



Aquatic Park Promenade Safety and Accessibility Improvements Environmental Assessment



**San Francisco Maritime National Historical Park
Building E, Fort Mason,
San Francisco, CA 94123**

U.S. Department of the Interior ♦ National Park Service ♦ San Francisco Maritime National Historical Park

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How this Environmental Assessment is Organized

i. Executive Summary: This section briefly recaps the contents of the EA, including the purpose and need for the project, an overview of the alternatives and other key project information.

ii. Table of Contents: This lists the chapters and primary sections and where they may be found within the document.

Chapter I. Purpose and Need: This chapter identifies the purpose and need for the proposed actions and the planning background for the project, including related laws, policy, monument plans and public participation to date. It also identifies the purpose and significance of the monument. *Impact Topics* describes the potentially affected resources and laws or policy relating to their inclusion in the EA. It also identifies those resources that have been dismissed from further analysis due to their having minor or less than minor environmental consequences.

Chapter II. Alternatives: This chapter describes the alternative courses of action that may be taken, including the reasons for dismissing options that do not meet the criteria for inclusion. It also identifies and provides analysis related to the selection of the Environmentally Preferable Alternative. The *Alternatives Comparison Chart* found at the end of the chapter provides a quick look at the numerical and other major differences among the alternatives.

Chapter III. Affected Environment/Environmental Consequences: Affected Environment describes the existing environment by resource category. Methodology identifies the means by which impacts to various resources are analyzed, including policy and laws relating to impact analysis. Environmental Consequences provides a comparison of effects associated with the alternatives including cumulative impacts compared to continuing on the present course of action. The Environmental Consequences section also contains an *Impact Comparison Chart* to assist in discerning the differences in projected impacts among the alternatives.

Chapter IV. Consultation and Coordination (List of Persons and Agencies Consulted / Preparers): This chapter provides additional information about internal and public scoping to determine the impact topics that would be contained within the document, as well as about preparation and review of the EA by other public agencies and Native American Tribes.

Chapter V: References: This chapter provides bibliographical information for sources cited in this EA.

Acronyms: Check this section for confusion about often repeated abbreviations.

Introduction

For over a century, the Aquatic Park area has been a popular public recreation site and waterfront park (NPS PWR 2010:1). This EA describes the impacts associated with the proposed rehabilitation of the Aquatic Park Promenade. The No Action Alternative (Alternative 1) describes the conditions associated with the existing Promenade. This alternative is used as a baseline of current conditions to compare the action alternatives (Alternatives 2-5). Alternatives 2-5 describe different ways the Promenade could be rehabilitated to improve safety, accessibility and visitor experience. A summary of other alternatives and actions considered but not fully analyzed is also provided.

The alternatives would vary in treatment of the State Belt Railroad tracks located within the Aquatic Park Promenade. These historic tracks would be retained in Alternatives 1 and 2 and removed in Alternatives 3-5. All action alternatives (2-5) would include partial or full replacement of Promenade asphalt and concrete pavement. The alternatives also vary in whether they would accommodate the proposed extension of the San Francisco Municipal Transit Agency F-line through Aquatic Park.

During design development for this project it was determined that, given the scope of this project, if funding allowed and to comply with federal law and policy, the Promenade should be made accessible to/from Van Ness Avenue (NPS SAFR 2013). Public comments also requested that this pathway be improved for bicyclists as part of the Bay Trail. These modifications are proposed as part of Alternatives 4 and 5.

To comment on the environmental assessment, mail or email comments to the name and address below. NPS practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours.

Individual respondents may request that we withhold their home address from the record, which we will honor to the extent allowable by law. If you want us to withhold your name and address, you must state this prominently at the beginning of your comment. We will make all submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety.

Please address comments to:
Superintendent; San Francisco Maritime National Historical Park;
Attn: Aquatic Park Promenade Rehabilitation Project
Building E, Fort Mason Center
San Francisco, California 94123

or via e-mail at: safr_planning@nps.gov

If reviewers do not identify significant environmental impacts, this EA will be used to prepare a Finding of No Significant Impact (FONSI), which will be sent to the NPS Pacific West Regional Director for approval.

Chapter I: Purpose and Need

A. Introduction

San Francisco Maritime National Historical Park (NHP) was established to preserve the maritime history of the United States especially that associated with the Pacific Coast. The intent of this proposal is to rehabilitate the Aquatic Park Promenade within the park to improve safety, resource conditions, and accessibility for visitors to the site. The Promenade is the wide sidewalk at the northern edge of the Aquatic Park National Historic Landmark District, running from Jefferson Street on the east toward Van Ness Avenue on the west (Figure 1). Near the west amphitheater (Bleachers) the Promenade separates into an upper and lower path.

The historic State Belt Railroad tracks (after 1969, the San Francisco Belt Railroad) run west from Hyde Street, down the middle of Jefferson Street, along the southern edge of the Promenade sidewalk just north of the Bleachers, and then along the upper asphalt path to cross Van Ness Avenue and enter a tunnel under Fort Mason. The asphalt path was originally a gravel railroad right-of-way that was paved after train service ended in the mid-1970s (with the Bicentennial Train). The concrete track bed and the sidewalk of the central and east portions of the Promenade were laid over sand and fill. Originally, the tracks were set flush with the concrete surface. Over the years, subsidence and the pressure of vehicle traffic has led to cracking and pavement loss. There has also been infill with asphalt and concrete to minimize safety hazards from the protruding railroad tracks and surrounding path subsidence.

B. Scope of this Environmental Assessment

This EA has been prepared to satisfy the requirements of the National Environmental Policy Act (NEPA) of 1969 (Public Law 91-190, 42 U.S. C. 4321-4347, as amended), including the Council on Environmental Quality (CEQ) regulations found at 40 CFR 1500 -1508 and other applicable laws, such as NPS Management Policies (2006) and NPS Director's Orders. This EA also facilitates compliance with other federal laws and executive orders enacted for the protection of the environment, including the National Historic Preservation Act (NHPA).

NEPA requires the documentation and evaluation of potential impacts resulting from federal actions. Federal actions may include projects financed, assisted, conducted, regulated or approved by a federal agency. An EA discloses the potential environmental consequences of implementing the proposal and other reasonable and feasible alternatives. NEPA is intended to provide decision-makers with sound knowledge of the environmental consequences of the alternatives available to them. In this case, the Superintendent of San Francisco Maritime National Historical Park and the Pacific West Regional Director are faced with a decision regarding how to rehabilitate the Aquatic Park Promenade to improve safety and accessibility while preserving park resources.

The purpose of this EA is to identify, evaluate and document the potential effects of the proposed rehabilitation of the Promenade. As described in the introduction to the EA, existing conditions described in the No Action Alternative (Alternative 1) constitute the baseline for evaluating the effects of the proposed rehabilitation.

An interdisciplinary team comprised of NPS staff, including natural and cultural resources and maintenance professionals and an architectural and engineering firm (Wiss, Janney, Elstner Associates, Inc.) (WJE) determined the purpose and need for the project and identified the likely beneficial and adverse effects of the proposed actions compared to existing conditions as documented herein.

Two value analysis processes were used to select the preferred alternative. The preferred alternative is the alternative that the NPS believes would best improve safety and protect cultural resources while providing the best visitor experience on the Aquatic Park Promenade.

C. San Francisco Maritime National Historical Park Purpose and Significance

San Francisco Maritime NHP encompasses approximately 35 acres on San Francisco's northern waterfront west of Fisherman's Wharf in what was once an industrial and food-packing section of the city. Significant resources include the fleet of historic vessels; a collection of approximately 100 small watercraft; the largest museum collection in the national park system, including, artifacts, historic documents, photographs, and manuscripts; a maritime library estimated at over 21,000 titles; and historic structures including the 1939 Aquatic Park Bathhouse Building, a Works Progress Administration (WPA) project, the 1860 Tubbs Cordage Company office building, and the 1907 Haslett Warehouse (now the Argonaut hotel) (NPS WRO 1997:1).

Park Purpose

The park purpose identifies the specific reasons for the creation of a park. Purpose statements are crafted using careful analysis of the enabling legislation or proclamation and the legislative history that molded the creation and development of the park. The park's purpose, as mandated by Congress, is "to preserve and interpret the history of achievements of seafaring Americans and the Nation's maritime heritage, especially on the Pacific Coast" (NPS WRO 1997:1).

Park Significance

Park significance statements express why park resources and values are important enough to merit national park system unit designation. Significance statements often identify why an area is important within a global, national, regional, and/or systemwide context. These statements are linked to the purpose of the park and are supported by data, research and consensus. They describe the park's distinctive nature and inform management decisions, focusing efforts on preserving and protecting the most important resources and values.

The significance of San Francisco Maritime NHP is found in its collection of large vessels, small watercraft, artifacts, art, historic documents, photographs, maps, drawings, books, and museum objects directly associated with the central role played by San Francisco Bay as the preeminent seaport in the maritime heritage of the Pacific Coast of the United States.

Among these include:

- The fleet of historic vessels, including the scow schooner Alma (1891), square-rigged ship Balclutha (1886), schooner C.A. Thayer (1895), ferry Eureka (1890), and the ocean tug Hercules (1907). Together, these vessels represent one of the most historically significant periods of commercial maritime activity on the Pacific Coast. The river tug Eppleton Hall (1914) is a historic English craft in the park's collection.
- Collection of approximately 108 small water-craft representing utility craft, working boats from the West Coast, lifeboats from historic ships, pilot tenders, fishing boats, pleasure boats, and duck- hunting craft. The collection represents the period from the late 1800s to mid-1900s. The small watercraft collection is accessioned, cataloged, and managed as part of the museum collection.
- Artifact collection such as vessel fittings, communications equipment, aids to navigation, lighthouse equipment, personal effects, fine and decorative arts, tools and hardware of maritime industry, engine-related machinery, ship models, furniture and furnishings, land transportation equipment, weapons, and small craft fittings. Approximately 35,000 items dating from the 1850s to the 1960s make up the museum artifact collection. These also range from large parts of sailing vessels to fine art created for the documentation and admiration of such vessels. There are items from the everyday lives of people making their living at sea, relying on the sea for transportation, and of those who became wealthy from their maritime endeavors. The object collections are a treasure trove of the iconic to

the practical, containing tangible links that help bring maritime history to life (3-17-13 email from K. Koehler to R. Jackson, SAFR).

- Historic document (archival) materials such as photographs, manuscripts, business records, vessel plans, nautical charts, and maps that represent the finest collection of West Coast maritime history in the country, documenting industry and community lifeways. The collection is important for the information it contains and for its artifactual value. Approximately 1,500 linear feet of manuscripts, 4,000 logbooks and sea journals, 120,000 vessel and shipyard plans, 5,000 charts and maps, and 185,000 photographic images, including over 78,600 negatives, make up the collection. Archival materials are accessioned, cataloged, and managed as part of the museum collection. These collections include the history and achievements of seafaring Americans primarily on the Pacific Coast of North America, from the California Gold Rush to recent times. They include paper records (such as manuscripts, naval architecture and marine engineering drawings), photographs, film and video as well as audio records on tape and digital media. The major subjects encompassed in the archives are oceanic and coastal trade, San Francisco Bay and river systems, marine harvesting, marine business, labor and shore-based support facilities (3-17-13 email from K. Koehler to R. Jackson, SAFR).
- The J. Porter Shaw Library, which collects and safeguards information to support the park's overall mission of preserving and interpreting the Pacific Coast maritime heritage. The library contains over 34,000 titles and is responsible for books, periodicals, and oral histories. This library collects and safeguards information to support the park's overall mission (including books, periodicals, maps and charts) (3-17-13 email from K. Koehler to R. Jackson, SAFR).
- Historic structures and settings associated with the history of the Bay and Black Point, such as the Aquatic Park Historic District (1939), which includes the Aquatic Park Bathhouse and associated public artwork, bleachers and basement spaces, concession stand and restroom buildings, east/west speaker towers, seawall and Promenade, WWII army landing pier (now Sea Scout base), integrated landscape portions of Aquatic Park, the Aquatic Park cove and beach, the Tubbs Cordage Company office building (Tubbs building [1860]), and the Haslett Warehouse (1907) (Argonaut Hotel) (NPS WRO 1997:5-6 as updated by park staff).

Park Vision Statement

The vision for San Francisco Maritime National Historical Park is that it be a major center for Pacific Coast maritime history in its widest possible context (NPS WRO 1997:6).

Park Mission Statement

San Francisco Maritime National Historical Park, with its partners, seeks to forge emotional and intellectual connections through preservation and interpretation of the resources and stories of America's maritime gateways, history, and culture, especially the development of the Pacific Coast. We maintain and make available the park's assets to enrich the lives of multiple communities and users (SAFR 2006).

D. Purpose of and Need for Management Action

1. PURPOSE

The purpose of this proposal is to rehabilitate the Aquatic Park Promenade to improve safety and accessibility for visitors and employees while preserving cultural resources important to retaining the integrity and historic character of the Aquatic Park National Historic Landmark.

2. NEED

Rehabilitation is needed because of the following conditions:

- Due to age, water intrusion, general weathering, exposure to the sea/salt environment, and use by vehicles, the concrete and asphalt concrete surface encasing the historic belt-line railroad tracks on the Aquatic Park Promenade has deteriorated.
- The deteriorated pavement around the historic State Belt Railroad tracks presents an uneven surface for pedestrians and bicyclists and other users of the Promenade.
- The mix of uses (tourists, beachgoers, NPS employees, bicycle rental customers, bicycle commuters and recreationists, and the general public) on the Aquatic Park Promenade requires users to move out of the way quickly for each other and in doing so they may not notice obstacles, such as the uneven railroad tracks and pavement.
- Numerous accidents and near misses involving bicyclists and pedestrians have occurred in the section of the Promenade that preserves the historic State Belt Railroad tracks, including several that have led to legal action against the National Park Service.
- Although the Service Road could meet accessibility standards for its slope, its surface is too uneven so access to Van Ness Avenue from the Aquatic Park Promenade is difficult for wheelchair users because of the poor condition of the road surface.
- A variety of repairs, such as paving of the Service Road, surface patching on the Promenade, and placement of signs have been made both to highlight the presence of the tracks and to decrease pavement changes, however none of these has resulted in long-lasting improvements.
- The railroad tracks are especially hazardous during wet conditions common in San Francisco.
- Asphalt expands and contracts more than concrete during weathering and has contributed to increasing pavement deterioration.
- The proposed extension of the F-line, an approved project by the San Francisco Municipal Transportation Agency (SFMTA), will affect visitor use of the Aquatic Park Promenade.
- The west end of the Aquatic Park Promenade is a gap in the Bay Trail that comes close to, but does not connect to the route up McDowell Road in Fort Mason.

E. Relationship to Laws, National Park Service Policy, and Monument Planning Documents

1. LAWS

National Park Service Organic Act (16 USC 1)

The key provision of the legislation establishing the NPS, referred to as the 1916 Organic Act is:

The National Park Service shall promote and regulate the use of the Federal areas known as national parks, monuments, and reservations hereinafter specified . . . by such means and measures as conform to the fundamental purpose of the said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

This is the guiding management law for all units of the National Park System, including San Francisco Maritime NHP.



Figure 1: Project Area

The prohibition against impairment in the Organic Act has been described in Management Policies (NPS 2006) and Director's Order-12, Conservation Planning, Environmental Impact Analysis, and Decision-making. These guidelines require analysis of potential effects to determine if actions would impair park resources (see Management Policies below). Impairment would be analyzed in an attachment to the proposed Finding of No Significant Impact, following public comments on this Environmental Assessment.

1970 National Park Service General Authorities Act (as amended in 1978 – Redwood amendment)

This act prohibits the NPS from allowing any activities that would cause derogation of the values and purposes for which the parks have been established (except as directly and specifically provided by Congress in the enabling legislation for the parks or by the President in a proclamation). Therefore, all units of the National Park System are to be managed as national parks, based on their enabling legislation and without regard for their individual titles (e.g. national monument, national historic site, national park, national historical park, national seashore, national recreation area etc.) unless differences are identified in their enabling legislation or proclamation. Parks also adhere to other applicable federal laws and regulations, such as the Endangered Species Act, the National Historic Preservation Act and the Wilderness Act. To articulate its responsibilities under these laws and regulations, the NPS has established management policies for all units under its stewardship (NPS Management Policies 2006).

National Environmental Policy Act (NEPA) (42 USC 4341 et seq.)

NEPA requires the identification and documentation of the environmental consequences of federal actions. Regulations implementing NEPA are set for by the President's Council on Environmental Quality (CEQ) (40 CFR Parts 1500-1508). CEQ regulations establish the requirements and process for agencies to fulfill their obligations under the act. This law is responsible for ensuring that federal agencies disclose the consequences of their actions in documents such as this EA.

Clean Water Act (CWA) (33 USC 1241 et seq.)

Under the Clean Water Act, it is a national policy to restore and maintain the chemical, physical, and biological integrity of the nation's waters, to enhance the quality of water resources, and to prevent, and control, and abate water pollution. Section 401 of the *Clean Water Act* as well as NPS policy requires analysis of impacts on water quality. *NPS Management Policies* (2006) provide direction for the preservation, use, and quality of water in national parks. Where applicable, in EAs, beneficial and adverse water quality impacts from proposed federal actions are analyzed.

Clean Air Act (as amended) (42 USC 7401 et seq.)

The Clean Air Act states that park managers have an affirmative responsibility to protect park air quality related values (including visibility, plants, animals, soils, water quality, cultural resources and visitor health) from adverse air pollution impacts. Where applicable, in EAs, beneficial and adverse air quality impacts from proposed federal actions are analyzed.

Endangered Species Act (16 USC 1531 et seq.)

The Endangered Species Act (ESA) requires federal agencies, in consultation with the Secretary of the Interior, to use their authorities in the furtherance of the purposes of the act and to carry out programs for the conservation of listed endangered and threatened species (16 USC 1535 Section 7(a)(1)). The ESA also directs federal agencies, in consultation with the Secretary of the Interior, to ensure that any action authorized, funded, or carried out by an agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat (16 USC 1535 Section 7(a)(2)). Consultation with the United States Fish and Wildlife Service (USFWS) is required if there is likely to be an effect.

Antiquities Act (1906) (16 USC 431- 433, 34 Statute 225)

This act was the first to provide protection for archeological resources. It protects all historic and prehistoric ruins or monuments on federal lands and prohibits their excavation, destruction, injury or appropriation without the departmental secretary's permission. It also authorizes the President to proclaim as national monuments public lands having historic landmarks, historic and prehistoric structures, and other objects of historic or of scientific interest. Additional authorizations allow the President to reserve federal lands, to accept private lands, and to accept relinquishment of unperfected mining claims. This act was superseded by the Archaeological Resources Protection Act (ARPA) for the prosecution of antiquities violations in National Park System areas. Other parts of the Antiquities Act, however, remain in effect.

National Historic Preservation Act (1966 as amended) (16 USC 470)

Section 106 of the National Historic Preservation Act (NHPA) directs federal agencies to take into account the effect of any undertaking [a federally funded or assisted project] on historic properties. "Historic property" is any district, building, structure, site, or object that is eligible for listing in the National Register of Historic Places (National Register) because the property is significant at the national, state, or local level in American history, architecture, archeology, engineering, or culture. This section also provides the Advisory Council on Historic Preservation (ACHP) and the State Historic Preservation Officer (SHPO) an opportunity to comment on the undertaking, particularly if there is likely to be an adverse effect. Section 110 of this act requires the ongoing documentation of historic resources by federal agencies. The 1992 amendments to the act further defined the roles of American Indian Tribes and the affected public in the Section 106 process.

Archaeological Resources Protection Act (ARPA) (1979) (16 USC 470aa - 470mm, Public Law 96-95)

This act secures the protection of archeological resources on public or Indian lands and fosters increased cooperation and exchange of information between the private / governmental / professional community to facilitate the enjoyment and education of present and future generations. The act regulates excavation and collection on public and Indian lands. It defines archeological resources to be any material remains of past human life or activities that are of archeological interest and are at least 100 years old. It requires notification of Indian tribes who may consider a site of religious or cultural importance prior to issuing permits for excavation or collection of historic objects. It was amended in 1988 to require the development of plans for surveying public lands for archeological resources and systems for reporting incidents of suspected violations.

Native American Graves Protection and Repatriation Act (NAGPRA) (1990)

Section 3 of this act has provisions regarding the custody of cultural items found on federal or tribal lands after November 16, 1990, while section 8 provides for repatriation of items found before that date. Section 3 also identifies procedures regarding the inadvertent discovery of Native American remains, funerary objects and objects of cultural patrimony during federal actions. NAGPRA regulations are found at 43 CFR Part 10.

Americans with Disabilities Act (ADA) (1990) / Architectural Barriers Act (ABA/ABAAS)

The Americans with Disabilities Act applies to the private sector, while the similar Architectural Barriers Act applies to actions on federal lands. This act states that new construction and programs will be accessible. Planning and design guidance for accessibility is provided in the Architectural and Transportation Barriers Compliance Board (36 CFR Part 1191). NPS Special Directive 83-3 states that accessibility will be proportional to the degree of development, with areas of intense development (visitor centers, drive-in campgrounds, etc.) more accessible than areas of less development (backcountry trails and walk-in campgrounds, etc.) which may have fewer accessibility features.

San Francisco Maritime National Historical Park Enabling Legislation (16 USC, Section 410nn, June 27, 1988)

“In order to preserve and interpret the history and achievements of seafaring Americans and of the Nation's maritime heritage, especially on the Pacific coast, there is hereby established the San Francisco Maritime National Historical Park. . .”

2. POLICIES

National Park Service Management Policies (2006)

Management Policies governs the way park managers make decisions on a wide range of issues that come before them. *Management Policies* consolidates agency policy on a wide variety of laws, technology, resource management and other issues pertinent to management of the National Park System. Sections applicable to the proposed project are quoted below.

Impairment

1.4.3 The NPS Obligation to Conserve and Provide for Enjoyment of Park Resources and Values

“The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. This mandate is independent of the separate prohibition on impairment and applies all the time with respect to all park resources and values, even when there is no risk that any park resources or values may be impaired. NPS managers must always seek ways to avoid, or to minimize to the greatest extent practicable, adverse impacts on park resources and values. The laws do give the Service the management discretion, however, to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, so long as the impact does not constitute impairment of the affected resources and values.

The fundamental purpose of all parks also includes providing for the enjoyment of park resources and values by the people of the United States. The enjoyment that is contemplated by the statute is broad; it is the enjoyment of all the people of the United States and includes enjoyment both by people who visit parks and by those who appreciate them from afar. It also includes deriving benefit (including scientific knowledge) and inspiration from parks, as well as other forms of enjoyment and inspiration. Congress, recognizing that the enjoyment by future generations of the national parks can be ensured only if the superb quality of park resources and values is left unimpaired, has provided that when there is a conflict between conserving resources and values and providing for enjoyment of them, conservation is to be predominant. This is how courts have consistently interpreted the Organic Act.”

1.4.4 The Prohibition on Impairment of Park Resources and Values

“While Congress has given the Service the management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the Park Service must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the Organic Act, establishes the primary responsibility of the NPS. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them.

The impairment of park resources and values may not be allowed by the Service unless directly and specifically provided for by legislation or by the proclamation establishing the park. The relevant legislation or proclamation must provide explicitly (not by implication or inference) for the activity, in terms that keep the Service from having the authority to manage the activity so as to avoid the impairment.”

1.4.5 What Constitutes Impairment of Park Resources and Values

“The impairment that is prohibited by the Organic Act and the General Authorities Act is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of

park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. Whether an impact meets this definition depends on the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts.

An impact to any park resource or value may, but does not necessarily, constitute an impairment. An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, or
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or
- identified in the park's GMP or other relevant NPS planning documents as being of significance.

An impact would be less likely to constitute an impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values and it cannot be further mitigated. An impact that may, but would not necessarily, lead to impairment may result from visitor activities; NPS administrative activities; or activities undertaken by concessioners, contractors, and others operating in the park. Impairment may also result from sources or activities outside the park..."

1.4.6 What Constitutes Park Resources and Values

"The 'park resources and values' that are subject to the no-impairment standard include: the park's scenery, natural and historic objects, and wildlife, and the processes and conditions that sustain them, including, to the extent present in the park: the ecological, biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structures, and objects; museum collections; and native plants and animals; appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairing them; the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and any additional attributes encompassed by the specific values and purposes for which the park was established."

1.4.7 Decision-making Requirements to Identify and Avoid Impairments

"Before approving a proposed action that could lead to an impairment of park resources and values, an NPS decision-maker must consider the impacts of the proposed action and determine, in writing, that the activity will not lead to an impairment of park resources and values. If there would be an impairment, the action must not be approved."

Safety

1.9.1.4 Employee Safety and Health

"The safety and health of employees, contractors, volunteers, and the public are core Service values. In making decisions on matters concerning employee safety and health, NPS managers must exercise good judgment and discretion and, above all, keep in mind that the safeguarding of human life must not be compromised. The Service must ensure that all employees are trained and informed on how to do their jobs safely, and that they have the necessary clothing, materials, and equipment to perform their duties with minimal personal risk."

8.2.5.1 Visitor Safety

"The saving of human life will take precedence over all other management actions as the Park Service strives to protect human life and provide for injury-free visits. The Service will do this

within the constraints of the 1916 Organic Act. The primary—and very substantial—constraint imposed by the Organic Act is that discretionary management activities may be undertaken only to the extent that they will not impair park resources and values.

While recognizing that there are limitations on its capability to totally eliminate all hazards, the Service and its concessioners, contractors, and cooperators will seek to provide a safe and healthful environment for visitors and employees. The Service will work cooperatively with other federal, tribal, state, and local agencies; organizations; and individuals to carry out this responsibility. The Service will strive to identify and prevent injuries from recognizable threats to the safety and health of persons and to the protection of property by applying nationally accepted codes, standards, engineering principles, and the guidance contained in Director's Orders #50B, #50C, #58, and #83 and their associated reference manuals. When practicable and consistent with congressionally designated purposes and mandates, the Service will reduce or remove known hazards and apply other appropriate measures, including closures, guides, signing, or other forms of education. In doing so, the Service's preferred actions will be those that have the least impact on park resources and values.

The Service recognizes that the park resources it protects are not only visitor attractions, but that they may also be potentially hazardous. In addition, the recreational activities of some visitors may be of especially high-risk, high-adventure types, which pose a significant personal risk to participants and which the Service cannot totally control. Park visitors must assume a substantial degree of risk and responsibility for their own safety when visiting areas that are managed and maintained as natural, cultural, or recreational environments.

These management policies do not impose park-specific visitor safety prescriptions. The means by which public safety concerns are to be addressed is left to the discretion of superintendents and other decision-makers at the park level who must work within the limits of funding and staffing. Examples include decisions about whether to install warning signs or artificial lighting, distribute weather warnings or advisories, initiate search-and-rescue operations or render emergency aid, eliminate potentially dangerous animals, close roads and trails or install guiderails and fences, and grant or deny backcountry or climbing permits. Some forms of visitor safeguards typically found in other public venues—such as fences, railings, and paved walking surfaces—may not be appropriate or practicable in a national park setting.”

Cultural Resources

5.3.5 Treatment of Cultural Resources

“The Park Service will provide for the long-term preservation of, public access to, and appreciation of the features, materials, and qualities contributing to the significance of cultural resources. With some differences by type, cultural resources are subject to several basic treatments, including (1) preservation in their existing states; (2) rehabilitation to serve contemporary uses, consistent with their integrity and character; and (3) restoration to earlier appearances by the removal of later additions and replacement of missing elements. Decisions regarding which treatments will best ensure the preservation and public enjoyment of particular cultural resources will be reached through the planning and compliance process, taking into account

- the nature and significance of a resource and its condition and interpretive value
- the research potential of the resource
- the level of intervention required by treatment alternatives
- the availability of data and the terms of any binding restrictions
- the concerns of traditionally associated peoples and other groups and individuals

Except for emergencies that threaten irreparable loss without immediate action, no treatment project will be undertaken unless supported by an approved planning document appropriate to the proposed action.

The preservation of cultural resources in their existing states will always receive first consideration. Treatments entailing greater intervention will not proceed without the consideration of interpretive alternatives. The appearance and condition of resources before treatment and changes made during treatment will be documented. Such documentation will be shared with any appropriate state or tribal historic preservation office or certified local government and added to the park museum cataloging system. Pending treatment decisions reached through the planning process, all resources will be protected and preserved in their existing states. . .”

Accessibility

9.1.2 Accessibility for Persons with Disabilities

“The Service will design, construct, and operate all buildings and facilities so they are accessible to and usable by persons with disabilities to the greatest extent reasonable, in accord with all applicable laws, regulations, and standards.

Accessibility will be provided consistent with preserving park resources and providing visitor safety and high-quality visitor experiences. In most instances, the degree of accessibility provided will be proportionately related to the degree of human-made modifications in the area surrounding the facility and the importance of the facility to people visiting or working in the park. Accordingly, most administrative offices, some overnight visitor accommodations, some employee housing, and most interpretive and visitor service facilities will be accessible.”

Director’s Order [D.O.] 77: Natural Resources Management and D.O. 77 Handbook

This comprehensive guideline directs the actions of park managers in natural resources protection so that natural resources activities planned and initiated within the national park system comply with federal law, regulations, and Department of the Interior and NPS policies.

D.O. 28: Cultural Resources Management and Handbook

This guideline identifies the authorities for cultural resources management as derived from federal laws and the Secretary of the Interior’s Standards and Guidelines for Archaeology and Historic Preservation that guide the implementation of cultural resources management in the national park system.

3. PARK PLANS

San Francisco Maritime National Historical Park General Management Plan (1997)

Applicable Management Objectives

Cultural Resource Management

- To the extent possible, restore altered and deteriorated resources for appropriate use. Historic vessels, small watercraft, artifacts, historic documents, and library resources will be restored as appropriate for such uses as operation, exhibition, and research. Preserve historic integrity consistent with resource context, acceptable practice, and governing standards.

Visitor Use

- Provide a range of quality visitor experiences based on the resources and purpose of San Francisco Maritime National Historical Park, compatible with preservation of those resources.

Park Development/Facility Design

- Encourage appropriate use and adaptive reuse of historic structures while preserving historic integrity.

Local Context

- Work cooperatively with appropriate local groups and government agencies to encourage compatible, aesthetic, and planned development and recreational opportunities adjacent to park boundaries, and to provide information, orientation, and services to visitors.

Relationship to Streetcar Extension

Although the current General Management Plan for SAFR (1996) acknowledges the potential extension of the Muni waterfront streetcar, it does not provide guidance in addressing potential impacts to circulation, historic resources and operations.

Aquatic Park/ Victorian Park Development Concept Plan

“...Recreational space and pedestrian access along the beach, waterfront Promenade, bleachers, and open lawn areas would be maintained and enhanced through landscaping, benches, signs, banners, and other design features that would complement the streamline modern style of Aquatic Park or the 19th century design theme of Victorian Park. Recreational activities in the lagoon such as swimming, rowing, and temporary mooring of sailboats would continue. The two bocce ball courts by the bathhouse would be maintained, and a nautical-theme children’s play area would be added adjacent to the courts. . .” (NPS WRO 1997:30).

Aquatic Park Cultural Landscape Inventory

The designed landscape of Aquatic Park was documented in 2001 as part of the National Park Service Cultural Landscapes Inventory (CLI). Revised in 2004, the CLI identifies 21 individual structures and landscape features that contribute to the significance of the historic district NPS PWR 2001).

Aquatic Park Cultural Landscape Report

The Cultural Landscape Report for Aquatic Park provides treatment recommendations for the preservation and rehabilitation of the historic designed landscape within the framework of contemporary park operations, compatible adaptive use of the grounds, and sustainability.

Among the recommendations include:

- Maintain the historic design of the Promenade including the width, alignment, and concrete finish surface.
- Maintain the concrete surface in good condition.
- Replace existing asphalt patches with concrete material, matching the original color and finish. If additional areas of the Beach Promenade require repair in the future, ensure that replacement materials and finishes are compatible and match the existing concrete paving.

4. SPECIAL DESIGNATIONS

Aquatic Park National Historic Landmark

The Aquatic Park Promenade is part of the Aquatic Park National Historic Landmark. In the GMP, Aquatic Park is part of the *Cultural Zone*, where development “must be compatible with preservation and interpretation of cultural values.” Within this management zone, Aquatic Park is within a *cultural subzone* where “preservation, adaptive use and commemoration” are appropriate treatments (NPS PWR 2010:1)

Fort Mason Historic District

First listed on the National Register of Historic Places in 1972, the Fort Mason Historic District is significant for its relationship to U.S. military history (National Register #72000109). Its period of significance is from 1855 – 1953. In 1972 the district comprised 82 acres over both Upper and Lower Fort Mason, and four buildings of historic significance on the eastern side of Upper Fort Mason. In 1979, the district was amended to expand the boundaries, an increase totaling 68.5 acres containing forty-five buildings, ten structures, and two objects of historic significance (National Register #79000530) (ARG and RHAA 2009: 5).

San Francisco Port of Embarkation National Historic Landmark

The San Francisco Port of Embarkation NHL was listed on the National Register of Historic Places in February 1985. It includes the buildings and cultural landscape at Lower Fort Mason. It was designated as a NHL for its significance related to historical events under Criterion A, based on the central role of these facilities in United States logistical strategy during World War II. The Period of Significance for the NHL is 1912-1945 (ARG and FHAA 2009: 5, Olmstead Center 2004 and 2012).

Available data regarding the NHL includes: the San Francisco Port of Embarkation, Historic Structures Report prepared by Architectural Resources Group, dated February, 1991 and Cultural Landscape Report for Fort Mason Golden Gate National Recreation Area, Volume One: Site History, Existing Conditions and Analysis (Olmstead Center for Landscape Preservation 2004) and a second volume, Treatment Strategy (Olmstead Center 2012). The Cultural Landscape Report Part II Treatment: Fort Mason Center (ARG and RHAA 2009) also describes the State Belt and Port of Embarkation.



Figure 2: Fort Mason Center (Architectural Resources Group Photo 2009 from CLR Part II)

Port of San Francisco Embarcadero Historic District

The Port of San Francisco Embarcadero Historic District was listed on the National Register in 1991. From 1878 to 1946, the area represents a pattern of development for transportation in its various features- the seawall and bulkhead wharf, the piers, the Ferry Building, and supporting buildings. The district embodies the interaction of ship transportation with land transportation- especially railroads and trucks. The district is significant in the area of Transportation at the local, state, and national levels (Corbett, Dobkin and Kostura 2006: Section 8, p. 45-46).

F. Impact Topics Analyzed

Impacts of the alternatives on the following topics are presented in this EA: soils, water quality, prehistoric and historic archeological resources, historic structures and cultural landscapes (including scenic resources), visitor experience (including visitor access and transportation, visitor use opportunities and safety, and interpretation and education) and park operations. Based on initial analysis and dependent on the alternative, there is the potential for more than minor effects on these resources.

1. PHYSICAL RESOURCES

Soils: Management Policies (NPS 2006) require the NPS to understand and preserve and to prevent, to the extent possible the unnatural erosion, physical removal, or contamination of the soil. Rehabilitation of the Promenade would involve ground disturbance, including of fill and some native materials below the Promenade. Therefore, soils are addressed as an impact topic.

Water Quality: Section 401 of the Clean Water Act as well as NPS policy requires analysis of impacts on water quality. Although there would be no new impacts to water quality, existing impacts related to storm drains and short-term construction impacts are discussed. Therefore, water quality has been retained as an impact topic.

2. CULTURAL RESOURCES

Prehistoric and Historic Archeological Resources: Conformance with the Archaeological Resources Protection Act and National Historic Preservation Act in protecting archeological resources is necessary. Because there is a potential for archeological resources to be located in or near the proposed project area, this is addressed as an impact topic.

Historic Structures and Cultural Landscapes: Consideration of the impacts to cultural resources is required under provisions of Section 106 of the NHPA of 1966, as amended, and the 2008 *Programmatic Agreement among the National Park Service, the National Conference of State Historic Preservation Officers, and the Advisory Council on Historic Preservation*. It is also required under Management Policies (NPS 2006). Federal land managing agencies are required to consider the effects proposed actions have on properties listed on, or eligible for inclusion in, the National Register of Historic Places (i.e., Historic Properties), and allow the Advisory Council on Historic Preservation a reasonable opportunity to comment. Agencies are required to consult with federal, state, local, and tribal governments and organizations to identify historic properties, assess adverse effects to historic properties, and negate, minimize, or mitigate adverse effects to historic properties while engaged in any federal or federally assisted undertaking (36 CFR Part 800). The Promenade is listed on the National Register of Historic Places as part of the Aquatic Park National Historic Landmark. Therefore this topic has been retained for further analysis.

The San Francisco Bay waterfront, including the Aquatic Park Promenade, which extends west from Fisherman's Wharf, is renowned as a premiere scenic area. Enhancing the scenic nature of this area was a key consideration in the design of historic Aquatic Park. As a result, scenic resources are retained as an impact topic within the context of the cultural landscape analysis.

3. RECREATIONAL / SOCIAL RESOURCES

Visitor Experience (including Visitor Access and Transportation, Safety and Visitor Use Opportunities, and Interpretation and Education): Based on Management Policies (NPS 2006), impacts to visitors are considered with respect to park undertakings. Because rehabilitation of the Promenade would have effects on visitor experience (including access to and use of the Promenade and the ability to understand the historic context of the area), for pedestrians, bicyclists and beachgoers, it has been retained as an impact topic.

The original impetus for the proposed project was to improve safety on the Promenade for pedestrians and bicyclists. For many years, the historic State Belt railroad tracks have been recognized as a safety hazard and successful lawsuits related to the unsafe condition have been brought against the park by visitors. As a result, safety has been included as both a purpose of the project and is retained as an impact topic.

Park Operations: Impacts to park operations are often considered in EAs to disclose the degree to which proposed actions would change park management strategies and methods as well as

sustainability. There would be both short- and long-term impacts to park operations (primarily from initial construction costs and reduced long-term maintenance) from proposed modifications. In addition, there would be changes related to managing the area from a safety standpoint. Therefore this topic has been retained for further analysis.

G. Impact Topics Dismissed From Further Consideration

The topics listed below either would not be affected or there would be negligible to minor adverse and/or beneficial effects from the alternatives evaluated in this EA. Therefore, these topics have been dismissed from further analysis.

1. PHYSICAL RESOURCES

Land Use: Lands in the proposed project area are located within San Francisco Maritime NHP. There would be no change in land use. The Promenade would continue to be used for public use. Therefore this topic has been dismissed from further analysis.

Geology: Management Policies (NPS 2006) call for analysis of geology and geological hazards should they be relevant. Rehabilitation of the Promenade would involve some alteration or covering of a portion of the underlying geology however because the area beneath the Promenade (based on the results of the geotechnical survey) (WJE 2013) is primarily fill mixed with native soil materials, such as sand, there would be no effect on geology. Therefore this topic has been dismissed from further analysis.

Air Quality: Class I areas are afforded the highest degree of protection under the Clean Air Act. This designation allows very little additional deterioration of air quality. Class II areas have limits on increases of particulate matter and sulfur dioxide above baseline conditions. San Francisco Maritime NHP is in a class II area.

Negligible, temporary air quality impacts would occur from the implementation of the alternatives described in this document. These impacts would not be detectable over existing conditions. Any hydrocarbons (NO₂, SO₂ emissions), as well as airborne particulates created by fugitive dust plumes, would rapidly dissipate because the location of the park and prevailing winds results in good air circulation. Overall, there could be a local, short-term, negligible degradation of air quality during construction activities; however, no measurable effects outside the immediate construction site would be anticipated. Any construction-related, adverse effects to air quality would be temporary, lasting only as long as construction.

If applicable, among the measures to further reduce impacts from a potential project would include dust control as needed during construction activities; requirements for construction machinery to meet applicable air emission standards; and restrictions to limit unnecessary idling of vehicles and equipment. Therefore this topic has been dismissed from further analysis.

Lightscares: Management Policies (2006) states that “the Service will preserve, to the greatest extent possible, the natural lightscares of parks, which are natural resources and values that exist in the absence of human-caused light.” The stars, planets, and moon, visible during clear nights, influence people and many other species of animals, such as birds, terrestrial predators and prey. The alternatives will not increase the intensity of artificial light sources on the Aquatic Park Promenade. The project proposal under Alternatives 3-5 call for the historic street lamps to be rewired and relamped to meet NPS night sky criteria. Although up to two additional streetlights or bollard lights could be added, relamping the streetlights would reduce existing night sky light pollution. Because, despite the addition of lamps, there would be a decrease rather than increase in intensity of artificial light in the environment, this topic was dismissed from further consideration.

Soundscapes: Park soundscape resources encompass all of the natural sounds that occur in parks, including the physical capacity for transmitting those natural sounds and the interrelationship among natural sounds of different frequencies and volumes in the park. NPS Director's Order 47 (Sound Preservation and Noise Management) defines operational policies that will protect, maintain, or restore the natural soundscape. Natural sounds are part of the park environment and are vital to the functioning of ecosystems and may also be valuable indicators of their health. Because they comprise the total ambient acoustic environment associated with an area, soundscapes may be composed of both natural and human-made sounds. In a high noise environment, such as periodically exists at Aquatic Park, natural ambient sounds may be masked by other noise sources. Because the study area alternatives would not introduce or increase sound sources in the environment, this topic has been dismissed from further consideration.

Water Resources: The 1972 Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977, is a national policy to restore and maintain the chemical, physical, and biological integrity of the nation's waters, to enhance the quality of water resources, and to prevent, and control, and abate water pollution. Management Policies (NPS 2006) provide direction for the preservation, use, and quality of water in national parks.

Water Quantity: There would be minimal temporary additional use of water during construction, such as for mixing concrete and dust control, a negligible to minor adverse impact. Therefore this topic has been dismissed from further analysis.

Wetlands: Executive Order 11990 (Protection of Wetlands) requires that impacts to wetlands be addressed. Other NPS policies and guidelines also provide requirements associated with work in wetlands. There are no wetlands in the proposed project area. No impacts on wetlands would occur. Therefore this topic has been dismissed from further analysis.

Floodplains: Executive Order 11988 (Floodplain Management) requires an examination of impacts to floodplains and potential risk involved in placing facilities within floodplains. NPS Management Policies, DO-2 (Planning Guidelines), and DO-12 (Conservation Planning, Environmental Impact Analysis, and Decision-making) provide guidelines for proposals in floodplains. There are no floodplains in the proposed project area. No impacts to floodplains would occur. Therefore this topic has been dismissed from further analysis.

2. BIOLOGICAL RESOURCES

Vegetation: NEPA calls for examination of the impacts on the components of affected ecosystems. NPS policy is to protect the natural abundance and diversity of park native species and communities, including avoiding, minimizing or mitigating potential impacts from proposed projects. No native vegetation or communities are present in the project area therefore this topic has been dismissed from further analysis.

Wildlife: NEPA calls for examination of the impacts on the components of affected ecosystems. NPS policy is to protect the natural abundance and diversity of park native species and communities, including avoiding, minimizing or mitigating potential impacts from proposed projects. A variety of native wildlife species may reside in or use the project area. Because wildlife in the project area is subject to repeated disturbance from noise and activity along the Promenade and within San Francisco, it is unlikely that project noise and disturbance would measurably affect wildlife presence. Therefore this topic has been dismissed from further analysis.

Special Status Wildlife: The Endangered Species Act (ESA) requires an examination of impacts to all federally listed threatened or endangered species. NPS policy also requires an analysis of impacts to state-listed threatened or endangered species and federal candidate species. Under the ESA, the NPS is mandated to promote the conservation of all federal threatened and endangered species and their critical habitats within the park boundary. *Management Policies*

(NPS 2006) includes the additional stipulation to conserve and manage species proposed for listing. There is no special status wildlife or plants in the project area. Therefore this topic has been dismissed from further analysis.

3. CULTURAL RESOURCES

Museum Collections: Management Policies (NPS 2006) and other cultural resources laws identify the need to evaluate effects on NPS collections if applicable. Requirements for proper management of museum objects are defined in 36 CFR 79. The collections at San Francisco Maritime NHP would not be affected by the proposed project, except by the potential addition of material for the collections if any is found (see mitigation measures under Archeological Resources in Chapter III: *Affected Environment and Environmental Consequences*). Therefore this topic has been dismissed from further analysis.

Traditional Cultural (Ethnographic) Resources: The San Francisco Bay area has a long history of use by prehistoric and contemporary Native Americans. Analysis of impacts to known resources is important under the National Historic Preservation Act (NHPA) and other laws. The NPS defines ethnographic resources as any “site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it” (NPS 1998:181). There would be no impacts on ethnographic resources because the proposed project would be in an existing developed area where no traditional cultural places have been identified. Therefore this topic has been dismissed from further analysis.

Native American Indian Sacred Sites: To comply with the American Indian Religious Freedom Act, federal agencies must consider the effects of their actions on American Indian traditional religious practices. Based on analysis, there are no known traditional or religious use areas within the study area. In addition, there are no known Indian sacred sites that would require compliance with Executive Order 13007: Indian Sacred Sites (61 FR 26771, 42 USC 1996).

Indian Trust Resources: Secretarial Order 3175 requires that any anticipated impacts to Indian trust resources from a proposed project or action by Department of the Interior agencies be explicitly addressed in environmental documents. The federal Indian trust responsibility is a legally enforceable fiduciary obligation on the part of the United States to protect tribal lands, assets, resources, and treaty rights, and represents a duty to carry out the mandates of federal law with respect to American Indian and Alaska Native tribes. There are no Indian trust resources in San Francisco Maritime NHP. The lands comprising the park are not held in trust by the Secretary of the Interior for the benefit of Indians due to their status as Indians. Therefore, the topic of Indian trust resources has been dismissed from further analysis.

4. RECREATIONAL / SOCIAL RESOURCES

Wilderness: NPS wilderness management policies are based on provisions of the 1916 NPS Organic Act, the 1964 Wilderness Act, and legislation establishing individual units of the National Park System. There is no wilderness in San Francisco Maritime NHP. Therefore this topic has been dismissed from further analysis.

Socioeconomics: Socioeconomic impact analysis is required, as appropriate, under NEPA and Management Policies (NPS 2006) pertaining to gateway communities. The local and regional economy and most business of the communities surrounding the park are based on tourism and resource use. Agriculture, manufacturing, professional services, and education also contribute to regional economies. There would be no measurable effects or changes in visitor attendance or visitor spending patterns as a result of the implementation of the actions described herein. It is also unlikely that beneficial effects associated with spending on the project would be discernible in the regional economy. Therefore this topic has been dismissed from further analysis.

Designated Critical Habitat, Ecologically Critical Areas, Wild and Scenic Rivers, or Other Unique Natural Areas: No areas within the project area are designated as critical habitat or ecologically critical, nor are there any existing or potential wild and scenic rivers within the project area. This topic is, therefore, dismissed from further analysis.

Prime and Unique Farmlands: No unique agricultural soils exist in the vicinity of the project. The area was a former waterfront wetland / beach. Therefore this topic has been dismissed from further analysis.

Energy Consumption: Implementation of the alternatives would not cause major increases or decreases in the overall consumption of electricity, propane, wood, fuel oil, gas or diesel associated with visitation or for park operations and maintenance. Therefore this topic has been dismissed from further analysis.

Hazardous Materials: Although there are no known hazardous materials associated with the Aquatic Park Promenade, an abandoned sewer line is proposed to be capped. Because hazardous materials such as oil and gasoline are used in construction projects, project mitigation measures call for developing and implementing a comprehensive spill prevention/response plan that complies with federal and state regulations and addresses all aspects of spill prevention, notification, emergency spill response strategies for spills occurring on land and water, reporting requirements, monitoring requirements, personnel responsibilities, response equipment type and location, and drills and training requirements. This plan would address hazardous materials storage, spill prevention, and responses and would be part of the construction project. Because impacts are likely to only arise from misuse or spills that would be mitigated by use of these plans, this topic has been dismissed from further consideration.

Environmental Justice: Executive Order 12898 requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. This Executive Order does not apply to the subject of this EA. The actions evaluated in this EA would not adversely affect socially or economically disadvantaged populations. Therefore this topic has been dismissed from further analysis.

H. Public Participation

Public involvement is a key part of the NEPA process. In this part of the process, the general public, federal, state, local agencies and organizations are provided an opportunity to identify concerns and issues regarding the potential effects of proposed federal actions. The opportunity to provide input is called “scoping.”

Internal scoping is the effort to engage professional staff at the park and other NPS offices to provide information regarding proposed actions that may affect San Francisco Maritime NHP resources. San Francisco Maritime NHP conducted internal scoping beginning in 2012. A variety of comments and concerns were raised by staff regarding planning, maintenance, and cultural resources, safety/law enforcement, and visitor experience.

1. PUBLIC SCOPING

Public scoping included a press release sent out on November 6, 2012 to the park’s press release mailing list and a public open house on December 6, 2012 at the maritime museum. Information from the press release was published in the San Francisco Chronicle on December 6, 2012. The formal public scoping period ended on January 6, 2013.

There were 8 public comment letters submitted, including one letter, three Planning, Environment and Public Comment (PEPC) comments and four optional comment cards. The online San Francisco Chronicle article also included space for responses to the article and there were five

applicable comment entries responding to that article. The comment cards, which were offered at the public meeting, were returned by daily (3) and weekly (1) users of the Promenade, including, self-identified walkers (3), swimmers (2), bicyclists (3), runners (2), other -- picnic, loiter (1), direct bicyclist customers (1).

Commenters were from San Francisco (7), Alameda (1) and unknown (article and 5 applicable responses). Comments were from 8 individuals, 1 organization (San Francisco Bay Trail Project), 1 newspaper article (San Francisco Chronicle), 5 applicable responses (San Francisco Chronicle).

Optional comment cards contained the following questions:

1. *How do you use the Aquatic Park Promenade?*
2. *How often do you use the Aquatic Park Promenade?*
3. *What do you see as the greatest safety problem on the Promenade?*
4. *What specific actions would you like the NPS to consider to improve safety and visitor enjoyment on the Promenade as part of the pavement repair project?*

General Comment (please continue on reverse if necessary):

Altogether 58 comments were recorded, including 11 outside the scope, four non-substantive and 43 substantive. The substantive comments were subsequently divided into 19 concern statements as identified below.

Non-substantive comments discussed the future F-Line route, restoration of or adding new features to the Promenade area and appreciation for the planning process.

The following were the concern statements identified from the public comments.

- The Aquatic Park Promenade is one of only three gaps in the San Francisco Bay northern waterfront trail.
- The Promenade is dangerous to pedestrians because bicyclists do not warn pedestrians of their approach.
- The Promenade is dangerous because people have been hurt there crossing the tracks / someone could get killed due to the unsafe condition of raised tracks.
- The Promenade is dangerous because it contains above-ground railroad track.
- The Promenade is dangerous because it contains an uneven, potholed surface
- The Promenade is dangerous because it contains multiple uses (bicycles and pedestrians as well as vehicles and carts).
- Railroad tracks are more dangerous when wet.
- The railroad tracks can be seen and are therefore not a hazard
- The proposed solution shown in the Cultural Landscape Report on the park's website on page 116 (Figure 99) would require an awkward maneuver by cyclists.
- The proposed solution shown in the Cultural Landscape Report on the park's website on page 120 (Figure 102) would address potential conflicts by separating bicyclists and pedestrians on the Promenade but would reduce the width of the path and elevate the route on a path above a vertical drop.
- Requiring bicyclists to walk their bikes through this section would avoid conflicts with pedestrians and allow the historic tracks and character to be preserved.
- Reroute bicyclists around Promenade.
- Identify a separate bicycle path along the Promenade, such as on the other side of the Maritime Museum.
- Improve the railroad tracks by making them part of the Tunnel Rail Service
- Improve the railroad tracks by making them more visible.
- Remove the railroad tracks
- Improve the pavement surface
- Remove car conflicts from Promenade

- Repaving without removing the tracks would result in long-term unsafe condition

A variety of comments were received that were outside the scope of the current project, including some comments about the F-line and rail service through the tunnel. Other suggestions outside the scope of the current project to improve the vicinity included the following:

- Rehab East and West Roundhouses.
- Put the “Mermaid” back on the porch
- Turn off the last 2 lights on Muni Pier
- Rebuild Muni Pier
- Have more NPS police based at Aquatic Park full time to enforce existing laws.
- Set necessary moorings for Sea Scout program.
- Restore operation of Roundhouse restrooms
- Restore bench areas in lawn at foot of Van Ness Ave, across street from Sea Scout Base.
- Install breeches buoy practice tower adjacent to wall in above lawn area.
- Please do not commercialize the area. No shops, kiosks, restaurants -- keep it natural.

2. ALTERNATIVES SCOPING

The park conducted scoping to discuss the preliminary alternatives being considered for the Environmental Assessment.

The preliminary alternatives included:

- Alternative A: No Action: Continue to Patch Deteriorating Asphalt and Concrete Adjacent to the State Beltline Railroad Tracks on the Aquatic Park Promenade
- Alternative B: Remove State Beltline Railroad Tracks and Replace Pavement with Concrete (including Upper Fork)
- Alternative B1: Remove State Beltline Railroad Tracks and Replace with Concrete Pavement (excluding Upper Fork) and Connect Promenade to Van Ness Avenue, Forming Accessible Multi-use Path
- Alternative C: Retain State Beltline Railroad tracks and Replace Pavement with Concrete
- Alternative 4: Limited Vertical Modification of State Beltline Railroad Tracks and Replace Pavement with Concrete

These alternatives were subsequently revised to the set included within this environmental assessment. Alternative 4 received additional consideration, but was eventually dismissed because it was not clear that it would meet the purpose and need over time or that it would be feasible (see Alternatives and Actions Considered but Dismissed in Chapter II).

Approximately 30 people attended the meeting and of those 14 people provided written comments. One commenter was affiliated with the Port of San Francisco and one was from the San Francisco Bicycle Coalition. Two others identified themselves as Aquatic Park Neighbors. Other commenters did not express an affiliation.

Park staff recorded verbal comments and collected written comments. Among the comments related to the project included:

- A request for a temporary solution to the slip hazard of the railroad tracks that would be installed as a temporary measure pending constructing the final fix.
- A request to create a means to slow down bicyclists on the Promenade, via signage, barriers etc.
- Two comments requesting that proposed construction avoid fleet week and the June – early October visitor use season.
- A suggestion to use Jefferson Street cement specs to do the pavement to keep it consistent and flow well with the recently re-done Jefferson Street.

- A request to avoid adding lighting and that added lighting should not make the area brighter except where the street lamps end. This suggestion also noted that only down/pathway lighting should be used.

Comments outside the scope of the current project included:

- A request to re-install the asphalt ramp at the end of Jefferson Street to the sidewalk, (which was just removed) so that the path can continue to be used as a bike route.
- A suggestion to reconfigure the end of Jefferson Street to create a better transition from the street to the Promenade. The commenter noted that the current configuration is confusing to bicyclists, pedestrians and drivers of vehicles.
- A request to solve the continuing problem on Jefferson Street when approaching from Hyde Street to the bollards.
- A request that park staff remind dog owners Aquatic Park is not a dog beach.
- A request to install bigger and more signs that say “no dogs on beach.”
- A question as to whether the tunnel under Fort Mason could be used as a rails-to-trails bicycle route (since Muni currently lacks funding to open the tunnel for streetcars)
- A concern about the mixing point where the Promenade meets Van Ness heading towards Fort Mason. This commenter requested that there be some kind of accommodation for bikes and people or restriction of cars in that section.
- A request to name the promenade after someone who made great contributions to Aquatic Park.

Several people that expressed an alternative preference favored Alternative B1. Among the reasons included that the railroad tracks which are hazardous and unused would be removed and that overall aesthetics would improve. One commenter noted that overall safety would be improved and would better accommodate people walking and riding bikes. Another noted the opportunity to place historical placards and more trees. Another commenter noted the importance of improving signs because of the mixed use,

One commenter noted concerns with Alternative B1 since it mixes bicyclists with pedestrians. That commenter favored continued separation enroute to Van Ness Avenue. Another commenter who favored Alternative B1 also noted the above concern as well as the additional concern that it would be very important to improve signage because of the mixed use pathway. Another concern was the intersection of the proposed new section of Promenade with Van Ness Avenue, where bicycles and pedestrians would mix with cars.

Another commenter was opposed to the removal of the State Belt Railroad tracks since they are part of the historical integrity of the site. The commenter noted that this use should be evident in the area because it's such an important part of the coastline of the city that was built around a port. If the tracks must be removed, some sort of indication should be maintained (scoring, different colors, etc.) so the story of the railway can be visually seen.

One comment was related to the process and providing more opportunities to engage in conversation with meeting attendees.

All of these comments were considered by the planning team in revising the alternatives for this EA.

3. ADDITIONAL INFORMAL CONSULTATION DURING SCOPING

There were also other, informal meetings that occurred with constituents during development of the alternatives, for instance project concept formation, park staff met with a local private bicycle rental organization (Blazing Saddles) and a San Francisco Bicycle Coalition representative. Comments included a desire to retain bike routing through the park, rather than on city streets. It is difficult to describe to patrons how to get around Fort Mason and would prefer the existing route along the water's edge. Meeting attendants noted the potential to add barriers on the

Service Road to slow bikes down, especially if the Alternative 4 concept was implemented. Other suggestions included adding permanent directional striping or text to pavement surface at ends of Promenade to improve wayfinding.

The park project manager has held several informal meetings with the San Francisco Fire Department about access to the Promenade for emergency vehicles.

4. PROCESS FOR COMMENTING ON THIS ENVIRONMENTAL ASSESSMENT (EA):

This EA is being made available to the public, federal, state and local agencies and organizations through press releases distributed to a wide variety of news media, direct mailing, placement on the park's website and announcements in press releases as well as in local public libraries (J. Porter Shaw Maritime Library; San Francisco Public Library (SFPL), Main; SFPL Marina; SFPL North Beach, SFPL Golden Gate Valley). Copies of the document may also be obtained from:

Mail:

Superintendent
San Francisco Maritime National Historical Park
Attn: Aquatic Park Promenade Project
Building E, Fort Mason Center
San Francisco, CA 94123

Phone: (415)561-7000 or Fax: (415)556-1624

Email: [safr_planning@nps.gov](mailto:sufr_planning@nps.gov)

NPS Planning, Environment and Public Comment (PEPC) website:
www.parkplanning.nps.gov/43036

Note: NPS practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. Individual respondents may request that we withhold their home address from the record, which we will honor to the extent allowable by law. If you want the NPS to withhold your name and address, you must state this prominently at the beginning of your comment. The NPS will make all submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials or organizations or businesses, available for public inspection in their entirety.

Responses to comments on the EA will be addressed in the proposed Finding of No Significant Impact (FONSI) or will be used to prepare an Environmental Impact Statement (EIS) (if appropriate).

(For more information about specific agency and staff consultation, see the section in this document entitled *List of Persons and Agencies Consulted / Preparers*)

Chapter II: Management Alternatives

The alternatives were created by an interdisciplinary planning team based on public comments and internal and external scoping. Internal and external scoping was conducted with a variety of stakeholders, such as swimming and rowing club members and the San Francisco Bicycle coalition, as well as city, county, state, and federal agencies, interested organizations and individuals. Public scoping for the preliminary alternatives was also conducted.

The following goals were identified as the purpose of the proposed project guided development of the alternatives:

- Improve safety for visitors and employees
- Improve accessibility by meeting the federal Accessibility Guidelines for Outdoor Developed Areas (AGODA)
- Preserve cultural resources important to retaining the integrity and historic character of the Aquatic Park National Historic Landmark.

The alternatives would vary in treatment of the State Belt Railroad tracks located within the Aquatic Park Promenade. These historic tracks would be retained in Alternatives 1 and 2 and removed in Alternatives 3-5. All action alternatives (2-5) would include partial or full replacement of Promenade asphalt and concrete pavement. The alternatives also vary in whether they would accommodate the proposed extension of the San Francisco Municipal Transit Agency F-line through Aquatic Park.

During design development for this project it was determined that, given the scope of this project, if funding allowed and to comply with federal law and policy, the Promenade should be made accessible to/from Van Ness Avenue (NPS SAFR 2013). Public comments also requested that this pathway be improved for bicyclists as part of the Bay Trail. These modifications are proposed as part of Alternatives 4 and 5.

The alternatives described in this chapter include:

- Alternative 1: No Action: Retain State Belt Railroad Tracks and Continue to Patch Deteriorating Asphalt and Concrete Adjacent to the Railroad Tracks and on the Aquatic Park Promenade
- Alternative 2: Retain State Belt Railroad Tracks and Replace Pavement with Concrete Within and Adjacent to Railroad Tracks
- Alternative 3: Remove State Belt Railroad Tracks and Replace Pavement with Concrete (Within and Adjacent to Railroad Tracks and on Service Road)
- Alternative 4: Remove State Belt Railroad Tracks and Service Road, Replace Pavement with Concrete, and Connect Promenade to Van Ness Avenue, Forming a Single Accessible Multi-use Path
- Alternative 5: Remove State Belt Railroad Tracks, Replace Pavement with Concrete and Connect Promenade to Van Ness Avenue, Retaining Separate Accessible Bicycle and Pedestrian Paths.

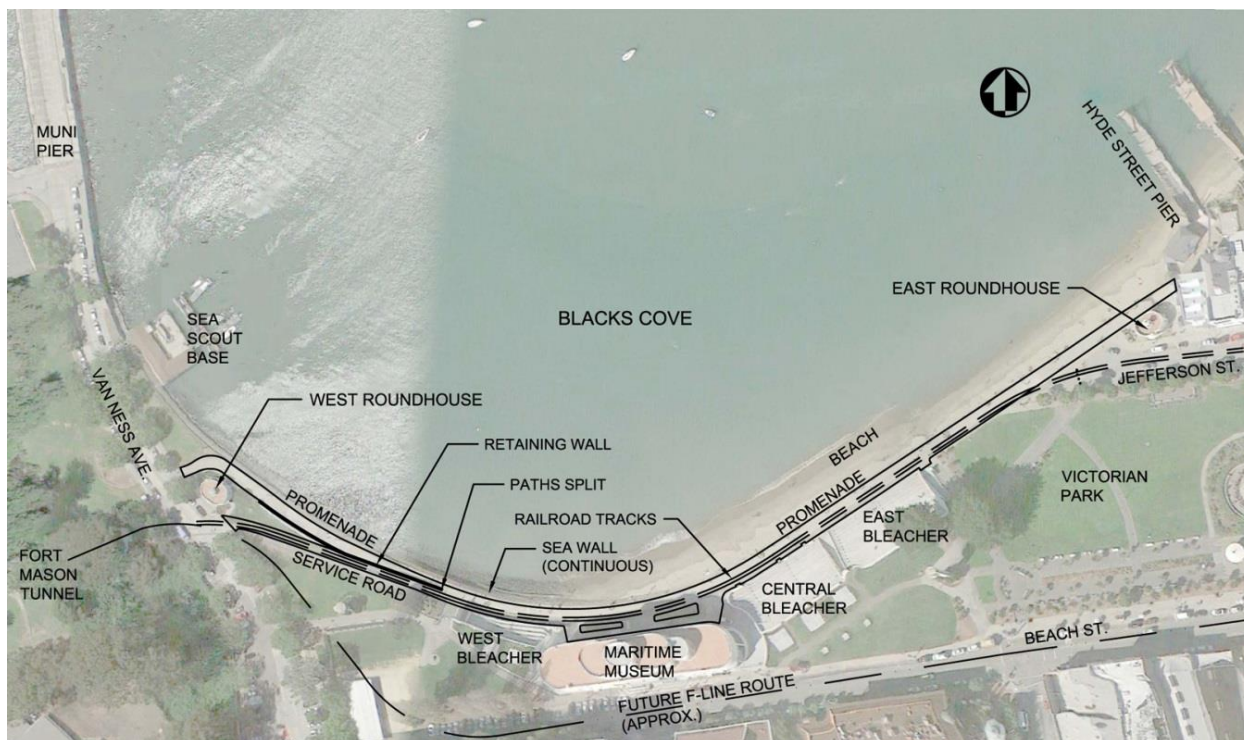


Figure 3: Existing Conditions

A. Existing Conditions

The abandoned State Belt Railroad tracks run the entire length of the Promenade until they diverge up the Service Road. Along most of their length, the tracks are formed as two parallel rails spaced approximately five feet apart (WJE 2013: 4). At two bends in the track along the Promenade, there are additional rails parallel to and inside the main or “running” rail. These additional rails are “guide” rails (Figure 4). The first set of guide rails begins in front of the east bleachers. The northern guide rail continues to the fork in the Promenade. The second set of guide rails begins as the Promenade approaches Van Ness Avenue and curves slightly to the south before entering the Fort Mason tunnel. The running and guide rails are set approximately 5-6 inches, on center, apart from each other (WJE 2013: 4). The top of the steel rails are each approximately 2.25 inches wide (WJE 2013: 4). Based on historic photos and as confirmed by geotechnical borings, the railroad tracks in this section are supported on a concrete slab, and are structurally independent from the surrounding pavement. Boring tests show that the concrete slab ranges in thickness from 6.5-10 inches. This slab terminates at the asphalt fork in the Promenade. The tracks on the upper asphalt fork (the Service Road) are supported on wood ties spaced between 18 and 24 inches on center instead of on a concrete slab (WJE 2013:6). Within San Francisco Maritime NHP, between Jefferson Street and Van Ness Avenue, the length of the railroad alignment is 1,245 feet. Each of the main running rails is 1,245 feet long and there are four sections of guide rails which comprise an additional 780 feet. In total, there is 3,270 feet of rail.

The condition of the rails and the Promenade pavement varies. In some places, the rails are visibly warped, bent, out of alignment and/or pitted. Where they occur together, the running rail and guide rail are also offset in some places (although not consistently at the same elevation). In front of the Bathhouse curve, this offset ranges from 0.5-1.25 inch. This offset area between the running rail and guide rail has been filled with asphalt. This asphaltic concrete is sloped to accommodate the vertical offset between the two rails and has been repeatedly patched within and along the rails over the years and is currently deteriorated (Figure 4) (WJE 2013:6).



Figure 4: Guide Rails and Deteriorated Patched Pavement



Figure 5: Upper Fork (Service Road) Aquatic Park Promenade, looking west

Settlement of pavement is most prevalent on the Service Road that provides access to Van Ness Avenue. In the upper 150 feet of the asphalt fork the pavement has settled so that it is now possible to distinguish the location of the railroad ties beneath the pavement, approximately 18-24 inches apart (Figure 5). Other areas of subsidence between the bleachers and the southern rail show differential settlement of more than two inches in height in the pavement around the tracks.

Overall, the asphaltic concrete pavement is in poorer condition than the concrete pavement. Numerous repairs (crack sealing and asphalt patching) undertaken over the Promenade's 75 years are evident throughout. This is most notable between the rails and in the strip of asphaltic concrete (1-4 feet wide) adjacent to the south rail. Both the concrete and asphalt pavements have been patched with thin overlays of asphalt. This patching has also deteriorated, leaving a rough surface with concrete visible below in many places. As described in the WJE report, the asphaltic concrete pavement is in "much worse condition than the concrete pavement" (WJE 2012:9). Deterioration of this pavement is exemplified in many places by a thin topping of asphalt that shows the rough concrete surface below (Figures 6 and 7).

In addition to paving issues and deterioration associated with the railroad tracks, the Promenade pavement itself is deteriorated and shows cracking, pavement offsets, and settlement (causing ponding). There are six areas of ponding, 760 feet of vertical offset from the rails, 260 feet of vertical offset between pavements (Figures 8 and 9), and 110 feet of cracked pavement. In addition there are 16 areas of localized vertical offset. Alternative 2 would address some of these areas. Alternatives 3-5 would address all of these areas.



Figure 6: Pavement Patching in Front of Maritime Museum Building



Figure 7: Pavement Variations and Deterioration adjacent to State Beltline Tracks

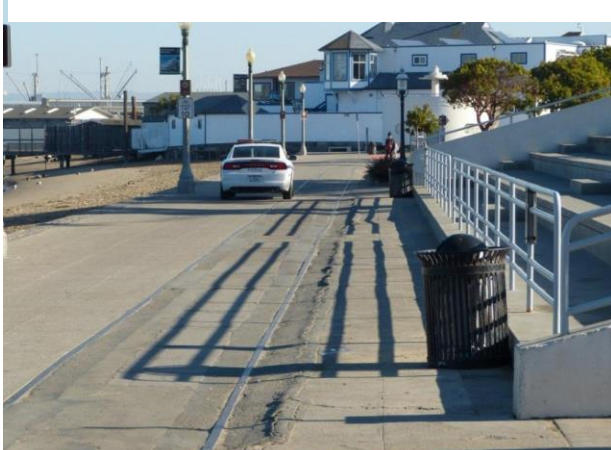


Figure 8: Pavement Offset in Front of East Bleacher



Figure 9: Vertical Offset of State Beltline Tracks from Surrounding Pavement

Current signs along the Promenade identify a 10 mph speed limit and warn bicyclists and pedestrians of the presence of the railroad tracks (Figure 10). Signs also direct pedestrians to use the lower fork (Promenade) and cyclists to use the upper fork (Service Road) (Figure 11). Despite these signs, there is continuing use of both forks by both bicyclists and pedestrians, including those pushing strollers.

B. Alternative 1: (No Action) Retain State Belt Railroad Tracks and Continue to Patch Deteriorating Asphalt and Concrete Adjacent to the Railroad Tracks and on the Aquatic Park Promenade

In Alternative 1, without major repairs, the concrete and asphalt paving on the Aquatic Park Promenade containing the State Belt Railroad tracks between the Jefferson Street bollards on the east and Van Ness Avenue on the west would continue to deteriorate and to pose a safety hazard for bicyclists and pedestrians.

Under Alternative 1, NPS staff at San Francisco Maritime NHP would continue to patch the asphalt and concrete surfaces as needed to maintain the Promenade. Areas showing the most deterioration would likely continue to be addressed first. Therefore, it is likely that because of limited maintenance funding and staffing, some surfaces would continue to remain uneven while others were repaired. There would

also continue to be an offset between the rails and the surrounding pavement and between the running and guide rails. Even with patching, these areas would remain uneven because the height between the rails and the slope between the rails and the edge of pavement varies.

There would also continue to be a retaining wall varying in height between one and five feet between the Service Road and the Promenade (Figure 11). Other uneven pavement along the Promenade would also continue to exist, including areas of subsidence and cracking closer to the San Francisco Bay shoreline on the north edge of the Promenade. Some of these areas of deterioration result in ponding on the Promenade during wet weather, reducing the useable pavement width and creating an additional hazard. The existing light poles also reduce the useable pavement width on the Promenade.

The Promenade would remain a shared multiuse pathway for 1,092 feet from Jefferson Street to the Service Road fork, where bicycles are recommended (signed) to go and pedestrians continue on the main pathway. At this juncture, the path is 6.1 feet wide +/- the 2 feet of the seawall on the pedestrian side (Promenade) and 12.5 feet on the bicycle side (Service Road). The split encompasses the last 295 feet of the route for bicyclists and the last 390 feet for pedestrians. Often, pedestrians also use the Service Road.

The American Association of State Highway and Transportation Officials (AASHTO) guide recommends wider pathways (11-14 feet) “in locations that are anticipated to serve a high percentage of pedestrians (30 percent or more of the total pathway volume) and high user volumes (more than 300 total users in the peak hour)” (AASHTO 2012: 5-3). The guidelines also note that at least 11 feet is needed to enable a bicyclist to pass another bicyclist or pedestrian going the same direction at the same time another user is approaching from the opposite direction.

Although most of the Promenade is accessible, at the end, where it connects to Van Ness Avenue, the slope and cross-slope would continue to exceed federal accessibility standards. With its current 2.5 percent slope, the Service Road, however, would continue to meet minimum accessibility standards for grade, but not for surface variation. The park’s administrative golf carts also use all of the routes, depending on the need for access.



Figure 10: Bicycle Railroad Tracks Caution Sign



Figure 11: Promenade Fork

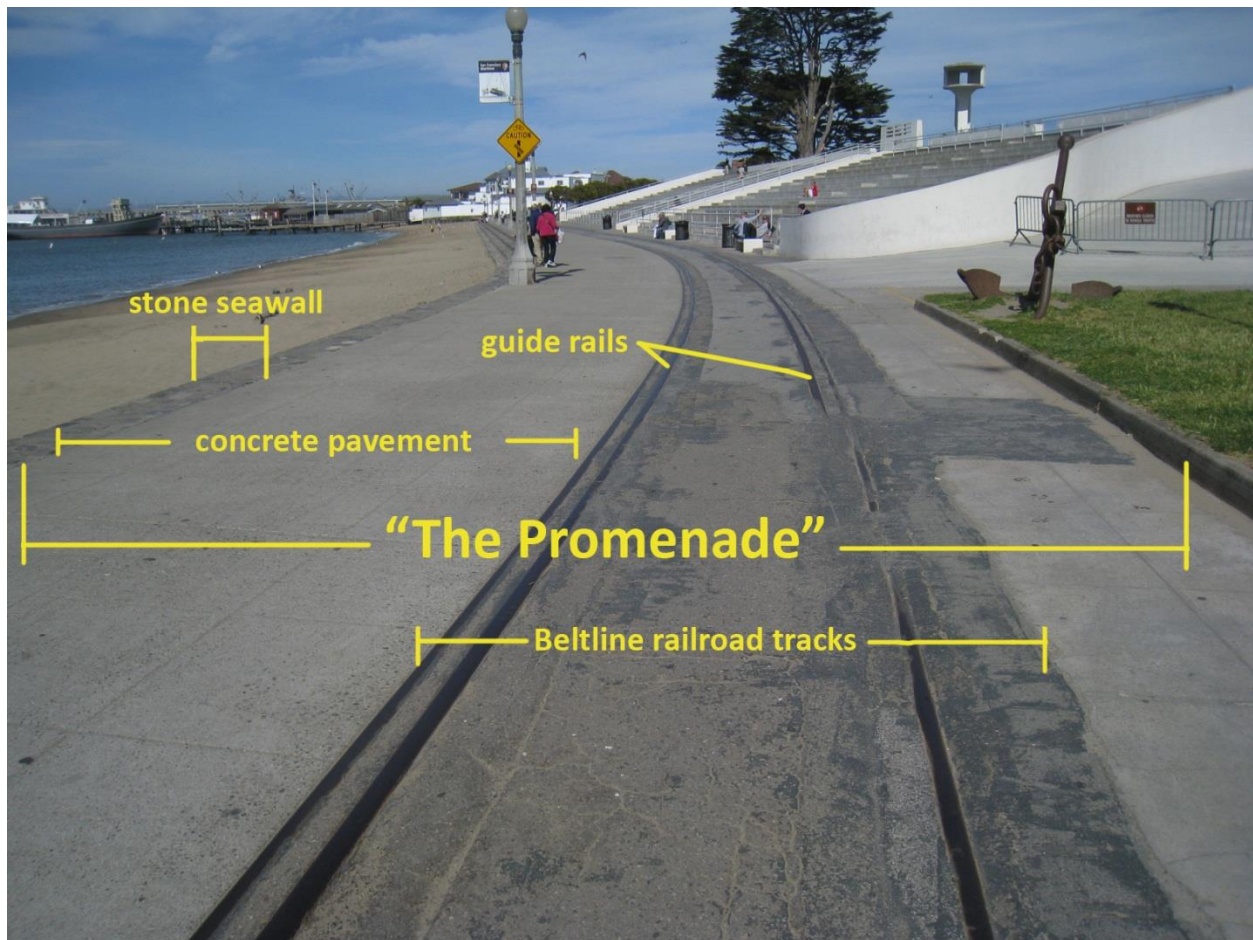


Figure 12: Terminology

C. Actions Common to Alternatives 2-5 (Action Alternatives)

There would be no change in use of the Promenade. There would continue to be a mix of user groups, including local and out-of-town pedestrians with and without children and pets, and commuter and rental bicyclists on a shared path for approximately 1,092 feet (73-78 percent of the current path) from Jefferson Street to the Service Road fork. The area would also continue to attract groups of tourists and slow-moving pedestrians and children playing along the shoreline. Both of these groups routinely cross the Promenade, perpendicular to the direction of travel, in front of other pedestrians and bicyclists. Frequently, clusters of individuals or groups are stopped along the Promenade enjoying the view and/or deciding where to go as the junction to Van Ness Avenue becomes evident. Segways, commercial tours and public motor vehicle use would continue to be prohibited, except for motor vehicle use associated with administration of the area and for emergency vehicles.

Directional and wayfinding signage on the Promenade would be replaced and would continue to direct pedestrians, cyclists and other users (Figure 11).

All action alternatives would improve the Promenade by minimizing or eliminating tripping hazards due to existing uneven surfaces. The action alternatives, however, would vary in the methods used to address safety hazards related to the rails and pavement and the effects of these (see Chapter III: Affected Environment / Environmental Consequences). All new pavement would be comprised of concrete placed on a prepared subgrade, either between the existing flange way (area between and adjacent to the rails)

Aquatic Park National Historic Landmark District

The historic designed landscape of Aquatic Park is significant in the area of Architecture and Landscape Architecture based on development by the Works Progress Administration and the Federal Art Project during the 1930s (NPS PWR 2010:4).

According to the Aquatic Park Cultural Landscape Report, the designed landscape of Aquatic Park includes historic circulation systems, open spaces, planted areas, and several significant structures including piers, retaining walls, unique outbuildings, and the *streamline moderne* bathhouse.

Aquatic Park is a National Historic Landmark.

San Francisco Port of Embarkation National Historic Landmark / Fort Mason Historic District

The San Francisco Port of Embarkation National Historic Landmark is part of the Fort Mason Historic District. “The San Francisco Port of Embarkation played a critical role in the movement of supplies and troops to the Pacific. Fort Mason served as the headquarters for the San Francisco Port of Embarkation, the nerve center of a vast network of shipping facilities that spread throughout the Bay Area” (NPS GOGA c. 2006: 5-16).

or in place of the rails. New pavement would be similar to existing historic areas in color and texture as well as in pavement markings (Figure 12).

All action alternatives would include replacing select areas of very poor pavement, including the Service Road, with new concrete pavement where the worst ponding occurs, such as in front of the West and East Bleachers on the Promenade.

Although most of the Promenade is accessible, some driveways and intersecting paths near buildings would continue to exceed federal accessibility standards. Where possible, however, the new pavement would be re-graded to meet federal accessibility standards.

All action alternatives would include interpretive signs or exhibits that illustrate and describe the importance of the State Belt. It is likely that these would be more descriptive in Alternatives 3-5, with the removal of the tracks than in Alternative B, where the tracks would be retained. Existing signs and Barbary Coast historic trail markers would generally be replaced in their current locations.

Light posts would also be retained in their current locations and would be repaired or replaced in-kind from a mold taken of the current post. The wiring, conduit and lamp would be replaced with more energy efficient equipment. As required by NPS Management Policies and dark sky considerations, an effort would be made to increase the downward directed beam of the light.

D. Alternative 2: Retain State Belt Railroad Tracks and Replace Pavement with Concrete Within and Adjacent to Railroad Tracks

This alternative calls for preserving the State Belt Railroad tracks from Jefferson Street to Van Ness Avenue. They would be retained in place along the Promenade and on the Service Road.

New concrete pavement would be constructed flush with the top of the rails where feasible, consistent with recommendations in the Aquatic Park Cultural Landscape Report (NPS PWR 2010). The new concrete pavement would also be constructed flush with existing thresholds of buildings, the bleachers and walls, but since these elevations vary and are not even with the rail elevations, the new concrete pavement would undulate in some locations. This would occur between the running rails and other locations where the rails are close to existing pavement edges or thresholds. (There would continue to be a slight slope or offset between the running and guide rails. Another approximately 1,300 square feet of concrete would be replaced in select areas, such as in doorways and in existing areas of ponding (deterioration).

Therefore, although there would be no abrupt changes in elevation, such as the more than two-inch offset between the rails and pavement currently present in some locations, the new concrete pavement would not be a smooth, flat surface. To reduce existing problems associated with the offset between the running and guide rails, the guide rails would be removed in this alternative. Nonetheless, the pavement would continue to have to rise to meet the rails, existing doorways and other features on the Promenade.

On the Service Road, new concrete pavement would be poured over the wood cross-ties supporting the rails. This new pavement would be placed on a prepared subgrade between the rails, but the rails would not be disturbed. Outside the flange way of the railroad tracks, the new pavement would also be placed on a new prepared subgrade.

In Alternative 2, the running rails (approximately 3,900 feet) would be retained, while 780 feet of guide rails would be removed. Approximately 6,000 square feet of concrete would be replaced in kind and approximately 11,600 square feet of asphalt (Service Road) would be replaced with concrete between and adjacent to the rails in place of the existing asphalt. Some of the Promenade pavement, therefore, would continue to be uneven and would continue to need patching.

As in Alternative 1, the Promenade would remain a shared multiuse pathway for approximately 1,092 feet (more than 70 percent of its length) from Jefferson Street to the Service Road fork, and a split pathway from there until the end (295 feet of the route for bicyclists and 390 feet for pedestrians). The Promenade would not be accessible at the west end (lower Van Ness Avenue), but the Service Road would become an accessible route, with both its grade and surface meeting federal Accessibility Guidelines for Outdoor Developed Areas (AGODA). Administrative access would also continue.

Because the railroad tracks contribute to the significance of the Aquatic Park National Historic Landmark District and to the San Francisco Port of Embarkation National Historic Landmark / Fort Mason Historic District (see sidebar and Chapter III: Affected Environment), consultation with the California State Historic Preservation Office (SHPO) would be required. Despite the removal of the guide rails from two sections of the State Belt tracks, this consultation would likely result in a determination of “no adverse effect” on these historic resources.

E. Alternative 3: Remove State Belt Railroad Tracks and Replace Pavement with Concrete (Within and Adjacent to Railroad Tracks and on Service Road)

Under this alternative, approximately 1,245 feet of track (3,270 feet of rail) of the historic State Belt railroad tracks and ties along the full length of the Promenade and Service Road from Jefferson Street to Van Ness Avenue would be removed and the area repaved with concrete. On the Service Road, pavement replacement would encompass the full width and length of the asphalt area. On the Promenade, new pavement would extend from the edge of the bleachers/curbs on the south to the north edge of the rails (a width of approximately seven feet) and then continue approximately 15 feet to the edge of the retaining wall stones (Figure 12).

Although a portion of the existing concrete pavement is in fair to good condition, replacement of the entire pavement surface would renew the lifespan of the pavement and provide a continuous, cohesive, strengthened, and aesthetically pleasing surface. In addition to replacement of the Promenade surface, subsurface repairs would also be made to ensure stability and to replace utilities in-kind. To rehabilitate the cultural landscape with a new cohesive concrete pavement is called for by the Aquatic Park Cultural Landscape Report (NPS PWR 2010). Approximately 34,790 square feet of concrete and asphalt pavement would be replaced with concrete.

New pavement would be installed flush with the adjacent concrete pavement. New pavement would also extend to the thresholds of the Maritime Museum Building, bleachers and areas adjacent to walls. The new pavement would have a compacted aggregate base and be designed to bridge over possible drainage and erosion cavities that may develop beneath it. Because the pavement would be replaced across the entire width and length of the Promenade, the 6-8 cross-drains beneath the Promenade would also be replaced. These stormwater drainage pipes beneath the Promenade pavement would be replaced in-kind with no change to the source or area served by the drainage pipe. These pipes generally drain the roof decks of the Maritime Museum Building.

Unlike Alternative 2, removal of the State Belt tracks would adversely affect the Aquatic Park National Historic Landmark District, the San Francisco Port of Embarkation National Historic Landmark, Fort Mason Historic District and the Port of San Francisco Embarcadero Historic District.

Removal of the State Belt railroad tracks and construction of the new pavement surface for the Promenade would temporarily require rerouting both bicyclists and pedestrians off the Promenade for the duration of construction. Walkers would be directed to the south side of the Maritime Museum and then to Van Ness Avenue; while bicyclists would be routed via one of the ways shown in Figure 13 or another way that would allow them to return to Fort Mason. Among the route options include: from east to west, bicyclists would travel west on Jefferson Street, south on Leavenworth or Hyde streets, then west on Northpoint to Van Ness Avenue. From west to east it would be south on Van Ness Avenue, east on Northpoint, north on Hyde or Leavenworth streets to Jefferson Street.

Because there would be an adverse effect to the historic landscape, the proposed project would require not only consultation with the California State Historic Preservation Office (SHPO), but development of a Memorandum of Agreement between the park and the SHPO, and concurrence by the Advisory Council on Historic Preservation should they decide to participate.

As in Alternatives 1 and 2, the Promenade would remain a shared multiuse pathway for 1,092 feet from Jefferson Street to the Service Road fork (79 percent of the bicycle route and 74 percent of the pedestrian route), and a split pathway from there until the end (295 feet [21 percent] of the route for bicyclists and 390 feet [26 percent] for pedestrians).



Figure 13: Promenade Bicycle Reroute Options

Initial mitigation measures to reduce the impacts of this adverse effect have been identified through preliminary consultation with the State Historic Preservation Office (SHPO). These mitigation measures include:

- Documenting the landscape features and railroad tracks using Historic American Landscape Survey (HALS) standards.

- Integrating a physical representation of the tracks in the new pavement (such as striping of colored concrete or scoring in the pavement).
- Installing interpretive waysides and other displays to illustrate the history of the State Belt and its importance in the development of San Francisco, including as associated with the Aquatic Park National Historic Landmark District and the San Francisco Port of Embarkation National Historic Landmark.
- Conducting regular archeological monitoring of excavation during construction beneath the Promenade pavement, primarily to look for artifacts related to the early history of San Francisco.

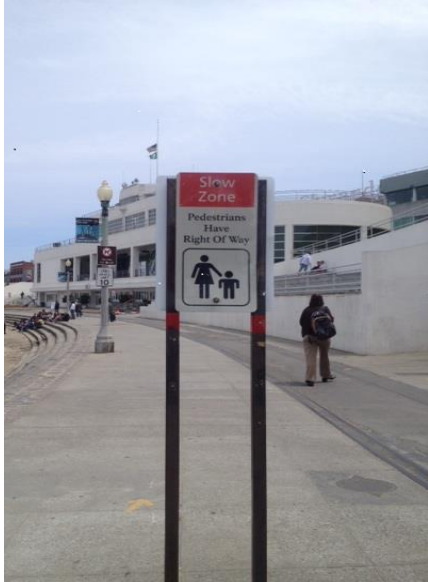


Figure 14: Bicycle Caution Sign



Figure 15: View of Promenade looking West with Seawall Basalt Steps

F. Alternative 4: Remove State Belt Railroad Tracks and Service Road, Replace Promenade Pavement with Concrete, and Connect Promenade to Van Ness Avenue, Forming a Single Accessible Multi-use Path

Actions would be similar to Alternative 3 except that the Promenade would be connected to Van Ness Avenue and the Service Road would be eliminated. Removal of a portion of the historic retaining wall would allow the Promenade to be widened to a continuous width of 16 feet west of the West Bleacher stairs. Realigning the historic retaining wall to connect with the landscaping wall adjacent to the stairway near the West Bleachers would eliminate the use of the Service Road (295 feet) for circulation; thereby consolidating circulation onto a single, wide path. The extension toward Van Ness Avenue would make the Promenade into a universally accessible pedestrian and bicycle path that would end in the vicinity of the Sea Scout Base. The steep ramp up to Van Ness Avenue in the vicinity of the West Concession Building would be replaced with a stairway (Figure 14). As a result, unlike Alternatives 1-3, the Promenade would become a shared multiuse pathway for its entire length from Jefferson Street to Van Ness Avenue (1,600 feet), varying from 21 feet 6 inches wide in front of the Maritime Museum to a minimum of 16 feet wide, except where impeded by lightposts. Since the 6.1 foot pinch point where the paths diverge would be removed, the narrowest point would now be the (existing) 13.5 feet in front of the West Concession Building.

Creating a single shared path would require the removal of approximately 105 feet of the historic retaining wall and replacement with a similar but different wall that allows for the Promenade to be widened where it narrows considerably. It would also require removal of approximately 72 feet of nonhistoric landscaping

wall adjacent to the West Bleacher stairway. The new section of retaining wall would continue the encircling design of the existing wall that arcs around Aquatic Park Cove (Figures 16 and 17). Figure 18 shows an artist rendering of this proposed modification. Figure 19, a photo of an original model of Aquatic Park (c. 1936) shows how this idea was part of the original design of Aquatic Park. This alternative also calls for adding skateboard deterrents in the new wall.

In this alternative, approximately 1,245 feet of tracks (3,270 feet of rail) would be removed and the asphalt and concrete pavement would be replaced with approximately 34,430 square feet of concrete. As in Alternative 3, concrete pavement would be replaced over the full width and length of the Promenade but would not include the Service Road (since it would be removed); however, as a cost savings measure, some areas of the Promenade pavement still in good condition could be retained.



Figure 16: Photo Showing Existing Historic Retaining (White) Wall and Existing Non-Historic (Landscaping Wall) (Looking Northwest)



Figure 17: View from Opposite Direction (Looking Southeast) toward Potential Connection Point



Figure 18: Artist Rendering of Proposed Aquatic Park Wall Extension (Alternative 4)

As noted in the introduction to the alternatives, the elimination of the Service Road would also be made in anticipation of the SFMTA waterfront streetcar (F-Line) extension (Final Environmental Impact Statement Extension of F-Line Street Car Service to Fort Mason Center, Record of Decision approved in February 2012). This alternative would also accommodate the F-Line Extension without the need for additional major modifications in this vicinity. This proposed extension would traverse the Aquatic Park National Historic Landmark District above the Service Road and cross Van Ness Avenue to the Fort Mason Tunnel near the current Bocce Ball Courts (Figure 20). If constructed, the F-Line extension could create conflicts because of the frequency of the train service regarding the use of the Service Road by park visitors (Figure 21).

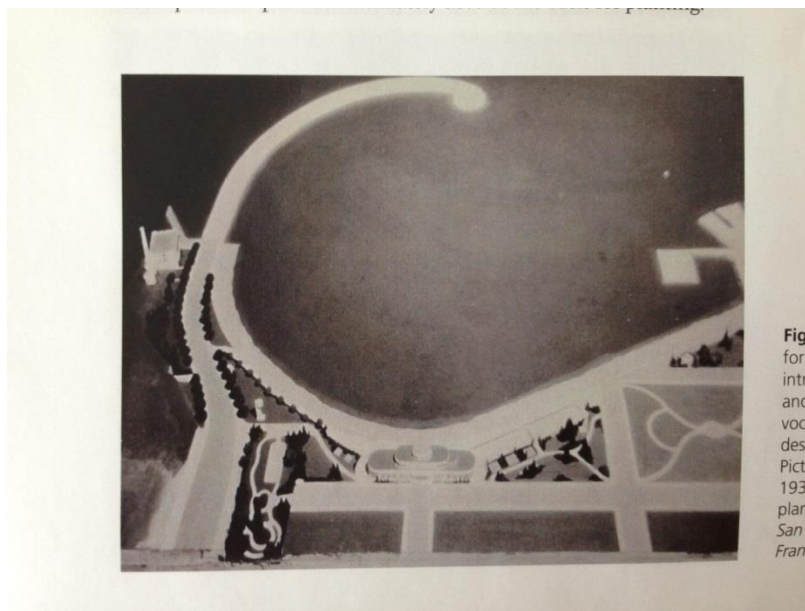
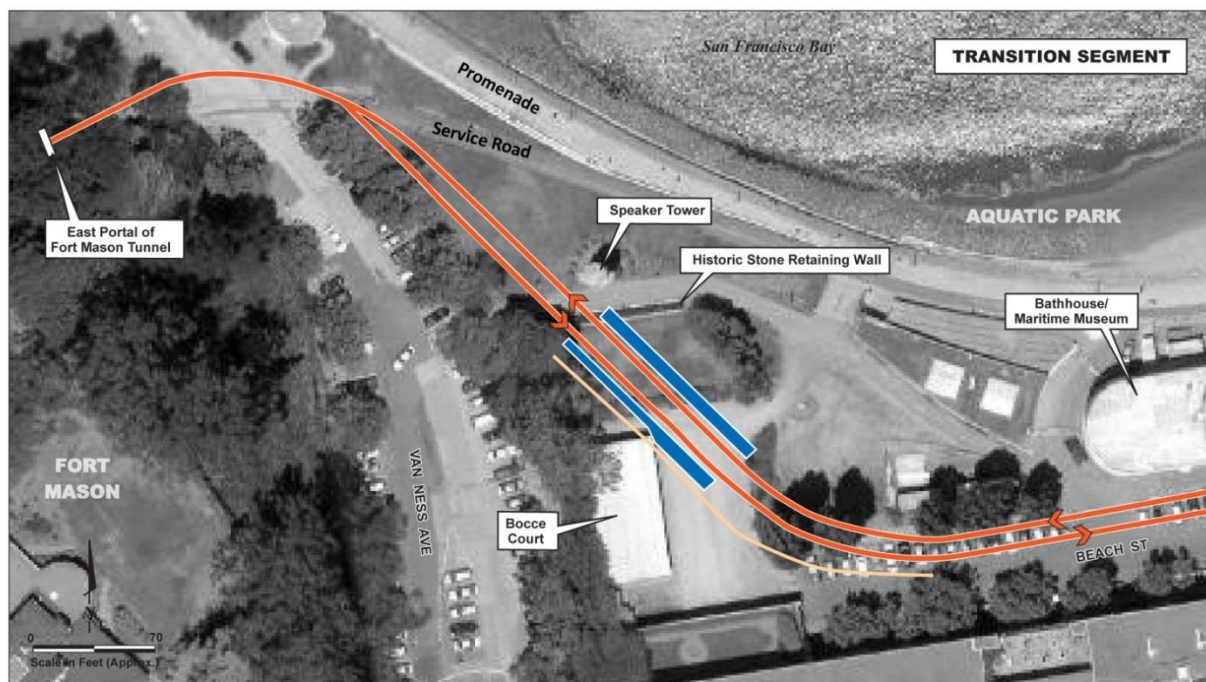


Figure 19: Model of Aquatic Park c. 1936



Source: NPS; Google Earth 2009.

LEGEND

- Proposed Streetcar Alignment
- Platform
- Proposed Retaining Wall

ALTERNATIVE 2 PROPOSED ACTION TRANSITION SEGMENT AREA



Draft Environmental Impact Statement
Historic Streetcar Extension
San Francisco, California

FIGURE 2-2

Figure 20: Proposed SFMTA F-Line Extension



Figure 21: Artist Rendering of F-Line and Service Road Intersection

This project would also include repair or replacement-in-kind of the lamp posts, the possible addition of lamp posts along the extension toward the Sea Scout Base, as well as rewiring and relamping the fixtures for improved energy efficiency and compliance with dark sky objectives.

From east to west, the specifics of the proposed changes would include:

- Most or possibly all of the concrete paving of the Promenade would be removed and replaced in-kind to match historic aggregate and scoring. Some of this concrete is original but most has been replaced due to the continual subsidence and erosion problems and now has a patchwork appearance.
- Historic light poles would be repaired or replaced in-kind. New electrical conduit, lamping and wiring would be installed.
- Stormwater drains (6-8) beneath the Promenade would be replaced-in-kind.
- The State Belt railroad tracks would be removed from a short portion of Jefferson Street, from the Promenade, and from the Service Road.
- Once the pavement, rails and ties are removed from the Service Road, the area would be landscaped with lawn and the irrigation system would be extended into it.
- Approximately 105 feet of the 325 foot historic retaining wall located west of the West Bleachers would be demolished and 135 feet of new wall would be built to curve further to the south to widen the Promenade. The new wall would look similar to the existing wall, but with details to distinguish it from the historic section.
- A section of non-historic landscaping wall near the northwest edge of the stairs would also be removed to accommodate the wall extension.
- The Promenade would be extended northwest along the edge of the seawall at a slope consistent with ADA standards to meet the Van Ness Avenue sidewalk. At the end the sidewalk would be modified with an appropriate curb cut to provide access to the street
- At the West Roundhouse, the current steep concrete slope would be converted to steps leading down to the extended Promenade from the Van Ness sidewalk (SAFR 2013). This action would require the removal and resetting of stone block pavement edging at the west end of the Promenade (Figure 22).

In a future project, where the eastern end of the Promenade meets Jefferson Street, the turn-around area would be reconfigured to better separate pedestrian and vehicle circulation. The park is also considering reconfiguring the bollards to deter parking in the turnaround area. This portion of the project would take place outside of the Aquatic Park Cultural Landscape boundary.

As in Alternative 3, removal of the State Belt railroad tracks and construction of the new pavement surface for the Promenade would temporarily require rerouting both bicyclists and pedestrians off the Promenade for the duration of construction. The reroute would be the same as described in Alternative 3.

As in Alternative 3, removal of the State Belt tracks would adversely affect historic resources, including the Aquatic Park National Historic Landmark District (NHLHD). In addition to removal of the State Belt tracks, however, the following proposed actions would also adversely affect the Aquatic Park NHLHD because these features are considered contributing elements to the District. Among the proposed changes include:

- Removing a portion of the historic retaining wall;
- Adding a new (nonhistoric) section to the historic retaining wall;
- Extending the promenade to the northwest; and
- Removing and replacing stone edge blocks.

Therefore, mitigation measures have been identified through preliminary consultation with SHPO. In addition to the measures listed in Alternative 3, the following additional mitigation measures associated with Alternative 4 would include documenting additional historic landscape features, (using HALS standards). The additional features that would be documented include the:

- Historic retaining wall,
- Service road path alignment, and the
- Northwestern portion of the promenade, including existing locations of the stone edge blocks.

Mitigation measures would also include conducting regular archeological monitoring of excavation during construction in current landscaped areas, primarily to look for artifacts related to the early history of San Francisco and the development of Aquatic Park.



Figure 22: Current Promenade West End with Stone Edge Blocks (West Roundhouse on left and Sea Scout Base on right)

G. Alternative 5 (preferred): Remove State Belt Railroad Tracks, Replace Pavement with Concrete and Connect Promenade to Van Ness Avenue, Retaining Separate Pedestrian and Bicycle Paths

Actions would be similar to Alternative 4 except that instead of removing part of and realigning the historic retaining wall separating the upper fork (Service Road) from the lower fork (Promenade), the historic retaining wall would be shortened by approximately 72 feet in its current alignment. Shortening this wall would partially alleviate the pinch point in the width of the Promenade that occurs where the path diverges into the current asphalt and concrete paths (Figure 16). This point is now 6.1 feet wide on the Promenade side and 12.5 feet wide on the Service Road side. Under Alternative 5, it would be 10 feet wide on the Promenade side and would continue to be 12.5 feet wide on the Service Road side. Removing part of the historic retaining wall would allow the Service Road to be retained and visitors to continue to take advantage of both paths. The grade of the Service Road would be steepened from the current 2.5 percent to 3.9 percent, to enable it to continue to meet federal accessibility standards. The Service Road would remain 12.5 feet wide (+/- 6 inches) and the Promenade would continue to vary in width, from 10 feet near the new junction with the Service Road to 16 feet near the West Concession Building to 21 feet 6 inches in front of the Maritime Museum. As in Alternative 4, there would continue to be constrictions where the lampposts are present, including the constriction of 13.5 feet at the West Concession Building.

Other components of Alternative 5 would be the same as in Alternative 4, including extending the Promenade to meet lower Van Ness Avenue. Modifications to the west end of the Promenade to provide for accessibility and to extend the Promenade would also be the same as described in Alternative 4 (including replacing the steep ramp with a stairway and extending the path to Van Ness Avenue). In Alternative 5, less historic retaining wall would be removed (72 feet vs. 105 feet in Alternative 4) and less new wall along the Promenade would be constructed, however additional wall would be added to the

landscaping wall adjoining the West Bleacher stairs on other side of the Service Road to evoke the historic arc of the Promenade.

Because the Service Road would be retained, this alternative would not as easily accommodate the proposed F-line extension. Therefore, at the time that the F-line extension is designed and constructed, additional modifications would likely need to be made to the Service Road and other visitor circulation routes on the west side of Aquatic Park (Figure 23).

With the partial removal of the historic retaining wall separating the two paths, the historic look of the Promenade from Municipal Pier and the water would change. Therefore in Alternative 5, the low landscape wall on the south side of the Service Road would be extended (to accommodate the grade change of the Service Road) and would be painted white so that from the water it would appear as a continuous wall as shown in the artist rendering (Figure 24). As a result, the new section of wall would be on the south side of the Service Road (not between the Promenade and the Service Road).

Similar to Alternatives 1-3, the Promenade would remain an accessible multiuse pathway from Jefferson Street to the Service Road fork and as in Alternatives 1-3, bicyclists would be encouraged to use the Service Road to access Van Ness Avenue, while pedestrians would continue to access Van Ness Avenue at the west end of the Promenade. The access to Van Ness Avenue however would be accessible via the extension and/or via stairs, the same as in Alternative 4 (unlike Alternatives 1-3).



Figure 23: Alternative 5 with F-Line Extension



Figure 24: Artist Rendering of Alternative 5

As in Alternative 3, approximately 1,245 feet of tracks (3,270 feet of rail) would be removed and the asphalt pavement would be replaced with approximately 37,290 square feet of concrete. Also as in Alternative 4, concrete pavement would be replaced over the full width and length of the Promenade; however, as a cost savings measure, some areas still in good condition could be retained.

As in Alternatives 3 and 4, removal of the State Belt railroad tracks and construction of the new pavement surface for the Promenade would temporarily require rerouting both bicyclists and pedestrians off the Promenade for the duration of construction. The reroute options would be the same as described in Alternative 3.

As in Alternatives 3 and 4, removal of the State Belt tracks would adversely affect historic resources, including the Aquatic Park National Historic Landmark District and the San Francisco Port of Embarkation Historic District. In addition, the following proposed actions would also adversely affect the Aquatic Park National Historic Landmark District:

- Removing a portion of the historic retaining wall separating the Service Road from the Promenade;
- Adding a new section of wall south of the Promenade
- Extending the Promenade to the northwest; and
- Removing and replacing original stone edge blocks.

In addition to the measures listed in Alternative 3, mitigation measures associated with Alternative 5 would include documenting additional historic landscape features (using HALS standards) including the:

- Wall separating the Service Road from the Promenade,
- Northwestern portion of the Promenade, and the
- Stone edge blocks at the west end of the Promenade.

Mitigation measures would also include conducting regular archeological monitoring of excavation during construction in the Service Road and in current landscaped areas, primarily to look for artifacts related to the early history of San Francisco and the development of Aquatic Park.

H. Alternatives and Actions Considered But Dismissed

Under NEPA and the Council on Environmental Quality (CEQ) *Forty Questions*, alternatives may be eliminated from detailed study based on the following reasons [40 CFR 1502.14 (a)]:

- Technical or economic infeasibility
- Inability to meet project objectives or resolve need for the project
- Duplicate other less environmentally damaging alternatives
- Conflict with an up-to-date valid plan, statement of purpose and significance, or other policy, and therefore would require a major change in that plan or policy to implement
- Environmental impacts are too great.

The following alternatives or variations were considered during the planning process, but were rejected because they met one of the above criteria.

◇ *Remove Sections of Rail*

This alternative was considered during the design phase of the project (in the engineering report) but was dismissed because it would have resulted in the loss of historic fabric and little improvement in safety with some sections of rail retained and some sections removed. Approximately 1,460 feet would have been removed and 1,810 feet retained in segments. This alternative would have had a higher cost and offered no benefit over retaining the rails in place with pavement modifications (Alternative 2).

◇ *Limited Vertical Modification of State Belt Railroad Tracks and Replace Pavement with Concrete*

This alternative was considered during the design and preliminary alternatives phases of the project but was eventually dismissed because it would have resulted in the loss of historic fabric without improving employee and visitor safety. Temporarily removing, paring down and resetting the rails, including the guide rails would be experimental and could result in future safety hazards if the resulting rails became more brittle as a result of this treatment. It would also be difficult to cut the rails to be uniformly level with the pavement and would adversely affect the appearance of the rails where extensive cuts were made. Portions of rail that required extensive modifications to reduce the uneven height could have a changed appearance, or the remaining rail head could be thinner, resulting in a potential for it to break over time and create new hazards.

This method would also have required removal of the rail prior to cutting the top surface which had the potential for unintended damage to the rails or the concrete base. The proposed method(s) for the vertical re-setting was preliminarily determined to be: removing pavement adjacent to the rail, removing the rail, and then cutting the top surface of the rail with an oxy-acetylene torch. The rail would then have been ground to achieve a similar appearance to the existing rail. As a result, it is likely that this work would be extremely labor intensive and success at achieving a similar appearance would be uncertain.

The proposal would have modified and reset 1,460 feet of tracks; retained 1,810 feet; and replaced approximately 13,000 square feet of concrete or asphalt with concrete between and adjacent to the rails. Similar to the previous dismissed alternative, this alternative resulted in a much higher cost and offered no benefit over retaining the rails in place with pavement modifications (Alternative 2).

◇ *Cover the Tracks with Concrete Instead of Removing Them*

Pouring concrete over the tracks to fix elevation changes was considered but dismissed because it would be difficult to achieve the minimum necessary thickness of concrete over the tracks without creating a ridge of pavement. Therefore this would not have eliminated safety hazards associated with uneven pavement. In addition, a thin layer of concrete would likely crack due to weathering and become another maintenance problem. Because this alternative would likely result in ongoing safety and maintenance problems, it would not meet the purpose and need.

◇ *Structural Replacement of the Promenade Surface and Add Sealant to Void between Tracks*

This alternative would have removed the paving between the Maritime Museum and bleachers to the south and the seawall to the north, and created a new slab, heavily reinforced with steel, and tied

structurally to both the bleacher/museum building and to the cast concrete core of the seawall. The slab would be of such a height that with the rails mechanically attached to it, and a new topping poured to the height of the rail tops, there would be a smooth and gently sloped grade between the southern structures and the seawall.

This alternative also included using the rubber-like sealant used in the tracks at Lower Fort Mason. The rubber-like sealant is between the main and guide rails to fill the gap between them (Figure 25). This substance is durable and has not deteriorated through heating and cooling. Asphalt has been placed up to the edge of the tracks. The sealant and asphalt around the tracks minimize the height of the tracks above them but the tracks are still slightly higher than the surrounding area. This alternative was dismissed because although the pavement would have been smoother, placing sealant would not resolve the safety issues associated with the tracks (because they parallel the direction of travel). Even if another covering was placed over the tracks to reduce their slipperiness, overall safety hazards would continue. Lower Fort Mason has many fewer pedestrians and much less bicycle traffic and the circulation patterns are not consistently parallel with the railroad tracks as is the case on the Promenade. Therefore this alternative would not meet the purpose and need.



Figure 25: Lower Fort Mason Track Sealant (showing running and guide rails)

◇ *Reroute Bicycle Use off the Promenade*

During rehabilitation of the bleachers, bicycles were rerouted off the Promenade through Victorian Park, onto Beach Street and the upper Promenade and then onto lower Van Ness Avenue. Barricades used to deter bicycle traffic were subject to graffiti and were repeatedly found thrown into the bay. Although some bicyclists observed the barriers, others continued to use the Promenade despite the barriers and signs during the reconstruction.

Permanent rerouting of bicycle traffic off the Promenade was considered but dismissed because of the long-time use of the Promenade as a pedestrian and bicycle path, because the Promenade is part of a regional bicycle transportation route and because without onsite law enforcement the park's ability to regulate these user groups would continue to be ineffective. This alternative would also not meet part of the purpose of the project (to retain current uses of the Promenade).

◇ *Separate Bicycle and Pedestrian Use on the Promenade*

Physically and/or visually separating bicycle and pedestrian use on the Promenade was also considered during the design phase, however because the primary safety problems associated with the Promenade were related to the presence of the railroad tracks, it was dismissed. In addition, the physical separation means that were considered, such as by using bollards with ship chains, would add a new element and would be an adverse effect that could not be mitigated. Historic use of the Promenade also includes both lengthwise and cross-wise use of the Promenade, which is dissimilar to other areas where lengthwise

separation of user groups would be appropriate. On the Promenade, user groups are both passing through and stopping along it. For example, there are kids running across from the bleachers to the beach and tourists stopping to take photos of the views. Visual separation, such as by pavement lines was also considered, but because of the experience with rerouting during previous work (see above example), it was considered infeasible without continuous enforcement. In the future, other alternatives, including time separation of users or imposing administrative requirements, such as walking bicycles during some time periods (e.g. noon to 4:00 p.m.) could potentially be considered if safety problems continue.

◇ *Widen the Promenade to Meet Pedestrian/Bicycle Standards*

The WJE study (WJE 2012) provided some initial analysis regarding recommended widths for bicycle and pedestrian paths on the Promenade. Although the Promenade was not designed with the intent of being a dual use facility, shared pedestrian and bicycle use developed over time.

Another complicating factor is that there is not only through usage of the Promenade from one end to the other, there is also routine cross-usage from the bleachers and the Promenade to the San Francisco Bay shoreline. These users are moving perpendicular, rather than parallel to or along the Promenade. In addition, there are often clusters of individuals or groups stopped along the Promenade enjoying the view and/or deciding where to go as the junction to Van Ness Avenue becomes evident.

As the following information (supplementing the WJE report) demonstrates, the Promenade also does not currently meet recommended guidelines for a separated or shared use pathway.

Section 890.4 of the Streets and Highways Code describes three levels of bikeways:

As used in this article, "bikeway" means all facilities that provide primarily for bicycle travel. For purposes of this article, bikeways shall be categorized as follows:

- (a) Class I bikeways, such as a "bike path," which provide a completely separated right-of-way designated for the exclusive use of bicycles and pedestrians with crossflows by motorists minimized.
- (b) Class II bikeways, such as a "bike lane," which provide a restricted right-of-way designated for the exclusive or semiexclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and crossflows by pedestrians and motorists permitted.
- (c) Class III bikeways, such as an onstreet or offstreet "bike route," which provide a right-of-way designated by signs or permanent markings and shared with pedestrians or motorists.

Although the WJE report concludes that the Promenade, which is 13 feet, 6 inches to 18 feet, 6 inches wide (not including the light post / seawall area), has inadequate width for side-by-side bicycle and pedestrian path, shared use paths have been constructed elsewhere. For instance, in Mount Rainier National Park, a study concluded that "constructing the reroute trail sections 10 feet wide is consistent with recommended guidelines from the American Association of Safety and Highway Transportation Officials (AASHTO) for hiking/bicycling trails" (NPS MORA 2010:73). Regardless, the Promenade would not meet new minimum standards for recommended width. According to the WJE report which references the AASHTO standards and the California Department of Transportation (Caltrans) standards, the minimum recommended path width is 7.87 feet (2.4 meters), with a minimum lateral clearance of 1.96 feet (0.6 meters) on each side. This minimum width would be 11.8 feet. In situations where heavy bicycle volumes or significant pedestrian traffic (shared use) of a Class I bikeway will be present, the minimum recommended width is 11.8 feet with 3.28 feet on either side, yielding a total recommended width of 18.36 feet.

As noted in the WJE report, the current situation on Promenade includes both heavy pedestrian and bicycle use. Although the Caltrans Highway Design Manual, Bikeway Planning and Design chapter is not a required standard for federal projects, it governs the design of bikeways for cities and counties (WJE 2013: 13). Based on this, the existing width of the Promenade is substandard for shared use based on current design standards. Modifying the Promenade to widen it substantially would both be infeasible and

would adversely affect the characteristics which make it eligible for the National Register. Therefore this alternative would have had greater impacts than other alternatives considered and was dismissed.

◇ *Other Modifications to the Promenade to Improve Accessibility*

The planning team also analyzed other modifications to improve accessibility on the western end of the Promenade, including adding a contemporary accessible ramp with landings and handrails. Although this would create an accessible route between the Promenade and Van Ness Avenue, it is inconsistent with the character-defining features of the Promenade, which make it eligible for the National Register and would create a separate, rather than shared path for handicapped users.

◇ *Repave the Promenade with Asphalt instead of Concrete*

Repaving the Promenade with asphalt instead of concrete would be less costly, however it would also heavily alter the character-defining features of the Promenade that contribute to its eligibility for the National Register as part of the Aquatic Park National Historic Landmark District and were therefore dismissed from further consideration. Asphalt could also be less feasible to design to the same strength as concrete for carrying emergency vehicles and for withstanding storm/tidal surge.

◇ *Alternative Ways to Reroute Bicycle Use around the Promenade During Construction*

Several alternatives were considered for temporarily rerouting bicycle use off the Promenade during the proposed replacement of the Promenade pavement (in all alternatives). Among these included:

- *through Victorian Park -- in area of resting visitors*
- *onto Beach Street -- in front of Museum, on sidewalk*
- *Hyde to North Point down Van Ness*
- *Hyde to Beach/Polk to Van Ness*

◇ *Retain Historic Ramp up to Van Ness Avenue Instead of Replacing it with a Stairway*

The ramp at the west end of the Promenade cannot remain as a ramp if the Promenade is extended further towards Van Ness Avenue because the slope of the pavement at its base would conflict with the new slope of the Promenade. The existing ramp has slopes and cross-slopes of 5-20 percent, which cannot be transitioned into the new 1.5 percent cross-slope of the Promenade extension within the available space. The bottom landing of the new stairs, however, and the new Promenade extension can compatibly share the space with slopes of less than 2 percent.

◇ *Improve Accessibility of Beach for Wheelchair Users*

Late in the process of alternative development, the park accessibility team proposed that the project include a beach access route over the seawall. Mats could be installed on the beach or a beach wheelchair could be used with ranger events. Although this idea is a good one, it is not within the scope of the current project. There are no proposed changes to the seawall. Except associated with its connection to the Promenade pavement, it is outside the proposed project area.

◇ *Interim Actions to Improve Visitor Safety on the Promenade*

During the planning process a number of ideas surfaced to improve visitor safety on the Promenade. Among these included encouraging visitors to walk their bicycles, painting sharrows and with "Walk Your Bikes" and "Caution Uneven Pavement" were proposed. Because these actions could be undertaken by the park at any time, including in concert with the proposed project under any alternative, no modifications to the alternatives were made.

I. Mitigation Measures Incorporated into the Action Alternatives

The measures listed under each resource section in *Environmental Consequences* have been developed to lessen the potential adverse effects of the action alternative.

Proposed SHPO mitigation measures are also discussed above within the context of each alternative description. See the resource impact sections in Chapter III Affected Environment/Environmental Consequences for additional measures that would be included.

J. Consistency with NEPA Section 101(b)

The Council on Environmental Quality (CEQ) (46 FR 18026 - 46 FR 18038) provides direction that the “environmentally preferable alternative is the alternative that would promote the national environmental policy as expressed in NEPA’s Section 101,” including:

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
2. Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
3. Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
4. Preserve important historic, cultural and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice;
5. Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life’s amenities; and
6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources (NEPA Section 101(b)).

Analysis

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.

The action alternatives (2-5) would meet this criterion. All of the action alternatives would improve visitor and employee safety and accessibility on the Aquatic Park Promenade. Because Alternative 3 would retain most of the characteristics that make the Aquatic Park National Historic Landmark District and the San Francisco Port of Embarkation National Historic Landmark eligible for the National Register of Historic Places while simultaneously improving safety for pedestrians and bicyclists on the Aquatic Park Promenade, Alternative 3 would best meet this criterion.

2. Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings.

All of the action alternatives would meet this criterion. Alternative 3 however, would best meet this criterion because it would improve safety while retaining the overall design implementation of the historic landscape by not adding new (nonhistoric) components to it.

3. Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.

The action alternatives, particularly Alternatives 3 and 4, would meet this criterion. Of these, it is more likely that Alternative 4 would best meet this criterion because it would allow for all users to share a path that implements the intended historic design of the Aquatic Park Promenade (shown in Figure 19) by completing the arc. Following construction, Alternative 4 also would not result in future change to circulation on the Aquatic Park Promenade when the proposed F-line extension is constructed. Other action alternatives, including 2, 3 and 5 would require further modifications to the area.

4. Preserve important historic, cultural and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.

All of the action alternatives (2-5) would meet this criterion. None of the alternatives however would best meet this criterion. Although Alternative 2 would retain the railroad tracks, pavement modifications and park outreach would improve but not eliminate this condition. Alternative 2 would also continue to allow Promenade users to choose between the upper (Service Road) and lower (Promenade) paths. Although not explicitly accessible, Alternative 2 provides for accessibility through continued use of the Service Road. By contrast, Alternatives 4 and 5 would provide for improved accessibility and connection to lower Van Ness Avenue for all recreational users but would add new elements to the historic landscape and

alter additional historic elements. Alternative 3 would have accessibility similar to Alternative 2 but would result in the loss of a characteristic (the State Belt railroad tracks) that contributes to the national historic landmark and national historic districts.

5. Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities.
6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources).

With removal of the State Belt railroad tracks, Alternative 3 balances the intent to minimize resource use and to improve visitor safety on the Aquatic Park Promenade. Although the State Belt railroad tracks would be removed, this action combined with repaving of the Promenade would dramatically improve public safety and the ability of users to move through the Promenade area unimpeded by potential slipping and tripping hazards. Other alternatives would either potentially continue to affect safety (Alternative 2) or the historic features that contribute to national register eligibility for the Promenade or Port of Embarkation (Alternatives 4 and 5). Alternative 3 would also result in the least resource use compared to the other alternatives that also improve safety.

K. Environmentally Preferable Alternative

In accordance with NPS Director's Order-12, *Conservation Planning, Environmental Impact Analysis, and Decision-making* and CEQ requirements, the NPS is required to identify the "environmentally preferable alternative" in all environmental documents, including EAs. The environmentally preferable alternative is determined by applying the criteria suggested in Section 101B of the National Environmental Policy Act (NEPA) of 1969.

The environmentally preferable alternative is the alternative that causes the least damage to the biological and physical environment and that best protects, preserves, and enhances historic, cultural, and natural resources (46 FR 18026 – 46 FR 18038).

Based on analysis associated with Section 101 criteria, the environmentally preferable alternative is Alternative 3. Alternative 3 would result in the least resource use and would retain most of the characteristics that make the Aquatic Park National Historic Landmark District and the San Francisco Port of Embarkation National Historic Landmark eligible for the National Register of Historic Places while simultaneously improving safety for pedestrians and bicyclists on the Aquatic Park Promenade.

L. Value Analysis

Two value analyses were performed during the alternatives development phase of the project.

The objective of the first value analysis (held in May 2013) was to examine alternatives to treat the railroad tracks to improve safety. A wide range of alternative proposals was considered. Other objectives included understanding the lifecycle costs associated with the alternatives and their relative value; and ensuring that the alternatives satisfied the purpose and need. Applicable NPS servicewide criteria were used to evaluate the alternatives. In addition, under the analysis, the project had to comply with the requirements established for work within a national historic landmark district.

The value analysis team examined four action alternatives for the Aquatic Park Promenade State Belt Railroad tracks. The four action alternatives considered in the first VA were:

- Alternative 0: No Action
- Alternative 1: Remove all Tracks
- Alternative 2: Maintain Tracks in Place
- Alternative 3: Limited Vertical Resetting of the Rails

These initial alternatives were reduced by one through elimination of a duplicative alternative that did not offer more value for less cost (See *Alternatives and Actions Considered but Dismissed* above). Alternatives 1, 2 and 3 in this EA were included in the Value Analysis.

Value Analysis Summary of Recommendations

Preliminary alternative 1, "Remove all Tracks" had the highest benefit to cost ratio since it has the largest reduction in safety hazards and the lowest cost of the alternatives considered. This comes at a cost to the cultural resources of the park, however, the rails are not a prime feature of the park and the safety problem has become a significant cost to NPS staff and resources. Preliminary alternative 3 "Limited Vertical Resetting of the Rails had the highest total benefit score, but also the highest cost and an uncertain outcome. The VA team recommended preliminary alternative 1, removing the railroad tracks from the Promenade (Raube 2013:6).

Following the first VA, the project scope expanded with additional proposed funding and the alternatives were modified to analyze options for providing accessibility.

The objective of the second value analysis was to analyze the proposed accessibility improvements associated with the alternatives.

The objective of the second value analysis (held in July 2014) was to analyze improvements to circulation, including for accessibility. The alternatives included in the second VA included:

- Alternative 0: No Action
- Alternative 1: Minimal Action (Remove Railroad Tracks and Replace with New Concrete Pavement)
- Alternative 2: Ramp (Same as Alternative 1 plus add contemporary accessible ramp)
- Alternative 3: Extension (Extend the Promenade and Create a Universally Accessible Connection to Van Ness Avenue)
- Alternative 4: Extension Plus Wall Reconstruction (Same Extension as Alternative 3 but Remove Service Road)

It also evolved into a more thorough discussion of assessing the safety of continuing to combine bicycle and pedestrian (including cross-ways) use of the Promenade given the adjacent seawall.

The Promenade extension plus wall reconstruction (Alternative 4) had the highest score and highest benefit to cost, but also the highest construction cost of the four action alternatives. There would be extensive modification to the historic landscape and contributing features and an adverse effect. Additional concerns related to the risk success of the project were a factor in the team discussions at the conclusion of the CBA process.

Alternative 5 had the second highest score, benefit to cost ratio, and a construction cost closer to the proposed budget. As in Alternative 4, there would be extensive modifications to the historic landscape and contributing features and an adverse effect. Regardless, once it was proposed that part of the historic wall could be removed and the slope of the Service Road modified to eliminate the pinch point, team consensus determined that this alternative potentially had a lower risk factor for implementation. Essentially Alternative 5 would alleviate the primary safety hazard by eliminating the railroad tracks, add accessibility by extending the Promenade and allow time to determine whether the Service Road is still needed before the F-Line extension is constructed. If the path is wide enough to accommodate all user groups or if a future administrative fix is found to reduce pedestrian and bicycle conflicts then this alternative would allow time for that to be determined. As a result, the VA team recommended Alternative 5 with the modifications adopted during the VA as the preferred alternative.

Table 1: Promenade Alternatives Comparison Chart

	Alternative 1: No Action	Alternative 2: Retain tracks, new pavement adjacent to tracks as smooth as possible, repave Service Road and other sections of deteriorated pavement	Alternative 3: Remove tracks, repave entire Promenade, including the Service Road (includes lightpost relamping)	Alternative 4: Remove tracks, repave all or most of Promenade, reconfigure wall, remove Service Road to create single circulation path with extension (includes lightpost relamping)	Alternative 5: Remove tracks, repave all or most of Promenade, keep Service Road but change grade, shorten wall and add end section, add new wall on opposite side of Service Road (includes lightpost relamping)
Promenade length for Pedestrians	1,481 feet	1,481 feet	1,481 feet	1,601 feet	1,601 feet
Promenade length for Bicyclists	1,386 feet	1,386 feet	1,386 feet	1,601 feet	1,386 feet
Length of Promenade Extension	n/a	n/a	n/a	120 feet	120 feet
Promenade width	varies 6.1 feet – 21.5 feet	varies 6.1 feet – 21.5 feet	varies 6.1 feet – 21.5 feet	varies 13.5 feet – 21.5 feet	varies 10.2 – 21.5 feet
Pinch Point width	6.1 feet	6.1 feet	6.1 feet	16 feet 13.5 feet at West Roundhouse	10.2 feet 13.5 feet at West Roundhouse
Service Road length	294 feet	294 feet	294 feet	n/a	220 feet
Service Road width	12.1 – 13.2 feet Average =12.3 feet	12.1 – 13.2 feet	12.1 – 13.2 feet		12.1 – 13.2 feet
Historic Retaining Wall Length	325 feet	325 feet	325 feet	220 feet	325-72 = 253 feet
Historic Retaining Wall Removed	n/a	n/a	n/a	105 feet	72 feet
New Retaining Wall Added	n/a	n/a	n/a	140 feet	130 feet south side 4 feet to end
Length of West Bleachers Stairway Landscaping Wall	n/a	n/a	n/a	72 feet	72 feet

	Alternative 1: No Action	Alternative 2: Retain tracks, new pavement adjacent to tracks as smooth as possible, repave Service Road and other sections of deteriorated pavement	Alternative 3: Remove tracks, repave entire Promenade, including the Service Road (includes lightpost relamping)	Alternative 4: Remove tracks, repave all or most of Promenade, reconfigure wall, remove Service Road to create single circulation path with extension (includes lightpost relamping)	Alternative 5: Remove tracks, repave all or most of Promenade, keep Service Road but change grade, shorten wall and add end section, add new wall on opposite side of Service Road (includes lightpost relamping)
Removed					
Length of West Roundhouse Ramp Removed	n/a	n/a	n/a	68 feet	68 feet
Length of Railroad Tracks	1,245 feet	1,245 feet	0	0	0
Length of Railroad Tracks Removed	n/a	n/a	1,245 feet	1,245 feet	1,245 feet
Promenade Pavement	Concrete and Asphalt Patched	Concrete and Asphalt Patched	Concrete	Concrete	Concrete
Service Road Pavement	Asphalt	Concrete	Concrete	n/a	Concrete
Amount of New Concrete Pavement	n/a	14,102 square feet (Service Road: 3,435 sf)	34,790 square feet	34,430 square feet	37,290 square feet
Number of connections to Van Ness Avenue	2	2	2	2	3
Number of Accessible Paths	1	1	1	1	2
New (nonhistoric) features	n/a	Promenade pavement	Promenade pavement	<ul style="list-style-type: none"> • Promenade pavement • Promenade Extension • Retaining Wall • Stairway to Van Ness – with retaining wall and rails • Lampposts (2) 	<ul style="list-style-type: none"> • Promenade Pavement • Retaining wall on south side of Service Road • Promenade Extension • West Bleachers Stairwall • Stairway to Van

	Alternative 1: No Action	Alternative 2: Retain tracks, new pavement adjacent to tracks as smooth as possible, repave Service Road and other sections of deteriorated pavement	Alternative 3: Remove tracks, repave entire Promenade, including the Service Road (includes lightpost relamping)	Alternative 4: Remove tracks, repave all or most of Promenade, reconfigure wall, remove Service Road to create single circulation path with extension (includes lightpost relamping)	Alternative 5: Remove tracks, repave all or most of Promenade, keep Service Road but change grade, shorten wall and add end section, add new wall on opposite side of Service Road (includes lightpost relamping)
				<ul style="list-style-type: none"> Up to 6 bollard lights 	<p>Ness Ness – with retaining wall and rails</p> <ul style="list-style-type: none"> Lampposts (2) Up to 6 bollard lights
Historic Features Removed	n/a	Promenade Pavement (Part) Guide Rails (780 feet)	Railroad Tracks* Promenade Pavement	Railroad Tracks* Promenade Pavement Retaining Wall (136') Service Road West Roundhouse Ramp Stone edging curb	Railroad Tracks* Promenade Pavement Retaining Wall (72+') Part of Service Road West Roundhouse Ramp Stone edging curb
Other (nonhistoric) Features Removed	n/a	n/a	n/a	Landscaping Wall (72')	Landscaping Wall (72')
Safety Improvements	<ul style="list-style-type: none"> Pavement patching 	<ul style="list-style-type: none"> Pavement replacement within and around railroad tracks Deteriorated pavement replacement Repaving Service Road with concrete Remove guide rails 	<ul style="list-style-type: none"> Full pavement replacement Remove railroad tracks 	<ul style="list-style-type: none"> All deteriorated pavement replaced Remove railroad tracks Widens Promenade at pinch point Avoids decision-making about which path to take Single path for all user groups 	<ul style="list-style-type: none"> All deteriorated pavement replaced Remove railroad tracks Widens Promenade at pinch point Retains two paths to Van Ness Avenue
Other Safety Issues	<ul style="list-style-type: none"> Uneven pavement remains – tripping hazard Tracks remain – 	<ul style="list-style-type: none"> Tracks remain – slipping hazard Pinch point at Service Road remains – 	<ul style="list-style-type: none"> Pinch point at Service Road remains – bicycle/pedestrian congestion 	<ul style="list-style-type: none"> Exposes bicyclists to potential drop-off (water/rock) for 350 feet 	<ul style="list-style-type: none"> Exposes bicyclists to potential drop-off (water/rock) for 68 feet, if they take the Service Road

	Alternative 1: No Action	Alternative 2: Retain tracks, new pavement adjacent to tracks as smooth as possible, repave Service Road and other sections of deteriorated pavement	Alternative 3: Remove tracks, repave entire Promenade, including the Service Road (includes lightpost relamping)	Alternative 4: Remove tracks, repave all or most of Promenade, reconfigure wall, remove Service Road to create single circulation path with extension (includes lightpost relamping)	Alternative 5: Remove tracks, repave all or most of Promenade, keep Service Road but change grade, shorten wall and add end section, add new wall on opposite side of Service Road (includes lightpost relamping)
	<ul style="list-style-type: none"> slipping hazard Pinch point at Service Road remains – bicycle/pedestrian congestion Pinch point at West Bleacher stairs 	<ul style="list-style-type: none"> bicycle/pedestrian congestion Pinch point at West Bleacher stairs 	<ul style="list-style-type: none"> Pinch point at West Bleacher stairs 		<ul style="list-style-type: none"> Bicyclists have greater chance of continuing on Promenade rather than Service Road, furthering congestion and exposure to drop-off
Adverse Effects on Historic Landscape	<ul style="list-style-type: none"> Deteriorated condition of landscape (Promenade pavement) 	<ul style="list-style-type: none"> n/a 	<ul style="list-style-type: none"> Removal of railroad tracks* 	<ul style="list-style-type: none"> Removal of railroad tracks* Extension of Promenade Replacement of Ramp with Stairway Removal of Service Road 	<ul style="list-style-type: none"> Removal of railroad tracks* Extension of Promenade Replacement of Ramp with Stairway Adds nonhistoric landscaping wall Changes configuration of service road/tracks slope and retaining walls
Historic Landscape Benefits	<ul style="list-style-type: none"> All historic features in landscape retained 	<ul style="list-style-type: none"> Partial replacement-in-kind of Promenade pavement 	<ul style="list-style-type: none"> Replacement-in-kind of Promenade pavement Fix deteriorated lampposts and lights 	<ul style="list-style-type: none"> Replacement-in-kind of Promenade pavement Fix deteriorated lampposts and lights 	<ul style="list-style-type: none"> Replacement-in-kind of Promenade pavement Fix deteriorated lampposts and lights
Other Benefits	<ul style="list-style-type: none"> n/a 	<ul style="list-style-type: none"> Least (other than no action) removal of historic fabric 	<ul style="list-style-type: none"> Fixes slipping, tripping hazards No new features added 	<ul style="list-style-type: none"> Minimizes additional modifications related to F-Line Extension 	<ul style="list-style-type: none"> n/a

	Alternative 1: No Action	Alternative 2: Retain tracks, new pavement adjacent to tracks as smooth as possible, repave Service Road and other sections of deteriorated pavement	Alternative 3: Remove tracks, repave entire Promenade, including the Service Road (includes lightpost relamping)	Alternative 4: Remove tracks, repave all or most of Promenade, reconfigure wall, remove Service Road to create single circulation path with extension (includes lightpost relamping)	Alternative 5: Remove tracks, repave all or most of Promenade, keep Service Road but change grade, shorten wall and add end section, add new wall on opposite side of Service Road (includes lightpost relamping)
				<ul style="list-style-type: none"> • Curve of new and old retaining wall arcs around Promenade as originally designed • Completes section of San Francisco Bay Trail for bicycles 	

* Affects 2 historic districts and 2 NHLs

Chapter III: Affected Environment and Environmental Consequences

A. Affected Environment

Information in this section is derived from a comprehensive review of existing information pertaining to the project area within the park. It includes information from the General Management Plan (NPS WRO 1997), various natural and cultural resources management plans and other park planning documents. Specific sections from these documents are cited in the text and the bibliographic information is provided in the *References* section of this document. Information in this section has also originated from management, research and analysis throughout the history of San Francisco Maritime NHP, including from interdisciplinary team participation in planning meetings.

The following resource topics that may be affected by actions in this plan are included in this section: soils, water quality, prehistoric and historic archeological resources, historic structures and cultural landscapes (including scenic resources), visitor experience (including visitor access and transportation, safety and visitor use opportunities, and interpretation and education), and park operations. For a list of impact topics dismissed from further analysis and the reasons for their dismissal see Chapter I: Purpose and Need.

B. Environmental Consequences Methodology

1. INTRODUCTION TO IMPACT ANALYSIS

This section contains the methods and/or criteria used to assess impacts for specific resource topics. The definitions of impacts adhere to those generally used by the NPS under the National Environmental Policy Act (NEPA) to describe impacts, and those used in analysis for Section 106 of the National Historic Preservation Act (NHPA). Impact analysis for historic properties is also based on the 36 CFR Part 800 criteria of effect as described below.

NEPA requires that federal agencies disclose the environmental impacts of the proposed federal action, reasonable alternatives to that action, and any adverse environmental consequences that cannot be avoided should the proposal be implemented. This section analyzes the environmental impacts of project alternatives on affected park resources. These analyses provide the basis for comparing the effects of the alternatives.

NEPA also requires consideration of context, intensity and duration of impacts, indirect impacts, cumulative impacts, and measures to mitigate impacts. In addition to determining the environmental consequences of the preferred and other alternatives, Management Policies (NPS 2006) and Director's Order-12, Conservation Planning, Environmental Impact Analysis, and Decision-making (NPS 2007) require analysis of potential effects to determine if actions would impair park resources. This impairment analysis will be part of the decision document. The decision document for this environmental assessment is a Finding of No Significant Impact (FONSI).

The environmental consequences for each impact topic were defined based on the following information regarding the context of the action, type of impact, duration of impact, area of impact and the projects that are considered part of the cumulative effects environment. Unless otherwise stated in the resource section in *Environmental Consequences*, analysis is based on a qualitative assessment of impacts.

a. Context of Impact

The context is the setting within which impacts are analyzed – such as the project area or region, or for cultural resources – the area of potential effects or APE. This varies by impact topic.

b. Type of Impact

The type of impact is a measure of whether the impact will improve or harm the resource and whether that harm occurs immediately or at some later point in time.

- **Beneficial Impacts** reduce or improve impact being discussed.
- **Adverse Impacts** increase or result in impact being discussed.
- **Direct Impacts** are caused by and occur at the same time and place as the action, and include impacts such as animal and plant mortality, damage to cultural resources, etc.
- **Indirect Impacts** are caused by the action, but occur later in time, at another place, or to another resource. These include changes in species composition, vegetation structure, range of wildlife, offsite erosion or changes in general economic conditions tied to park activities.

c. Duration of Impact

Duration is a measure of the time period over which the effects of an impact persist. The duration of impacts evaluated in this EA may be one of the following:

- **Short-term:** Often quickly reversible and associated with a specific event, and lasting one to five years.
- **Long-term:** Reversible over a much longer period, or may occur continuously based on normal activity, or for more than five years.

d. Area of Impact

The area of impacts may be detectable in nearby or surrounding areas.

- **Localized Impacts** are detectable only in the vicinity of the activity.
- **Widespread Impacts** are detectable on a landscape or regional scale.

e. Impact Mitigation

Impacts may be reduced in the following ways. Projects can:

- **Avoid** conducting management activities in an area of the affected resource, or
- **Minimize** the type, duration or intensity of the impact to an affected resource.

Impacts may also be reduced by additional mitigation actions such as by:

- **Repairing** localized damage to the affected resource immediately after an adverse impact.
- **Rehabilitating** an affected resource with a combination of additional management activities.
- **Compensating** a major long-term adverse direct impact through additional strategies designed to improve an affected resource to the degree practicable.

f. Intensity for All Impacts Except Cultural Resources

Note: As noted above, cultural resources impact determinations are formally determined consistent with the National Historic Preservation Act (Section 106). Cultural resources impacts are also initially characterized as noted below, however the conclusion follows the format below, and makes a formal determination of effect under Section 106 of the National Historic Preservation Act.

- **Negligible:** Measurable or anticipated degree of change would not be detectable or would be only slightly detectable. Localized or at the lowest level of detection.
- **Minor:** Measurable or anticipated degree of change would have a slight effect, causing a slightly noticeable change of approximately less than 20 percent compared to existing conditions, often localized.
- **Moderate:** Measurable or anticipated degree of change is readily apparent and appreciable and would be noticed by most people, with a change likely to be between 21 and 50 percent compared to existing conditions, may be localized or widespread.
- **Major:** Measurable or anticipated degree of change would be substantial, causing a highly noticeable change of approximately greater than 50 percent compared to existing conditions, often widespread.

In accordance with *Management Policies* (NPS 2006), the analysis in this Environmental Assessment fulfills the responsibilities of the NPS under Section 106 of the National Historic Preservation Act.

g. Intensity for Cultural Resources Impacts

- **No effect:** There are no historic properties in the Area of Potential Effect (APE); or, there are historic properties in the APE, but the undertaking will have no impact on them.
- **No adverse effect:** There will be an effect on the historic property by the undertaking, but the effect does not meet the criteria in 36 CFR Part 800.5(a)(1) and will not alter characteristics that make it eligible for listing on the National Register. The undertaking is modified or conditions are imposed to avoid or minimize adverse effects. This category of effects is encumbered with effects that may be considered beneficial under NEPA, such as restoration, stabilization, rehabilitation, and preservation projects. Under the terms of the 2008 PA, data recovery can mitigate affect to archaeological properties that are eligible for listing on the NR under criterion D. However, some archaeological sites are eligible as traditional cultural places under criterion A, and such mitigation may not be sufficient or appropriate.
- **Adverse effect:** The undertaking will alter, directly or indirectly, the characteristics of the property making it eligible for listing on the National Register. An adverse effect may be resolved in accordance with the Stipulation VIII of the 2008 Programmatic Agreement, or by developing a memorandum or program agreement in consultation with the SHPO, ACHP, American Indian tribes, other consulting parties, and the public to avoid, minimize, or mitigate the adverse effects (36 CFR Part 800.6(a)).
- **Significant Impact:** An impact to a National Register historic property would be considered significant when an adverse effect cannot be resolved by agreement among SHPO, ACHP, American Indian tribes, other consulting and interested parties, and the public. The impact will diminish the integrity of location, design, setting, materials, workmanship, feeling or association characteristics that make the historic property eligible for inclusion in the National Register Historic Places. The resolution must be documented in a memorandum or programmatic agreement or the FONSI.

2. CUMULATIVE IMPACTS

The Council on Environmental Quality (CEQ) describes a cumulative impact as follows (Regulation 1508.7):

A cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Therefore the projects addressed in this cumulative impacts analysis include past and present actions, as well as any planning or development activity currently being implemented or planned for implementation in the reasonably foreseeable future. Cumulative actions are evaluated in conjunction with the impacts of an alternative to determine if they have any additive effects on a particular resource. Because most of the cumulative impacts projects are in the early planning stages, the evaluation of cumulative impacts was based on a general description of the project.

Projects Included in the Cumulative Impacts Analysis for the Aquatic Park Promenade

The following projects are included in the cumulative impacts analysis presented in this chapter.

- San Francisco Maritime National Historical Park General Management Plan (NPS WRO 1997)
This General Management Plan for San Francisco Maritime National Historical Park guides the management of resources, visitor use, and general development at the park over the next 15 to 20 years. It summarizes the final actions that were approved in the park's Final General Management Plan / Environmental Impact Statement completed in September 1997.

The direction for future park management is based on the laws establishing the park, the purpose of the park, and the park's significant resources. The park's purpose, as mandated by Congress, is to preserve

and interpret the history of achievements of seafaring Americans and the Nation's maritime heritage, especially on the Pacific Coast.

- 1986 Seawall Repair

Repairs in 1986 consisted of full replacement of the center portion of the Promenade and seawall as a result of failure caused by overwash of the Promenade due to a combined storm surge and high tide (a "king" tide).

- 1998 Promenade Repair

Due to severe winter storms in 1995 and 1996, which produced unusually high winds, torrential rains, and constant west-to-east wave scouring action, the seawall had become severely undermined, resulting in a substantial cave-in on the adjacent Promenade from loss of fill behind the seawall. Repair of the Promenade required removal and replacement of approximately 900 square feet of concrete pavement. It also included repair of the existing seawall. This work was accomplished by removing debris, small rocks, and sand from the toe of the existing seawall; excavating the existing wall footing; drilling and placing dowels into existing seawall; then cutting, tying and placing reinforcing bars; forming and pouring a four foot high concrete wall in front of the existing seawall; pressure pumping grout through grout tubes; and filling voids underneath the existing seawall and behind the new concrete wall. Following completion of the concrete wall and grout pumping, additional excavation / grading was required to provide a consistent surface for placement of filter fabric and stone armor rock.

- Rehabilitate Failing Amphitheater Structure in Aquatic Park National Historic Landmark District (2006)

This environmental assessment examined two alternatives: no action and the National Park Service preferred alternative. The preferred alternative focused on rehabilitating the amphitheater structures, portions of which were being supported by temporary shoring, in the Aquatic Park National Historic Landmark (NHL) District within San Francisco Maritime National Historical Park (NHP). The project included repair, and in some cases substantial reconstruction, of the severely deteriorated visitor-use bleachers, including the structure's accompanying underground offices and work spaces. Work included removal and replacement of failed concrete and rebar in some areas, and shotcrete repair in other areas, installation of new waterproofing and drain system, replacement of skylights. The drain pipes from the building run through the building out onto the beach. The project also included removal of historic vegetation (i.e., cypress trees). The historically accurate landscape was rehabilitated or restored in areas disturbed by the project, in accordance with the findings of the cultural landscape report completed in 2010. In addition, repairs included upgrades for accessibility, and upgrades to facility mechanical and electrical systems to meet building codes. The purpose of the proposed project was to provide a safe and usable structure for visitors and park employees and to rehabilitate and protect the cultural resources of the building and the national historic landmark district.

- Muni F-Line to Fort Mason Center (2013)

This project would extend the Municipal Railroad's F-line, which operates historic streetcars, from Fisherman's Wharf, through San Francisco Maritime NHP to Fort Mason Center in Golden Gate National Recreation Area. The route of the new railroad line is currently planned to run along Beach Street, crossing through the bocce ball courts in the southwest corner of the park to use the existing abandoned railroad tunnel under Fort Mason. New structures proposed as part of this future project include new railroad tracks, an overhead traction power system, an overhead contact system to convey power to the electric streetcars, new boarding platforms and signaling systems, which will create new physical and visual impacts in the Aquatic Park Historic District. Two station platforms are planned within on park property. Other changes in the transition area would include adding retaining walls and/or modifying existing historic retaining walls.

The proposed route would cross the existing upper asphalt path, creating a conflict with bicyclists and pedestrians and necessitating relocation of the bocce ball courts. Under the proposed design, it would not pass close enough to the main Promenade to conflict with pedestrians or bicyclists along the shoreline. Elements not yet specifically designed are the in-street track alignment, platform locations, and shelters.

Because the preferred alternative for the proposed F-line route would run through the bocce ball courts, it would require relocation of the courts. The bocce ball club has expressed interest in developing an indoor venue that meets standards for international competition. The NPS is committed to replacing the bocce ball court and would evaluate suitable alternatives during a separate planning effort and in conjunction with the new General Management Plan for San Francisco Maritime NHP (NPS GOGA 2012:270)

- Reconstruction of Municipal (Muni) Pier

According to a summary of planning for the western portion of Aquatic Park, maintaining the Municipal Pier is critical to preserving Aquatic Park and the ships at Hyde Street Pier. Without the pier's protection, the park will erode, and the ships would be subject to punishing waves. The pier is also important to the marine businesses, docks and fuel stations to the east. A project has been developed to address Municipal Pier, and the park is seeking funding. The pier is sagging and the concrete is splayed and degraded in many areas (NPS PWRO 2006:7).

- Rehabilitation of Sea Scout Base

The Sea Scout Base is in need of an accessible entrance and also would be one of the first buildings affected by sea level rise. The park has proposed a repair rehabilitation project to raise the structure, improve the entrance, and add a restroom.

- Replacement of Belt tracks elsewhere along the waterfront

Elsewhere along the San Francisco waterfront, the State Belt railroad tracks have been removed or covered up. Among the most unique of the interpretation of the State Belt tracks is a line of glass blocks adjacent to the Embarcadero that shows the location of the tracks. There are also other representations of the tracks in various pavement surfaces, such as narrow metal sheets embedded to replicate tracks.

- Marina Blvd Paving Project 37048 PEPC

The project scope included only changes to the curb ramps associated with the upcoming PUC sewer replacement and repaving of Marina Blvd, in an effort to improve the safety and accessibility to the Marina Blvd Bay Trail in compliance with Americans with Disability Act requirements. This required correcting 13 curb ramps and 3 driveways along the north side of Marina Blvd, that impact buried rails of the former Belt Railway (595' of the north rail and 519' of the south rail were altered). The sewer work under Marina Blvd and repaving occurred in stages, including the Baker to Scott Street section and the Marina Blvd section. Lastly, alteration of the bike trail along Marina Green occurred.

- Proposed Reroute of Bicycle Traffic off the Waterfront Sidewalk onto the Embarcadero

This action is being considered by the SFMTA. As of the publication of this environmental assessment, only an initial public meeting had been held (August 2014) to gather input on the proposal. This action, however, was tested during the 2014 America's Cup races in San Francisco when a temporary bikeway was installed along the Embarcadero (Figure 26). According to an analysis of that event, the current design for people on bikes on The Embarcadero includes an unprotected green bike lane on the east side of the street and a "floating" part-time green bike lane on the west side of the street. The relatively high speeds and traffic volumes combined with the unprotected nature of the existing cycling facilities discourage less experienced cyclists. As a result, many people choose to cycle along the Promenade, a designated mixed-use path. For some time, the SFMTA, the Port of San Francisco, and bicycle and pedestrian advocates have expressed concern over the high volumes of pedestrians and cyclists along the Promenade and the potential for conflict (SFMTA 2014).



Figure 26: SFMTA Photo showing temporary protected bikeway along the Embarcadero

- Proposed improvements to Jefferson Street Turnaround

Although there is currently no formal proposal for improvements to this area, the park has been considering redesign of the area to improve traffic flow.

- 2013 Jefferson Street Public Realm Plan, implementation of Phase 1:

Under a City of San Francisco project, the two blocks west of Jones Street were rehabilitated to calm the traffic and make Jefferson Street more pedestrian friendly. Utilities were upgraded and Belt tracks buried under the street were removed. Two lanes of parking were removed so that sidewalks could be widened. Traffic is no longer one way on the rehabilitated section, but now moves in both directions.

- Aquatic Park Bathhouse Accessible Entrance (Proposed)

This project is to provide a more permanent and pleasing ADA (American's with Disabilities Act) compliant entrance to the Museum Building. The location of the project is the main entry doors to the Aquatic Park Bathhouse on Beach Street. A companion project would provide an accessible ramp entrance to the Bay View Room. Removal of the existing ramp, paving and metal handrails is proposed to accommodate installation of new concrete ramps and level landings at the entries. New metal handrails are also proposed.

- Repairs to San Francisco Fire Department Pump Station No. 2

Proposed repairs to the pump station are needed to upgrade equipment and ensure the building will survive a major earthquake. Anticipated work is expected to begin in spring 2015. This project would affect only the pump station, but would require a staging area on or near Lower Van Ness Avenue within the park.

- Rehabilitation of McDowell Road (repair of the road edge)

This Golden Gate National Recreation Area proposed project may occur in 2015. Under the proposed project, the failing edge of McDowell Road retaining wall (on the San Francisco Bay side) would be repaired and the road resurfaced. This project would require a reroute of bicycle and pedestrian traffic up Van Ness Avenue and around Fort Mason.

- Visitor Circulation Study

The park is in the midst of planning for a visitor circulation study to be conducted to evaluate traffic patterns in the park with the goal of minimizing user conflicts and improving safety.

C. Affected Environment and Environmental Consequences

Setting

Black Point Cove, later developed as Aquatic Park, was recognized from a very early point as a site uniquely well-suited to recreational use. Protected from the prevailing northwesterly winds by the Black Point headland, the Cove offered a sandy beach stretching two blocks to the east, to the line of what is now Hyde Street. Historically the line of Hyde Street ended in a high sand spit, not specifically named on early charts, but apparently locally called either Whaleman's Point or Sand Point (Canright 2013:4).

Prior to industrial and recreational development of the area, Black Point Cove probably contained areas of salt marsh including cordgrass and pickleweed. Like similar areas of the bay, the marsh was probably an abundant resource for enormous bird populations, including very large communities of ducks and migrating birds such as Canadian geese, egrets, herons, osprey, and seagulls visiting the salt marsh. The area was also a setting for Native American settlement, with access to land-based game such as deer, elk, and waterfowl and marine game such as seals, sea lions, sea otters, fish (salmon, surf perch, white sea bass, jacksmelt) and shellfish (red abalone, oysters, clams) (NPS PWR 2001: 3b, 1 of 33).

A. Soils Affected Environment

Because Black Point Cove has been dramatically altered by historic land use, site specific soils information is not available for the project area (NPS SAFR 2006). General soils mapping for the area indicates that the soils consist of mud, sand, gravel, and silt. The Aquatic Park area is a designed landscape in a tidally influenced area, therefore it is likely that the native material is overlain with fill brought to the site during its development in the early part of the 20th century. Based on geotechnical boring tests conducted as part of this project and historical documentation, the native sand, silt and gravel is mixed with locally obtained fill and debris. Historic photographs from the construction of Aquatic Park show large piles of fill. Documentation of improvements to the site includes evidence that fill from the 1906 San Francisco earthquake was used (see below and historic archeological resources section).

The Cultural Landscape Inventory explains that the park is a product of the many attempts to alter the cove's nature shoreline (NPS PWR 2001: 3b, 1 of 33). By the late 1850s, business owners along the shore began adding fill material to the cove to expand the buildable surface area and to stabilize the shoreline. Coast survey charts indicate that by 1859, structures were already built over the previous high tide mark and by 1869, bulkheads and wharves were pushing out into the cove almost 20 feet beyond the original shoreline south of Beach Street (NPS PWR 2010:10).

At the time that the first major alterations to Black Point Cove began around 1860, both the Pioneer Woolen Mills and San Francisco Water Company were expanding operations by adding fill material to the shoreline. In an equally dramatic move, the Selby Smelter leveled Sand Point Bluff at the foot of Hyde Street and dumped it into the bay. These expansions of the waterfront forever altered the natural character of the shoreline. By 1900 approximately half of the block north of Beach Street between the alignments for Larkin Street and Van Ness Avenue had been filled, and in the southwest corner of the cove, wharves extended out to the (underwater) alignment for Jefferson Street. ² Perhaps even more dramatic changes to the shoreline came as a result of the extensive dumping of debris, following the 1906 San Francisco earthquake and fire. The extent of fill materials from this operation is not known, but accounts from the period report that 15,000 truckloads of red brick rubble from the Palace Hotel dumped along the shore, which "utterly ruined" the beach area³ (NPS PWR 2010: 62).

Later during excavation of the railroad tunnel, which began in 1914, much of the excavated rock and clay was dumped into the cove alongside the trestle (Canright 2013:8). In addition, sand excavated from beneath Union Square in 1941 was used to replenish the beach (NPS PWR 2001: 3b, 1 of 33).

In 1910, the army began dumping debris and fill along the western side of the cove to construct a seawall and to extend McDowell Road around the west side of Black Point (NPS PWR 2010:13-14). By March

1914, after the State Belt Railroad completed construction of a trestle across the cove and a tunnel under Black Point, several other rowing clubs joined the San Francisco Recreation League to protest additional filling of the cove at the north end of blocks 33, 36, and 37 (located on either side of today's Jefferson Street).

Although official filling operations in the cove ended in 1914, the city continued dumping the following year. The damage to the cove was tremendous; the sand beach was gone, covered with tons of rubble, mud, and rock, and much of the former cove was now dry land. Moreover, the railroad trestle interrupted access to the water for swimmers and rowers. Community concern eventually reached a critical point when public support galvanized and key officials for both the army and city became involved and supported the movement to construct a public park (NPS PWR 2010:13-14).

In 1931, the former seawall (*former site of the Quartermaster's Pier*) and small walkway around the east side of Black Point were slowly filled in by thousands of cubic yards of fill, placed to form a broad platform to extend Van Ness Avenue towards the (*future Municipal*) pier. In addition, 47 truckloads and 12 railroad cars full of cobblestones salvaged from reconstructed San Francisco streets were hauled to the site and stockpiled in the park. A crude seawall was constructed around the shoreline to hold the unconsolidated fill material (NPS PWR 2001: 3a, 11 of 26).

In preparation for this proposed rehabilitation of the Promenade, eight borings (drilled to depths of between 1.5 and 8.5 feet below the surface) were conducted to determine the causes of uneven settlement of paving, buckled asphalt, poor drainage and ponding near the rails, and gaps beneath the Promenade. Based on the resultant material, this underlying area consists of sand, gravel, silt and clay and varies from very loose (granular sand and gravel) to very stiff (clay and silt). Groundwater, which varies seasonally and with tides, was encountered in four of the eight holes. The holes also contained brick, ceramic and wood fragments as well as unspecified organic material.

A USGS Map entitled Soil Type and Shaking Hazard in the San Francisco Bay Area identifies the Aquatic Park area as NEHRP-E or "water-saturated mud and artificial fill. The strongest amplification of shaking due is expected for this soil type" (<http://earthquake.usgs.gov/regional/nca/soiltype/map> accessed 6-19-13).

B. Soils Environmental Consequences

Impacts from Alternative 1

Under Alternative 1, there would be no additional impacts to soil and fill in the Aquatic Park Promenade area. Although periodic repairs to seal voids and to patch deteriorated pavement surfacing would continue to be made, it is unlikely that routine repairs would affect areas beneath the pavement.

Impacts from Alternative 2

In this alternative, because the new concrete pavement constructed flush with the rails would be placed on a prepared subgrade, placement of the subgrade would disturb the area underneath the rails. As a result, fill and potentially native soils beneath the rails could be impacted. Because, however, this area was previously disturbed through the placement of fill during construction of Aquatic Park, including construction of the railroad tracks, it is likely that disturbance of native soils would be minimal. If voids have formed underneath the tracks, however, as a result of tidal action or water saturation, some impacts could occur to place the subgrade for the concrete surface. Overall impacts (loss or disturbance of native soil) would be negligible to minor.

Impacts from Alternative 3

Impacts would be similar to but greater than Alternative 2 because the rails would also be removed. In addition, disturbance to fill and soil could occur from replacing approximately 34,790 square feet of asphalt and concrete pavement over the length and width of the Promenade from Jackson Street to near lower Van Ness Avenue. Replacing the cross drains across the promenade could also require some additional excavation and replacement of fill beneath the current pavement surface. Because the area has been wholly disturbed and filled, however, overall impacts to native materials would be minor.

Impacts from Alternative 4

Most impacts would be the same as described in Alternative 3. In addition, the area at the west end of the Promenade would be excavated to construct the stairway up to lower Van Ness Avenue and to construct the accessible extension to the Promenade. Approximately 1,000 cubic yards of soil would be excavated for the stairway and extension to the Promenade. It is likely that these areas also contain a mixture of native materials (sand) and fill. There would also be footing excavation associated with construction of the extension for the new portion of wall added to the historic retaining wall. This excavation could be as deep as four feet. Finally, there would be recontouring, including placement of fill and topsoil in the area where the Service Road is now located where landscaping would replace asphalt. Overall impacts would be minor to moderate but impacts to native soils would likely remain minor as a result of the extensive amount of fill located in the area.

Impacts from Alternative 5

Impacts would be the same as described in Alternative 4 for the removal of the railroad tracks and replacing the pavement surface along the width and length of the Promenade. Impacts would also be the same for extending the Promenade to meet lower Van Ness Avenue with both a stairway and an accessible pathway. Alternative 5 impacts, however, would differ related to construction associated with the Service Road (which would be steepened rather than removed) and related to the historic retaining wall, which would be shortened, rather than lengthened. Removal of the wall would possibly require reinforcing the remaining existing wall with steel, adding new concrete footings, or adding a layer of structural concrete to the side of the wall that is currently buried. Steepening the Service Road would be required to change the point of intersection with the Promenade and would include removing and re-grading slope fill material. Excavated materials would be removed from the park. Approximately 400 cubic yards of pavement and earth would be modified or removed to regrade the Service Road.

Impact Avoidance, Minimization and Mitigation Measures

Measures that would be included in the proposed project (as appropriate to the alternative actions) to minimize impacts to soils include:

- Excavated areas would be the minimum needed to safely accomplish proposed work and would be covered during nonwork periods.
- Because disturbed soils are susceptible to erosion until revegetation or replacement of paving takes place, standard erosion control measures such as silt fences and/or sand bags would be used to minimize the potential for soil erosion.
- Disturbed areas would be revegetated where applicable and/or restored as close as possible to pre-construction conditions as soon as practicable following construction work in the area.
- Fugitive dust generated by construction would be controlled by spraying water on the construction site, if necessary.
- Reusing excavated materials where possible in the project area.
- Preparing and approving a Hazardous Spill Plan before construction begins.
- To minimize possible petrochemical leaks from construction equipment, the contractor would regularly monitor and check construction equipment to identify and repair any leaks. In addition, spill containment supplies would be kept on site.
- Encouraging the use of vegetable oil in place of hydraulic fluid in heavy equipment.

Cumulative Impacts: Over time, development along the San Francisco Bay shoreline within San Francisco Maritime NHP has had major impacts on soils. Much of the park was created from fill deposited along the shoreline of Black Point Cove. Despite this, the Aquatic Park shoreline includes a native sandy beach, which has been supplemented over the years. Although the shoreline appears natural, it too has been modified using fill to increase its landward extent. Combined, past actions have moderate to major long-term adverse impacts on soils from increasing impervious surfaces, decreasing infiltration, increasing soil compaction, reducing soil moisture, and removal of vegetation and soil, as well as from placement of nonnative fill materials.

Although there are a range of proposed actions that would occur within and in the vicinity of the park as described in the cumulative impacts project list at the beginning of this chapter, except for the modifications to Pumphouse #2, these projects would not affect soils in the vicinity of Aquatic Park. Actions to rehabilitate the pump house would also occur primarily within the structure, however, it is likely that an area within the park would be used to stage materials. Because the area would likely be either a lawn or hard surfaced area, effects would be minimal.

When the effects of the proposed alternatives are combined with those from actions that have already occurred, there would be no contribution to cumulative impacts under Alternatives 1-3 and negligible contributions to cumulative effects from the proposed actions under Alternatives 4 and 5, primarily from additional impervious surfaces added from the extension of the Promenade. While Alternative 4 would also have beneficial effects related to removing surfacing from the asphalt fork and replacing it with landscaping, Alternative 5 would not. Overall cumulative impacts on soils would continue to be moderate to major and long-term.

Conclusion: There would be no additional impacts from Alternative 1, negligible to minor localized adverse impacts from Alternatives 2 and 3, and minor to moderate localized adverse impacts from Alternatives 4 and 5. There would be no contribution to cumulative impacts on soils from Alternatives 1-3 and negligible contributions to cumulative impacts from 4 and 5.

C. Water Resources Affected Environment

Numerous topographic changes have affected Black Point Cove and the area surrounding the Promenade. In addition to those discussed in the previous section, other topographic changes such as the leveling of the bluff (Sand Point) at the foot of Hyde Street and dumping the material into the bay created another building site, first for the Selby Smelter, followed by the San Francisco Gas Works, on the same footprint. By 1900, approximately half of the block north of Beach Street between the alignments for Larkin Street and Van Ness Avenue had been filled, and in the southwest corner of the cove the Spring Valley Water Works (formerly the San Francisco Water Company) and Dolphin Swimming and Boating Club wharves extended out to the then (underwater) alignment of Jefferson Street (NPS PWR 2010:11).

Today's Black Point Cove (aka Aquatic Park Cove) is a constructed lagoon and shoreline on the site of a former tidal marsh. Low waves wash up onto a sandy beach along the cove forming a portion of the south shore of San Francisco Bay. The sandy beach rises to meet an historic seawall along the Aquatic Park Promenade.

From the south, draining into the cove beneath the boardwalk, are several cast iron drain pipes that flow during rainy periods. These drain pipes allow water passage from Bathhouse complex landscaped roofs, and the north side of the Maritime Museum Building roof that drains under the Promenade. There are approximately six to eight 4-inch cast iron drain pipes.

Water quality monitoring has been conducted at Aquatic Park Beach for 22 years (since 1992). In 2010, Aquatic Park Beach was ranked among the cleanest in the Bay Area, receiving a year-round A or B grade, according to an annual report published by Heal the Bay. There is also another monitoring station at the nearby Hyde Street Pier that continues to receive high marks year-round. Heal the Bay publishes a weekly online Beach Report Card that includes Aquatic Park.

The annual Heal the Bay report studies pathogens and bacteria at 456 California beaches. According to the annual report summary, nearly all the beaches are clean in summer, but many also experience high contamination in winter. Recent applicable water quality monitoring results vary and often include 1-4 days of monitoring over a several month period that do not meet bathing standards (<http://www.sfwater.org/cfapps/LIMS/beachresults3.cfm?loc=4613> accessed 1-15-14, 8-14-14).

According to the Heal the Bay report, "poor water quality is often found at beaches near flowing storm drains, piers and enclosed water bodies with inadequate circulation. The worse the grade a location receives, the greater the risk of such serious illness as stomach flu, ear infections, upper respiratory

infections and skin rashes” (<http://www.healthebay.org/media-center/press-releases/summer-water-quality-excellent-ca-beaches> 8-28-13).

Additional water quality monitoring is conducted and/or reviewed by the State Water Quality Control Board (WQCB). Recently, representatives approached the park about an area by the swim clubs that fails testing standards approximately 25 percent of the time (Bell personal communication 2014). This may be related to a pumping station that was formerly located near Hyde and Jefferson streets and/or to an abandoned City of San Francisco sewer line beneath the Promenade. The WQCB has asked the park to identify the source of the contamination during proposed construction.

D. Water Resources Environmental Consequences

Impacts from Alternative 1

There would be no additional impacts to water quality under Alternative 1. There would continue to negligible to minor adverse impacts from water that drains from within the park to the bay.

Impacts from Alternatives 2 - 5

Construction would result in minor earth and rock disturbing activities from replacement of fill beneath the Promenade, which could increase the potential for erosion and sedimentation in the vicinity of the proposed project area; however the area would continue to be separated from San Francisco Bay by the seawall. Because the storm drains would be replaced in kind (including existing location and capacity) there would be no additional long-term impacts on water quality. Existing negligible to minor impacts would continue. In addition, any potential water quality impacts as a result of the proposed construction activities would be mitigated through the use of best management practices for control of runoff and sediment.

If full repaving of the Promenade occurred (Alternatives 3-5), it could result in outsloping it slightly toward the bay to allow for improved drainage, where water now ponds on the pavement surface. As a result, there could be negligible to minor long-term impacts from changing water that now drains slowly or evaporates off the Promenade to water that could flow off the Promenade during intense storms. Because this condition is not different from the existing condition, where pavement is intact, impacts would continue to be negligible to minor.

Because sediment disturbing and fill placement activities are within 100 feet of the shoreline, they require a permit from the San Francisco Bay Conservation and Development Commission (BCDC) and a consistency determination with the Coastal Zone Management Act (see permitting section in Chapter V: Consultation and Coordination). There may also be additional permitting required (such as, related to the City of San Francisco easement) depending on the disposition of the abandoned sewer line beneath the Promenade.

Additional Impacts from Alternatives 4 and 5

In addition to disturbance of soil, rock and other fill beneath the Promenade for the replacement of some or all of the pavement, there would be additional excavation near the west end of the Promenade to extend it via a stairway and accessible pathway to lower Van Ness Avenue. As a result, there would be the potential for additional impacts should there be wet periods while this area above the seawall was under construction. As with impacts underneath the existing Promenade surface, there would be a series of mitigation measures used to prevent runoff and thus sedimentation. In addition, both alternatives would include additional excavation (in Alternative 4 for the extension of the historic retaining wall and in Alternative 5 for the change in the grade of the Service Road associated with the shortening of the historic retaining wall). Similarly, these other construction areas would include sedimentation prevention measures throughout construction.

Impact Avoidance, Minimization and Mitigation Measures

Measures that would be included in the proposed project (as appropriate to the alternative actions) to minimize impacts to water quality include:

- Locate staging and stockpiling areas away from the edge of the Promenade.

- Stage and protect excavated materials to prevent potential sedimentation impacts.
- Because disturbed soils are susceptible to erosion, standard erosion control measures such as silt fences and/or sand bags would be used to minimize potential soil erosion.
- Minimizing the amount of disturbed earth area and the duration of soil exposure to rainfall.
- Encouraging the use of vegetable-based hydraulic fluid in heavy equipment.
- Developing and implementing a comprehensive Spill Prevention/Response Plan that complies with federal and state regulations and addresses all aspects of spill prevention, notification, emergency spill response strategies for spills occurring on land and water, reporting requirements, monitoring requirements, personnel responsibilities, response equipment type and location, and drills and training requirements.
- Developing and implementing a Stormwater Pollution Prevention Plan (SWPP).
- Developing strategies to deal with high tides and a high groundwater table.
- Working with the City of San Francisco to determine the disposition of the abandoned sewer line beneath the Promenade.

Prevention of Fuel Spills: The following BMPs to control adverse impacts of fuel spills would also be used:

- Refueling activities would be done at least 100 feet from the cove.
- Areas where refueling or maintenance of equipment would occur would be identified and would have containment devices, such as temporary earth berms.
- Absorbent pads would be available to clean up spills.
- Restrictions on the location of fueling sites, requirements for spill containment, and other measures to safeguard aquatic and terrestrial habitat from construction-related contaminants would be identified.

Cumulative Impacts: The Sacramento and San Joaquin Rivers combine to form San Francisco Bay, which is essentially a wide river mouth flooded by the sea, which flows through the Golden Gate. The mix of fresh and salt water is the source of the richness of this great estuary, the largest on the Pacific Coast. Over time, development has caused the loss of many of the wetlands which surrounded the bay, including those that were present near Aquatic Park. Nonetheless, thousands of species of fish, plants, mammals, reptiles and birds continue to thrive in the San Francisco Bay estuary. Today, the bay is important for a wide range of uses, including for commerce, transportation, and defense, and for moderating the area climate and attracting residents and visitors to the area. The key location of San Francisco Maritime NHP allows visitors to enjoy these and many other features of the bay. It is also clear, however, that there have been a wide range of impacts to the bay. Among these include changes in water quality. As a result, a variety of governmental organizations have arisen to protect the bay and its resources, contributing long-term beneficial impacts to protecting the bay, despite the great range of development impacts.

In San Francisco Maritime NHP, there have been a range of incremental cumulative adverse and beneficial impacts that have modified water quality, however most of these, including construction of the docks and Promenade, took place long before it became a unit of the National Park System. Because their construction in the 1930s contributed to the loss of a wide array of wetlands along the shoreline, these areas continue to contribute incremental cumulative adverse effects on water resources, including water quality from the loss of natural wetlands, which contributed to cleansing the bay. Day to day operations in the park, however, have resulted in long-term incremental beneficial effects from minimizing actions that would adversely affect area water quality, including using integrated pest management (IPM) to manage area landscaping and minimizing actions that would adversely affect other natural and cultural resources in maintaining the park.

The contribution of the alternatives to cumulative impacts, therefore, would continue to be negligible, with some actions having the potential for short-term adverse impacts that would not contribute measurably to cumulative effects. When the actions in Alternatives 1-5 are combined with the actions from other projects taking place along the San Francisco Bay shoreline, including those within and outside the park, overall cumulative impacts contributed by the alternatives would continue to be negligible and would continue to be mitigated by the management oversight actions of governmental organizations such as the San

Francisco Bay Conservation and Development Commission and other local, state and federal laws designed to protect the bay and its resources.

Conclusion: Alternative 1 would have no additional impacts on water quality but could continue to contribute negligible adverse effects. Alternatives 2-3 could contribute negligible impacts to water quality during construction that would be mitigated by best management practices and the same negligible long-term adverse effects as in Alternative 1. Alternatives 4-5 could contribute minor adverse impacts to water quality during construction that would be similarly mitigated and the same long-term negligible adverse effects. The overall contribution to cumulative impacts would continue to be negligible.

E. Historic Archeological Resources Affected Environment

Archeological resources within the Aquatic Park National Historic Landmark District have been identified in “Archeological Resources of Golden Gate National Recreation Area,” and “Historic Objects from Fort Mason ‘Mini Park,’ Van Ness Avenue at Aquatic Park,” GGNRA, San Francisco.” (Kelly 1976 and 1980 in NPS SAFR 2006).

There are four prehistoric archeological sites in the vicinity of Black Point Cove, including a prehistoric habitation site at the corner of Hyde and Beach streets registered as SFr-23 (although archeological analysis was not conducted prior to the impact of urbanization). The other archeological sites at Black Point are registered as SFr-29, 30, and 31 and have been preserved. These consist of the Black Point U.S. Army battery which was partially excavated and restored in the 1980s and the Point San Jose Historic Archeological Site composing the early habitation areas of what would become Fort Mason by the 1880s.

The cove at Aquatic Park (Black Point) was used in the nineteenth century as an anchorage for ships with shallow drafts, however, the potential for underwater archeological resources related to this maritime activity is considered unlikely according to the Cultural Landscape Inventory (NPS PWR 2001: 3a, 11). Other submerged archeological resources may include the remnants of a U.S. Army pier (ca. 1871) and a State Belt Railroad trestle (1914) crossing the cove at Aquatic Park. These two features were removed to complete plans for the construction of Aquatic Park and they are therefore not considered contributing to the National Historic Landmark. Although there is an abundance of evidence of past human activity on the site, according to the CLI, little of it relates to the primary period of significance established for Aquatic Park (1920-1941).

Black Point Cove eventually became a dumping ground for tons of debris and rubble from the Palace Hotel and other downtown buildings following the 1906 San Francisco earthquake and fire. According to one account, 15,000 truckloads of red brick rubble from the [Palace] hotel “utterly ruined the fine bathing beach” of the cove (NPS PWR 2010:13, 62).

Some burned items, including utensils, tools, bottles, coins, and non-organic building materials were encountered in the fill at the foot of Van Ness Avenue during construction activity in 1976 (NPS PWR 2001: 3a, 11).

In December 2007 and February 2008, earthquake rubble including glass and ceramic shards of tableware and a couple of glass bottles were found when digging the hydraulic pit for a new elevator in the Bathhouse Building. A piece of railroad rail was encountered 22 feet below ground level and left in place.

F. Historic Archeological Resources Environmental Consequences

Impacts from Alternative 1

There would be no impacts to historic archeological resources.

Impacts from Alternatives 2 - 5

Although not anticipated, there is the possibility that artifacts related to the construction of the bathhouse, additional debris from the 1906 earthquake, or remains from a previously undocumented historic or prehistoric cultural resource could be uncovered during ground disturbance associated with construction.

Although it is unlikely that significant intact deposits would be discovered during the proposed project, the possibility remains that previously unknown archeological resources could be affected. This potential would be greater in Alternatives 4 and 5 than in Alternatives 2 and 3 because work in Alternative 4 and 5 would not only cause the removal of materials below the Promenade, but would also result in potential impacts to areas associated with the historic retaining wall and on the west end of the Promenade for the accessible pathway and stairs.

Additional Impacts from Alternatives 3 - 5

Because prior to the construction of Aquatic Park, a great deal of fill was dumped in the area from the excavation of the tunnel and from the 1906 earthquake, there is potential for the discovery of historical era archeological resources below the Promenade when the paving and ties are removed from the rail spur path, and in the area where the Promenade extension will be constructed.

Impact Avoidance, Minimization and Mitigation Measures

Measures that would be included in the proposed project (as appropriate to the alternative actions) to minimize impacts to historic archeological resources would include:

- There are no known archeological sites within the affected area. Historic fill materials, presumed to be from the 1906 earthquake may be located within the affected area.
- A qualified archeological monitor would be on site during ground disturbing activities to identify and record anything that might be uncovered.
- Should construction unearth previously undiscovered cultural resources, work would be stopped in the area of any discovery, and the park would consult with the State Historic Preservation Officer and the Advisory Council on Historic Preservation, as necessary, according to §36 CFR 800.13, Post Review Discoveries.
- In the unlikely event that human remains are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (1990) and the Archaeological Resources Protection Act (1979) would be followed.
- The NPS would ensure that all contractors and subcontractors are informed of the penalties for illegally collecting artifacts or intentionally damaging paleontological materials, archeological sites, or historic properties. Contractors and subcontractors would also be instructed on procedures to follow in case previously unknown paleontological or archeological resources are uncovered during construction.

Cumulative Impacts: Prior to the advent of archeological resources protection laws, archeological resources in the park and elsewhere in the vicinity have likely been adversely impacted to varying degrees from past construction-related disturbances, visitor impacts, vandalism, and erosion and other natural processes. Because mitigation measures would be employed to minimize impacts to potentially unidentified cultural resources in other proposed and future projects, it is likely that these measures would protect archeological resources from additional impacts. Because mitigation measures would be employed, Alternatives 1-5 would not be expected to contribute any additional cumulative effects on archeological resources.

Conclusion: Alternative 1 would have no effect on archeological resources. Alternatives 2-5 would have the potential to adversely affect archeological resources, but because mitigation measures would be employed, they would be anticipated to have no effect or no adverse effect on archeological resources. There would be no contribution to cumulative impacts from Alternatives 1-3.

G. Historic Structures and Cultural Landscapes Affected Environment

Historic significance is ascribed to districts, sites, buildings, structures, and objects that possess exceptional value or quality in illustrating or interpreting the heritage of the United States in history,

architecture, archeology, engineering, and culture, and that possess a high degree of integrity of location, design, setting, materials, workmanship, feeling and association. The historic areas potentially affected by the proposed project on the Aquatic Park Promenade are within the Aquatic Park National Historic Landmark District. Because this area contains the State Belt Railroad tracks, other areas potentially affected by the alternatives also include:

- San Francisco Port of Embarkation National Historic Landmark
- Port of San Francisco Embarcadero National Historic District
- Fort Mason Historic District

Aquatic Park National Historic Landmark District

Aquatic Park is a National Historic Landmark District (NHLD). Aquatic Park was listed in the National Register of Historic Places in 1984. Later, in recognition of its national significance, the park was designated a NHLD in 1987. The period of significance for the historic district is between 1920 (initial plan and construction) and 1945 (the end of World War II and military use of the site) (NPS PWR 2010:1).

Aquatic Park is significant on the National Register under Criterion C: The “property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.”

It is also significant as a NHL under Criterion 4: “Properties that embody the distinguishing characteristics of an architectural type specimen exceptionally valuable for a study of a period, style, or method of construction, or that represent a significant, distinctive and exceptional entity whose components may lack individual distinction” (<http://www.nps.gov/nR/publications/bulletins/nhl/nhlpt4.htm> accessed 8-28-14).

As defined in the GMP, Aquatic Park is within the park-wide Cultural Zone where development “. . . must be compatible with preservation and interpretation of cultural values.” Within this relatively broad management zone, Aquatic Park itself is within a Cultural Subzone where “preservation, adaptive use, and commemoration” are appropriate treatments (NPS PWR 2010:1).

The area of potential effects (APE) for the alternatives includes the entire Aquatic Park National Historic Landmark District. More specifically the APE includes the Promenade, from the edge of the seawall across the wide flat Promenade to the toe of existing structures and from the Van Ness Avenue curb to the Jefferson Street bollards (Figure 1).

The historic designed landscape of Aquatic Park is significant in the area of community planning and development by the Works Progress Administration and the Federal Art Project during the 1930s (NPS PWR 2010:4). According to the Aquatic Park Cultural Landscape Report, the designed landscape of Aquatic Park includes historic circulation systems, open spaces, planted areas, and several significant structures including piers, retaining walls, unique outbuildings, and the *streamline moderne* bathhouse. John Punnett, the city engineer, created a plan that defined the off-center asymmetrical curve of the promenade that is a character defining feature of the shoreline today. Punnett’s plan for the WPA project updated an earlier plan completed in 1922 by Bakewell, Brown, and Bauer. Punnett’s plan also defined the *streamline moderne* style of the Bathhouse and other structures along the Promenade (WJE 2013).

For the construction of Aquatic Park, the city of San Francisco

“submitted an application for \$1,777,887 to the newly formed Works Progress Administration (WPA). The project at Aquatic Park was described as requiring:

The construction of 3,250 cu. yds. masonry rubble sea wall, 1 bath house, 2 boat houses, 2 life saving stations; paving 101,000 sq. ft. of promenades; excavation and fill of 20,000 cu. yds.; relocation of 1,400 linear feet of railroad track; the installation of flood light system for night swimming and rowing, and approach wharf to school boat house, pile cutter berths, and landing floats²⁴” (NPS PWR 2010: 18).

Aquatic Park was dedicated just over 75 years ago on January 22, 2014 when the Works Progress Administration formally turned over the project to the City of San Francisco. The celebratory dedication included extravagant speeches and tours of the Bathhouse and was attended by thousands of people (www.nps.gov/safr accessed 1-15-14).

Aquatic Park, or the former Black Point Cove, has been a recreational site for over a century. By 1871, "Sea Baths" were listed in the city directory. Located at Black Point, the sea baths became the "Neptune Bath House" by 1877. In 1900, three swimming and rowing clubs replaced the bath house with clubhouses.

Landscape architect Frederick Law Olmsted first advocated the idea for an aquatic park at Black Point Cove in 1866. In 1905, architect and urban planner Daniel Burnham suggested that the site serve as a "bay shore park" with a yacht harbor and rowing and swim clubs nearby (NPS PWR 2010:-3). The intent of Burnham's plan was "to preserve the beauty of the point (Black Point) and to restrain the encroachment of any buildings other than clubhouses and those of a semi-public character" (NPS PWR 2010:13). Although neither plan was adopted, by 1909 community groups were campaigning to have the area set aside for a public park and in 1917, the San Francisco Board of Supervisors authorized purchase of land around the cove (NPS PWR 2010:3). Initially, the construction was completed by the City, later, when the City ran out of funds, it became a WPA project.

Contributing Elements

Information below is taken from the Cultural Landscape Inventory (NPS PWR 2001) and Cultural Landscape Report (NPS PWR 2010). For a detailed description of the condition, history and significance of Aquatic Park please see the Aquatic Park CLR (http://www.nps.gov/safr/parkmgmt/upload/cultural_ldscape_rpt_optimized.pdf)

Contributing elements to the Aquatic Park NHL include its spatial organization, cluster arrangement, buildings and structures (including the Aquatic Park Bathhouse and Promenade), circulation (including Victorian Park), land use, topography, and views and vistas. Archeology, nonnative vegetation and some small-scale features added later are considered non-contributing.

Proposed actions in the alternatives would not affect spatial organization, cluster arrangement, buildings, or land use. As a result, the following section focuses on topography, historic structures, circulation, and views and vistas. To better describe the setting, information about historic buildings is also included.

Spatial Organization

Spatial organization refers to the way buildings and structures are arranged in the landscape. It describes the structures as an expression of a distinct architectural style, and the relationships between buildings and the designed landscape (NPS PWR 2010: 61). A more complete description of spatial organization can be found in the Aquatic Park Cultural Landscape Report (NPS PWR 2010).

Cluster Arrangement

Cluster arrangement refers to the location and patterns of buildings, structures, and associated spaces (NPS PWR 2001: 3a, 19). The cluster arrangement of the site, which was based on coordinating the wide range of activities that occurred throughout the park and separating these from the city beyond. Among these activities included: recreational swimming and sunbathing (along the shallow sandy shoreline), rowing clubs (on the east side of the cove), fishing and walking to take in scenic views (on the west at Muni Pier) (NPS PWR 2001: 3a, 20). A more complete description of cluster arrangement can be found in the Aquatic Park Cultural Landscape Inventory (NPS PWR 2001).

Land Use

Land use is defined by the principal activities in the landscape that have formed, shaped, or organized the landscape as a result of human activity (NPS PWR 2001: 3a, 20). Among the historic land uses associated with Aquatic Park were military, industrial (transportation and manufacturing) and recreational. Current land uses are now recreation, tourism, and museum-related uses. Despite these changes, the

area is still focused on recreational and aquatic uses. A more complete description of land use can be found in the Aquatic Park Cultural Landscape Report (NPS PWR 2010).

Buildings and Structures

Within the Aquatic Park NHL, there are four historic buildings and 10 historic structures. The four buildings are the Aquatic Park Bathhouse (now the Maritime Museum and San Francisco Senior Center), the east and west convenience stations, and the Sea Scout building. The 10 structures include the east and west bleachers, the seawall, the east and west speaker towers, the San Francisco Municipal Pier, the Aquatic Park southwest retaining wall, the Promenade and retaining wall, and a concrete retaining wall, the Sea Scout Base docks. All of the buildings and structures date from the period of significance (1920–1945).

Buildings

Aquatic Park Bathhouse: The bathhouse (1936-1939) (Figure 27) was built as a public bathhouse and gathering place. The structure and associated features represent an important part of architectural and social history of the city. The national significance of the building is its overall design, which incorporates *streamline moderne* design elements. The building is an integrated mix of art and architecture with marine motifs and themes. When planned, the bathhouse was intended to be the focal point of the Aquatic Park. The building includes a four-story central block with the amphitheater structures, partially underground, to the east and west of it.

In 1947, the San Francisco Senior Center moved into the east end of the 2nd floor and the ground floor of the central block and into spaces beneath the central and western bleachers. The senior center is the oldest, private, nonprofit senior center in the United States. In 1951, the opening of the San Francisco Maritime Museum in the Bathhouse building at Aquatic Park provided a compatible and viable use for the structure, and the museum became the anchor for the park's redevelopment (NPS PWR 2010:3).



Figure 27: Aquatic Park Bathhouse

East and West Comfort (Convenience) Stations (aka East and West Roundhouses): The West Convenience Station/concession stand was designed as a concession stand and comfort station. It is located near the north end of Van Ness Avenue near the railroad tracks. The east convenience station/lifeguard station (Figure 28) is adjacent to the Rowing Club buildings at the terminus of Jefferson Street and is similar, but does not include a concession stand.

Designed as part of the Aquatic Park complex, and the east and west convenience stations' architecture reflects the same rounded, nautically inspired, *streamline moderne* elements as the other buildings in the group, including two bands of a wave design along the upper part of their concrete walls and fixed metal

sash restroom windows shaped like portholes. A stairway leading to the roof and observation decks wrap around the exterior of the building. The decks have built-in benches and a small shelter, designed to provide lookouts for lifeguards.



Figure 28: East Convenience Station (East Roundhouse) with Propellers

The roof deck of each building is bordered by a parapet, which retains its original metal rail, similar to the metal parapet on the bathhouse (NPS PWR 2001: 3a, 2-3 of 26).

Sea Scouts Building (No Building Number): A former landing wharf (1941-1948) used by the Army is located at the west end of the cove near the West Convenience Station and the terminus of Municipal Pier. A one-story, wood-frame building, the core of which was built in 1943, and which was enlarged in the 1950s and 1960s, is accessed by narrow concrete stairs from the Van Ness Avenue. The building contains many small rooms used for storage, offices, and classrooms by the Sea Scouts (part of the Boy Scouts of America), the park and the park association (NPS PWR 2001: 3a, 3-4 of 26).

Structures

East and West Bleachers: The bathhouse is flanked on its northern side by concrete bleachers (1938). The east bleachers (65' x 250') are the larger of the two structures, and feature eleven rows of seating. The west bleachers (30' x 100') contain four rows of seats. *Streamline moderne* design details are incorporated into the bleacher wingwalls. Between the bathhouse and the bleachers, vehicular ramps lead from Beach Street to the promenade. These ramps curve around the east and west ends of the bathhouse, and repeat the elliptical forms characteristic of the complex of Aquatic Park buildings and structures. Metal handrails, similar to those forming the bathhouse parapet rails, separate the bleachers from the Promenade and line the entryway, in the center of the east bleachers, to the bathhouse changing rooms (NPS PWR 2001: 3a, 3-4 of 26).

While sitting in the bleachers, visitors have views of the Golden Gate Bridge, cargo ships from around the world coming and going through the Bay, as well as ferries, tugboats, sailboats, and other motor craft. Angel Island, and the opposite shores of Sausalito, Richardson Bay, Richmond, Albany and Berkeley can also be viewed from this vantage point.



Figure 29: Seawall Steps

Seawall: The seawall provided a reinforced shoreline for the proposed bathhouse, and was one of the first construction projects on the site. Concrete foundations were prepared, and thousands of cobblestones taken from San Francisco streets during a city-sponsored modernization project were hauled to the site between 1931 and 1933 and were used to construct the seawall. The wall gradually rises from seven to ten steps (Figure 29) as it moves westward, maintaining a level elevation as it follows the slope of the cove shoreline and stretches toward the base of Municipal Pier (NPS PWR 2001: 3a, 4 of 26).

The earlier rubble and concrete seawall, haphazardly constructed in 1931 near Municipal Pier, was torn down and its base served as the foundation for the new wall. The debris, along with the rubble from the beach and earth graded from the site, was used to backfill the seawall and extend the land for Aquatic Park further into the cove (Delgado, p.63). The seawall extends from the eastern end of the park near the West Convenience Station to meet Municipal Pier. Where it meets Municipal Pier, the seawall is largely above grade and acts as a barrier between Van Ness Avenue and the rubble-filled shoreline (NPS PWR 2001:3a 4 of 26).

East and West Speaker Towers: In 1938, two reinforced concrete speaker towers were constructed to the east and west of the bathhouse. The concrete pier of each tower artfully flanges out toward the speaker housing at the top, thirty-five feet above the park. The towers are of the same *streamline moderne* design as the other WPA structures, and are key sculptural elements in the historic landscape (NPS PWR 2001: 3a, 4 of 26).

San Francisco Municipal Pier: Municipal Pier (1931-33) was designed as a recreational facility. The pier also protects the cove from the currents of the open bay. Electric lines supplied power for the street lamps that line the pier and water lines were to service the unfinished convenience station at its terminus. When the WPA turned the project over to the city it was less than 50 percent finished. The circular building was intended to match the other two convenience stations in the park. Only the rough concrete exterior was constructed. Access to the unfinished building is by bolted hatches on the roof, which lead to interior rooms filled with rubble and water.

According to the CLI, the pier has a curvilinear plan with a round, bulb-like end. The pilings are concrete and support a wood, concrete, and asphalt deck. Concrete curbs along the outer edges of the pier mask utility pipes and separate vehicles from pedestrians and fishermen. Concrete benches and streetlights

(obsolete) are located at even intervals along its length. Notches in the railing opposite the benches provide access for fishing and improve the ability to see while seated (NPS PWR 2001: 3a, 4-5 of 26).

Muni Pier sustained severe structural damage in the 1940s when an Army tug crashed into the pier. This damage was repaired in 1947. Later, in 1953, a freighter rammed it in heavy fog. Although Municipal Pier is within the cultural landscape boundary for the Aquatic Park Historic District, it is located in Golden Gate National Recreation Area, outside the boundary of San Francisco Maritime NHP.

Promenade: The Promenade extends along the shoreline, abutting the seawall. The Promenade provides access to the beach, the east and west convenience stations, the bleachers, the bathhouse, Van Ness Avenue, and Municipal Pier. Pedestrians access the Promenade from Jefferson Street to the east, Van Ness Avenue to the west, from two paved walkways on the outsides of the bleachers, and via two vehicular ramps between the bathhouse and the bleacher structures. The concrete vehicular ramps curve around both sides of the bathhouse and descend to the promenade (NPS PWR 2001: 3b, 5 of 33). The area below the ramps is now used for deliveries and maintenance vehicles.

The Aquatic Park Promenade is a 0.25 mile long concrete sidewalk located just south of the seawall. It is 24 feet at its widest point, but narrows to 18 feet 4 inches where there are lampposts. For about half of its length, and for the entire length behind the Bathhouse Building and Bleachers, the Promenade also includes tracks from the State Belt Line Railroad. At the point where the tracks and Promenade diverge, the Promenade is pinched down to 8 feet, 3 inches. The western portion of the Promenade west of the pinch point is generally 17 feet wide. The Promenade currently makes a very steep curve around the West Convenience Station to join the sidewalk at Van Ness Avenue (SAFR 2013).

Promenade and Municipal Pier Lampposts: Formed concrete lampposts with metal collars and glass globes installed between January and March 1939 along the promenade and Municipal Pier (one is located on Beach Street near the bocce courts) are the only extant light standards dating from the period of significance. These regularly spaced lights along the promenade and pier remain in their original locations although most of the globes along the Municipal Pier *[and Promenade]* have been destroyed *[and replaced with acrylic versions]* (NPS PWR 2001: 3b, 5 of 33).

Aquatic Park Southwest Retaining Wall: Two retaining walls support the grade change at the southwestern corner of the park. Based on early maps, and a 1935 photograph, the stone masonry retaining wall pre-dates most park construction. The stone masonry retaining wall has concrete coping and granite piers topped with concrete acorn finials, and forms the northern edge of the site of the former water pumping station. The wall was altered during the construction of Aquatic Park. The original configuration was longer; the western end was curved and the eastern end was either angled or curved. Today, the western end is buried in soil except for one acorn finial, which still rises above ground. It is unclear if the entire western end is still intact. Archeological research is needed to make this determination. A portion of the eastern end of the wall, including its angle/curve, was removed at an unknown date. The concrete retaining wall, which runs parallel to the east side of Van Ness Avenue, meets the west end of the stone masonry wall at a ninety-degree angle. A 1938 WPA construction photograph shows the concrete retaining wall adjoining the stone masonry retaining wall adjacent to the east Van Ness Avenue sidewalk. The stone masonry wall and concrete retaining wall, combined with the change in grade, separate the pedestrian walkways from the lawn areas and the bocce ball courts below (NPS PWR 2001: 3a, 5 of 26).

Promenade Retaining Wall: At the western end of the Promenade a concrete retaining wall terminates the park's slope as it meets the beach promenade (Figure 30). The wall begins where the Promenade and the State Belt Line railroad separate and curves to the north side of the West Convenience Station, enclosing a small lawn area. The retaining wall is nineteen inches wide, highest at its center, and tapers lower at its ends. The wall appears in a March 18, 1938 historic photograph of the park and is also shown on Punnett's 1938 park plan (NPS PWR 2001: 3a, 5 of 26).



Figure 30: Promenade Retaining Wall (right) Showing Visitors on Seat-wall and Service Road Above

Topography

Describes the purposeful grading of the site to create the open and terraced ground plane stepping down to the cove (NPS PWR 2010: 61). As described under soils, alterations to the original topography were significant because of fill added to the site. Later, grading was also a large part of creating the landscape that currently exists (Figure 31).



Figure 31: Construction of Aquatic Park

Circulation

Circulation describes the designed systems that allow pedestrian movement through the park, connecting to adjacent areas (NPS PWR 2010: 61).

“Historically, pedestrian circulation in Aquatic Park was designed and integrated with the sloping topography and graded terraces around the Bathhouse, providing movement through the park landscape. Walkways and roads were curvilinear in design, wrapping around buildings and through lawn areas with transitions between grades and functional areas of the park. The seawall with the Beach Promenade was designed to follow the shoreline around the cove, creating a structural edge and flexible pedestrian area used for a variety of activities. In a similar manner, the extension of Van Ness Avenue was originally designed as a promenade, 15 feet wide with an allée of street trees” (NPS PWR 2010:78).

Beach Promenade

“The Beach Promenade is paved with concrete and has a uniform width of approximately 15 feet. In the early site plans for Aquatic Park, city engineer John Punnett used the term “promenade” for the walk along the water, suggesting that this primary pedestrian route was designed to be somewhat grand. The Beach Promenade begins at the east end of the seawall, adjacent to the East Convenience Station, and continues west along the cove to Van Ness Avenue. It provides access to the beach, the convenience stations, the bleachers, the Bathhouse, Van Ness Avenue, and the Municipal Pier. The Beach Promenade connects Jefferson Street on the east with Van Ness Avenue on the west, paved walkways near the east and west bleachers, and the two concrete ramps that curve around the Bathhouse” (NPS PWR 2010:78).

State Belt Railroad Tracks:

“The initial design for Aquatic Park incorporated the alignment of both the State Belt Railroad tracks and the Municipal Pier into the overall circulation system. The State Belt Railroad was originally constructed as a single standard-gauge track on a trestle over the lagoon in 1914. These tracks were relocated (in 1925 and again in 1936) and incorporated into the Beach Promenade during development of the park. The State Belt Railroad of California was renamed the San Francisco Belt Railroad (ca. 1969). Crossing Aquatic Park from east to west, the trains ran infrequently and generally at night. The tracks historically extended from the Embarcadero through the Fort Mason tunnel, eventually reaching lower Fort Mason and on to the Presidio. Within Aquatic Park, the portion of track between the stairs west of the West Bleachers and Van Ness Avenue appears to have been paved in the late 1970s when the railroad was no longer used. Over the years, the area between the rails has been backfilled with asphalt to reduce hazards for pedestrians and bicyclists. In spite of these changes the tracks remain in the same location as they were during the period of significance”¹³ (NPS PWR 2010:79).

Views and Vistas

The following information comes from the Cultural Landscape Inventory (NPS PWR 2001:3b, 30 of 33).

“The views created by Aquatic Park’s buildings and structures are central to the experience of the district. The bathhouse was constructed parallel to Beach Street at the park’s highest elevation and is the primary viewpoint in the historic district. The multi-level bathhouse building was designed to allow the visitor to take in views of the bay and the adjacent cityscape. Each of the building’s floors contains sizable observation decks. Views from these decks encompass Hyde Street Pier, Alcatraz Island, the Golden Gate Bridge, and Angel Island. The primary function of the bleachers that flank the bathhouse on both sides was to direct views toward the beach promenade, Municipal Pier, and the cove. The views from the bleachers are similar to those from the bathhouse.

The appreciation of views was an integral aspect of the designs for the east and west convenience stations. A stair wraps around each building to reach the roof, and is open to the public. The rooftops afford views of the promenade, cove, and the adjacent cityscape, and were originally intended to serve as lifeguard lookout stations. From the roof of the east convenience station visitors [used to be able to] see ships docked at Hyde Street Pier, adjacent Victorian Park,

the Haslett Warehouse across Beach Street, as well as the expanse of San Francisco Bay and the Golden Gate Bridge.

The beach promenade offers pedestrians an expansive view of the city skyline, Hyde Street Pier, Black Point [Aquatic Park] Cove, Fort Mason, the Golden Gate Bridge, and San Francisco Bay. Views unfold sequentially as pedestrians follow the curve of the lagoon [cove]. As the beach promenade curves around to meet Municipal Pier, the view is directed toward the open bay. The pier's terminus provides yet another vista. As Municipal Pier curves back toward the lagoon [cove], views are directed to the promenade, bathhouse, and cityscape. From this vantage point, Aquatic Park is seen on the edge of Black Point [Aquatic Park] Cove with the slope of Russian Hill rising behind it."

Although some of the views and vistas from Aquatic Park have changed due to the maturation of vegetation and alteration of the city skyline, most remain.

San Francisco Port of Embarkation National Historic Landmark

The San Francisco Port of Embarkation National Historic Landmark, U.S. Army Historic District encompasses the area now known as Fort Mason Center and includes the:

- Lower port area
- Railroad tracks
- Four Storehouses, FM-310, 312, 314 and 315
- Three Piers, FM-316, 318 and 320
- Three Pier Sheds, FM-317, 319, 321
- Marine Repair shops, FM-308
- Fire Station, FM-309
- Battery Charging Station, FM-322
- Provost Marshal Office, FM-302
- Entrance Gate to port area and guard post, FM-310 and 303, and the
- Port Headquarters in Upper Fort Mason, FM-201.

Because this NHL identifies the State Belt tracks as significant, it is included in the area of potential effects for the proposed alternatives in Aquatic Park.

The San Francisco Port of Embarkation is significant on the National Register under Criteria A, B and C:

- A. Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B. Property is associated with the lives of persons significant in our past.
- C. Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

It is also significant as a NHL under Criterion 1: "Properties that are associated with events that have made a significant contribution to, and are identified with, or that outstandingly represent the broad national patterns of United States history and from which an understanding and appreciation of those patterns may be gained" (<http://www.nps.gov/nR/publications/bulletins/nhl/nhlpt4.htm>).

The period of significance for the San Francisco Port of Embarkation NHLD is 1912- 1945.

"During the early months after the United States entered World War II, the U.S. Army's San Francisco Port of Embarkation (SFPE) shipped more military supplies than all other military ports in the United States combined. The statistical returns for the entire war showed that San Francisco was second only to New York in the numbers and amounts of personnel and supplies shipped to the war zones. Between December 1941 and August 1945, 1,745,000 personnel embarked at San Francisco. In addition, more than half a million veterans of the war debarked at San Francisco during the same period. . . For various periods of time between 1941 and 1944 the ports of Los Angeles, California; Portland, Oregon; and Seattle, Washington, were administered by San Francisco . In the Bay Area,

Fort Mason oversaw port operations at no fewer than thirteen other installations. San Francisco was the primary port for the Central, South, and Southwest Pacific Areas” (NPS 1985).

The National Historic Landmark nomination for the Port of Embarkation lists the railroad tracks as a historically significant feature of the original construction, noting that in 1914 the tracks were laid into the port area with single tracks to the three wharves and double tracks to the storehouses. After Pier 3 was enlarged in 1934, the tracks were relayed and repaired with steel ties replacing the original wooden ones. The rail tracks convey an original circulation pattern at the lower port area and are partially extant (ARG 2009: 12).

The State Belt Railroad tunnel was completed by 1915 to serve the San Francisco Port of Embarkation. “From the 1920s through World War II, the San Francisco Port of Embarkation played a critical role in the movement of supplies and troops to the Pacific. Fort Mason served as the headquarters for the San Francisco Port of Embarkation, the nerve center of a vast network of shipping facilities that spread throughout the Bay Area. However, by the 1950s, the port’s role was much diminished. Increasingly troop movement relied on air transport instead of ships. In the 1960s the Department of Defense began examining cost-cutting possibilities and eventually closed both the post and the docks altogether (NPS GOGA c. 2006: 5-16).”

The State Belt Railroad also played an important part in ferrying visitors to the Panama Pacific International Exposition (PPIE) in 1915. The PPIE was the world fair designed to celebrate the opening of the Panama Canal, which improved travel to and from the east coast and worldwide (NPS GOGA c. 2006:14). The PPIE also signaled that San Francisco had recovered from its devastating earthquake.

Construction of the State Belt Railroad through the site to the Army piers at Fort Mason led to efforts to preserve the cove, and spurred public opinion to establish Black Point Cove as a public park devoted to aquatic sports (NPS PWR 2001: Part 4, 3).

The design of Aquatic Park incorporated the existing State Belt Railroad tracks and Municipal Pier into its circulation system. The State Belt Railroad tracks, which were originally constructed in 1914 on trestles over the cove as a single standard gauge track, were incorporated into the Promenade when they were realigned between 1925 and 1936 during development of Aquatic Park. Later, the State Belt Railroad of California, was renamed the San Francisco Belt Railroad (c. 1969).

State Belt Railroad Tracks: The State Belt tracks extended from the Embarcadero to the Fort Mason tunnel and beyond to lower Fort Mason and the Presidio, separating at the walkway near the Promenade’s western terminus. The portion of track between the stairs west of the women’s shower room and Van Ness Avenue was likely paved in the 1970s when use of the railroad was discontinued in 1976. The tracks retain integrity, although the flangeways have been filled with asphalt to reduce hazards to pedestrians and bicyclists. They are a contributing structure in the landscape (NPS PWR 2001: Part 3a, 12).

The railroad along the Promenade was transferred to the San Francisco Belt Railroad in 1969 and remained in use until 1976, when the last Bicentennial train passed through.

Although the Belt Line tracks in the park are considered contributing features to the landscape, research into their construction and significance had been limited. Therefore, for this project, Stephen Canright, park Curator of Maritime History, prepared a short report “*The State Belt Railway Tracks within the Aquatic Park National Historic Landmark District: A Supplementary Significance Assessment*” (September 4, 2013). In this report, Mr. Canright notes that the rail line passed through Aquatic Park because of the need to connect the busy waterfront through the tunnel under Fort Mason to the U.S. Army Port of Embarkation and the Presidio and the design of Aquatic Park was altered to accommodate the railroad.

Recently, current park managers faced a similar need related to the project to extend the F Line Streetcar through the tunnel. As related in Mr. Canright’s report, the current proposed F Line alignment is more-or-

less in the location of the proposed, but not built, State Belt Line alignment as shown in a 1936 plan of Aquatic Park (Figure 19).

Two National Register Nominations and one Determination of Eligibility report address the State Belt Line tracks in other locations:

1. The National Register of Historic Places Inventory – Nomination Form for “Port of San Francisco Embarcadero Historic District” by Michael R. Corbett with Marjorie Dobkin and William Kostura, dated January 2006. <http://pdfhost.focus.nps.gov/docs/NRHP/Text/06000372.pdf>
2. The National Register of Historic Places Inventory – Nomination Form for “San Francisco Port of Embarkation, US Army”, 1985. <http://pdfhost.focus.nps.gov/docs/NHLS/Text/85002433.pdf>
3. Historic Resources Evaluation Report for the “Marina Green Trail Project” by Frances Schierenbeck, dated October, 2011.

Based on this information, the Belt Line tracks that run through Aquatic Park also contribute to the significance of the San Francisco Port of Embarkation National Historic Landmark (1941-45) (SAFR 2013).

Port of San Francisco Embarcadero Historic District

The Port of San Francisco Embarcadero Historic District is listed on the National Register under criterion A for its association with a "pattern of events ... that [has] made a significant contribution to the broad patterns of our history" (United States Department of the Interior *Bulletin 15* 1991:12) in the area of Transportation. During the period from 1878 to 1946, the district represents a pattern of development for transportation in its various features- the seawall and bulkhead wharf, the piers, the Ferry Building, and supporting buildings. The district represents the interaction of ship transportation with land transportation- especially railroads and trucks. Railroads are represented in the design of the piers to accommodate rail spurs for loading and unloading ships and in several features of the Belt Railroad- spurs, the main office (Pier 29 Annex), a car ferry slip (Pier 43), and pier (Pier 36). Trucks are represented in the asphalt surfaces of the pier decks, bulkhead connector buildings, and quay-type piers. The district is significant in the area of Transportation at the local, state, and national levels (Corbett, Dobkin and Kostura 2006: Section 8, p. 45-46).

The Board of State Harbor Commissioners, created by the California State Legislature in 1863 built the Belt Railroad beginning in 1890 “to serve the piers and link them with commercial warehouses and railroads” (Corbett, Dobkin and Kostura 2006: Section 8, p. 8-9). The railroad was completed in 1914. The railroad allowed a new source of revenue from the development of new industries linked to the port by the Belt Railroad, including a gravel company, several company warehouses, and “the Southern Pacific Co. automobile station at North Point and Leavenworth Streets” (BSI-IC 1926:63 in Corbett, Dobkin and Kostura 2006: Section 8, p. 33).

Eventually most of the port came under the control of the San Francisco Port of Embarkation (SFPE) during the time the port of San Francisco was used for transporting both troops and cargo.

The SFPE “had the responsibility of delivering men and supplies the length and breadth of the Pacific” (Snow and Thompson n.d.: 14). It had a long history in San Francisco, beginning “with the completion of three piers and two permanent storehouses in 1912” at Fort Mason which became “both an army general depot and the docking area for the Army Transport service” (Snow and Thompson n.d.:7). The port of San Francisco was connected to what were called the Army Transport Docks at Fort Mason in 1914 by the construction of a tunnel for an extension of the Belt Railroad. In 1932, the Army Transport Docks became the San Francisco Port of Embarkation (Kinnard 1966:Vol. 2:402) (Corbett, Dobkin and Kostura 2006: Section 8, p. 38)

According to the national register nomination, “the need for the port’s piers by the SFPE was an issue inseparable from the need for warehouse space wherever it could be found and from the means of moving personnel and materials around” (Corbett, Dobkin and Kostura 2006: Section 8, p. 39).

The Belt Railroad eventually

linked all of the piers, publicly owned rail yards across from the piers, and public car ferries (for rail cars) into a single system. Like the Southern Pacific, the terminals of other transcontinental as well as regional railroads were linked to the port of San Francisco by car ferry. After the Belt Railroad was linked across Market Street into one system in 1913, the port of San Francisco boasted that no other port in the United States had such a rail system and that the key to modern and efficient port operations was the quality of the link between shipping facilities and railroads. The Belt Railroad was operated by a large staff of 150 or more workers.

The Belt Railroad facilities included a main line in the Embarcadero, rail spurs on each pier, rail yards in the seawall lots inland from the Embarcadero, car ferry slips, an office (now Pier 29 Annex), and an engine house or roundhouse (in the seawall lot inland from Pier 29 Annex). While the main line and the rail yards have been removed, the car ferry slip at Pier 43, a wide apron for a car ferry at Pier 36, the office, and many rail spurs survive. (The roundhouse, a San Francisco City Landmark, lies outside the district boundaries) In addition, the design of standard pier aprons and transit shed openings on the piers reflect the presence and operations of the Belt Railroad (Corbett, Dobkin and Kostura 2006: Section 8, p. 44-45).

"At one time the Belt Railroad, largely built between 1890 and 1913, was the only public shoreline railroad among all United States ports" (Corbett, Dobkin and Kostura 2006: Section 8, p. 118).

Today, although substantial elements of the Belt Railroad no longer exist, important features still survive. There are rail spurs on many of the piers. The Belt Railroad office survives at Pier 29 Annex. The roundhouse- an early rehabilitation project using the Secretary of the Interior's Standards- survives across the Embarcadero outside the district.

Among the Belt Railroad car ferry facilities, portions survive. Neither the slip nor the hoisting tower survive at Pier 45. At Pier 43, the headhouse, hoisting tower, and hinged ramp survive while the pier and slips around it have been replaced. At Pier 36, neither the slip nor the hoisting tower survive, but the wide south apron, built with rail spurs to facilitate switching cars at the slip, survives.

In addition, accommodations of the Belt Railroad survive in the designs of some of the bulkhead buildings and transit sheds. Through some of the large front openings of the bulkhead buildings locomotives and railcars passed between the Embarcadero and the pier aprons. The curved side walls of some of the bulkhead buildings and transit sheds followed the alignments of exterior and interior rail spurs running between the Embarcadero and the piers. The 1917 extension of the Pier 36 transit shed provides the most extensive and most conspicuous example of this. Both sides of the building curve along with the alignments of exterior spurs for distances of about one hundred feet. An interior spur exits on the south side along a portion of wall with a different curve. Other prominent examples include Pier 1, with the interior alignment of a rail spur retained as public space in the bulkhead building and the curving wall of the long south side of the transit shed. At Pier 48, both side walls of both transit sheds curve along with rail spurs at the Embarcadero end. Others, such as Pier 28 have short sections of curved walls where rail spurs entered the pier from the Embarcadero (Corbett, Dobkin and Kostura 2006: Section 8, p. 56-57).

When the Bay Bridge and the Golden Gate Bridge were opened, there was a substantial decrease in Belt Railroad traffic, ferry traffic, and some shipping: "The loss in the inland waterway trade is attributable principally to the completion of the San Francisco-Oakland Bay Bridge and the Golden Gate Bridge which caused the discontinuance of extensive ferryboat services and deprived the port of large waterborne tonnage movements." In a related effect, "The loss in coastwise trade was caused by rail and truck carrier competition" (BSHC 1941:61) (Corbett, Dobkin and Kostura 2006: Section 8, p. 59).

The San Francisco Embarcadero Historic District nomination notes that:

As measured by the seven aspects of integrity, discussed below, the port retains a substantial degree of integrity in all aspects despite numerous losses and changes. The district has suffered a substantial diminishing of its integrity of Design through the loss of many piers and the Belt Railroad but this is mitigated to a degree by the presence of integrity in their aspects, perhaps mostly integrity of Feeling (Corbett, Dobkin and Kostura 2006: Section 8, p. 188).

In the area of Transportation, integrity of association is present in the broad features of the district and insofar as working ships and trucks are still present, but it is diminished by the absence of the Belt Railroad (Corbett, Dobkin and Kostura 2006: Section 8, p. 197).

Fort Mason Historic District

The Fort Mason Historic District initially comprised 82 acres over both Upper and Lower Fort Mason, including four buildings of historic significance at Upper Fort Mason. It was initially listed on the National Register of Historic Places in 1972 (National Register #72000109). Later, in 1979, the district was enlarged to 1,120 acres that include 45 buildings, 10 structures and 2 objects of historic significance (National Register #79000530). This comprised the entire military post.

Initially, it was found eligible under Criterion C for its distinctive construction “characteristics of a type, period or method... or that represent a significant and distinguishable entity whose components may lack individual distinction.” The larger boundary is enclosed

by Van Ness Avenue to the east, Bay Street to the south and Laguna Street to the west. To the north, the district was bounded by the San Francisco Bay, taking in the buildings and resources of the former San Francisco Port of Embarkation. The amended nomination also found the Historic District eligible for its “association with the events that have made a significant contribution to broad patterns of history,” under Criterion A (CLI Part I: 18).

The period of significance

begins with the construct of the civilian residences on the eastern hillside of Black Point during the mid-1850s and extends to the conclusion of the Korean conflict during the early 1950s. The listing of contributing buildings and sites found in the National Register documentation includes everything from the dwellings first constructed in 1855 as private residences, to the seven sets of Capehart-Wherry style officer's quarters comprising the area known as the "Quad," constructed between 1947 and 1953. The nomination specifically raises the issue of the level of significance for varied resources relating to this very broad period. It cites some of Fort Mason's buildings and sites as potentially having national significance, while the significance of more recent resources are cited as being locally significant (CLI Part I: 18).

According to the Statement of Significance in the Cultural Landscape Report, the Fort Mason Historic District is eligible under criteria A, C, and D

Criterion A

The 1979 National Register form states, "The Fort Mason military reservation in its entirety is highly significant as a historic district. Commencing in 1797, and lasting through the Spanish and Mexican administrations of Alta California, Fort Mason was one of two sites on the San Francisco Bay that was armed with artillery for the defense of the harbor. For over forty years under the American administration, it played a role in the coastal defenses of the bay from the Civil War to post- Spanish- American War. It also served as an important element in the first submarine mine defense of the San Francisco Bay, in the Spanish-American War. From the Spanish-American War to the Korean War, Fort Mason's role as the headquarters of the San Francisco Port of Embarkation was of national significance historically. Through it moved millions of men and millions of tons of supplies, providing evidence of the United States' expansion and growing interests in the Pacific."

Criterion C

The 1979 National Register form states, “The collection of military structures dating from the 1850s to the Korean War illustrates the evolution of an Army post (and coastal fortifications to the lesser degree) over a period of 100 years. The contrasts and many moods of the architecture, the effect of the Army’s caste system on the quarters, the charm of the earliest officers’ row, the simple lines of the Endicott battery, the WPA architecture of the Great Depression, the Army’s determination in landscaping – all these blend together to present a history of this place and its times. While many of the structures by themselves possess only local historical significance, together they build a district possessing both historical and architectural significance ranging from the local to the national level.”

Criterion D

In the 1980s two excavations, one at Black Point Battery and one in the southeast corner of Fort Mason adjacent the MacArthur entrance gate, revealed nineteenth century military technology and artifacts. In addition, the brick battery gun emplacements remain in situ, under current landscaping, at Black Point Battery. These two locations have yielded and retain the potential to yield further information about the nineteenth century at Fort Mason (CLI Part I: 19).

Fort Mason National Historic District

The cultural landscape report for this area notes the importance of the site related to the State Belt Tracks:

Construction of San Francisco’s Panama Pacific International Exposition of 1915 affected Fort Mason’s infrastructure. The tunnel beneath Upper Fort Mason was constructed by promoters of the exposition and the municipal electric streetcar line was a remnant of the fair (ARG 2009: 3).

The CLR also notes that rail track replacement was one of the projects underway by the WPA at the site in 1934. It mentions the tracks under the cultural landscape characteristic: circulation: “ Unusual circulation features include the railroad tunnel below Upper Fort Mason, and the railroad tracks through it, extending into Lower Fort Mason” (ARG 2009: 11).

Among the goals in the CLR (Part II) include:

Improve transportation connections and water access, water arrival and departure via taxi service. The re-introduction of the historic streetcar line will affect the site. Retaining and enhancing the historic beltway rail lines is important to the interpretation of the site. Improving the entry experience must consider the historic military control points (ARG 2009:23).

The State Belt is mentioned under circulation as a contributing characteristic:

The tunnel beneath Upper Fort Mason was constructed by promoters of the Panama Pacific International Exposition.²⁸ In 1914, the California State Board of Harbor Commissioners extended the Belt-Line railroad serving the San Francisco waterfront through Fort Mason.²⁹ The original western terminus of the tunnel remains at the southern perimeter of Lower Fort Mason (ARG 2009:43).

Although “. . . Railroad uses are no longer active on the site; however, the tracks and tunnel remain as reminder of the industrial and mass transit rail uses on and adjacent to the site” (ARG 2009:44).

The CLR also notes that “Alterations include the installation of signage, traffic islands, curbs, traffic striping, and bollards. The traffic islands often sit on top of the railroad tracks, obscuring them and significantly compromising the integrity of the site’s original rail circulation routes” (ARG 2009:43).

The CLR therefore calls for:

- Preserve and maintain all existing railroad tracks and associated equipment, such as switches.
- Emphasize the significance of the railroad tracks as one of the primary organizational elements in the historic district.
- Consider circulation improvements that highlight the railroad alignment. This may include the reconfiguration of vehicular drives or pedestrian pathways to follow rail alignments or the reintroduction of new rail service along the original alignments.

- Remove contemporary paving, traffic islands, and curbing that obscure the railroad tracks.
- Consider reintroduction of all rail track lines within the yard or on the pier aprons (whether they have been removed or covered over) to re-establish the historic rail circulation system on the site. Reconstruction of demolished rail track lines and spurs allows for better interpretation (ARG 2009:46).

Actions not recommended include:

- Removing railroad tracks and / or associated equipment.
- Obscuring railroad tracks with new paving materials (ARG 2009:47).

At Fort Mason, there are several means that have been used to minimize hazards associated with the rails:

Historic photographs from different periods show cobblestone or asphalt paving between the rail tracks and a combination of asphalt and concrete paving to the south of the storehouses. Most of the tracks remain in place and appear in good condition. The tracks consist of special rails manufactured by Bethlehem Steel to sit within street paving. The rail is rolled with an integral recessed pocket for the wheel flanges. The top of the rail is approximately flush with the surrounding paving. The flange pockets have been filled with a rubber material to minimize pedestrian and bicycle hazards. The space between the rails is paved with concrete, which serves to visually accentuate the railroad's former role (ARG 2009:49).

The CLR therefore recommends the following treatment:

Preserve the existing railroad tracks. Emphasize the significance of the railroad tracks through the use of different hard paving materials in the rail bed between the tracks. Hard paving materials shall draw upon the palette of materials historically used at the rail bed (ARG 2009:51).

H. Historic Structures and Cultural Landscapes Environmental Consequences

Impacts from Alternative 1

There would be no effect on the San Francisco Port of Embarkation NHL, the Fort Mason Historic District, or the Port of San Francisco Embarcadero Historic District. There would be no effect on the following cultural landscape characteristics which are contributing elements to the Aquatic Park NHL:

- spatial organization,
- cluster arrangement,
- buildings,
- circulation (including Victorian Park),
- land use,
- topography, and
- views and vistas (scenic resources).

Historic Structures

There would be no additional effects on historic structures under Alternative 1; ongoing impacts would continue. Although most historic structures would be unaffected, there would continue to be minor to moderate localized long-term adverse impacts to the Promenade from deterioration of the pavement surface. Without the rehabilitation called for by the Aquatic Park Cultural Landscape Report (NPS PWR 2010), ongoing impacts would also contribute to further decline of the Promenade pavement surface. The State Belt railroad tracks would remain and although additional wear would occur, there would be long-term beneficial effects from retaining them.

Impacts from Alternative 2

As in Alternative 1, there would be no effect on the contribution of spatial organization, cluster arrangement, buildings, circulation, land use, topography or views and vistas to the Aquatic Park NHL or on the characteristics that contribute to the San Francisco Port of Embarkation NHL, the Port of San Francisco Embarcadero Historic District, or the Fort Mason Historic District.

Historic Structures

Impacts would be similar to Alternative 1, however, existing conditions would improve from rehabilitation of the pavement within and adjacent to the railroad tracks and from improvements to other deteriorated sections of the Promenade. Although replacing the asphalt on the Service Road with concrete would contribute beneficial effects to ease of maintenance, it would not affect either the San Francisco Port of Embarkation National Historic Landmark or the Aquatic Park NHL because the Service Road is currently considered a non-contributing feature. Combined with ongoing patching of pavement elsewhere on the Promenade there would be long-term negligible to minor beneficial effects from replacing pavement in poor condition. Negligible to minor adverse effects, however, would also continue from additional wear and tear of the pavement surface because not all of the pavement would be replaced.

In addition to effects on the Promenade, there would be long-term beneficial effects on historic structures from retaining the State Belt railroad tracks in their existing alignment. Retaining the tracks is consistent with the Aquatic Park National Historic Landmark District CLR:

The CLR makes the following recommendations regarding the State Belt Railroad tracks:

- Replace existing asphalt paving around the State Belt Railroad tracks with concrete to create a more stable surface and track bed.
 - Ensure that new concrete pavement is finished flush with the top of the rails, without gaps, and the top of the rails are visible on the surface of the pavement.
- Use a compatible concrete material, and finish for all future repairs and patches to the rail bed along the Beach Promenade, ensuring a smooth and level surface at grade.
 - Maintain lawn and/or vegetation adjacent to the rail line to clearly delineate the historic dimension and edge of the alignment.
- Repair areas where impervious surface materials such as asphalt, gravel, or compacted earth have spread beyond the original edge of the walk and prevent the growth of vegetation. Replant with sod with mesh or geo-tech underlay to support edge treatments as needed (NPS PWR 2010: 119).

Retaining the railroad tracks would continue to have long-term beneficial effects on the Aquatic Park NHL, Fort Mason National Historic District, the San Francisco Port of Embarkation NHL and the Port of San Francisco Embarcadero Historic District.

Impacts from Alternative 3

Historic Structures

Promenade Concrete Replacement: There would be long-term minor adverse and beneficial effects on the Aquatic Park Promenade from replacing the full width and length of the Promenade surface with new concrete. Although a portion of the pavement is historic, much of it is not. The concrete pavement has become deteriorated in numerous areas and replacement would provide a suitable recreational surface that should last for 20-30 years. Replacement in-kind of the concrete with surface markings to delineate it from any historic pavement that may remain is consistent with the Secretary of the Interior's Standards for Rehabilitation. As in Alternative 2, there would be no effect on historic structures from replacing the asphalt surface of the Service Road with concrete.

State Belt Track Removal: Removal of the State Belt railroad tracks would have a moderate long-term adverse effect on historic structures. The Promenade design in the 1930s was altered to accommodate the State Belt tracks. Analysis of historic documentation (drawings and photographs) has revealed that although the State Belt tracks were to have originally gone down Beach Street, that sometime during the construction of the Promenade (after the retaining wall was constructed) that a redesign occurred and the tracks were instead routed onto the Promenade and up a slope (currently the Service Road). Because the tracks contribute to the significance of two national historic landmarks and two historic districts, there would be minor to moderate long-term adverse effects from their removal. As described above, however, although the tracks are located in the Aquatic Park Historic Landmark District, they are not an integral part of the original *Streamline Moderne* design, but were accommodated due to the necessity of keeping the railroad line through the Fort Mason tunnel open at the time of its construction. As noted in analysis of their significance by the park historian, the site plan from 1933 shows that the designers had a

preferred route that would not have complicated the design of the Promenade that was ultimately not used.

Alternative 3 would not comply with the recommendations noted in the CLR. The effects of removing the tracks would be partially mitigated by locating a representation of the tracks within the Promenade pavement but the loss of the tracks themselves would continue to adversely affect the recognizable connection of the tracks to those that continue across lower Van Ness Avenue to the railroad tunnel under Fort Mason. Coupled with interpretation, this representation of the tracks would give visitors an idea of their historic significance, a negligible to minor beneficial effect on the national historic landmarks and historic districts that they contribute to, particularly the Aquatic Park NHL.

Historic Structures / Circulation

Similarly, the tracks contribute to the San Francisco Port of Embarkation NHL and the Port of San Francisco Embarcadero Historic District and there would be long-term minor to moderate adverse effects on circulation and historic structures from their removal. Except for spur lines along the piers, the tracks have mostly been removed from the Embarcadero but are still present in the Port of Embarkation and Fort Mason Historic District. Although (as noted above) the tracks would continue across lower Van Ness Avenue, through the tunnel and down to the Lower Fort Mason docks (the Fort Mason Historic District / Port of Embarkation NHL), this connection would not be as evident as it is now. Negligible to minor beneficial effects (as noted above) on the Aquatic Park and Port of Embarkation NHLs would result from incorporating a visual representation of the tracks in the Promenade pavement and from interpretive signage but the overall effect would continue to be adverse.

As noted in the analysis of the significance of the State Belt,

The history of the Belt Line can and should be presented within the District through permanent interpretive materials. The historic route of the rail tracks along the Promenade can and should be marked permanently in the new pavement in colored concrete. These actions would show proper respect for the contributions of the Belt Line rails to regional and national history, while allowing us to provide for better and safer public use of the District in its modern context (Canright 2013:17).

Impacts from Alternative 4

As in Alternatives 1-3, there would be no effect on spatial organization, cluster arrangement, buildings or land use related to the Aquatic Park NHL. Unlike Alternatives 1-3, however, there would be effects on not only historic structures, but also circulation, topography, and views and vistas (scenic resources) associated with the NHL. Effects on the San Francisco Port of Embarkation NHL, Embarcadero Historic District and Fort Mason Historic District would be the same as described in Alternative 3.

Historic Structures

Impacts from removal of the State Belt tracks and replacement of the Promenade pavement with a new continuous concrete surface would be the same as described in Alternative 3, however, there is a possibility that the replacement of Promenade pavement would be reduced (as a cost-savings measure) to only affect deteriorated areas. Under this scenario, some of the existing Promenade pavement in good condition (primarily near the east end) could be retained. This would have negligible beneficial effects, depending on whether this section is part of the original construction, combined with negligible adverse effects from replacement of historic pavement.

In addition, the following proposed changes in this alternative would adversely affect other historic structures in the Aquatic Park National Historic Landmark District:

- Removing a portion of the historic retaining wall (105 feet) and constructing a new section to extend the historic retaining wall 135 feet, curving to meet the stairway near the West Bleachers.
- Extending the Promenade northwest to form a universally accessible pathway up to Van Ness Avenue, including removing and replacing stones that form Promenade pavement edging near the steep rise to Van Ness Avenue. This would add paving where lawn now exists.
- Constructing a new stairway to replace the steep ramp up to Van Ness Avenue.

These changes would result in the loss of historic fabric and add new non-historic elements to the historic designed landscape of Aquatic Park.

Retaining Wall: Modifying the retaining wall would require removing the easternmost 105 feet (thereby retaining most of the original 325 feet of retaining wall). The added retaining wall would arc to meet the stairway near the West Bleachers (where a small portion of non-historic landscaping and wall would be removed). Although the old and new portions would be designed to look different and would implement the original design for Aquatic Park (see Figure 19), this modification would constitute a long-term moderate adverse effect on the historic retaining wall and its contribution to the Aquatic Park NHL. Rehabilitating the Promenade with a more consistent width (16 feet) throughout is in keeping with the original design intent of the park's construction and would result in a long-term beneficial effect.

Promenade Extension: Similarly, extending the Promenade northwest to form a compatible universally accessible pathway that meets lower Van Ness Avenue at an accessible grade and with a similar width would add a new element to the historic designed landscape and (as mentioned) would require removing and resetting the stone edging along the westernmost portion of the Promenade, including the ramp up to lower Van Ness Avenue. Although the path extension would be approximately the same width as the existing Promenade (a continuous 16 feet from the West Bleachers), it would continue to narrow slightly (to 13.5 feet) at the West Convenience Station because of the proximity of the stone seawall and lamppost. Removal would require regrading the lawn slope and replacing lawn with concrete pavement. Combined these changes would result in long-term minor to moderate adverse effects on the Promenade and its contribution to the Aquatic Park NHL. As noted in the Aquatic Park CLR, the intent to improve accessibility throughout the park has the potential to affect historic circulation patterns and features (NPS PWR 2010:2). Therefore, this change is consistent with that expectation.

Ramp: Replacing the historic steep ramp up to Van Ness Avenue with a stairway would result in the loss of this historic end to the Promenade, a long-term minor to moderate adverse effect; however, replacing the ramp with a stairway would continue to allow for an alternate way for pedestrians to access Van Ness Avenue. As a result, there would continue to be two ways to access Van Ness Avenue from the Promenade.

Circulation

As described above, modifications to historic structures, including the Promenade, the retaining wall, the ramp up to Van Ness Avenue, and the stone pavement edging would result in minor changes to circulation on the Promenade. Although these changes would benefit pedestrians, especially those needing accessible pavement and grades, they would have minor adverse effects on the contribution of circulation to the Aquatic Park National Historic Landmark District.

Although the Service Road was previously identified as not contributing to the Aquatic Park NHL, its alignment is part of the original landscape design and historic photos show it used as both a railway and a pedestrian path. Therefore removing the Service Road would contribute to overall minor adverse effects on circulation.

Topography

Shortening, then altering the curve of, and lengthening the historic retaining wall, as well as replacing the Service Road with lawn would have minor adverse effects on topography as a contributing element to the Aquatic Park NHL. Similarly extending the Promenade to meet Van Ness Avenue at an accessible grade and replacing the steep ramp with a stairway would have localized long-term minor to moderate adverse effects on historic topography. Because these changes would not substantially affect the overall design of Aquatic Park and because they would not alter the grade of the Promenade, there would be negligible to minor adverse effects on the contribution of topography to the Aquatic Park NHL.

Views and Vistas (Scenic Resources)

There would be no effect on the outstanding views from the Promenade towards San Francisco Bay. Although there would be minor effects, views of Aquatic Park from Muni Pier or the Bay would be similar to today as shown in Figure 18, the artist rendering of Alternative 4. In addition, the extension of the

historic retaining wall would result in an appearance similar to that in the original design for Aquatic Park (Figure 19). In fact, during analysis of the alternatives, an historic photograph was discovered that showed that apparently the historic retaining wall was originally constructed to be much longer than it is now (Figure 32) (similar to what is proposed in Alternative 4), but that apparently when a design modification rerouted the proposed State Belt tracks from Beach Street onto the Promenade, that the wall was modified to its current size and shape as is shown in other historic photographs of the construction.

Impacts from Alternative 5

Historic Structures

Impacts from the removal of the State Belt Railroad tracks and replacement of the Promenade pavement on the Aquatic Park NHLD, San Francisco Port of Embarkation NHL, Port of San Francisco Embarcadero Historic District and Fort Mason Historic District would be the same as described in Alternative 3.

In addition, the following impacts would be the same as described in Alternative 4:

- Extending the Promenade to the northwest to form a universally accessible pathway up to Van Ness Avenue, including removing and replacing lawn and stones that form Promenade pavement.
- Constructing a new stairway to replace the steep ramp up to Van Ness Avenue.

Impacts that would be different from Alternative 4 would include shortening, rather than lengthening the retaining wall (including steepening the Service Road) and adding a new element to the landscape by constructing another short portion of wall on the other side of the Service Road to recreate the arc of the historic retaining wall around Aquatic Park from viewpoints on San Francisco Bay and Muni Pier.

Retaining Wall: Instead of impacts from adding onto the historic retaining wall as described in Alternative 5, however, there would be impacts in Alternative 5 from removing approximately 72 feet of the historic retaining wall to widen the Promenade at the Service Road junction. Compared to Alternative 4, there would be a loss of 33 feet less of the historic retaining wall, also a long-term adverse effect. Depending on the length and height of the historic retaining wall remaining, it is possible but unlikely that handrails would need to be installed to minimize the potential for safety hazards from the height difference between the walking and bicycling paths.



Figure 32: Longer Historic Retaining (Seat) Wall (note lower Van Ness Avenue and Fort Mason tunnel)

Circulation

Impacts would be similar to those described in Alternative 4, except that although the Service Road would be retained, the merge point with the Promenade would change to a location 70 feet past its current junction. This would result in similar minor adverse effects on circulation associated with the Aquatic Park NHL.

Topography

Impacts associated with extending the Promenade to meet Van Ness Avenue at an accessible grade and replacing the steep ramp up to Van Ness with a stairway would have the same impacts as in Alternative 4 (localized long-term minor to moderate adverse effects). In addition, steepening the grade of the Service Road would affect topography in the vicinity of the historic retaining wall, which would also be shortened. As in Alternative 4, neither of these changes would substantially affect the Aquatic Park NHL, nor would they alter the grade of the Promenade. As a result, overall impacts on topography would be minor.

Views and Vistas (Scenic Resources)

As in Alternative 4, there would be no effect on views from the Promenade toward San Francisco Bay. With the addition of a short wall along the southern edge of the Service Road near the stairway, as mitigation for removal of a portion of the historic retaining wall, views of Aquatic Park from Muni Pier or the Bay would be similar to today as shown in Figure 24, the artist rendering of Alternative 5.

Impact Avoidance, Minimization and Mitigation Measures

Measures that would be included in the proposed project (as appropriate to the alternative actions) to minimize impacts to historic structures would include:

- Documenting the landscape features and railroad tracks using Historic American Buildings Survey (HABS) standards (Alternatives 3-5).
- Integrating a physical representation of the tracks in the new pavement (such as by using striping, textural treatments, colored concrete, or scoring) (Alternatives 3-5).
- Installing interpretive waysides and other displays to illustrate the history of the State Belt and its importance in the development of San Francisco, including as associated with the Aquatic Park National Historic Landmark District and the San Francisco Port of Embarkation National Historic Landmark (Alternatives 3-5).
- Conducting regular archeological monitoring of excavation during construction beneath the Promenade pavement, primarily to look for artifacts related to the early history of San Francisco (Alternatives 2-5).
- Documenting the historic retaining wall separating the Service Road from the Promenade; and the existing northwestern portion of the Promenade, including existing locations of the granite edge blocks and London plane tree using HALS standards (Alternatives 4 and 5).
- Constructing a wall behind the Service Road fork to evoke the design of the historic retaining wall (Alternative 5).
- (CLR) Preserve and protect the [remaining] integrity of the Beach Promenade Retaining Wall. (Bracketed information added) (NPS PWR 2010:113).
- (CLR) Continue to discourage recreational use by skateboarders. Maintain the use of deterrent bolts on the wall to prevent damage. Although currently damaged in places, existing bolts appear to deter many skateboarders (NPS PWR 2010:113).
- (CLR) Repair damaged portions of the wall where deterrent bolts have broken or given way. Replace bolts as needed along repaired portions of the wall (NPS PWR 2010:113).
- (CLR) Extend the placement of deterrent bolts along the entire portion of the wall contiguous with the railroad right of way, from the eastern end of the wall to the point where it diverges from the path. If a different style deterrent bolt is required at a future date, replace existing bolts to ensure material consistency along the entire length of the wall. Select a style of deterrent bolt that has a simple and visually unobtrusive design (NPS PWR 2010:113).
- (CLR) Conduct regular inspections of the retaining wall to identify potential structural issues or damage to the concrete and painted surface. Repair damaged concrete in kind, matching materials and finish. Repaint when stabilized (NPS PWR 2010:113).
- (CLR) Maintain the current alignment and width of the Upper Promenade, Beach Promenade, and Van Ness Avenue extension as primary historic circulation structures linking the park with adjacent areas (NPS PWR 2010:116).
- (CLR) Maintain ramps and stairs providing connections between walkways and promenades as the third level in the circulation hierarchy, critical for transitions between grades and the upper and lower terraces of the park (NPS PWR 2010:116)
- (CLR) Repair walkways determined to be in poor condition due to cracked or broken surface pavement, displacement from water or vegetation, loss of distinct and defined edges between the walk and vegetated areas. Whenever possible, repairs should be completed as part of an overall rehabilitation strategy for the circulation system holistically (NPS PWR 2010:116).
- (CLR) Remove excess paving material in places where past repairs have altered the historic width, alignment, material, edge treatments, or character of the historic walkway (NPS PWR 2010:117)
- (CLR) Maintain a defined clean edge between walkways and lawn areas (NPS PWR 2010:117).
- (CLR) Maintain consistent and uniform material selection for future repairs to historic walkways and promenades. Repair concrete elements using concrete, taking care to match color and finish texture with the existing material. Date-stamp new concrete to distinguish it from existing materials (NPS PWR 2010:117).
- (CLR) Ensure positive drainage on paved surfaces around all structures (NPS PWR 2010:117).
- (CLR) Retain and repair as needed historic lampposts located along the Beach Promenade and in other areas throughout the park (NPS PWR 2010:150).

Cumulative Impacts: Over time, there have been a variety of changes to the Aquatic Park National Historic Landmark District. Some have resulted in the loss or alteration of historic fabric, while some have

resulted in the rehabilitation of historic buildings or structures. Among the recent modifications have included rehabilitation of the Bathhouse and rehabilitation of the west, central and east bleachers. The addition of some non-historic elements or changes that were not compatible with the Secretary of the Interior's Standards for Rehabilitation have resulted in the list of non-contributing resources identified in the Cultural Landscape Inventory.

When the Cultural Landscape Inventory (NPS PWR 2001) was written, it identified the area as in "fair" condition. The Cultural Landscape Report (CLR) also notes:

Although stabilization work related to preservation of significant historic structures, museum collections, and other park resources has occurred, specific treatments for preservation and rehabilitation of the historic designed landscape comprising Aquatic Park have been limited. The primary document setting the framework for treatment of the landscape is the park's *General Management Plan* (GMP) (NPS PWR 2010: 1).

It further states that although the GMP provides a framework for managing the NHL, "the park lacks specific guidance for maintaining the grounds and treating historically significant landscape resources" and that this

has the potential to affect the integrity of the NHL district as a whole. For example, some landscape maintenance practices undertaken to address park security or safety concerns, such as adding, replacing, or removing plant materials, may be incompatible with the historic character of the park and designed landscape (NPS PWR 2010: 1-2).

Since the CLI was written, a variety of work has been done to improve the cultural landscape. Long-term beneficial impacts have also been contributed by the rehabilitation of the Bathhouse (2007), the rehabilitation of the bleachers (2009). These structures have been upgraded to "good" condition. Ongoing adverse impacts include continued deterioration associated with Muni Pier and the current disuse associated with the East and West Roundhouses (Convenience Stations). As a result there have been both cumulative beneficial and cumulative minor to moderate adverse impacts.

The CLR also notes that the park was engaged in planning projects that could affect the NHL, including the SFMTA F-Line Streetcar Extension, a proposed new GMP (since postponed and now proposed as a Foundation Document instead in 2015), a new wayside and interpretive exhibit plan, and improvements in accessibility. Specifically, the CLR noted that the proposed extension of the historic streetcar from Fisherman's Wharf to San Francisco Maritime NHP and Fort Mason through Aquatic Park "will potentially require the addition of new structures, utilities, and circulation systems, creating new physical and visual impacts within the district" (NPS PWR 2010:2). Although these changes have yet to occur, they are planned and there is an approved plan (the selected alternative) in the resultant Environmental Impact Statement/Record of Decision.

The CLR also describes changes that have occurred related to the State Belt Railroad tracks:

During construction of Aquatic Park, the State Belt Railroad tracks were realigned to follow the curve of the Beach Promenade before climbing the grade west to the Fort Mason tunnel. At this time the rail tracks that ran along the Beach Promenade were anchored to the concrete paving. From a point at the west end of the cove where the tracks diverged from the promenade, the rails were secured to timber sleepers set on an earthen or gravel bed. After the railroad ceased operation in the 1970s, the rail bed through Aquatic Park and across Van Ness Avenue was paved over with asphalt. On the segment between the Beach Promenade and Van Ness Avenue, asphalt was used to pave the entire 12-foot wide right-of-way including the space between the rails.

With or without the current project, there would continue to be remnants of the significance of the State Belt Railroad that contribute to understanding of its presence in San Francisco. Among these include various buildings related to its management as well as rail spurs running along wharf bulkhead buildings along the Embarcadero. As noted in the Port of San Francisco Embarcadero Historic District Nomination:

Rail spurs joined with the Belt Railroad on the Embarcadero by passing through, or running along the side of, the bulkhead building. Since World War II some of the depressed rail spurs have been

rebuilt as flush rail spurs. Since the 1960s or 1970s some of the flush rail spurs have been covered with asphalt, so that only their outlines are visible. Although the rail spurs have been removed from most sections of the bulkhead wharf they are still present on many pier aprons (p. 83)

As a result, over time, there have been numerous changes to the State Belt Railroad tracks, not least of which has been their removal from most of the area they formerly occupied, including in most places along the Embarcadero and in the streets leading up to Aquatic Park. For example, the recent rehabilitation of Jefferson Street resulted in removal or burying of many feet of former railroad tracks.

Although there are numerous remnant sections of track, including along various piers on the Embarcadero, for the most part, the overall route of the State Belt Railroad has generally disappeared except from Aquatic Park, Fort Mason and Lower Fort Mason. With the retention of the tracks under Alternatives 1 and 2, there would be long-term beneficial effects on the areas that they contribute to, whereas with removal and replacement with a representation under Alternatives 3-5, there would be cumulative adverse effects that would not be dissimilar to those that have already occurred along the Embarcadero. The difference would be that there would also be long-term beneficial effects from interpretation of the tracks and their significance to the San Francisco Waterfront, the Port of Embarkation and Aquatic Park.

With the implementation of the F-Line extension, it is possible that in the future, the key component of the State Belt Railroad would potentially be recreated. As noted in the short-history of the State Belt Railroad prepared by park historian Stephen Canright:

. . . while the existence of a rail line through the Historic District is an essential feature of the historical nature of the District, the routing of that rail line is not. At such time as the F-Line passenger service is routed through the south-west corner of the District, that historical function would be re-established. The planned redesign of the Promenade would improve its functionality without significantly undermining the overall integrity of the Park design (Canright 2013:17).

When the actions in Alternative 1 and 2 are combined with past, present and future actions, there would continue to be minor cumulative adverse effects on the contribution of the State Belt Railroad tracks to Aquatic Park NHL, the San Francisco Port of Embarkation NHL, the Port of San Francisco Embarcadero Historic District and the Fort Mason Historic District. Under Alternatives 3-5, there would be moderate adverse effects that could potentially be reduced (in the Aquatic Park NHL) by creating a representation of the track alignment and alleviated, but also adversely affected by the F-Line extension, depending on actual alignment of that extension (Although the proposed alignment is shown in the EIS, the EIS also notes that specifics would be part of future design) (NPS GOGA 2012).

In addition to effects on the State Belt railroad tracks, Alternatives 2-5 would result in cumulative beneficial effects to the Promenade pavement. Improvements would likely be greatest in Alternative 3 (with full repaving), followed by Alternatives 4 and 5 (with full repaving or repaving of all deteriorated sections), and then 2 (where only the portion of pavement within/near the tracks would be replaced). Ongoing negligible to minor adverse and beneficial effects would continue to be contributed under Alternative 1, which would continue to focus on patching and repairs only when sections fail.

With the extension of the Promenade, Alternatives 4 and 5 would also have minor cumulative adverse effects on circulation. These minor cumulative effects would be added to in both alternatives, with effects becoming minor to moderate in Alternative 5 from the shortening and steepening of the Service Road by removing part of the historic retaining wall and moderate in Alternative 4 from removal of the Service Road (by shortening and then changing the arc of the retaining wall).

When the other actions in Alternatives 4 and 5 are considered from a cumulative effects standpoint, the contribution of other elements to cumulative effects would be negligible to minor from removing and resetting stone edging blocks and from repairing or replacing historic lampposts as well as from the possible addition of lampposts along the proposed Promenade extension.

The contribution to cumulative effects would continue to be minor to moderate and adverse in Alternative 1 (entirely from the F-Line extension); while the contribution to cumulative effects in Alternative 2 would include slight long-term beneficial effects combined with the same minor to moderate adverse effects. Alternative 3 would contribute minor to moderate cumulative adverse and cumulative beneficial effects (from rehabilitation of the Promenade pavement). Alternative 4 would contribute minor to moderate cumulative adverse effects (from F-Line extension, loss of historic fabric, addition of non-historic elements, changes in circulation, and loss of State Belt Railroad tracks) and cumulative beneficial effects from pavement rehabilitation and accommodation of the F-Line extension). Similarly Alternative 5 would contribute minor to moderate adverse effects (from F-Line extension, loss of historic fabric, changes in circulation, and loss of State Belt Railroad tracks) and negligible beneficial effects (from pavement rehabilitation).

Conclusion: There would be no adverse effect under Alternatives 1-2 on the Aquatic Park NHL. Alternatives 3-5 would have an adverse effect on the district. Under Alternative 3, that adverse effect would be limited to removal of the State Belt Railroad tracks. Under Alternatives 4 and 5, in addition to removal of the State Belt Railroad tracks, the adverse effect would include:

- Changes to historic structures and circulation patterns in Aquatic Park (Alternatives 4 and 5).
- Adding non-historic elements (adding onto the historic retaining wall in Alternative 4; adding a non-historic retaining wall in Alternative 5; and adding a stairway and Promenade path extension to Van Ness Avenue in Alternatives 4 and 5).
- Removal and relocation of stone edging (Alternatives 4 and 5).
- Loss of a portion of the historic retaining wall and the Service Road (Alternative 4).
- Steepening and shortening the Service Road and loss of a portion of the historic retaining wall (Alternative 5).

The other elements of the project either replace damaged historic or non-historic fabric in-kind, or are a necessary rehabilitation based on the current use of the site and are consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties under Rehabilitation. Among these include:

- Repaving the Promenade with Concrete (partial in Alternative 2, fully in Alternative 3, and full or where deteriorated in Alternatives 4 and 5).
- Rehabilitation of underdrains (Alternatives 3-5).
- Rehabilitation of lampposts, wiring and light structures (Alternatives 3-5).

Rehabilitating the Promenade with a more consistent width throughout is compatible with the original design intent of the park's construction.

Under Alternative 4, despite the adverse effect to historic retaining wall and the existing ramp up to lower Van Ness Avenue, this alternative would have the following advantages:

- It would implement the initial design concept for the wall identified in the c. 1936 drawing by rebuilding the wall, adding approximately 35 feet to its original length to continue the arc of the wall around the edge of Aquatic Park.
- Approximately 105 feet of wall would be removed, compared to 72 feet of wall removed in Alternative 5.
- It would remove the Promenade pinch point by widening the area to 16 feet.
- It would enhance accessibility at the west end of the Promenade.
- It would remove a non-historic landscaping wall near the West Bleachers.
- The design would accommodate future proposed modifications to the site when the proposed F-Line extension occurs.

Under Alternative 5, despite the adverse effect to historic retaining wall and the existing ramp up to lower Van Ness Avenue, this alternative would have the following advantages:

- It would widen the Promenade at the pinch point to 10 feet.
- It would maintain two separate pathways (designated for bicyclists and pedestrians) over 300-400 feet of the Promenade.
- It would enhance accessibility at the west end of the Promenade.

By incorporating mitigation measures, impacts on historic structures and cultural landscapes would not affect the eligibility of the Aquatic Park National Historic Landmark District, Port of Embarkation NHL, or Fort Mason or Port of San Francisco Embarcadero historic districts for the national register.

Visitor Experience (Visitor Access and Transportation, Visitor Use Opportunities/Safety, and Interpretation and Education) Affected Environment and Environmental Consequences

I. Visitor Use Access and Transportation Affected Environment

The park is located near Fisherman's Wharf and adjacent to the Marina, North Beach and Nob Hill neighborhoods. It is also within a 30-minute walk from downtown San Francisco. As a result, it is served by numerous modes of public and private transportation. The second-story entrance of the Maritime Museum faces Beach Street, near the intersection of Polk and Beach streets. A city bus stop is located just east of the building entrance on Beach Street, and the terminus of the Powell/Hyde Street cable car line is at the corner of Beach and Hyde within the Victorian Park area of the national historical park. The Muni F-line with its historic streetcars currently ends three blocks southeast at Jefferson and Jones Streets.

The Promenade is adjacent to the San Francisco Bay shoreline in Black Point Cove (north of the Maritime Museum). In addition to accommodating pedestrian traffic, the Promenade is a route for recreational and commuter bicyclists and is also used for emergency vehicle access. Pedestrians and bicyclists access the Promenade from the south (Beach Street), west (Van Ness Avenue/Fort Mason) or east (Hyde Street Pier and Jefferson Street/Fisherman's Wharf). The Promenade is also used by beachgoers, including swimmers from the adjacent Dolphin and South End clubs. As a result, there is often a combination of visitors on the Promenade who are moving quickly, moving slowly and standing still (Figure 33).



Figure 33: Aquatic Park Promenade: Jefferson Street Entrance

Adjacent public vehicle parking is available on Jefferson Street and Van Ness Avenue. The Ghirardelli Square building, located directly across from Aquatic Park on Beach Street, operates a public parking garage. Public parking is also available at Fort Mason, at the Golden Gate National Recreation Area headquarters. From Fort Mason, visitors can walk around via Beach Street or down the hill overlooking the Bay onto Van Ness Avenue and Aquatic Park Cove. Some parking is also available in the crowded

Fisherman's Wharf area, near the Hyde Street Pier and there are numerous public parking lots/garages east along the waterfront.

One of the historic cable car lines connecting downtown San Francisco with the northern waterfront, extends down Hyde Street and terminates at the cable car turn-around in Victorian Park, which is part of San Francisco Maritime NHP. Victorian Park is approximately two blocks east of the Maritime Museum.

In the future, the F-line Environmental Impact Statement calls for a streetcar station platform in the vicinity of the Bocce Ball Courts, which are located on the west end of the park, near Van Ness Avenue (Figure 20). Although this element of the plan was identified in the selected alternative in the Record of Decision, specific actions and impacts were left to future planning (NPS, GOGA 2012). When this stop is constructed, the Bocce Ball Courts may be moved to another location either within the park or within Golden Gate National Recreation Area or to another area outside the parks.

Table 1 shows park annual visitation over the last 10 years, while the graph below it shows visitation since the park was established (1989).

Table 2: San Francisco Maritime NHP Annual Visitation

Year	Visitation	Year	Visitation
2004	4,055,479	2009	4,152,497
2005	3,976,056	2010	4,130,970
2006	3,984,645	2011	4,224,897
2007	4,042,022	2012	4,129,983
2008	4,086,211	2013	4,154,455

J. Visitor Use Access and Transportation Environmental Consequences

Impacts from Alternative 1

There would be no change and no additional impact to visitor use access and transportation in Alternative 1. Existing impacts, such as uneven pavement, would continue to affect use of the Promenade, requiring visitors (including pedestrians and bicyclists) to be aware of the surface to avoid hazards. Over time, because of limited maintenance funding and staffing, some surfaces would continue to remain uneven while others were repaired, an ongoing minor to moderate adverse effect.

There would also continue to be an offset between the rails and the surrounding pavement and between the running and guide rails. Even with patching, these areas would remain uneven because the height between the rails and the slope between the rails and the edge of pavement varies. Because visitors would need to continue to be aware of their surroundings to travel safely, this would result in ongoing minor to moderate adverse effects from safety hazards affecting visitor travel (whether as pedestrians or bicyclists) on the Promenade.

Although most of the Promenade is accessible, the west end (where the slope and cross-slope rise to meet Van Ness Avenue close to the West Roundhouse) would continue to exceed federal accessibility standards. The alternate route to Van Ness Avenue (the Service Road), however, has a 2.5% percent slope that would continue to meet minimum accessibility standards for grade, but not for surface variation (because of the warping associated with the railroad ties in the asphalt, among other reasons).

Because the Promenade would remain a shared multiuse pathway for approximately 1,092 feet (more than 70 percent of its length) from Jefferson Street to the Service Road fork, where bicycles are recommended (signed) to go (for 295 feet) and where pedestrians would generally continue on the main pathway (390 feet) to its intersection with Van Ness Avenue. Nonetheless, there would likely continue to be a mix of uses on the Promenade on both forks as now occurs. This would continue to result in minor to moderate long-term adverse and beneficial effects, depending on whether visitors preferred a single-use

or shared pathway and depending on the number of visitors on the Promenade, which would affect the potential for conflicts to occur.

There would be no changes to the San Francisco Bay Trail, which would continue to pass through the park. Users of this trail would continue on the trail from the west end of the Promenade or Service Road, down Van Ness Avenue and up into Golden Gate National Recreation Area (GGNRA) via McDowell Road. Because there are no signs and because this route includes several transitions both within and outside of Aquatic Park, the route would continue to be confusing to some users, a minor adverse effect.

Impacts from Alternative 2

There would be long-term beneficial effects from replacing the pavement within and adjacent to the State Belt railroad tracks and on the Service Road. Although the new concrete pavement would be constructed flush with existing thresholds of buildings, the bleachers and walls, these elevations vary and are not even with the rail elevations, therefore the new concrete pavement would undulate in some locations on the Promenade. This would occur between the running and guide rails and the rails and other locations where the rails are close to existing pavement edges or thresholds. On the Service Road, the new pavement would be poured over the railroad ties. Overall, there would be beneficial effects from the new pavement surface, which would be smooth compared to the existing deteriorated pavement.

Elsewhere on the Promenade, deteriorated pavement depressions would also be repaired. Some of these areas of deterioration result in ponding on the Promenade during wet weather, reducing the useable pavement width and creating potential hazards. Replacing select areas of very poor pavement with new concrete pavement where the worst ponding occurs, such as in front of the West and East Bleachers on the Promenade would result in minor long-term beneficial effects on visitor use by minimizing areas avoided by visitors during wet weather.

Because the pavement within and adjacent to the State Belt railroad tracks and in other select areas would be replaced, the Promenade may be unavailable for short periods. During these times, alternate access routes would be provided for pedestrians and bicyclists. Walkers would be directed to the south side of the Maritime Museum and then to Van Ness Avenue, while bicyclists could follow one of several alternative transportation routes. This would result in a minor adverse effect on visitor access and transportation.

Impacts from retaining the shared multiuse pathway from Jefferson Street to the Service Road fork and as separate bicycle and pedestrian paths from the Service Road fork to Van Ness Avenue would be the same as described in Alternative 1 except that because the pavement would be improved, there would be fewer chances for conflicts related to avoiding poor pavement conditions to occur. Instead conflicts would continue to be related to avoiding the railroad tracks themselves, since they are parallel to the direction of travel.

Impacts associated with the San Francisco Bay Trail would be the same as in Alternative 1.

Impacts from Alternative 3

Removing the railroad tracks and replacing all of the asphalt and concrete pavement on the Promenade and Service Road would result in moderate long-term beneficial effects to visitor use access and transportation. No longer would visitors have to be as consistently aware of the pavement surface to avoid hazards as they walked, bicycled or played near the Promenade. Replacement of the pavement surface would provide a continuous smooth surface.

Because the State Belt railroad tracks would be removed and because all of the pavement associated with the Promenade and Service Road would be replaced, pedestrians and bicyclists would be temporarily rerouted off the Promenade during the rehabilitation. As a result, for approximately 4-6 months, during construction, walkers would be directed to the south side of the Maritime Museum and then to Van Ness Avenue, while bicyclists could follow one of several alternative transportation routes. This would result in a minor to moderate, short-term adverse effect on visitor use and access to the

Promenade. For visitors from out of the area who may only see the area once, the effect would be greater than the effect on visitors who regularly recreate on or near the Promenade.

In addition to disruption of pedestrian and bicyclist access on the Promenade, up to 22 parking spaces on lower Van Ness Avenue could be affected by construction staging for the proposed project, a short-term minor to moderate adverse effect on visitor access.

Impacts from retaining the shared multiuse pathway from Jefferson Street to the Service Road fork and as separate bicycle and pedestrian paths from the Service Road fork to Van Ness Avenue would be the same as described in Alternative 2 except that because more pavement would be improved, there would be fewer chances for conflicts related to avoiding poor pavement conditions to occur. Removal of the railroad tracks would result in an overall improvement in conditions related to avoiding hazards on the shared and separate pathways.

Ongoing impacts associated with the San Francisco Bay Trail would be similar to Alternative 1. Because the railroad tracks would be removed, the experience of accessing the trail on a bicycle would be improved, a long-term beneficial effect.

Impacts from Alternative 4

Impacts from Alternative 4 would be the same as described in Alternative 3 for the replacement of the Promenade pavement. In addition, there would be minor to moderate adverse effects from excavation of the west end of the Promenade to create the stairway and the accessible extension and there would be impediments to visitor access during construction of the retaining wall extension. Combined, these would contribute additional minor adverse effects to the likely minor to moderate adverse effects in Alternative 3, but would not change overall short-term impacts on accessing the Promenade during construction, which would remain minor to moderate. Because extension of the Promenade would occur at the west end, this work could be less likely to interfere with visitor access, depending on the sequencing of construction, however the length of time construction staging impacts would be present would likely be longer. Following construction, there would be moderate long-term beneficial effects from the extension of the Promenade and the stairway, which would continue to provide two ways for visitors to access Van Ness Avenue.

With the realignment of the historic retaining wall, the Promenade would also be widened where the Service Road and the Promenade meet. The Promenade would be 16 feet wide vs. 6.1 feet at that location, a long-term beneficial effect. Removing the Service Road fork would also result in long-term beneficial effects related to shared use because visitors (especially bicyclists) would not have to make a split-second decision about which way to go as they approach the fork and because there would be no downhill speed to gain as bicyclists approached the Promenade from Van Ness Avenue because the steep descent on the Service Road would no longer be present.

Because there would be a shared multiuse pathway from Jefferson Street to Van Ness Avenue, however, pedestrians and bicyclists would continue to need to avoid each other as well as other visitors with children and pets traveling in a cross-wise direction toward the beach along the Promenade. Removing all pavement in poor condition and the railroad tracks, however would result in improved overall conditions similar to Alternative 3 because the Promenade would be a seamless pathway, with the only obstructions being the existing street lights on the edge of the seawall.

Compared to Alternatives 1-3, access to and direction-finding on the San Francisco Bay Trail through Aquatic Park would be improved, a long-term beneficial effect. Improvements would include better access to Van Ness Avenue via the Promenade extension as well as curb cuts and pavement improvements that would contribute to an overall better access experience.

Impacts from Alternative 5

Impacts from Alternative 5 would be the same as in Alternative 4 except that instead of lengthening the Promenade retaining wall it would be shortened and instead of two ways to access Van Ness Avenue, at the conclusion of the project, there would be three ways, including the Service Road (still intended

primarily for bicyclists), the Promenade accessible extension, and the stairway. Over the long-term having three ways to access Van Ness Avenue would contribute negligible to minor beneficial effects, especially during major special events, when crowding occurs.

Impacts from retaining the shared multiuse pathway from Jefferson Street to the Service Road fork and separate bicycle and pedestrian paths from the Service Road fork to Van Ness Avenue would be similar to Alternative 3, except that removal of 60 feet of the Service Road and flattening its alignment to meet the Promenade would result in a wider section of Promenade where the Promenade and the Service Road meet (10 feet on the Promenade side compared to 6.1 feet and the same 12.5 feet on the Service Road side).

Impacts regarding access to the San Francisco Bay Trail would be the same as described in Alternative 4, however route-finding could remain somewhat confusing (more like in Alternatives 1-3) because of the continued divergence of the two paths on the Promenade. Overall, there would be long-term beneficial effects from pavement improvements and access.

Impact Avoidance, Minimization and Mitigation Measures

Measures that would be included in the proposed project (as appropriate to the alternative actions) to minimize impacts to visitor use access and transportation include:

- Minimizing the length of construction by closing the Promenade to all traffic during major construction activities (thereby eliminating slow-downs related to managing ongoing visitor use).
- Focusing the construction season outside of the busiest visitor use season.
- Signing alternate pedestrian and bicyclist reroutes through the park.
- Minimizing the number of parking spaces on Van Ness Avenue that would be affected by construction staging.
- Publicizing the closures and changed conditions on the Promenade through press releases and updates on the park's website.
- Managing vehicle traffic and contractor hauling of materials, supplies, and equipment within the construction zone to minimize traffic disruptions nearby.
- Developing a safety plan prior to the initiation of construction to ensure the safety of visitors, workers, and park staff.

Cumulative Impacts: Early in San Francisco's history, the construction of Aquatic Park was a response to the need to provide public access to the waterfront. That access has continued result in cumulative beneficial effects on visitor access. Over time, additional access to the waterfront, including restoration of Crissy Field, has been provided, however, there are few places in downtown, except Aquatic Park, where a semi-natural area of beachfront remains. Because Aquatic Park is adjacent to Fisherman's Wharf, it remains a popular recreation area in all seasons.

Other projects occurring in the vicinity of the waterfront include the proposed improvements to Pump House #2 by the San Francisco Water Department, which may affect lower Van Ness Avenue within the park for staging. Golden Gate National Recreation Area has identified the need for modifications (improvements) to the McDowell Road retaining wall. Also proposed are improvements to the route of the F-Line Streetcar by the San Francisco Municipal Railway (by the San Francisco Municipal Transit Agency), which would further alter Aquatic Park, by removal of the historic rock wall by the Bocce Ball Courts and by routing new streetcar tracks on the south side of the Maritime Museum, then into the upper part of Aquatic Park and across the Service Road to meet up with the tracks that cross Van Ness Avenue to access the tunnel under Fort Mason (Figure 20).

The ongoing effort to establish the San Francisco Bay Trail would be benefitted by Alternatives 3, 4 and 5, with greater benefits in Alternatives 4 and 5 from the extension of the Promenade to Van Ness Avenue and slighting greater benefits in Alternative 4 from improved route finding because of the single path.

When actions in Alternative 1 are added to the actions to reroute the F-Line and other past, present and future projects, there would be no additional cumulative effects. When the effects of Alternatives 2-5 are

added to the effects of constructing the F-Line through Aquatic Park, each would require additional modifications to Aquatic Park in areas that were rehabilitated under the proposed plan. In Alternatives 2-3 and 5 the Service Road area would be modified to place the F-Line tracks, which would traverse across rather than parallel to the Service Road. In Alternative 4, the tracks would be placed in the area of the former Service Road, where landscaping would be added. Compared to the moderate adverse effects of adding new railroad tracks in an area where they had been removed (the Service Road) in Alternatives 2-3 and 5, there would be minor adverse effects from adding tracks back to the landscaped area in Alternative 4.

Fewer effects would occur in Alternative 4 because the Service Road would not exist and therefore there would no longer be a designated bicycle path where the potential for crossing railroad tracks continued to exist. Because Alternative 4 would eliminate the asphalt "spur" of railroad tracks (the Service Road from the Promenade to Van Ness Avenue), it would eliminate one area of potential pedestrian/bicycle conflict inherent in the historic streetcar preferred alternative. Figure 2-3 in the Streetcar EIS (Figure 20 in this document) shows the new streetcar tracks crossing/making a turn over the historic tracks/asphalt path just south of the West Roundhouse (NPS GOGA 2012). Although removal of this potential conflict is beneficial, this further illustrates the need for the streetcar not to block or otherwise alter the southernmost pathway.

When actions in Alternative 1 are combined with the proposed modifications to McDowell Road, there would be no effect on visitor access and transportation. There would, however, be additional short-term adverse effects on visitor access and transportation associated with Alternatives 2-5. These would include additional changes in visitor use access during both rehabilitation of the Promenade and rehabilitation of the retaining wall. If these projects occurred at the same time and bicycle and pedestrian traffic reroutes were combined, there would be fewer overall effects.

The proposed actions under Alternatives 2-3 and 5, when combined with other projects in the vicinity of the San Francisco Bay shoreline, would therefore have minor short-term adverse effects combined with moderate cumulative adverse and beneficial effects from rehabilitating the Aquatic Park Promenade to ensure that the area remains available and well-maintained long into the future. Similarly, Alternative 4, would have fewer adverse (minor short- and cumulative) and moderate cumulative beneficial effects because the actions in Alternative 4 would accommodate the changes proposed by the F-line extension.

Conclusion: There would be no additional impacts on visitor use access and transportation on the Promenade under Alternative 1. Existing impacts from deteriorated pavement and wayfinding confusion would continue, a long-term minor to moderate adverse effect. Although the pavement would be partially improved under Alternative 2, it would still be warped as it met existing conforms and the presence of the railroad tracks would continue to have minor to moderate adverse effects. With the removal of the tracks in Alternatives 3-5, overall pavement conditions and visitor travel on the Promenade would be improved, a long-term beneficial effect. Although wayfinding for the San Francisco Bay Trail could still be confusing under Alternatives 3 and 5, it would be improved. Alternatives 4 and 5 would result in long-term beneficial impacts on visitor access and transportation from widening the Promenade at the pinch point where the paths diverge. With the divergence removed in Alternative 5, there would be less visitor confusion, but a potential for visitor use conflicts to occur from placing all users on the same path. In Alternative 4, the confusion would continue but bicyclists and pedestrians would continue to be directed onto separate paths to Van Ness Avenue.

K. Visitor Use Opportunities / Safety Affected Environment

Visitor Use Opportunities

As described in the Aquatic Park Cultural Landscape Report, the public began using Black Point Cove for recreation soon after the first homes and businesses were established. Despite commercial use and the industrial character of the area, by the 1860s Black Point Cove, with its sandy beaches and proximity to the city, was a favorite spot for swimming and recreation. Entrepreneurs soon established bathing concessions near the beach to meet the needs of the public. About the same time, various rowing and swimming clubs began to use the cove, reinforcing recreational use of the area. In some cases these organizations became centers for social events, including picnics, barbecues, dances, and banquets. By

1909, three “clubs” were located at the cove, including the South End Boat Club (later called the South End Rowing Club), formed in 1873, the Ariel Rowing Club (later called the San Francisco Rowing Club), formed in 1877, and the Dolphin Swimming and Boating Club, which moved to the southwest corner of the cove in 1895. By 1900, Van Ness Avenue was paved down to Bay Street and city residents were pressuring the San Francisco Board of Supervisors to grade the bluff and extend the street to the edge of the water (NPS PWR 2010:11-12).

Current visitation to the park is approximately 4.1 million visits per year. The adjacent Fisherman’s Wharf area has been identified as the third-most-visited destination point in the U.S. and visitation from this area spills over into the park as people continue walking west toward the open views of San Francisco Bay offered along the Promenade. As with many parks, the area experiences seasonal visitation, with the peak tourist season in the summer. On summer days, hundreds of visitors use the amphitheater bleachers and thousands more use the area during special events such as the Fourth of July celebration and Fleet Week, when there is standing room only (NPS 2004 in NPS SAFR 2006).

From the bleachers, visitors can see the Golden Gate Bridge and San Francisco Bay with cargo ships bound worldwide, as well as ferries, tugboats, sailboats, and power craft (NPS 2004 in NPS SAFR 2006). Many other cities around the bay can also be seen.

A variety of special events are held in the park each year. The park permits two large events, such as the Bridge to Bridge triathlon that draws upward of 10,000 runners, and numerous medium-sized events, such as the Across the Bay 12k and the whale boat race. People attending and/or watching these events often congregate on the lawns rather than the bleachers, gazing across the Promenade.

The wide sweep of views from the Promenade are an integral part of the visitor experience in the park, including the national historic landmark ships berthed at Hyde Street Pier, the cove, the *streamline moderne* setting of the WPA buildings, San Francisco Bay, and as associated with the waterfront culture and maritime heritage. Visitor use opportunities on the Promenade include walking, running, bicycling, rollerblading, sunbathing, beach going, and other recreational activities. Some visitors stay for hours, while others pass through on their way enroute to Fisherman’s Wharf (east) or toward Muni Pier and/or upper Fort Mason and the Golden Gate Bridge (west). Visitors traverse seamlessly from Jefferson Street on the east onto the Promenade and then west onto Van Ness Avenue. Most bicyclists head toward the Golden Gate Bridge.

The Promenade is approximately 1,386 feet long for bicyclists and 1,481 feet long for pedestrians. It begins on the east at the swim club building along Jefferson Street, where there are bollards to block vehicle traffic. As noted above the Promenade accommodates a wide variety of user groups. The Promenade varies in width. Most of the Promenade is a single path which varies from 16 feet to 21 feet 6 inches wide until it reaches the fork, where it and the Service Road diverge in different routes to Van Ness Avenue. The widest parts are as the path leaves Jefferson Street (17 feet) and in front of the Maritime Museum / Senior Center (18 feet 6 inches), while the narrowest parts are at the split with the Service Road (6 feet) and adjacent to the West Roundhouse (16 feet).

Even during the winter months, WJE observed swimmers exiting the cove, cyclists, tour-groups, joggers, horses, children, the elderly, persons with physical disabilities, parents with strollers, Segways, golf carts, maintenance trucks, and police cars all sharing use of the Promenade (WJE 2013: 4).

At the junction with the Service Road, bicyclists are directed toward an upper path (the Service Road), while pedestrians are directed onto the lower path (the Promenade) which follows the curve of the shoreline toward the West Roundhouse and Van Ness Avenue. At this point, the junction with Van Ness Avenue (up the Service Road), as evidenced by vehicles parked along the roadway can be seen.



Figure 34: Crowd During Special Event

Safety

Safety and the State Belt Railroad Tracks / Uneven Pavement Surface: Where the tracks run behind the Bleachers and Bathhouse, they were built on a concrete foundation that was constructed independently of the concrete sidewalk that flanks them. The sidewalk was then mostly constructed on a sand bed, which has continually eroded over time causing cracking, settling and subsidence of the concrete. This can be acute where the sidewalk meets the railroad tracks, and has created dangerous conditions for walkers and bicyclists. This was noted by the NPS in 1977, and then documented beginning in 1984 when a series of rather unsuccessful projects to shore up and repair the sidewalk began to be undertaken (NPS SAFR 2013).

In 2010, the Cultural Landscape Report noted:

The elastic nature of the asphalt paving has a tendency to make it sag and separate around the rails. Today the uneven character of the rails and the asphalt bedding around them has the potential to create safety issues for bicyclists and other users of the park. Heavy truck traffic and frequent patches to the asphalt exacerbate the safety issue and create an adverse visual impact (NPS PWR 2010: 119).

As described in the recent short history of the State Belt Railroad, the tracks create a tripping hazard for pedestrians and a slipping hazard for bicyclists, since they run parallel to the path of travel. This is a frequently cited concern for bicyclists. Although most routinely cross railroad tracks that are perpendicular to the path of travel, parallel tracks are more difficult to navigate on a bicycle. A series of serious injuries have led to numerous tort claims, some resulting in significant damage awards. They have also led to an unknown number of minor, mostly unreported, accidents. The NPS and the park have recognized the need to take action to correct these hazardous conditions (Canright 2013).

Many of the bicyclists on the Promenade are novice riders, families with children, and visitors from other parts of the U.S. and world, who rent bicycles from nearby commercial bicycle rental businesses, including from next door to the visitor center. Because the Promenade is also used by commuter bicyclists and a wide range of pedestrians, including runners, walkers and parents with strollers, visitors

are often dodging one another while distracted by the view or setting. Combined with the frequently wet or damp and foggy weather that makes the State Belt Railroad tracks slippery and the relatively narrow width of the Promenade for the number of users, this often leads to near misses or accidents.

There have been numerous bicycle accidents, both documented and undocumented on the Promenade. Injuries in these accidents have ranged from minor falls and scrapes to very serious injuries, including broken teeth, bones and paralysis. Although documentation of bicycle incidents is sparse because there are often no formal reports of these taken by NPS or Park Police staff, three accidents have resulted in lawsuits against the NPS (2006, 2008 and 2012) which awarded monetary damages (from \$65,000 to \$3,000,000) against the NPS. None of the available records detail when or how the accidents took place. In two of the three, the rider went home and visited a doctor a few days later and then sued a year later. The third bicyclist was found on the beach below the Promenade after flying off his bike. All three accidents appear to have been caused by a bike tire being caught in a gap or groove or slipping on the railroad tracks, which subsequently caused the rider to fall. (Glasgow, personal communication 2013). Accidents have likely occurred, not only because of the tracks as an obstacle, but also as a result of uneven pavement, interactions with pedestrians, including bicyclists and pedestrians trying to avoid one another, and from slippery conditions during wet weather.

In response to public scoping associated with the proposed rehabilitation of the Promenade, respondents related two anecdotes regarding bicycle accidents (see Public Scoping section in Chapter I). In addition, the engineering consultant for this project also related two incidents witnessed during a site visit in January 2013.

Two other anecdotal notes of relatively recent injuries to visitors while riding bikes on the Promenade were noted by the park's Safety Officer (Seely 2013). There is also a record of a visitor (bicyclist) who suffered injuries requiring ambulance transport in 2008. In addition, another visitor who attended the open house described falling on the tracks while bicycling, which resulted in ambulance transport for broken ribs and both wrists.

There have also been pedestrian accidents on the Promenade, including one involving a park employee. These pedestrian accidents have been the result of slips, trips and falls associated with the uneven surface of the Promenade. Some are related to bicyclists, while others are likely related to the uneven pavement surfaces (both concrete and asphalt) surrounding the railroad tracks. The NPS documents its own employee injuries in the Safety Management Information System (SMIS). In SMIS, there have been two employee, volunteer or cooperator accidents in the past ten years. Both were single pedestrian accidents and neither mentioned railroad tracks. One involved a cooperator employee being struck by a bicyclist which resulted in a broken arm. Another resulted in a facial contusion but not in broken bones.

There are also frequent staff accounts of visitor crashes and falls on the Promenade or tracks that are unreported and/or do not require medical treatment. Based on some staff comments, these accidents occur at the rate of approximately one per week and this number often increases with increasing visitation during the summer.

Besides visitor, commuter, resident and park employee use of the Promenade, the area is also used for emergency vehicles, including City of San Francisco fire and police departments and for vehicle and equestrian patrols by U.S. Park Police. Fire trucks up to approximately 35 feet and ambulances, as well as patrol vehicles travel down the Promenade and exit at the Service Road. While the Service Road continues straight toward Van Ness, exiting on the Promenade adjacent to the West Roundhouse (up the ramp) requires a turn of approximately 28 feet radius, while on a slope with an average of 15 percent, which is difficult for vehicles to negotiate.

As described in the WJE report, the Promenade provides emergency access to the north side of the Maritime Museum. It is patrolled intermittently by horse-mounted park police as well as accessed by police, fire, and emergency medical vehicles. The Promenade is also used by maintenance vehicles, including small trucks and golf carts. The existing pavement, outside of the railroad tracks, was most likely not designed for emergency vehicle use, such as is imposed by fire trucks. Within the flangeway, the

weights imposed by trains would likely exceed emergency vehicle weights, so the emergency vehicle weights do not govern the design in that area (WJE 2013: 11).



Figure 35: Police Car on East End of Promenade



Figure 36: Fire Truck in Front of Maritime Museum

Although prohibited, there is also occasional Segway use by commercial tour operators. The area is also heavily used by rental bicycles. Over the last few years these rental bicycles have comprised a substantial and increasing segment of Promenade visitors.

L. Visitor Use Opportunities / Safety Environmental Consequences

Impacts from Alternative 1

There would be no changes in the ability of the park to accommodate special events or other currently conducted activities. There would continue to be a broad range of visitors who use the Promenade, including area residents and visitors from the nation and the world. These visitors would continue to use the Promenade in a variety of ways, including for exercise, birdwatching, beach visits, tourism, sightseeing, bicycling, commuting, and special events such as Fleet Week. Visitors would continue to be able to use both the Promenade and Service Road. Their use of these areas; however, would continue to be impeded by physical deterioration of the Promenade and Service Road pavement and by the presence of the State Belt Railroad tracks.

The Promenade would continue to be accessible along most of its route, except at the steep ramp on the west end. The Service Road, with its 2.5 percent grade and cross-slope of less than 2 percent, meets standards for grades but is not currently considered accessible due to its deteriorated condition with pavement undulations. There would, however, continue to be no accessible parking spaces identified on Van Ness Avenue adjacent to the Service Road. Two accessible parking spaces are located across the street from the Service Road, near the tunnel entrance.

Under Alternative 1, the park would continue to work to mitigate the hazards on the Promenade through signs and other minor corrective actions. Because of the known history of accidents on the Promenade, over time, the park has placed numerous warning signs at the entrances to the Promenade as well as at various locations along the Promenade. Despite the warning signs, however, accidents have continued to occur. These accidents appear to be mostly related to the presence of the State Belt Railroad tracks, including from their slippery when wet conditions; however, accidents have also occurred on other parts of the Promenade.

As noted in the Aquatic Park CLR:

As a part of the urban and recreational waterfront of San Francisco Bay, Aquatic Park receives heavy pedestrian traffic. Walkers, joggers, bicycles, skateboarders, commuters, in-line skaters, and other users can create congestion, user conflicts, and potentially hazardous situations along the Beach Promenade and adjacent areas (NPS PWR 2010:115).

Over the years, asphalt paving and patching around the tracks has created uneven surfaces and in some cases, presents safety hazards (NPS PWR 2010: 120).

Under Alternative 1, it is likely that accidents would continue to occur due to the range of visitors, some of whom are familiar with the area, but many of whom are not, and from the range of transportation modes they use, as well as from the lengthwise and crosswise movement of visitors simultaneously on the walkways. Traversing the Promenade also requires visitors, including those on rental bicycles, to make quick decisions about which route to take as they approach Van Ness Avenue from the east (Fisherman's Wharf). The route up the Service Road is signed for bicyclists, but the signs are located high on posts and the railroad tracks also continue, paralleling the route of travel in this same direction, making it necessary for bicyclists to both look up and look at the ground as they approach the divergence. As a result, there would likely continue to be indecision reflected in local, regional, national and international visitors. This indecision would continue to be problematic due to the quick pace of some Promenade users, such as commuters and those on rental bicycles, as well as children running across to the water. In addition, bicyclists and those who need an accessible path would continue to have to exit onto busy lower Van Ness Avenue, a long-term minor adverse effect, especially for bicyclists who would likely enter the roadway (rather than the sidewalk) at this location.

As noted in the WJE report, for a length of approximately 120 feet the pavement of the Service Road is also flush with the top of the historic concrete retaining wall which divides the upper (Service Road) and lower (Promenade) forks. This retaining wall poses a potential fall hazard, since it is an unprotected edge which tapers from 1 foot to 5 feet in height (WJE 2013: 6). Typically, according to current building code requirements, heights of over 27 inches require guardrails. Although there are few documented accidents related to this edge, its presence would continue to be a potential long-term minor to moderate adverse effect on safety.

Alternative 1 would continue to maintain access for emergency services such as emergency medical services, search and rescue, and fire suppression, a long-term beneficial effect.

Overall impacts on safety as a result of these and other conditions would continue to be long-term, moderate and adverse from the high potential for mishaps to occur. Impacts on visitor use opportunities, because of the relatively higher potential for accidents to occur, would continue to be minor to moderate.

Impacts from Alternative 2

In Alternative 2, there would be no change in the kinds or locations of visitor use activities. Both the Service Road and the Promenade would continue to be available, and the Service Road would continue to be signed for bicyclists. There would also be no change in accessibility. The Service Road would be the accessible route with new, smooth pavement. Impacts associated with the Service Road access would also be the same as in Alternative 1. As in Alternative 1, Alternative 2 would continue to maintain access for emergency services such as emergency medical services, search and rescue, and fire suppression, a long-term beneficial effect.

Unlike Alternative 1, however, the area adjacent to and between the State Belt rails would be repaved with concrete resulting in beneficial effects on visitor experience. Repaving this area (including the Service Road and other severely deteriorated areas on the Promenade) would improve pavement conditions for all user groups, including pedestrians and bicyclists.

Although the pavement surface would be improved under Alternative 2, thus eliminating most tripping hazards, slipping hazards related to the railroad tracks would continue, a long-term minor adverse effect. These conditions are most prevalent during the routine wet weather experienced in the area, from both fog and rain as well as from condensation at night that occurs because of the proximity to the Bay.

Treadwell and Rollo in a letter to WJE that is part of geotechnical report attached to the WJE report also stated: "It is also our opinion, that if left in place the tracks, supporting slab and ties will continue to be "hard spots" in the paving with the possibility of future differential settlement between the rail line and the adjacent promenade pavement" (WJE 2013: Appendix C: 3). As a result, it seems probable that there will continue to be uneven pavement conditions over time, despite the repaving of the Promenade resulting in a long-term minor to moderate adverse effect that would contribute to ongoing and future safety hazards.

As in Alternative 1, the two pathways connecting to Van Ness Avenue would be maintained and as a result, it is likely that visitor attention would continue to be focused both on the obstacle of the railroad tracks in the pavement as well as on the road ahead, resulting in visitors continuing to be distracted as they approached the junction. As in Alternative 2, bicyclists and those who need an accessible path would continue to have to exit onto busy lower Van Ness Avenue, a long-term minor adverse effect, especially for bicyclists. The two pathways would also continue to be separated by the historic concrete retaining wall, which poses a long-term minor to moderate adverse effect because of its unprotected edge above the Promenade.

Although the pavement would be new, it would likely continue to be difficult to maintain the pavement surface since it would undulate slightly in response to the varying height of the rails and the need to match pavement surrounding the length of the railroad tracks. As a result, there would continue to be long-term moderate adverse impacts on visitor safety, while potential impacts on visitor use opportunities would be slightly reduced (minor) from improving the pavement surface in the areas most likely to affect visitor travel.

Impacts from Alternative 3

Compared to Alternative 1, there would be long-term beneficial impacts on visitor use opportunities and visitor safety. Removal of the State Belt Railroad tracks would enable the Promenade and Service Road pavement to be replaced in a smooth continuous surface, with no surface imperfections resulting from wear and tear or obstacles to impede movement along the finished area. Therefore, the potential for safety hazards to impact visitor experience would be greatly reduced.

As in Alternatives 1 and 2, Alternative 3 would continue to maintain access for emergency services such as emergency medical services, search and rescue, and fire suppression, a long-term beneficial effect. In addition, replacement of the Promenade pavement would result in a more robust surface that could continue to withstand the weight of occasional travel by these heavier vehicles.

Compared to Alternative 1, there would be improvements in accessibility on the Promenade. The Service Road would no longer contain obstacles, such as uneven pavement and the State Belt Railroad tracks. As a result, those who needed an accessible path would find it easier to navigate as an accessible route. They would, however, still be separated from other pedestrians who would continue on the lower pathway toward Van Ness Avenue and as in Alternatives 1 and 2, they would continue to share the accessible route with bicyclists and exit onto busy lower Van Ness Avenue, a long-term minor adverse effect.

Wayfinding signs on the Promenade and Service Road and where these two pathways diverge would be the same. Because these two pathways that connect to Van Ness Avenue would be maintained, it is likely that visitor confusion about these would continue but because visitor attention could be focused on the

road or path ahead, rather than on whether the State Belt tracks needed to be crossed or avoided or whether adverse conditions in pavement were ahead, there would likely be fewer accidents from visitor confusion/distracted.

Because the State Belt tracks would be retained within Van Ness Avenue, extending east-west as they cross to the Fort Mason tunnel (Figure 36), there would continue to be a potential for slipping and tripping hazards, however because most visitors on bicycles and on foot cross south or north to access Van Ness Avenue onto the street or sidewalk, the likelihood that incidents would occur is small. Bicycles would also continue to exit the Service Road into automobile traffic on Van Ness Avenue, a long-term minor adverse effect.



Figure 37: Junction of Service Road and Van Ness Avenue (Sidewalk and Road)

Impacts from Alternative 4

Impacts from the removal of the State Belt Railroad tracks on safety would be the same as described in Alternative 3. In addition, this alternative would consolidate the Promenade into a single path curving around Aquatic Park, resulting in less visitor confusion regarding which access to Van Ness Avenue to take where the path now forks at the Service Road. It is at this point that the connection to Van Ness Avenue becomes clear because it can be seen from the beginning of the Service Road, whereas it is not clear whether there is a connection to Van Ness Avenue on the Promenade. Because all user groups would be directed onto the same path safety hazards associated with path confusion would be eliminated.

Although confusion about which path to follow would end by funneling all users onto one path, there could be an increased potential for visitor use conflicts to occur, such as when large groups of rental bicyclists

take up much of the pathway or when large groups of people congregate on the Promenade to enjoy the view. Because most users slow down when approaching others, especially in crowded conditions, however it is likely that these conflicts would resolve. Similarly the AASHTO guide states: "Under most conditions, there is no need to segregate pedestrians and bicyclists on a shared use path, even in areas with high user volumes-they can typically coexist. Path users customarily keep right except to pass" (AASHTO 2012: 5-4). It also notes that "signs may be used to remind bicyclists to pass on the left and to give an audible warning prior co passing other slower users" (AASHTO 2012:5-3/4).

Under the worst case scenario, some users could feel pushed toward the edge of the seawall, where steps down to the Bay or a wall are located. The path would meet shared use criteria established by AASHTO for width but would not meet the criteria for a path adjacent to water, which recommend that the path be separated by additional width and/or a railing, depending on the situation. Nonetheless, the path would be more than 10 feet wider (than it is now) at the former pinch point and similar to the width of the path coming from the east (Fisherman's Wharf).

Without the Service Road, the potential for needing a guardrail would be eliminated. It is possible, however, that a guardrail would be needed along a portion of the top of the seawall. Additional analysis and future investigation would determine whether one should be installed because it could also become an attractive nuisance, causing additional safety issues from potentially enabling visitors to sit on/alongside it and becoming path obstructions.

With the removal of the Service Road, however, there would be a narrower exit from the Promenade to Van Ness Avenue. Although this exit from the Promenade for vehicles would be narrower, it would continue to accommodate vehicles, including emergency vehicles. It would not meet the desired width and radius requirements identified by the San Francisco Fire Department because of the existing constriction between the West Roundhouse and the seawall. Access to this end of the Promenade, however is also available from Van Ness Avenue.

With construction of the western extension of the Promenade and removal of the Service Road, accessibility would change. Instead of the Service Road being used as an accessible route, there would be a universally accessible path all the way to the end of the Promenade that would meet Van Ness Avenue closer to McDowell Road and Muni Pier, and at new designated accessible parking stalls. This would result in long-term beneficial effects on visitor use opportunities. No longer would visitors with the need for accessibility have to share the Service Road with faster moving bicycles and other obstacles, such as the State Belt Railroad tracks and uneven pavement. Instead their experience would be heightened as they continue with other pedestrians and bicyclists along the edge of the Bay, taking in the views and sharing the universally accessible combined path.

Instead of one accessible/bicycle route and one non-accessible pedestrian route, there would be one universally accessible trail in Alternative 4. As a result, all who needed an accessible path either around Aquatic Park and/or to Van Ness Avenue would use the Promenade (the lower path) rather than the Service Road.

Impacts from Alternative 5

Impacts would be the same as in Alternative 3 regarding removal of the State Belt Railroad tracks. Impacts would be the same as in Alternative 4 regarding extension of the path to Van Ness Avenue. Similar to Alternatives 1-3 and unlike Alternative 4, however, in this Alternative both the Service Road and the Promenade paths would remain. As a result, there would be an accessible route and a universally accessible trail available, a long-term beneficial effect. Impacts on emergency vehicle use would be the same as in Alternative 3. As noted in the CLR:

In most cases the separation between bicycles routed on the upper walkway and tracks (left) and pedestrians along the shoreline on the Beach Promenade helps mitigate potential pedestrian/ bicycle conflicts (NPS PWR 2010: 120).

The AASHTO guide notes that:

Another solution is to provide physically separated pathways for pedestrians and wheeled users. A number of factors should be considered when determining whether to provide separate paths, such as general site conditions (i.e., the width of separation and setting), origins and destinations of different types of path users, and the anticipated level of compliance of users choosing the appropriate path. In some instances, the dual paths may have to come in close proximity or be joined for a distance due to site constraints (AASHTO 2012: 5-5).

This is the approach taken in Alternative 5.

Compared to Alternatives 1-3, the Service Road would rise approximately 70 feet further from the Promenade, necessitating a steeper slope for the Service Road while allowing the Promenade to be wider at the junction. Compared to Alternatives 1-3 it would be four feet wider. Compared to Alternative 4 it would be 6 feet narrower at that point. As a result, there could be slightly more time for users to make a decision about which path to take. Bicyclists however may be coming down the Service Road at a faster rate of speed because of the slightly steepened slope and because there would be fewer obstacles in their path with the smooth continuous concrete pavement and the railroad tracks removed. Although a stop sign could be placed at the bottom of the Service Road ramp, studies have documented that cyclists often do not obey traffic devices (SFMTA 2014). Future opportunities for installing traffic calming measures, such as rough pavement, speed bumps or rumble strips, however, would also be available if speed is determined to be a continuing safety hazard.

As in Alternatives 1-3, bicycles would also continue to exit the Service Road into automobile traffic on Van Ness Avenue, a long-term minor adverse effect.

Impact Avoidance, Minimization and Mitigation Measures

Measures that would be included in the proposed project (as appropriate to the alternative actions) to minimize impacts to visitor use opportunities and safety include:

- Replacement of part or all of the deteriorated Promenade pavement (Alternatives 2-5)
- Removal of State Belt Railroad tracks (Alternatives 3-5)
- Considering future administrative modifications to minimize conflicts between bicyclists and pedestrians on the Promenade.
- Distributing press releases to local media, and providing information on closures and alternative routes during construction of the project.
- Using a public information program to warn of construction-related road closures, delays, and hazards.
- Developing a safety plan prior to the initiation of construction to ensure the safety of visitors, workers, nearby residents, and park staff.

Cumulative Impacts: Visitor use opportunities provided by the development of visitor facilities in Aquatic Park have been available for just over 75 years. Although there has been a change in the focus of activities at Aquatic Park, for the most part, activities which began following the area's construction continue today. Among these include boating, swimming, beachcombing, and walking. Since establishment of the Aquatic Park first as part of Golden Gate National Recreation Area and later as its own national park unit, there have been a range of long-term beneficial effects from management of visitor use opportunities in the area.

Although most proposed future projects would not contribute to cumulative adverse effects, the proposed extension of the F-Line Streetcar route through Aquatic Park would result in visitors no longer being able to use the Bocce Ball courts if the proposed route identified in the Final EIS is implemented (see Figure 20). The final EIS calls for this activity to be moved to another area within Golden Gate National Recreation Area. The proposed extension of the F-Line would result in cumulative adverse effects on visitor use of the Bocce Ball courts under all alternatives. Construction of this extension could also affect the proposed project area under Alternatives 1-3 and 5. Under Alternative 5, the Service Road would be removed and visitors would continue to be able to use the single Promenade pathway. Under Alternatives 1-3 and 5, it is uncertain whether the Service Road could continue to be used given the frequency of the streetcar loading and unloading in the vicinity (NPS GOGA 2012).

When the actions in Alternatives 2-5 are combined with the effects of actions related to other past, present and future impacts in the vicinity, there would primarily be minor beneficial impacts on visitor use opportunities and safety on the Aquatic Park Promenade because of physical improvements in pavement conditions. These impacts would be greatest in Alternatives 3-5 (minor to moderate), while fewer beneficial impacts would occur in Alternative 2, because much of the deteriorating Promenade pavement would remain. When combined with the effects of the F-line project, although the alternatives in this environmental assessment would not contribute to changes in use of the Bocce Ball Court where future implementation of the F-Line would result in moderate to major adverse effects on court users.

Conclusion: The action alternatives would have a range of short-term negligible to moderate adverse effects from restricting visitor use opportunities during construction coupled with long-term beneficial impacts on safety. Beneficial impacts on safety would be greatest in Alternatives 3, 4 and 5, with many fewer beneficial impacts in Alternative 2 from the retention of the State Belt Railroad tracks. There would be ongoing minor to moderate adverse impacts on safety and visitor use from Alternative 1.

M. Interpretation and Education Affected Environment

The park offers both a visitor center (499 Jefferson Street) and the Maritime Museum (900 Beach Street). At both locations, exhibits explain the park's and maritime history and park staff are available to help visitors plan their visit and to guide them to Hyde Street Pier. Docked at Hyde Street Pier are five national historic landmark ships, including: the 1886 square-rigger *Balclutha*, 1890 steam ferryboat *Eureka*, 1891 scow schooner *Alma*, 1895 schooner *C.A. Thayer*, and 1907 steam tug *Hercules*. From Hyde Street Pier, the Aquatic Park Promenade and Muni Pier there are breathtaking views of San Francisco Bay and Alcatraz, and of the Golden Gate Bridge and City from Hyde Street Pier and Muni Pier.

On Hyde Street Pier, visitors can stroll on their own or take a guided tour or take part in special programs (such as the monthly sea chantey sing-a-long) celebrating the maritime history of the Pacific Coast. There are also a variety of self-guided and interpreter led walking tours, including of the historic waterfront. On the Pier and on the Promenade are a number of wayside exhibits, which explain the features and history of the area. Also available are 28 cell phone audio tour talks given by park rangers. Since 2006, some lucky visitors have also sailed with rangers on the NHL scow schooner *Alma*, built in 1891.

Barbary Coast Markers: Approximately eight Barbary Coast Trail Markers are located or are proposed to occur in the park. The markers were installed by the San Francisco Historical Society in 1997 and are part of a 3.8 mile walking tour that connects twenty historic sites associated with the early history of San Francisco (NPS PWR 2001: 3b, 6 of 33).

N. Interpretation and Education Environmental Consequences

Impacts from Alternatives 1 - 2

There would be no changes to or impacts on interpretation and education under Alternatives 1 or 2. There would continue to be a range of beneficial effects from conducting existing interpretive and educational programs and activities related to San Francisco Maritime National Historical Park. Effects on interpretation and education as a result of the implementation of Alternative 1 would continue to be negligible to minor and beneficial.

Impacts from Alternative 3 - 5

The loss of the State Belt Railroad tracks would have long-term moderate adverse effects on visitor understanding of the importance of the State Belt to early San Francisco and American history. In Alternatives 3-5 to partially mitigate this loss, the park would construct a representation of the tracks in the new concrete pavement through scoring or staining or another surface treatment method. In addition, interpretive signs to describe the significance of the tracks and their contribution to the Aquatic Park National Historic Landmark District, the San Francisco Port of Embarkation National Historic Landmark, and the Port of San Francisco Embarcadero and Fort Mason historic districts would be developed and installed. Combined, enhancing interpretation of these aspects of the park would have additional long-

term negligible to minor beneficial effects on visitor understanding of the importance of the railroad and why it was present in Aquatic Park.

Although the Promenade pavement would be replaced in Alternatives 3-5, there would be no effect on the Barbary Coast markers. These would be reinstalled as the pavement was replaced.

Impact Avoidance, Minimization and Mitigation Measures

Measures that would be included in the proposed project (as appropriate to the alternative actions) to minimize impacts to interpretation and education would include:

- Integrating a physical representation of the tracks in the new pavement (such as striping of textured or colored concrete or scoring in the pavement).
- Installing interpretive waysides and other displays to illustrate the history of the State Belt and its importance in the development of San Francisco, including as associated with the Aquatic Park National Historic Landmark District and the San Francisco Port of Embarkation National Historic Landmark.

Cumulative Impacts: Since its establishment (1988), the park has made changes in both the number of programs and the diversity of interpretive and educational programming, as well as regarding targeting specific programs for different audiences. The adjacent Golden Gate National Recreation Area has also dramatically altered visitor understanding of the area through a wide range of exhibits, interpretive and educational activities, including tours of Alcatraz, events in the Marin Headlands, and at Fort Mason. Combined these adjacent areas have resulted in a myriad of visitor educational and interpretive opportunities.

Ongoing and proposed actions in Alternatives 1-5 would continue to have ongoing negligible to minor beneficial effects on interpretation and education within the park. New interpretive opportunities would be present in Alternatives 3-5 because of the California State Historic Preservation Office mitigation requirement to interpret the significance of the State Belt for visitors. As a result, there would be more interpretation of area history. When the impacts of the alternatives are added to the impacts from other past, present and future actions, overall impacts would be negligible and beneficial. There are few currently proposed actions that would add to or take away from area interpretation. Ongoing improvements to nearby waterfront areas, such as Crissy Field would likely continue to occur. San Francisco Maritime NHP and Golden Gate National Recreation Area would continue to offer programming that would have cumulative beneficial effects on visitor education and understanding of the San Francisco waterfront area.

Conclusion: There would be no effect on educational or interpretive activities under Alternatives 1 or 2. Under Alternatives 3-5, there would be long-term beneficial impacts from mitigation measures that call for interpretation of the State Belt Railroad and its importance to the history of World War II and the San Francisco waterfront.

O. Park Operations Affected Environment

Numerous pavement repairs have been undertaken on the Promenade. The park has also undertaken more extensive repairs, notably in 1986 and 1998. Repairs in 1986 consisted of full replacement of the center portion of the Promenade and seawall as a result of failure caused by overwash of the Promenade due to a combined storm surge and high tide (a “king” tide) (Figure 38). Repairs in 1998 consisted of work at the bottom of the seawall toward the west, where failure occurred and was not as extensive as the 1986 repairs. In addition, subsurface repairs have also been undertaken associated with the repair of the seawall when a portion of it failed in the late 1990s. As shown in Figure 39, the Promenade is essentially a bridge between the seawall and the bleachers. Note the voids under the concrete pavement.

Ongoing measurement of tides along the San Francisco Bay waterfront near Crissy Field has shown that the height of tides has increased. In addition, fundamental changes in seawater chemistry are occurring throughout the world's oceans, according to the National Oceanic and Atmospheric Administration (NOAA) (NPS Newton 2014). Since the beginning of the industrial revolution, the release of carbon

dioxide (CO₂) from humankind's industrial and agricultural activities has increased the amount of CO₂ in the atmosphere (NPS Newton 2014). The ocean absorbs about a quarter of the CO₂ we release into the atmosphere every year, so as atmospheric CO₂ levels increase, so do the levels in the ocean. At Aquatic Park, tidal changes are evidenced by increasingly close approaches to the Promenade. Damage that occurred to the Promenade in 1998 is also thought to be partially attributed to higher tides as a result of climate change and high spring tides.

Many other smaller repairs have also been undertaken on the Promenade but have not been recorded. Most work has focused on smoothing out pavement, mostly by patching with an asphalt cold patch mix. Many of these are visible on the surface (see photographs in Chapter II: Alternatives). In other areas, the Promenade has been repeatedly resurfaced in small sections with asphalt or concrete. At one time, a moderate (15 foot-square section of pavement) was also recast and replaced.

Routine maintenance work in and around the Promenade includes lawn mowing, leaf removal, litter removal, etc. Less frequently, the following cyclic activities are undertaken: pavement patching, wall refinishing, light and light pole repair and other activities.

The following section from the WJE report describes the current condition of the Promenade pavement:

The concrete appears to be of varying ages and placements. Shallow lines are scored into the concrete that form panels from 32 inches to 36 inches wide. The panels vary from square to rectangular in plan. The shallow scored lines are not of sufficient depth to act as control joints, per modern recommendations for control joints, although they do appear to have limited irregular cracking of the concrete. The lines follow the Promenade and remain perpendicular to the shoreline in most locations. In some locations, such as in front of the Bathhouse, the control lines run perpendicular to the building and in other locations are oriented to align with the sidewalk. The pavement thicknesses and sub-base materials vary.

Asphaltic concrete pavement has been used in many locations along the Promenade, usually as an offset repair or fills material between the rails. Along nearly the entire Promenade the area between the rails as well as the track's flangeway has been filled with asphaltic concrete. In many locations the asphaltic concrete extends beyond the rails and sporadically covers the adjacent concrete. This was presumably done as needed to ameliorate vertical offsets between the rails and concrete.

At several locations there are large cracks in the concrete pavement. These almost exclusively align with control joints and run perpendicular to the shoreline. Most of these cracks also align with the concrete lamp-posts, and may be caused by restraint of the concrete at the lamp posts. These cracks generally do not have vertical offsets. The largest cracks, which are accompanied by vertical offsets occur near the center of the west bleacher. This fifteen feet wide area of concrete pavement was recast after a portion of the Promenade settled substantially, reportedly from voids developing below the pavement. Cracking is much more prevalent in this repair pavement and asphaltic concrete has been used several times to correct the vertical offset between pavements at the east end of this area. The east end of the repair pavement represents the largest offset between concrete pavements and may be indicative of continued settlement.

In general, the asphaltic concrete pavement is in much worse condition than the concrete pavement. This is most notable between the rails and in the 1 to 4 feet strip of asphaltic concrete that runs adjacent to the south rail. The south strip of asphalt appears, in many places, to be a thin topping that is greatly deteriorated leaving a rough surface with concrete visible below. The asphaltic concrete has deteriorated or displaced relative to the rails at many locations, as discussed in the railroad track condition section above.

Settlement of the asphaltic concrete pavement is very prevalent in the Service Road area. In the upper 150 feet of the Service Road the pavement has settled to a degree where it is now possible to distinguish the location of the railroad ties beneath the pavement. This presents as a series of

cracked mounds spaced apart 18 to 24 inches. Another area of very noticeable distress of the asphaltic pavement is at the interface of asphalt to concrete pavement in the narrow strip of pavement between the bleachers and the southern rail. There has been differential settlement at this location. Some of the ridges at these conditions exceed 2 inches in differential height.

The pavement, in its present condition, ponds water in a number of locations. At some of these areas, particularly two areas at the east end of the bleachers, ponding obstructs most of the path width to the north of the rails. The east end of the bleachers is also the area where the largest ridges between pavements were observed. It is possible that ponding water is infiltrating the pavement and causing the loose sands that support the pavement to settle differentially (WJE 2013: 6-9).



Figure 38: 1998 Seawall Repair



Figure 39: Voids below Promenade

In addition to work on the Promenade by park staff, the Promenade is often used by emergency vehicles, including police and fire.

P. Park Operations Environmental Consequences

Impacts from Alternative 1

There would be a wide range of park operations needed to continue to manage Aquatic Park. Among these would include continuing cultural resources management expertise, maintenance and park management operations. As a result existing minor to moderate adverse impacts on park operations from Alternative 1 would continue. Among these would be ongoing costs associated with maintaining 1,500 linear feet (approximately 37,000 square feet) of unimproved (deteriorating) concrete pavement, and 390 linear feet (3,500 square feet) of asphalt Service Road, the 16 Promenade street lights, and three bollards adjacent to Jefferson Avenue, as well as the lawns adjacent to the Promenade. There would also continue to be other park maintenance activities not related to the Promenade (such as maintaining over two acres of other pavement surfaces and numerous historic buildings and ships). Among the ongoing maintenance activities related to the Promenade alternatives include lawn mowing, light fixture maintenance, wall painting (related to deterioration and graffiti), hand-railing maintenance, pathway maintenance, and periodic pavement patching and resurfacing. Intermittent maintenance also includes repairs related to (unauthorized) skateboard use of walls, railings and steps.

Alternative 1 would also continue to result in moderately high electrical costs for lighting, ongoing radiant heat from the asphalt, and frequent repairs from less robust concrete and asphalt pavement.

Because there would continue to be limited repair and maintenance actions under Alternative 1, it is likely that the Promenade pavement would continue to deteriorate, eventually requiring replacement. Because the Promenade pavement is permeable to water in some places, ongoing repairs may not be enough to keep it from failing catastrophically during a large storm event or king tide. Impacts from ongoing maintenance would have fewer initial impacts on carbon emissions. Long-term impacts would be moderate and adverse if catastrophic failure of small or large sections occurred. When failure occurred in 1986 and 1998, the Promenade was closed and all traffic rerouted for several months.

Impacts from Alternative 2

Compared to Alternative 1, repair of the most deteriorated sections of pavement, including replacement of pavement between and adjacent to the rails would result in long-term beneficial effects on park operations from reduced maintenance costs related to the more frequent repairs that these areas normally require. Replacing the Service Road pavement with concrete would result in overall improvements regarding sustainability and would diminish heat radiation related to the asphalt pavement. Other impacts related to ongoing maintenance described in Alternative 1 would be the same. Overall impacts would remain minor to moderate and adverse, with some beneficial impacts from repairing some sections of the Promenade.

Impacts from Alternative 3

Under Alternative 3, there would be no change in the amount of Promenade pavement or in the amount of lawn to mow. Compared to Alternatives 1 and 2, the new concrete pavement on the Promenade would be able to withstand higher and stronger wave action and would be easier to maintain because it would be of one material type. Because the pavement would provide a continuous new surface, with a uniform thickness, it would be more robust and under normal conditions of wear and tear would not need as frequent maintenance as the current pavement (Alternative 1). Because the railroad tracks would be removed, it is anticipated that the pavement would also deteriorate more slowly resulting in lower long-term maintenance costs. Although the period of construction would increase carbon emissions, because the pavement would last much longer, there would likely be less overall emissions from replacing the pavement in a single project, rather than in multiple projects over time.

New LED lamps for the historic light poles would have reduced energy costs and would be easier to maintain. The lamps would also be brighter since their lighting would be wholly directed downward, instead of diffusing out. In addition, the lamps would meet city and NPS guidelines for minimizing night sky impacts.

There would be new maintenance costs associated with maintaining accessible parking near the Service Road from installing and maintaining signs and pavement markings.

Impacts from Alternative 4

Impacts would be similar to Alternative 3, except that there would be additional impacts from connecting the Promenade to Van Ness Avenue. Although the overall amount of pavement would remain approximately the same from the removal of the Service Road and the addition of the extension, there would be changes in the location of and likely the amount of lawn to mow. There would also be changes in the type of pavement, with stairs replacing the ramp on the western end of the Promenade. Although there would be slightly more wall to maintain, maintenance associated with it (primarily painting when damaged by graffiti) would be the same as in Alternative 1.

Impacts would be similar to Alternative 3 from providing accessible parking on Van Ness Avenue, except that the location of the parking would be different (at the western end of the Promenade, rather than adjacent to the Service Road). There could also be more interference with loading and unloading at the Sea Scout Base since the accessible parking would be near where that activity currently occurs, however it is likely that the park would designate spaces that would avoid this interference.

Impacts from Alternative 5

Impacts would be similar to Alternative 4, except that there would be different impacts from connecting the Promenade to Van Ness Avenue. Adverse impacts would include more pavement (300 linear feet –

approximately 3,000 square feet) to maintain, while beneficial effects would be related to the reduced amount of lawn to maintain.

Impact Avoidance, Minimization and Mitigation Measures

Measures that would be included in the proposed project (as appropriate to the alternative actions) to minimize impacts to park operations include:

- Replacing pavement in deteriorated areas (such as where ponding occurs) on the Promenade
- Repairing or replacing lamps and light posts in-kind.
- Replacing asphalt pavement with longer wearing uniform depth concrete pavement.
- Planting drought tolerant plants in re-landscaped areas.
- Replacing incandescent and fluorescent light bulbs with LED bulbs.

Cumulative Impacts: From its inception as a city-managed park hosting a private maritime heritage museum, to its management by Golden Gate National Recreation Area, and ultimately to its management under San Francisco Maritime NHP, an individual unit of the National Park System, Aquatic Park has benefited the downtown San Francisco waterfront by maintaining the cultural heritage resulting from efforts of the early city and the Works Progress Administration. Although management responsibilities have increased over time as user groups have changed and diversified, the types of overall park operations management activities have improved protection of natural and cultural resources in Aquatic Park. Although there would be a range of impacts on park operations from the alternatives under consideration in this EA, each of the alternatives would result in long-term beneficial effects on park resources. Each would also have minor to moderate adverse effects on park operations, from continuing to manage the park for future generations.

Conclusion: There would be ongoing minor to moderate adverse impacts on park operations under Alternative 1. Repaving the area between and adjacent to the rails, on the Service Road and in other deteriorated areas of the Promenade would have minor long-term beneficial effects, however minor to moderate adverse effects would continue from the need to maintain other areas of deteriorated pavement and additional cracking or subsidence related to the continued presence of the State Belt Railroad tracks. Under Alternatives 3-5, there would be long-term beneficial effects combined with ongoing adverse effects on park operations. Compared to Alternatives 1 and 2, there would be fewer adverse impacts because the pavement would be in better condition and other areas, particularly under Alternatives 4 and 5 would need less intensive work to keep them in good condition. Overall impacts, however, under all alternatives would continue to be long-term, minor and adverse.

Table 3: Impact Comparison Chart

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Soils	No additional impacts	Negligible to minor	Minor	Minor to moderate	Minor to moderate
Cumulative	No contribution	No contribution	No contribution	Negligible	Negligible
Water	No additional impacts	Negligible short- and long-term	Negligible short- and long-term	Minor short-term, Negligible long-term	Minor short-term, Negligible long-term
Cumulative	Negligible	Negligible	Negligible	Negligible	Negligible
Historic Archeological	No impacts	No impacts Slight potential for discovery	No impacts Potential for discovery	No impacts Potential for discovery	No impacts Potential for discovery
Cumulative	No contribution	No contribution	No contribution	No contribution	No contribution
Historic Structures and Cultural Landscapes	No adverse effect	No adverse effect	Adverse effect MOA with SHPO/ACHP	Adverse effect MOA with SHPO/ACHP	Adverse effect MOA with SHPO/ACHP
Cumulative	Minor to moderate adverse	Same as Alternative 1 plus long-term beneficial	Minor to moderate adverse and beneficial	Minor to moderate cumulative adverse and beneficial	Minor to moderate cumulative adverse and beneficial
Visitor Access and Transportation	No additional impacts Ongoing minor to moderate adverse	Minor to moderate adverse	Short-term adverse Long-term beneficial	Short-term adverse Long-term beneficial	Short-term adverse Long-term beneficial
Cumulative	No contribution	Moderate adverse and beneficial	Moderate adverse and beneficial	Minor adverse and moderate beneficial	Moderate adverse and beneficial
Visitor Use Opportunities / Safety	Ongoing minor to moderate adverse	Improved accessibility Negligible to moderate long-term adverse and long-term beneficial	Improved accessibility Short-term minor adverse and long-term minor beneficial	Improved accessibility Short-term minor adverse and long-term moderate beneficial	Improved accessibility Short-term minor adverse and long-term minor to moderate beneficial
Cumulative	No contribution	Minor beneficial	Minor to moderate beneficial	Moderate beneficial	Minor to moderate beneficial
Interpretation and Education	No additional impacts	No additional impacts	Long-term minor to moderate adverse and negligible to minor beneficial	Long-term minor to moderate adverse and negligible to minor beneficial	Long-term minor to moderate adverse and negligible to minor beneficial
Cumulative	No contribution	No contribution	Negligible beneficial	Negligible beneficial	Negligible beneficial
Park Operations	Ongoing minor to moderate adverse	Ongoing minor to moderate adverse and minor beneficial	Minor adverse and moderate beneficial	Minor adverse and moderate beneficial	Minor adverse and moderate beneficial
Cumulative	Minor to moderate adverse and beneficial	Minor to moderate adverse and beneficial	Minor to moderate adverse and beneficial	Minor to moderate adverse and beneficial	Minor to moderate adverse and beneficial

Chapter IV: Consultation and Coordination

A. History of Public Involvement

1. PUBLIC SCOPING

Public scoping included a press release sent out on November 6, 2012 to the park's press release mailing list and a public open house on December 6, 2012 at the maritime museum. Information from the press release was published in the San Francisco Chronicle on December 6, 2012. The formal public scoping period ended on January 6, 2013.

There were 8 public comment letters submitted, including one letter, three Planning, Environment and Public Comment (PEPC) comments and four optional comment cards. The online San Francisco Chronicle article also included space for responses to the article and there were five applicable comment entries responding to that article. The comment cards, which were offered at the public meeting, were returned by daily (3) and weekly (1) users of the Promenade, including, including self-identified walkers (3), swimmers (2), bicyclists (3), runners (2), other -- picnic, loiter (1), direct bicyclist customers (1).

Commenters were from San Francisco (7), Alameda (1) and unknown (article and 5 applicable responses). Comments were from 8 individuals, 1 organization (San Francisco Bay Trail Project), 1 newspaper article (San Francisco Chronicle), 5 applicable responses (San Francisco Chronicle).

Altogether 58 comments were recorded, including 11 outside the scope, four non-substantive and 43 substantive. The substantive comments were subsequently divided into 19 concern statements.

2. ALTERNATIVES SCOPING

The park conducted scoping in winter 2014, including hosting a public open house on February 20, 2014 to discuss the preliminary alternatives being considered for the Environmental Assessment.

Approximately 30 people attended the meeting and of those 14 people provided written comments. One commenter was affiliated with the Port of San Francisco and one was from the San Francisco Bicycle Coalition. Two others identified themselves as Aquatic Park Neighbors. Other commenters did not express an affiliation. Comments are summarized in Chapter I: Purpose and Need.

3. PUBLIC REVIEW

This EA is being made available to the public, federal, state and local agencies and organizations through press releases distributed to a wide variety of news media, direct mailing, placement on the park's website and announcements in press releases as well as in local public libraries (J. Porter Shaw Maritime Library: San Francisco Public Library (SFPL), Main; SFPL Marina; SFPL North Beach, SFPL Golden Gate Valley). Copies of the document may also be obtained from:

Mail:
Superintendent
San Francisco Maritime National Historical Park
Attn: Aquatic Park Promenade Project
Building E, Fort Mason Center
San Francisco, CA 94123

Phone: (415)561-7000 or Fax: (415)556-1624

Email: safr_planning@nps.gov

NPS Planning, Environment and Public Comment (PEPC) website: www.parkplanning.nps.gov/43036

Note: NPS practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. Individual respondents may request that we

withhold their home address from the record, which we will honor to the extent allowable by law. If you want the NPS to withhold your name and address, you must state this prominently at the beginning of your comment. The NPS will make all submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety.

Responses to comments on the EA will be addressed in the proposed Finding of No Significant Impact (FONSI) or will be used to prepare an Environmental Impact Statement (EIS) (if appropriate).

B. List of Preparers and Persons and Agencies Consulted

San Francisco Maritime National Historical Park

Building E, Fort Mason, San Francisco, California 94123
Craig Kenkel, former Superintendent
Robbyn Jackson, Chief of Cultural Resources (preparer)
Phil Erwin, Chief of Facilities
Todd Bloch, Historical Architect (preparer)
Rob Kier, Buildings and Utilities Supervisor
Lynn Cullivan, Management Assistant
Mike Bell, Project Manager
Stephen Canright, Historian

Golden Gate National Recreation Area:

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Leo Barker, Archeologist
Steve Haller, Historian
Amy Hoke, Historical Landscape Architect

Wiss, Janney, Elstner Associates, Inc.:

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Pacific West Regional Office, Seattle

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Justin DeSantis, Federal Lands Highways Program Manager
Elaine Jackson-Retondo, National Historic Landmark Program Manager
Scott Pardue, former Safety and Wellness Program Manager
Sarah Raube, Landscape Architect (preparer)

California Office of Historic Preservation, Department of Parks and Recreation

1725 23rd Street, Suite 100 SACRAMENTO, CA 95816-7100 (916) 445-7000 Fax: (916) 445-7053 calshpo@parks.ca.gov
Carol Roland-Nawi, Ph.D., State Historic Preservation Officer
Mark Beason, Project Review Unit Historian

C. Agency Consultation and Permitting

For the no-action alternative, no permits would be required. For the action alternatives, the following are among the agencies and permit processes which may be necessary based on proposed actions:

California State Historic Preservation Office

The Aquatic Park National Historic Landmark District is listed on the National Register of Historic Places (NRHP) and actions in the alternatives have the potential to affect another national historic landmark (San Francisco Port of Embarkation) and two historic districts (Port of San Francisco Embarcadero and Fort Mason).

The National Historic Preservation Act, as amended (16 USC 470 et seq.), NEPA, National Park Service Organic Act, NPS Management Policies (2001), Director's Order – 12: Conservation Planning, Environmental Impact Analysis, and Decision-making (2001), and Director's Order – 28: Cultural Resources Management Guideline require the consideration of impacts on cultural resources, either listed in or eligible to be listed in, the NRHP. The National Park Service has contacted the California State Historic Preservation Office (SHPO) and discussed the proposed rehabilitation. SHPO consultation is ongoing. Several of the alternatives would require a Memorandum of Agreement (MOA) between the National Park Service (San Francisco Maritime NHP) and the California State Historic Preservation Office, including the potential for comments by the Advisory Council on Historic Preservation.

City of San Francisco

The City has a 20-foot wide easement underneath the Promenade for electricity and sewer line beneath it. These utility lines (water, electricity and sewer) are located beneath the Promenade. Consultation with the City of San Francisco is ongoing, including with the San Francisco Bay Conservation and Development Commission (see below). There is one sewer line beneath the Promenade that comes from the West Roundhouse and heads towards the corner of Jefferson and Hyde streets where a pump station used to sit. Since it has been abandoned in place, that line can be capped off if it is discovered during construction under Alternatives 3-5 and provision has been made for this potential in preliminary design documents. It likely lies deeper than the new pavement excavation and could be left in place as is.

San Francisco Bay Conservation and Development Commission (BCDC)

Because the project is within 100 feet of the shoreline, a permit is required from the San Francisco Bay Development and Conservation Commission (BCDC), a state agency. According to the BCDC website, BCDC authorizes activities:

- *within priority use areas* (those parts of the shoreline that the Commission has reserved for ports, water-related industries, airports, wildlife refuges and water-related recreation), the Commission can authorize only either the use for which the area has been reserved or an interim use that will not preclude the site from being converted to the priority use. Maximum feasible public access to the shoreline must be provided as part of the project.

Since the proposed project would not alter public access to the shoreline no changes in the permitting would be required.

In addition, BCDC reviews federal projects for Coastal Zone Management Act consistency as follows:

In addition to carrying out its regulatory authority under state law, the federal Coastal Zone Management Act allows the Commission to review federal projects and projects that require federal approval or are supported with federal funds. The Commission carries out its "federal consistency" responsibilities by reviewing federal projects much like it does permit applications. However, the Commission cannot require federal agencies to submit permit applications. Nevertheless, federal agencies and applicants for federal approvals must provide the project details, data and other material required by the form to assure that the Commission has the information it needs to evaluate federal projects.

BCDC has requested drawings when available and has suggested adding it to the park's consistency determination as a regular maintenance project.

Pacific Gas and Electric

There are 15 lamp posts along the perimeter of the Promenade that will be removed, refurbished and rewired. Through an historic agreement PG&E maintains every other lamp post on an existing high voltage street lighting grid. The park has met with PG&E on several occasions and PG&E has agreed that during the proposed rehabilitation of the Promenade the affected lamp posts will be converted to a more energy efficient system. When this occurs, the park will take over maintenance of the lamp posts and PG&E will no longer have responsibility for them. A memo between the park and PG&E will be used to confirm this arrangement.

U.S. Fish and Wildlife Service

In accordance with section 7(c) of the Endangered Species Act of 1973, as amended (16 USC 1531 et seq.), it is the responsibility of the federal agency (National Park Service) proposing the action to determine whether the alternatives would adversely affect any listed species or designated critical habitat. The U.S. Fish and Wildlife Service and the National Marine Fisheries Service were notified and asked to provide a list of potential threatened, endangered, and special status species in the vicinity of the proposed project. There are no special status species that would be impacted by the project activities.

Coastal Zone Management Act Consistency Determination

The Coastal Zone Management Act of 1972 established a voluntary national program within the Department of Commerce to encourage coastal states to develop and implement coastal zone management plans. In order to be eligible for federal approval, each state's plan was required to define boundaries of the coastal zone, to identify uses of the area to be regulated by the state, the mechanism (criteria, standards, or regulations) for controlling such uses, and broad guidelines for priorities of uses within the coastal zone. In addition, the 1972 law established a system of criteria and standards requiring that federal actions be conducted in a manner consistent with the federally approved plan. The standard for determining consistency varied depending on whether the federal action involved a permit, license, financial assistance, or a federally authorized activity (USFWS 2005). A Coastal Zone Management Act consistency determination would be required for this project. As noted above, consultation between the park and the San Francisco Bay Conservation and Development Commission is ongoing.

Non-Point Discharge Elimination System (NPDES) permit and Stormwater Pollution Prevention Plan (SWPPP)

Both permits are required because the project is approximately one acre. These would be obtained by the contractor and the park from the State Water Resources Control Board.

Golden Gate National Recreation Area disbursement of Cosco Busan Funding

A portion of the project funding is coming from oil spill mitigation money from the Cosco Busan spill in 2007. As a result, the project is required to comply with California State Fish and Game requirements that address a variety of resource impacts. Where applicable, that analysis has been incorporated into this EA and is specifically shown in Appendix A.

Chapter V: References

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Acronyms

AASHTO	American Association of State Highway Transportation Officials
ABA	Architectural Barriers Act (Federal Architectural and Historic Preservation Act)
ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act
AGODA	Accessibility Guidelines for Outdoor Developed Areas
APE	Area of Potential Effects
ARPA	Archeological Resources Protection Act
CBA	Choosing By Advantages
CEQ	(President's) Council on Environmental Quality
CFR	Code of Federal Regulations
CLI	Cultural Landscape Inventory
CLR	Cultural Landscape Report
DO	(NPS) Director's Order (NPS)
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
FR	Federal Register
GMP	General Management Plan
HABS	Historic American Buildings Survey
HAER	Historic American Engineering Record
HALS	Historic American Landscape Survey
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NHL	National Historic Landmark
NHLD	National Historic Landmark District
NHP	National Historical Park
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NPS	National Park Service
PWRO	(NPS) Pacific West Regional Office
ROD	Record of Decision
SAFR	San Francisco Maritime National Historical Park
SFMTA	San Francisco Municipal Transportation Agency
SHPO	State Historic Preservation Office/Officer
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VA	Value Analysis
WJE	Wiss, Janney, Elstner Associates, Inc.
WPA	Works Progress Administration
WRO	NPS Western Regional Office (now NPS Pacific West Regional Office)