



GOLDEN GATE NATIONAL RECREATION AREA MUIR WOODS NATIONAL MONUMENT

DRAFT GENERAL MANAGEMENT PLAN/ENVIRONMENTAL IMPACT STATEMENT

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RESOURCES AND VALUES THAT COULD BE AFFECTED
BY THE ALTERNATIVES (AFFECTED ENVIRONMENT)

9



INTRODUCTION

1 This part of the document describes the
2 existing environment of Golden Gate
3 National Recreation Area and Muir Woods
4 National Monument. This discussion serves
5 to identify the current conditions in the park
6 that could be affected by the implementation
7 of any of the alternatives in this plan. The
8 information is organized around six general
9 topics: natural resources, cultural resources,
10 visitor use and experience, social and
11 economic environment, transportation, and
12 park operations, although there is some
13 overlap between social and economic
14 environment and transportation.
15
16 Regarding the discussion of the first three
17 topics—natural resources, cultural resources,

18 and visitor use and experience—differences
19 between the two units are distinct enough to
20 warrant separate discussions for Golden Gate
21 National Recreation Area and Muir Woods
22 National Monument. However, because of
23 the proximity of the two units and their
24 similar relationships to the urban centers
25 within the planning area, combined
26 discussions that incorporate information
27 about both units are presented for the last
28 three topics.
29
30 Table 1, beginning on the next page, presents
31 more detailed information on specific impact
32 topics and the reasons that each was retained
33 or dismissed from further evaluation.

SUMMARY TABLE OF IMPACT TOPICS

TABLE 1. IMPACT TOPICS RETAINED FOR OR DISMISSED FROM DETAILED ANALYSIS

Impact Topic (Retained or Dismissed from further analysis)	Rationale	Relevant Law, Regulation, or Policy
Natural Resources		
Carbon Footprint and Air Quality Retained	<p>Retained as an impact topic for further detailed analysis because of the interest in minimizing greenhouse gas emissions and reducing the carbon footprint of the park and monument, the Bay Area, and the state of California. The focus of the analysis is on greenhouse gas emissions related to NPS operational activities and how that would vary among the alternatives included in the plan.</p> <p>The park and monument are within the class II air quality areas under the Clean Air Act, as amended. A class II designation indicates the maximum allowable increase in concentrations of pollutants over baseline concentrations of sulfur dioxide and particulate matter as specified in section 163 of the Clean Air Act.</p> <p>The California Clean Air Act of 1988, as amended, sets ambient air quality standards that are stricter than the federal standards and requires local air districts to promulgate and implement rules and regulations to attain those standards. Under the act, California Ambient Air Quality Standards are set for all pollutants covered under national standards, as well as vinyl chloride, hydrogen sulfide, sulfates, and visibility-reducing particulates. If an area does not meet the California standards, it is designated as a state nonattainment area.</p> <p>Golden Gate National Recreation Area and Muir Woods National Monument are in the San Francisco Bay Area Air Basin, which consists of San Francisco, San Mateo, Santa Clara, Alameda, Contra Costa, Napa, and Marin counties, as well as portions of Sonoma and Solano counties. The Bay Area Air Quality Management District is the air quality agency responsible for the entire basin. The San Francisco Bay Area is designated a federal nonattainment area for ozone and a state nonattainment area for ozone and inhalable particulate matter.</p> <p>Dust and exhaust emissions would be produced by development activities and the potential for increased vehicular traffic to the park and monument; however, these activities would not be expected to cause national ambient air quality standards to be exceeded because visitation increases would be relatively small and the level of new development proposed is minimal. Air quality impacts from the use of prescribed fire were analyzed in the park's <i>Fire Management Plan / Environmental Impact Statement</i>. Any amount of pollutants added because of the actions proposed in this general management plan (GMP) would be negligible compared to existing levels. None of the actions described in this plan would violate any air quality standard or result in a</p>	<p>Clean Air Act; Executive Order 13423</p> <p>DOI Secretarial Order 3226, Amendment No.1</p> <p>California Global Warming Solutions Act of 2006 (AB32)</p> <p><i>NPS Management Policies 2006</i></p> <p>NPS Pacific West Region Directive PW-047</p>

TABLE 1. IMPACT TOPICS RETAINED FOR OR DISMISSED FROM DETAILED ANALYSIS

Impact Topic (Retained or Dismissed from further analysis)	Rationale	Relevant Law, Regulation, or Policy
	cumulatively considerable net increase of any criteria pollutant for which the Bay Area is in nonattainment under federal or state ambient air quality standards. Implementation of any of the alternatives described in the plan would have negligible effects on air quality and the class II air quality status of the park and monument would be unaffected.	
Soils and Geologic Resources and Processes (including natural shoreline and coastal processes) Retained	Soils and geologic resources and processes are an important component of maintaining the ecological integrity of the park and monument. Actions included in the plan, such as recreational facility development, changes in visitor use, and restoration, could affect soils and natural coastal processes. Any impacts that would adversely affect soils or geologic processes would be of concern to NPS managers and the public. Therefore, this topic was retained for detailed analysis.	NPS <i>Management Policies 2006</i>
Water Resources and Hydrologic Processes (including stream character, water quantity and quality, watershed processes, wetlands, floodplains, and marine/estuarine resources) Retained	Water resources and hydrologic processes are an important component of the ecological communities of the park and monument. Development can alter, and has altered in the past, natural surface flows and watershed processes, with subsequent effects on the natural environment. Actions included in the plan, such as recreational facility development and stream/habitat restoration could affect water quality, wetlands, floodplains, and watershed processes. Therefore, water resources and hydrologic processes were retained for detailed analysis.	Clean Water Act; Executive Order 12088 Executive Order 11990 Executive Order 11988 NPS <i>Management Policies 2006</i> Director's Order 77-1 Director's Order 77-2
Habitat (vegetation and wildlife) Retained	Terrestrial and aquatic habitat is an important resource that defines the natural environment. The park and monument contain a diversity of plant and animal habitats. Actions included in the plan, such as recreational facility development, changes in visitor use, and restoration, could affect natural habitat values. Proposed actions could beneficially or adversely affect these resources, which would be of concern to NPS managers and the public. Therefore, this topic was retained for detailed analysis.	NPS Organic Act NPS <i>Management Policies 2006</i>
Special Status Species: Federal Threatened and Endangered Retained	The park and monument host a variety of federal listed species. Actions included in the plan, such as recreational facility development, changes in visitor use, and habitat restoration, could affect the quality of habitat preferred by many of these species, as well as the behavior of certain species. Therefore, the following federal listed species were retained for detailed analysis: northern spotted owl, coho salmon, steelhead trout, California red-legged frog, mission blue butterfly, tidewater goby, western snowy plover, San Francisco lessingia, San Francisco garter snake, and San Bruno elfin butterfly. See appendix D for a listing of all special status species considered. All species that have been retained for analysis are identified in the appendix table.	Endangered Species Act Migratory Bird Treaty Act NPS <i>Management Policies 2006</i>

TABLE 1. IMPACT TOPICS RETAINED FOR OR DISMISSED FROM DETAILED ANALYSIS

Impact Topic (Retained or Dismissed from further analysis)	Rationale	Relevant Law, Regulation, or Policy
Special Status Species: State Threatened and Endangered Retained	The park and monument host a number of state listed species. Actions included in the plan, such as recreational facility development, changes in visitor use, and habitat restoration, could affect the quality of habitat preferred by one of these species, as well as the behavior of the species. Therefore, the following state listed species was retained for detailed analysis: bank swallow	Endangered Species Act; California Endangered Species Act; NPS <i>Management Policies 2006</i>
Special Status Species: Other Federal and State Listed Species Dismissed	Several other federal and state listed species that are known to occur in the area were dismissed because (1) these species are typically not found in the park or monument, (2) their preferred habitat would not be physically disturbed by any of the GMP alternatives, or (3) the effects of actions included in the alternatives on these species would be negligible. See appendix D for a listing of all special status species considered. All species that have not been identified as "Retained" were dismissed for one or more of the above reasons.	Endangered Species Act Bald and Golden Eagle Protection Act Migratory Bird Treaty Act Marine Mammal Protection Act National Environmental Policy Act California Endangered Species Act; NPS <i>Management Policies 2006</i>
Essential Fish Habitat Dismissed	In accordance with the 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act, federal agencies that fund, permit, or carry out activities that may adversely impact essential fish habitat are required to consult with the National Marine Fisheries Service regarding the potential adverse effects of their actions on essential fish habitat; such agencies must also respond in writing to National Marine Fisheries Service recommendations. Essential fish habitat is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Waters include aquatic areas and their associated physical, chemical, and biological properties. Substrate includes sediment underlying the waters. "Necessary" means the habitat required to support a sustainable fishery and the species' contribution to a healthy ecosystem. Spawning, breeding, feeding, or growth to maturity covers all habitat types used by a species throughout its life cycle. The conservation of essential fish habitat is an important component of building and maintaining sustainable fisheries. Loss or degradation of essential fish habitat is primarily the result of activities such as point and nonpoint water pollution, livestock grazing, mining, road construction, estuarine or marine habitat alteration, creation of migration barriers or hazards, increases or decreases in sediment delivery, and alteration of stream banks, shorelines, wetlands, and floodplains. The San Francisco Bay, a migratory corridor between riverine habitat and the Pacific Ocean, is designated critical habitat for several listed fish species. Habitat loss and degradation is primarily the result of overfishing, timber harvest, point and	Magnuson-Stevens Fishery Conservation and Management Act

TABLE 1. IMPACT TOPICS RETAINED FOR OR DISMISSED FROM DETAILED ANALYSIS

Impact Topic (Retained or Dismissed from further analysis)	Rationale	Relevant Law, Regulation, or Policy
	<p>nonpoint water pollution, livestock grazing, mining, road construction, diking and stream bank stabilization, and dredge and fill activities.</p> <p>None of the actions proposed in the GMP alternatives would contribute to essential fish habitat loss or degradation. Some of the actions described in this plan would contribute to improvements in the quality or quantity of essential fish habitat; however, additional environmental compliance and consultation with National Marine Fisheries Service would take place prior to implementation of these specific projects. Therefore, the topic of essential fish habitat was dismissed from further analysis.</p>	
<p>Marine Protected Areas Retained</p>	<p>Executive Order 13158, "Marine Protected Areas," defines marine protected areas as any area of the marine environment that has been reserved by federal, state, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein. The executive order requires every federal agency to identify its actions that affect the natural or cultural resources that are protected by a marine protected area and, to the extent permitted by law and the maximum extent practicable, to avoid harming these resources. There are several federal- and state-designated marine protected areas near the park. The marine and estuarine area of Golden Gate National Recreation Area was designated a federal marine protected area under the national system of marine protected areas on May 25, 2010. Impacts on the natural and cultural resources protected by these marine protected areas are analyzed under their respective topics and marine protected areas are not included as a separate impact topic.</p>	<p>Executive Order 13158</p>
<p>Prime and Unique Farmlands Dismissed</p>	<p>In August 1980, the Council on Environmental Quality (CEQ) directed that federal agencies assess the effects of their actions on farmland soils classified as prime or unique by the U.S. Department of Agriculture, Natural Resource Conservation Service. Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops (e.g., citrus, tree nuts, olives, cranberries, fruit, and vegetables). The Farmland Protection Policy Act (7 <i>United States Code</i> [USC] 4201 et seq.) and the U.S. Department of the Interior (Environmental Statement Memorandum No. ESM94-7 – Prime and Unique Agricultural Lands) require an evaluation of impacts on prime or unique agricultural lands.</p> <p>According to Natural Resource Conservation Service soils data, prime and unique farmlands do exist within the jurisdictional boundaries of Golden Gate National Recreation Area in San Mateo County at and adjacent to the Rancho Corral de Tierra property. All of these farmlands (with one</p>	<p>Farmland Protection Policy Act Council on Environmental Quality 1980 Memorandum</p>

TABLE 1. IMPACT TOPICS RETAINED FOR OR DISMISSED FROM DETAILED ANALYSIS

Impact Topic (Retained or Dismissed from further analysis)	Rationale	Relevant Law, Regulation, or Policy
	<p>small exception) are in private ownership and will not be acquired or managed by the National Park Service as part of the future land transfer with the Peninsula Open Space Trust. The one exception is an approximately 5-acre segment of farmland (adjacent to the privately owned Aenlle property) that contains prime soils and is scheduled to be acquired by the National Park Service as part of the land transfer. Once acquired, the National Park Service intends to use the land for native plant production supporting landscape restoration projects in the park. Consequently, no loss of prime soils or their potential for agricultural production would occur. However, the management zone used in the preferred alternative and in one or more of the other alternatives (diverse visitor opportunities zone) allows for facility development, diverse visitor uses, and ecosystem restoration. Should the National Park Service decide to discontinue the agricultural use of the prime farmland and convert it to a nonagricultural use that could adversely impact its soil resources and its use and potential for agricultural production, then the National Park Service would be required to evaluate the impacts on prime farmland and consult with the Natural Resource Conservation Service.</p> <p>Within Golden Gate National Recreation Area in Marin County, only farmland of statewide importance exists—there are no prime and unique farmlands. Based on a determination by the Natural Resource Conservation Service in 2007, soils and farmland in the vicinity of the Lower Redwood Creek property are not classified as prime or unique farmland (Parson 2007).</p> <p>In addition, there are no prime and unique farmlands within the boundaries of Muir Woods National Monument. Therefore, this topic was dismissed from further analysis.</p>	
<p>Natural or Depletable Resource Requirements and Conservation Potential</p> <p>Dismissed</p>	<p>None of the alternatives being considered would result in the extraction of new resources from Golden Gate National Recreation Area or Muir Woods National Monument. In all of the alternatives, ecological principles would be applied to ensure that the natural resources of the park and monument were maintained and protected. Certain resources could continue to be collected for scientific and educational purposes, and the specimens would be stored in the NPS collection. Agricultural operations on NPS lands would continue to result in the harvesting of crops, which assist in meeting cultural landscape objectives. The fields would be managed to sustain this harvest. Implementation of the alternatives would result in the use of limited natural resources and energy for construction and operation of new recreational facilities and for restoration activities. New development would be designed to be sustainable to the maximum extent practicable. The use and consumption of fuel and other nonrenewable resources for NPS operations, activities, and development associated with the alternatives would be very small in comparison to that of the region.</p>	<p>National Environmental Policy Act</p> <p>Council on Environmental Quality</p>

TABLE 1. IMPACT TOPICS RETAINED FOR OR DISMISSED FROM DETAILED ANALYSIS

Impact Topic (Retained or Dismissed from further analysis)	Rationale	Relevant Law, Regulation, or Policy
	Overall, the impact on this topic would likely be negligible and thus it was dismissed from detailed analysis.	
Energy Requirements and Conservation Potential Dismissed	<p>Council on Environmental Quality guidelines for implementing the National Environmental Policy Act of 1969 (NEPA) require examination of energy requirements and conservation potential in environmental impact statements. NPS staff strive to incorporate the principles of sustainable design and development into all facilities and park operations. Sustainability can be described as the result achieved by doing things in ways that do not compromise the environment or its capacity to provide for present and future generations. Sustainable practices minimize the short-term and long-term environmental impacts of developments and other activities through resource conservation, recycling, waste minimization, and the use of energy efficient and ecologically responsible materials and techniques.</p> <p>The NPS <i>Guiding Principles of Sustainable Design</i> (1993) provides a basis for achieving sustainability in facility planning and design, emphasizes the importance of biodiversity, and encourages responsible decisions. The guidebook describes principles to be used in the design and management of visitor facilities that emphasize environmental sensitivity in construction, use of nontoxic materials, resource conservation, recycling, and integration of visitors within natural and cultural settings. The National Park Service would minimize energy costs, eliminate waste, and conserve energy resources by using energy efficient and cost effective technology wherever possible. Recent examples include projects to install photovoltaic panels on the NPS headquarters building at Upper Fort Mason and projects to pursue alternative energy options at Alcatraz Island. Energy efficiency would also be incorporated into any decision-making process during the design or acquisition of facilities, as well as all decisions affecting park operations.</p> <p>The use of value analysis and value engineering, including life cycle cost analysis, would be performed to examine energy, environmental, and economic implications of proposed NPS development. National Park Service staff would encourage suppliers, permittees, and contractors to follow sustainable practices and would address sustainable park and park partner practices in interpretive programs. Consequently, any adverse impacts relating to energy use, availability, or conservation would be negligible. Therefore, energy requirements and conservation potential was dismissed from further analysis.</p>	National Environmental Policy Act Council on Environmental Quality

TABLE 1. IMPACT TOPICS RETAINED FOR OR DISMISSED FROM DETAILED ANALYSIS

Impact Topic (Retained or Dismissed from further analysis)	Rationale	Relevant Law, Regulation, or Policy
Cultural Resources		
Archeological Resources Retained	Actions included in the plan, such as recreational facility development, changes in visitor use, and ecosystem restoration, could result in impacts on archeological resources. Therefore, this topic has been retained for detailed analysis.	National Historic Preservation Act; National Environmental Policy Act Secretarial Order 13007 Director's Order 28 <i>NPS Management Policies 2006</i> NPS-28A, "Archeological Resources Management"
Cultural Landscapes Retained	Actions included in the plan, such as recreational facility development, changes in visitor use, and ecosystem restoration, could result in impacts on the integrity and function of identified or potential cultural landscapes. Therefore, this topic has been retained for detailed analysis.	<i>NPS Management Policies 2006</i> NPS-28, "Cultural Resources Management"
Ethnographic Resources Retained (for Alcatraz Island only)	Research and consultation with affiliated American Indian tribes and descendants to identify ethnographic resources have not been undertaken in the park and monument. There may also be ethnographic resources at Alcatraz Island that have association to other American Indian groups and individuals. Actions included in the plan, such as recreational facility development, changes in visitor use, and restoration, could result in impacts on potential ethnographic resources at Alcatraz Island. Therefore, this topic has been retained for detailed analysis.	National Environmental Policy Act Secretarial Order 13007 Director's Order 28 <i>NPS Management Policies 2006</i> NPS-28, "Cultural Resources Management"
Historic Structures Retained	Many of the structures in the park and monument are listed or have been determined eligible for listing in the National Register of Historic Places. Actions included in the plan, such as adaptive reuse of structures and changes in visitor use, could result in impacts on historic structures. Therefore, this topic has been retained for detailed analysis.	National Historic Preservation Act <i>NPS Management Policies 2006</i> NPS-28, "Cultural Resources Management"
Park Collections Retained	Actions included in the plan, such as options for the use, curation, and storage of park collections, could result in impacts on park collections. Therefore, this topic has been retained for detailed analysis.	National Historic Preservation Act <i>NPS Management Policies 2006</i> Director's Order 24 "Museum Collections Management"
Indian Trust Resources Dismissed	Secretarial Order 3175 requires that any anticipated impacts on 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 it represents a duty to carry	Secretarial Order 3175

TABLE 1. IMPACT TOPICS RETAINED FOR OR DISMISSED FROM DETAILED ANALYSIS

Impact Topic (Retained or Dismissed from further analysis)	Rationale	Relevant Law, Regulation, or Policy
	<p>out the mandates of federal law with respect to American Indian and Alaska Native tribes.</p> <p>There are no Indian trust resources or sacred sites in the park or monument; therefore, this topic was dismissed from further consideration.</p>	
Visitor Use and Experience		
<p>Visitor Use and Experience (including diversity of recreation opportunities; visitor access; experience of the park setting; visitor understanding, education, and interpretation; and visitor safety)</p> <p>Retained</p>	<p>Enjoyment of the park resources by visitors is part of the fundamental purpose of a national park unit. The visitor experience is an important issue that could be appreciably affected under the alternatives. The Organic Act of 1916 and <i>NPS Management Policies 2006</i> direct the National Park Service to provide enjoyment opportunities that are uniquely suited and appropriate to the resources found in the park and monument. The types and levels of access are important components of visitor use and experience and are of concern to many people as well as NPS managers. Therefore, this topic was retained for detailed analysis.</p>	<p>Enabling legislation; <i>NPS Management Policies 2006</i></p>
<p>Lightscape (dark night sky preservation)</p> <p>Dismissed</p>	<p>Due to its urban setting, light pollution is present in many areas of Golden Gate National Recreation Area and Muir Woods National Monument, although some areas retain a high degree of natural darkness. The National Park Service strives to minimize the intrusion of artificial light into the night scene by limiting the use of artificial outdoor lighting to basic safety requirements, shielding the lights when possible, and using minimal impact lighting techniques. Any new facilities proposed in the alternatives that would necessitate new nighttime lighting would be constructed with down lighting that would minimize light pollution. Furthermore, the level and type of new development and lighting proposed in the plan is minimal and dispersed. The effects of actions contained in this plan on natural lightscapes would be negligible to minor. Therefore, lightscape was dismissed from further analysis.</p>	<p>NPS Organic Act Enabling legislation <i>NPS Management Policies 2006</i></p>
<p>Public Health and Safety</p> <p>Dismissed</p>	<p>The proposed developments and actions included as part of the GMP alternatives would not result in any identifiable adverse impacts on human health or safety. Furthermore, visitor safety is addressed under the topic of visitor use and experience. Therefore, public health and safety was dismissed from further analysis.</p>	<p>Council on Environmental Quality regulations Director's Order 12 Handbook</p>
<p>Soundscape (natural sound preservation)</p> <p>Dismissed</p>	<p>An important part of the NPS mission is the preservation of natural soundscapes associated with national park system units. Natural soundscapes exist in the absence of human-caused sound. The natural ambient soundscape is the aggregate of all the natural sounds that occur in a park unit, together with the physical capacity for transmitting natural sounds. Natural sounds occur within and beyond the range of sounds that humans can perceive and can be transmitted through air, water, or solid materials. The frequencies, magnitudes, and durations of human-caused sound</p>	<p>NPS Organic Act <i>NPS Management Policies 2006</i> Director's Order 47</p>

TABLE 1. IMPACT TOPICS RETAINED FOR OR DISMISSED FROM DETAILED ANALYSIS

Impact Topic (Retained or Dismissed from further analysis)	Rationale	Relevant Law, Regulation, or Policy
	<p>considered acceptable varies among national park system units, as well as potentially throughout each park unit; generally acceptable levels are greater in developed areas and less in undeveloped areas.</p> <p>Unnatural sounds, often a byproduct of recreational activities, can be intrusive and can impact natural soundscape conditions that affect visitor experience and use and wildlife. The National Park Service has taken substantial steps to preserve natural soundscapes and manage human-caused noise, especially at Muir Woods National Monument where data collection, research, and management actions have improved the natural soundscape and successfully led to improved visitor experiences. Actions included in the plan would not substantially change visitor use and the generation of human-caused noise compared to current conditions; consequently, sound conditions in the park and monument would not be expected to be substantially affected—the impact to the natural soundscape would be negligible to minor. Therefore, this topic was dismissed from further analysis.</p>	
Social and Economic Environment		
Social and Economic Retained	The social and economic conditions of the Bay Area and the gateway counties of Marin, San Francisco, and San Mateo influence Golden Gate National Recreation Area and Muir Woods National Monument and how they are managed. Conversely, the park and monument directly contributes to the social and economic conditions of these three counties and the Bay Area as a whole. This section describes the potential beneficial and adverse impacts related to this relationship by highlighting the park's quality of life benefits as well as the Bay Area's demographic and economic trends.	National Environmental Policy Act
Conformity with Local Land Use Plans Dismissed	The basic land use of the park and monument as a public recreation and resource management area is in conformance with local land use plans. The creation of additional recreation and visitor service opportunities in the park and monument as proposed in the alternatives would be consistent with existing park land uses or local (non-NPS) land use plans, policies, or controls for the area. Therefore, this topic was dismissed from detailed analysis.	Council on Environmental Quality regulations Director's Order 12 Handbook
Urban Quality and Design of the Built Environment Dismissed	The quality of urban areas would be addressed by design guidelines used to guide new development and the rehabilitation of existing structures, as well as project review processes that the National Park Service has in place, all of which are part of standard operating procedures. Throughout the park and monument, vernacular architecture and compatible design would be considered for new structures built (or modifications to existing structures) under all of the alternatives. Emphasis would be placed on designs, materials, and colors that blend in and do not detract from the natural and built environment. Consequently, adverse impacts on the	40 CFR 1 502.16

TABLE 1. IMPACT TOPICS RETAINED FOR OR DISMISSED FROM DETAILED ANALYSIS

Impact Topic (Retained or Dismissed from further analysis)	Rationale	Relevant Law, Regulation, or Policy
	quality of urban areas are anticipated to be negligible. Therefore, this topic was dismissed from detailed analysis.	
Environmental Justice Dismissed	<p>Executive Order 12898 requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing the disproportionately high or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. According to the Environmental Protection Agency (EPA), environmental justice is the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.</p> <p>Marin, San Francisco, and San Mateo counties, where the park and monument are located, contain minority and low-income populations; however, environmental justice is dismissed as an impact topic for the following reasons:</p> <p>NPS staff and planning team actively solicited public participation as part of the planning process and gave equal consideration to input from all persons regardless of age, race, income status, or other socioeconomic or demographic factors.</p> <p>Implementation of any of the alternatives would not result in any disproportionate human health or environmental effects on minorities or low-income populations and communities.</p> <p>The impacts associated with implementation of the alternatives would not result in any effects that would be specific to any minority or low-income community. Any anticipated impacts, such as traffic, would not disproportionately affect minority or low-income populations.</p>	Executive Order 12898, "General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations"
Transportation		
Visitor Connections to Park Sites and Communities Retained	Actions included in the plan, such as changes in visitor opportunities and access, as well as improvements to alternative transportation, could result in impacts on visitor connections to park sites and communities. Therefore, this topic was retained for detailed analysis.	National Environmental Policy Act

TABLE 1. IMPACT TOPICS RETAINED FOR OR DISMISSED FROM DETAILED ANALYSIS

Impact Topic (Retained or Dismissed from further analysis)	Rationale	Relevant Law, Regulation, or Policy
Functionality of the Transportation System Retained	Actions included in the plan, such as changes in visitor access, alternate modes of transportation, and transportation system assets, could result in impacts on the functionality of the parks' transportation system. Therefore, this topic was retained for detailed analysis.	National Environmental Policy Act
Park Management, Operations, and Facilities		
NPS Operations Facilities Retained	Support facilities necessary to house, transport, inform, and serve visitors and staff require proper planning, design, programming, construction, operation and maintenance. Facilities should be cost-effective, integrate sustainable design, and consider impacts on the landscape, environs, and resources of the park and monument. Actions included in the plan, such as the type and location of NPS operations facilities for maintenance and law enforcement, could result in impacts on NPS operations and management. Therefore, this topic was retained for detailed analysis.	NPS Organic Act DOI Departmental Manual; <i>NPS Management Policies 2006</i> Director's Order 80
Staffing Retained	Actions included in the plan, such as changes in visitor opportunities, facility use, resource management, and interpretation/education, could result in impacts on NPS staffing. Therefore, this topic was retained for detailed analysis.	NPS Organic Act DOI Departmental Manual <i>NPS Management Policies 2006</i> Director's Order 80

NATURAL RESOURCES: GOLDEN GATE NATIONAL RECREATION AREA

1 INTRODUCTION

2 Golden Gate National Recreation Area is one
3 of the largest urban national parks in the
4 world. The park’s 80,500 acres of land and
5 water extend from Tomales Bay in Marin
6 County south into San Mateo County,
7 encompassing 59 miles of bay and ocean
8 shoreline. Golden Gate National Recreation
9 Area is rich in natural resources—it
10 comprises 19 separate ecosystems and is
11 home to more than 1,250 plant and wildlife
12 species. With 80 sensitive, rare, threatened, or
13 endangered species, Golden Gate National
14 Recreation Area ranks fourth among all units
15 in the national park system in the number of
16 federally protected and threatened species
17 found within the park.

18
19 Numerous special status designations
20 emphasize the collective importance of
21 Golden Gate National Recreation Area and
22 Point Reyes National Seashore as areas of
23 biological significance. The Nature
24 Conservancy has listed this region as one of
25 the six most biologically important areas in
26 the United States; it is a biodiversity “hot
27 spot” recognized by The Nature
28 Conservancy and targeted by the global
29 conservation community as key to preserving
30 the world’s ecosystems. Conservation
31 International describes this portion of central
32 California as one of the top 25 hotspots and
33 the most threatened of all biologically rich
34 terrestrial regions in the world. Point Reyes
35 National Seashore and Golden Gate National
36 Recreation Area are jointly designated as a
37 biosphere reserve, one of 411 reserves
38 designated by the United Nations
39 Educational, Scientific, and Cultural
40 Organization’s (UNESCO) Man and the
41 Biosphere Programme to provide a global
42 network representing the world’s major
43 ecosystem types (NPS 2007a).

44

45 Golden Gate National Recreation Area is part
46 of the California Floristic Province
47 (characterized by Mediterranean vegetation)
48 and a zone of overlap of marine provinces
49 (Californian and Oregonian) leading to a
50 wide diversity of terrestrial and aquatic
51 habitats. From the tip of Tomales Point to the
52 southernmost areas of Sweeney Ridge and
53 Phleger Estate, the natural communities of
54 the park support a diversity of habitats:
55 marine environments, coastline, sea cliffs and
56 sand dunes, mud flats and salt marshes,
57 chaparral and coastal scrub, grasslands,
58 redwood forests, and oak woodlands. The
59 recreation area spans two of the largest
60 estuaries on the West Coast: Tomales Bay
61 and San Francisco Bay. Aquatic associated
62 habitats include ephemeral and perennial
63 freshwater streams, groundwater seeps and
64 springs, seasonal wetlands, tidal and brackish
65 saline wetlands grading into estuaries, and
66 the marine environment (NPS 2007a).

67
68

69 ALCATRAZ ISLAND

70 Alcatraz Island is a unique part of Golden
71 Gate National Recreation Area. Accounts of
72 early explorers describe the island as having
73 little plant life and covered with bird guano.
74 Construction of the Civil War military fort
75 and later the federal penitentiary changed the
76 landscape significantly, sharpening the
77 incline of the cliffs and flattening the slopes.
78 Few plants are native to Alcatraz Island and
79 most of the existing plants are a result of
80 prison gardens or other means of
81 importation, including soils brought from
82 Angel Island during the fort construction.
83 Since the closure of the prison, many bird
84 species have made the island home.

85
86

1 **PHYSICAL RESOURCES**

2 **Air Quality**

3 Section 118 of the 1963 Clean Air Act (42
4 USC 7401 et seq.) requires a national park
5 system unit to meet all federal, state, and local
6 air pollution standards. Golden Gate
7 National Recreation Area and Muir Woods
8 National Monument are in a class II air
9 quality area under the Clean Air Act, as
10 amended. A class II designation indicates the
11 maximum allowable increase in
12 concentrations of pollutants over baseline
13 concentrations of sulfur dioxide and
14 particulate matter as specified in section 163
15 of the Clean Air Act. Further, the Clean Air
16 Act provides that the federal land manager
17 has an affirmative responsibility to protect air
18 quality-related values (including visibility,
19 plants, animals, soils, water quality, cultural
20 resources, and visitor health) from adverse
21 pollution impacts.

22
23 The Clean Air Act requires the Environ-
24 mental Protection Agency to identify national
25 ambient air quality standards to protect
26 public health and welfare. Standards were set
27 for the following pollutants: ozone (O₃),
28 carbon monoxide (CO), nitrogen dioxide
29 (NO₂), sulfur dioxide (SO₂), inhalable
30 particulate matter less than 10 microns
31 (PM₁₀) and less than 2.5 microns (PM_{2.5}), and
32 lead (Pb). These pollutants are designated
33 criteria pollutants because the standards
34 satisfy criteria specified in the act. An area
35 where a standard is exceeded more than
36 three times in three years can be considered a
37 nonattainment area.

38
39 The California Clean Air Act of 1988, as
40 amended, sets ambient air quality standards
41 that are stricter than the federal standards
42 and requires local air districts to promulgate
43 and implement rules and regulations to attain
44 those standards. Under the act, California
45 Ambient Air Quality Standards are set for all
46 pollutants covered under national standards,
47 as well as vinyl chloride, hydrogen sulfide,
48 sulfates, and visibility-reducing particulates.
49 If an area does not meet the California

50 standards, it is designated as a state
51 nonattainment area.

52
53 In 1993, the Environmental Protection
54 Agency adopted regulations implementing
55 section 176 of the Clean Air Act as amended.
56 Section 176 requires that federal actions
57 conform to state implementation plans for
58 achieving and maintaining the national
59 standards. Federal actions must not cause or
60 contribute to new violations of any standard,
61 increase the frequency or severity of any
62 existing violation, interfere with timely
63 attainment or maintenance of any standard,
64 delay emission reduction milestones, or
65 contradict state implementation plan
66 requirements. Federal actions that are subject
67 to the general conformity regulations are
68 required to mitigate or fully offset the
69 emissions caused by the action, including
70 both direct and indirect emissions over which
71 the federal agency has some control.

72
73 Golden Gate National Recreation Area and
74 Muir Woods National Monument are in the
75 San Francisco Bay Area air basin, which
76 consists of San Francisco, San Mateo, Santa
77 Clara, Alameda, Contra Costa, Napa, and
78 Marin counties, as well as portions of
79 Sonoma and Solano counties. The Bay Area
80 Air Quality Management District is the air
81 quality agency responsible for the entire
82 basin. The agency monitors criteria
83 pollutants continuously at stations
84 throughout the Bay Area.

85
86 Overall, air quality in the basin is better than
87 in other urban areas of California despite
88 widespread urbanization and extensive
89 industrial and mobile source (vehicular)
90 emissions. The Bay Area's coastal location
91 and favorable meteorological conditions help
92 keep pollution levels low much of the year,
93 primarily due to the area's relatively cooler
94 temperatures and better ventilation.
95 However, when temperatures are hot and
96 there are no ocean breezes, levels of ozone
97 and other pollutants can exceed federal and
98 state air quality standards.

99

1 The San Francisco Bay Area is designated a
2 federal nonattainment area for ozone and a
3 state nonattainment area for ozone and
4 inhalable particulate matter (PM₁₀ and
5 PM_{2.5}). Ozone is a principal component of
6 smog. It is caused by the photochemical
7 reaction of ozone precursors (reactive
8 organic compounds and nitrogen oxides).
9 Ozone levels are highest in the Bay Area
10 during days in late spring through summer
11 when meteorological conditions are
12 favorable for the photochemical reactions to
13 occur, i.e., clear warm days and light winds.
14
15 An air emissions inventory was conducted in
16 1999 to determine the origins, compositions,
17 and rates of emission of pollutants affecting
18 park lands and resources. In addition to
19 Golden Gate National Recreation Area
20 activities, the inventory included air
21 emissions associated with park partners and
22 concession operations and visitor activities to
23 the extent that data were available.
24 Standardized emission factors and air quality
25 models from the California Air Resources
26 Board and the Environmental Protection
27 Agency were used to develop emission levels
28 for the range of activities and facilities that
29 can emit pollutants in Golden Gate National
30 Recreation Area (NPS 2005a).
31
32 Sources of air emission within Golden Gate
33 National Recreation Area include all three
34 types identified by the Clean Air Act:
35 stationary sources, area sources, and mobile
36 sources. Stationary sources can include fossil-
37 fuel-fired space and water heating
38 equipment, backup generators, fuel storage
39 tanks, paint and chemical usage, and
40 woodworking equipment. Area sources may
41 include prescribed burning, campfires, and
42 bonfires. Mobile sources may include
43 vehicles and other equipment operated
44 within the park by visitors, tour operators,
45 Golden Gate National Recreation Area
46 employees, and concession employees.
47

48 The emissions inventory included all lands
49 and uses within the GMP planning area.
50 Included in the inventory were all structures,
51 vehicles, boats, and equipment used by the
52 park, park partners, or concessions such as
53 the Hornblower that operates the ferry
54 service to Alcatraz Island.
55
56 There are no air quality monitoring stations
57 in operation for the coastal areas of the Bay
58 Area air basin that are certain to represent air
59 quality conditions within the park. A
60 monitoring station at Fort Cronkhite in the
61 Marin Headlands records levels of toxins
62 present in the air as a by-product of
63 manufacturing, such as acetone and benzene,
64 and does not monitor for criteria pollutants.
65 The closest monitoring stations to park lands
66 that record levels of criteria pollutants are in
67 the cities of San Rafael, Redwood City, and
68 eastern San Francisco. The levels recorded at
69 these stations, which are in the midst of
70 urban development, would be more
71 representative of the cumulative levels of air
72 pollutants in urbanized areas that contain
73 heavily used roadways, urban and residential
74 sources, and existing stationary sources
75 throughout the air basin. Data collected at
76 these stations can serve as very conservative
77 estimates of ambient air quality affecting park
78 lands, which are largely coastal and generally
79 upwind (based on prevailing wind direction)
80 of local sources of Bay Area air emissions, but
81 are still subject to pollutant problems, such as
82 ozone, that have a more regional effect on air
83 quality. However, the actual ambient
84 pollutant concentrations within park lands
85 are anticipated to have lower background
86 levels of these pollutants because the project
87 area and surroundings are more remote and
88 generally upwind of roadways and other
89 emission sources (NPS 2005a).

TABLE 2. COUNTY VARIATION IN ATTAINMENT STATUS DEMONSTRATED BY MONITORING STATION DATA, 2001–2003

Pollutant	Redwood City San Mateo County		San Francisco San Francisco County		San Rafael Marin County	
	State Standard	Federal Standard	State Standard	Federal Standard	State Standard	Federal Standard
Ozone (1-hour)*	N	NA	A	NA	A	NA
Ozone (8-hour)	NA	NA	NA	NA	NA	NA
Carbon monoxide	A	A	A	A	A	A
Nitrogen dioxide	A	A	A	A	A	A
Sulfur dioxide	ND	ND	A	A	ND	ND
Particulate matter (PM ₁₀) (Max. 24- hour)	NA	A	N	A	NA	A

Source: Bay Area Air Quality Management District Annual Bay Area Air Quality Summary

Notes:

A = Attainment, N = Nonattainment, U = Unclassified, NA = Not Applicable, ND = No data

*Attainment status is assigned only on an air-basin level. Though specific county monitors indicate attainment with NAAQS, all counties are included in the San Francisco Bay Area Air Basin, which is designated as nonattainment for 1-hour and 8-hour ozone national standards and for state standards for PM₁₀.

1 Carbon Footprint

2 A “carbon footprint” is a measure of the
3 impact human activities have on the
4 environment in terms of the amount of
5 greenhouse gases produced, and is measured
6 in units of carbon dioxide. The greenhouse
7 effect is a natural phenomenon that keeps the
8 earth’s temperature stable at an average of 60
9 degrees Fahrenheit (°F). Without this natural
10 warming effect, our planet would be
11 uninhabitable at an average temperature of
12 14°F. However, human actions are disturbing
13 this balance through over-production of large
14 amounts of two main greenhouse gases—
15 carbon dioxide (CO₂) and methane (CH₄).
16 The increase in greenhouse gases is causing
17 an overall warming of the planet, commonly
18 referred to as *global warming*. The term
19 *climate change* describes the variable
20 consequences of global warming over time.

21
22 The National Park Service has a goal of
23 reducing its contribution to global warming

24 and climate change through the reduction of
25 emissions. To begin tracking the results of
26 their efforts, the park staff inventoried its
27 emissions in 2006 using the Climate
28 Leadership in Parks (CLIP) tool developed
29 by the National Park Service and the
30 Environmental Protection Agency. The CLIP
31 tool converts emissions of various
32 greenhouse gases into a common “metric
33 tons of carbon dioxide equivalent”
34 (MTCO₂e) unit, which provides a basis for
35 comparison among gases and simplifies
36 reduction tracking. The conversion of a
37 greenhouse gas to an MTCO₂e unit is based
38 on how strongly that particular gas
39 contributes to the greenhouse effect and how
40 many tons of carbon emission would have the
41 same effect.

42
43 The emissions inventory (NPS 2007c) then
44 examined the relative input of various
45 sectors: stationary combustion (building
46 furnaces, dryers, electrical generators, hot
47 water heaters), purchased electricity, mobile

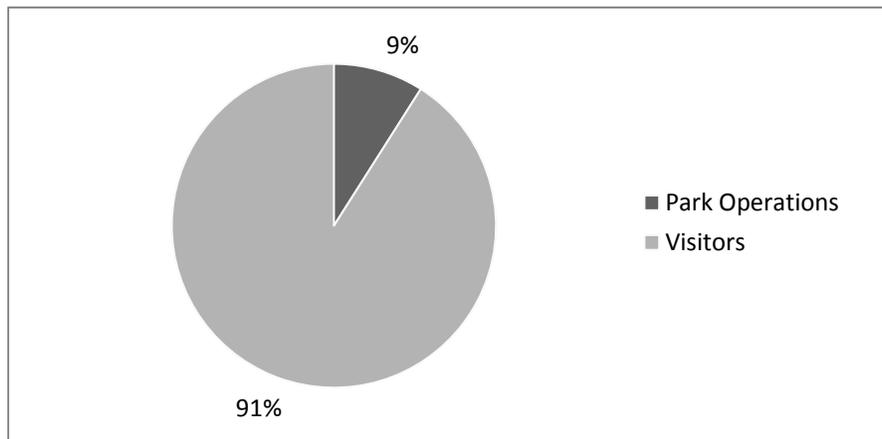
1 combustion (vehicles, buses, heavy
2 equipment), wastewater treatment, and solid
3 waste disposal (garbage transportation and
4 decomposition) for Golden Gate National
5 Recreation Area and Muir Woods National
6 Monument. Based on the emissions
7 inventory completed in 2006, emissions from
8 visitors (mobile combustion primarily from
9 personal automobile use) represents 91% of
10 gross emissions and emissions from park
11 operations represent 9% (figure 1). Figure 2
12 demonstrates how the NPS emissions from
13 park operational activities are distributed
14 among sectors when visitor emissions are
15 excluded.

16
17 Visitor emission totals consist of an
18 approximation of how much gasoline is
19 consumed while driving to various park sites.
20 Using annual visitor vehicle counts to many
21 of the different sites in the park, the total
22 number of miles driven by visitors was
23 approximated (based on the assumption that

24 they were driving from somewhere in the Bay
25 Area). The resulting total vehicle miles driven
26 by visitors was put into the CLIP tool. The
27 CLIP tool then used assumptions about the
28 different types of cars and the miles per
29 gallon capacity of each to determine
30 approximate fuel consumption.

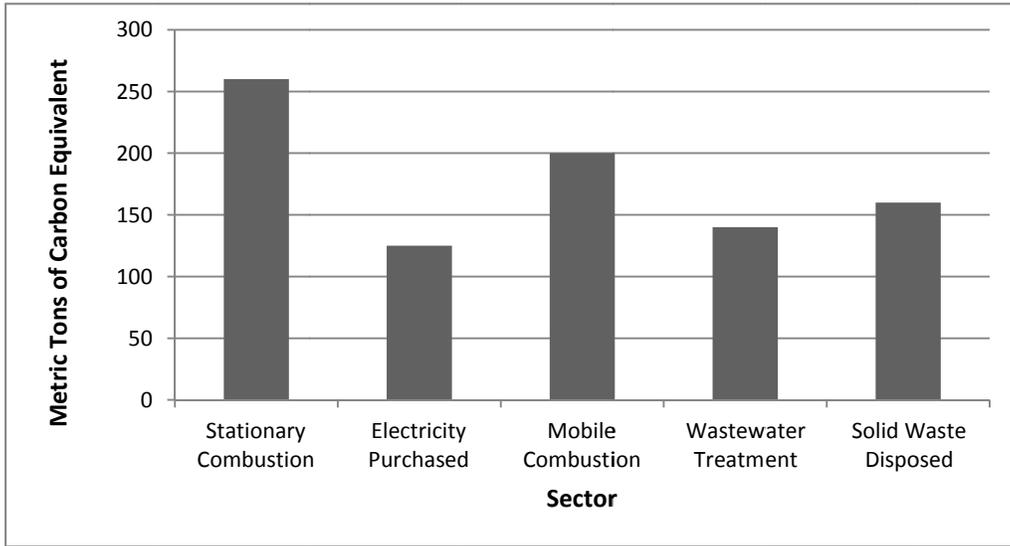
31
32 Figure 3 shows how the sectors of emissions
33 are distributed when visitor emissions are
34 included. The vast majority of emissions at
35 Golden Gate National Recreation Area are
36 attributable to visitor mobile combustion
37 (vehicles).

38
39 In 2008, Golden Gate National Recreation
40 Area emissions inventory was updated and
41 included the following emissions statistics for
42 Golden Gate National Recreation Area
43 (including park lands in the three-county
44 area and Alcatraz Island) and Muir Woods
45 National Monument. These data represent
46 existing baseline conditions.



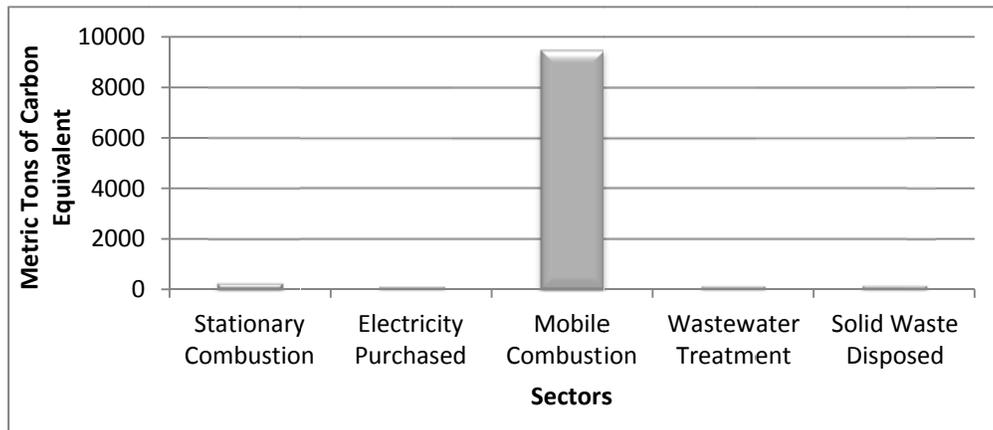
Source: Climate Change Action Plan for Golden Gate National Recreation Area, August 2007

FIGURE 1. GROSS EMISSIONS FOR GOLDEN GATE NATIONAL RECREATION AREA



Source: Climate Change Action Plan for Golden Gate National Recreation Area, August 2007

FIGURE 2. 2006 GROSS PARK EMISSIONS BY SECTOR, EXCLUDING VISITORS



Source: Climate Change Action Plan for Golden Gate National Recreation Area, August 2007

FIGURE 3. 2006 GROSS PARK EMISSIONS BY SECTOR, INCLUDING VISITORS

TABLE 3. EMISSION STATISTICS FOR GOLDEN GATE NATIONAL RECREATION AREA

	Marin County	San Francisco County	San Mateo County	Alcatraz Island	Muir Woods
Statutory combustion	523	148	No data available	632	5
Purchased electricity	385	382	No data available	0	17
Mobile combustion	1,047	1,419	No data available	1,167	4,873
Wastewater treatment	263	0	No data available	31	1
Solid waste	332	472	No data available	0	50
Gross emissions	2,551	2,422	No data available	1,830	4,946

1 **Soils and Geologic Resources**
 2 **and Processes**

3 **Geology**

4 The majority of the lands within Golden Gate
 5 National Recreation Area are on the North
 6 American Tectonic plate. The more recently
 7 acquired lands in San Mateo are on the
 8 Pacific plate. The boundary between these
 9 two plates is a transform fault (the plates are
 10 sliding past each other) and is formed by
 11 what is perhaps the best known geologic
 12 feature of California: the San Andreas fault
 13 zone. Movement along the San Andreas and
 14 its subsidiary faults (Hayward and Calaveras)
 15 is infamous for producing the large
 16 earthquakes that periodically shake
 17 California and result in the area’s rugged
 18 terrain. Older rocks of coastal California
 19 indicate that before the Pacific Plate started
 20 slipping northward past the North American
 21 Plate on the San Andreas fault system, the
 22 Pacific ocean floor was subducted (moved)
 23 beneath the western edge of the North
 24 American Plate. The distinctive rocks of the
 25 world-famous Franciscan Complex, named
 26 at San Francisco and underlying much of

27 coastal Northern California, formed in this
 28 subduction zone.

29

30 In the Bay Area, rocks of the Franciscan
 31 Complex form the basement for the Coast
 32 Ranges east of the San Andreas Fault. The
 33 Franciscan primarily consists of graywacke
 34 sandstone and argillite, but also contains
 35 lesser amounts of greenstone (altered
 36 submarine basalt), radiolarian ribbon chert,
 37 limestone, serpentinite (altered mantle
 38 material), and a variety of high-grade
 39 metamorphic rocks such as blue schist (high
 40 pressure), amphibolites and eclogite (high
 41 temperature). These rocks are typically highly
 42 fractured and disrupted and may be mixed
 43 together on a local scale to create what is
 44 called a *mélange* (French for “mixture” or
 45 “blend”).

46

47 Because serpentinite is altered mantle rock,
 48 its chemistry is unlike most other continental
 49 rocks. Serpentinite is low in potassium and
 50 calcium, which are important plant nutrients.
 51 It also contains high levels of magnesium,
 52 nickel, and chromium that are potentially
 53 toxic to plants. Therefore, plants living on
 54 serpentine soils are specially adapted to these
 55 unusual chemical conditions, and

1 serpentinite areas can often be mapped based
2 on the abrupt vegetation change that occurs
3 at their boundaries.

4
5 Serpentinite outcrops in California and
6 throughout the world are known to support
7 rare and endangered plant species
8 (Kruckenberg 1984). Some species are
9 confined to just one or a few outcrop areas.
10 Eight of the 12 rare plants found at the
11 Presidio grow on serpentinite, including the
12 federally endangered Presidio clarkia and
13 Raven's manzanita (Elder n.d.).

14 **Soils**

16 Most of the soils within Golden Gate
17 National Recreation Area belong to the
18 following complexes: Blucher-Cole,
19 Centissima-Barnabe, Cronkhite-Barnabe,
20 Dipsea-Barnabe, Felton Variant-SoulaJule,
21 Franciscan, Gilroy-Gilroy Variant-
22 Bonnydoon Variant, Henneke stony clay
23 loam, Kehoe, Rodeo Clay Loam, and
24 Tamalpais-Barnabe Variant (USDA, Soil
25 Surveys for Marin, San Francisco, and San
26 Mateo counties). All of these soils are
27 susceptible to sheet and rill erosion when
28 disturbed or exposed. The susceptibility to
29 wind erosion is generally low. In general,
30 these soils are characterized by slow to
31 moderate permeability, rapid stormwater
32 runoff, and a high hazard of soil erosion, soil
33 creep, and occasional land sliding. An aerial
34 view of the park area landscape makes clear
35 the threats posed by erosion. Coastal waves
36 rhythmically crash against the shoreline;
37 deep, long gullies originate at old roads;
38 heavily used areas are devoid of vegetation;
39 undesignated social trails crisscross through
40 the natural areas; and landslides or slumps
41 exist in the small valleys (NPS 2005a).

42
43 Alcatraz Island is composed of consolidated
44 sandstone sediments, and is the remainder of
45 a mountain that has been highly eroded.
46 Much of the soil on the island is a result of
47 importation from Angel Island during the fort
48 construction or soil amendments added over
49 the years to support the various gardens and
50 landscape areas.

51 **Paleontological Resources**

52 Fossils of tropical and subtropical species of
53 zooplankton (radiolarian) have been found in
54 chert of the Marin Headlands. Mollusks
55 fossils (ammonite, belemnite, bivalve) have
56 also been found here. Bivalve mollusk fossils
57 are found on Alcatraz Island, and Mori Point
58 is a source of zooplankton (radiolarian,
59 foraminifera). Fort Funston includes mollusk
60 (gastropod, bivalve), sand dollar, crustacean,
61 marine worm (polychaete), woolly
62 mammoth, giant ground sloth, mastodon,
63 horse, camel, canid and split-toed ungulate
64 fossils. Fossils found on the Phleger Estate
65 include mollusk (freshwater gastropod,
66 bivalve), unnamed vertebrates, and plants.

69 **Shoreline Processes**

70 The park's coastal shoreline along the Marin
71 Headlands, Golden Gate Strait, and San
72 Francisco peninsula comprise a diverse
73 mixture of rocky shorelines, fine-grained
74 sand beaches, and artificial structures (e.g.,
75 piers), as well as sites with a mixture of fine-
76 grained and larger substrates. As the name
77 implies, the Marin Headlands are steep rocky
78 headlands, such as Tennessee Point and
79 Point Bonita, that are unprotected and
80 exposed to high wave erosion and strong
81 currents. In sheltered areas, large beaches,
82 such as Rodeo and Muir beaches, form bars
83 that create lagoonal features behind them.
84 Small pocket beaches are often characterized
85 by steep slopes and a mixture of small and
86 large substrates. The Golden Gate strait is
87 characterized by rocky headlands, smaller
88 sand and gravel beaches, and strong tidal
89 currents. Within the Golden Gate strait, the
90 shorelines have a higher percentage of
91 artificial structures such as rubble
92 breakwaters (Fort Baker), seawalls (Alcatraz,
93 Fort Point, and Presidio), piers, and riprap
94 bank protection. Much of the San Francisco
95 peninsula shoreline within the park is
96 dominated by Ocean Beach, the park's largest
97 sand beach resource (NPS 2007a).

98

1 Alcatraz Island is composed of fractured
2 sandstone and is somewhat susceptible to
3 wave-generated erosion.

4
5
6 **Sea Level Rise, Flooding, and**
7 **Coastal Vulnerability**

8 While the effect of climate change on sea
9 level has shocking global implications of
10 inundating low-lying islands and threatening
11 coastal cities and harbors, it also raises
12 serious concerns for many U.S. national
13 parks. Golden Gate National Recreation Area
14 is no exception, given its extensive shorelines
15 along the Pacific Ocean and San Francisco
16 Bay. Although there is general consensus in
17 the scientific community that notable sea
18 level rise will occur over the next 100 years,
19 the predicted degree of sea level rise varies
20 considerably depending on which
21 assumptions are incorporated into the
22 prediction. For example, scientists who
23 factor in the melting of the Greenland ice
24 sheets predict that sea levels could rise 13 to
25 20 feet (approximately 4 to 6 meters) over the
26 next 100 years as a result of global warming
27 (Overpeck et al. 2006). If this occurs, the
28 coastal areas of the park and the Bay Area will
29 experience extraordinary change. This
30 prediction is probably at the upper end of the
31 range of sea level rise forecasts. It is also
32 important to understand that mean sea level
33 rise is not the immediate threat. The more
34 immediate threat is the projected increase in
35 storm frequency and severity and the related
36 coastal flooding and erosion.

37
38 Other sea level rise projections incorporate
39 only a partial contribution from the melting
40 Greenland and Antarctic ice sheets. The
41 Intergovernmental Panel on Climate Change
42 (IPCC) is an international scientific body
43 established by the United Nations
44 Environment Programme and the World
45 Meteorological Organization to provide a
46 scientific view of the current state of climate
47 change and its effects. In its latest assessment
48 report, *Climate Change 2007*, the
49 Intergovernmental Panel on Climate Change
50 indicated that sea level rise by the year 2100

51 could range from 0.18 to 0.59 meters (7.0
52 inches to about 24.0 inches), depending on
53 the climate change scenario that occurs over
54 this time (IPCC 2007). However, the IPCC
55 report was clear in noting that these
56 projections do not factor in uncertainties in
57 climate-carbon cycle feedbacks nor the full
58 effects of changes in ice sheet flow or melting.
59 Therefore, the report states that the upper
60 value of this range should not be considered
61 the potential upper bounds for sea level rise
62 (IPCC 2007).

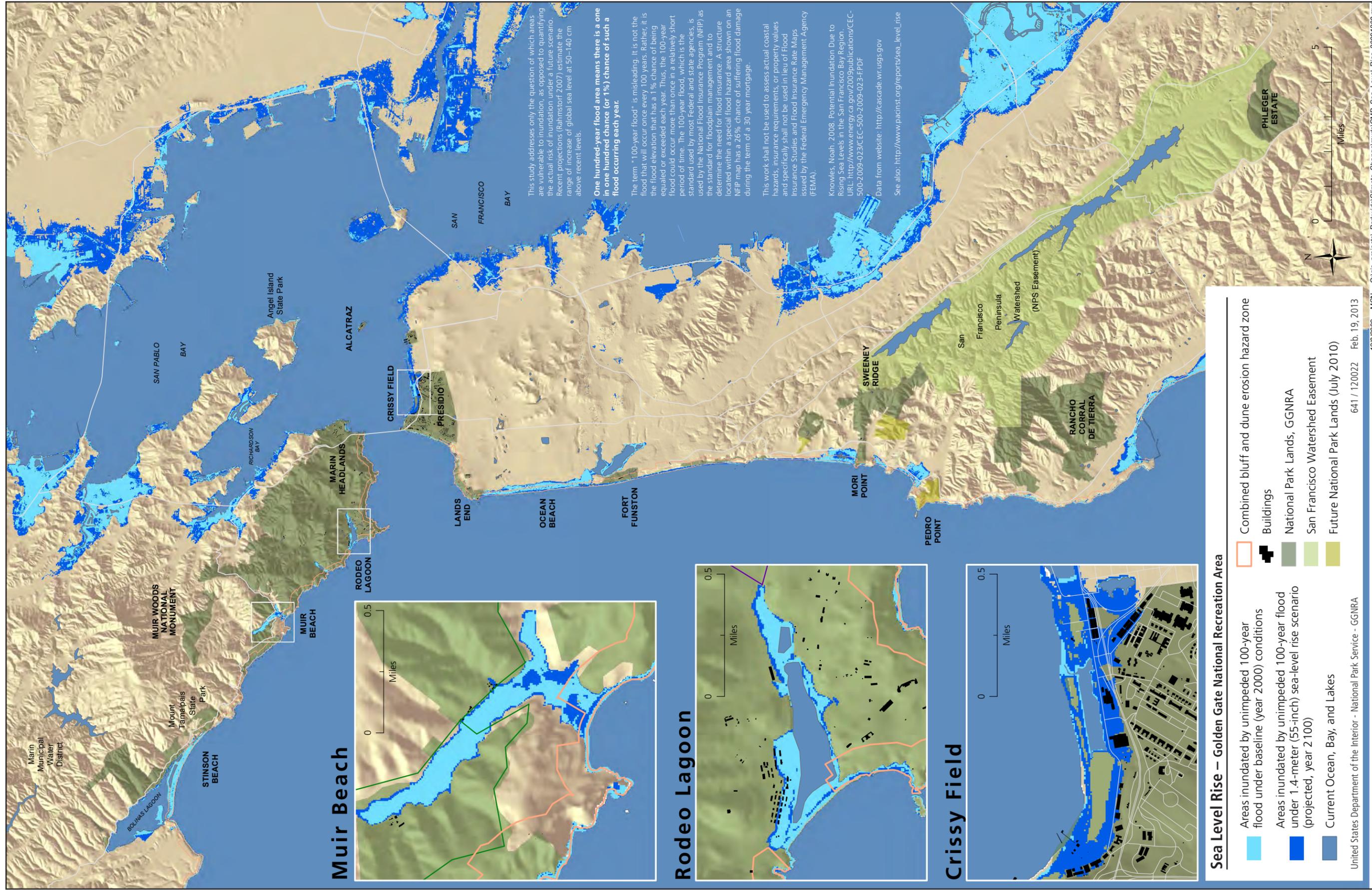
63
64 More recent research was conducted for the
65 California Energy Commission’s Climate
66 Change Research Program to assess the
67 effects of climate change and sea level rise on
68 California over the next 90 years. Using a set
69 of climate change scenarios of medium to
70 medium-high emissions, researchers
71 projected that the mean sea level will rise 1.0
72 to 1.4 meters (3.3 to 4.6 feet) along
73 California’s coast by the year 2100 (Cayan
74 et al. 2009; Heberger et al. 2009). This is the
75 most commonly used sea level rise forecast in
76 the park’s planning area. However, these
77 respective climate change reports quickly
78 clarify that most climate models do not
79 include ice-melt contributions from the
80 Greenland and Antarctic ice sheets. Thus, the
81 potential sea level rise could be much higher
82 than these figures (Heberger et al. 2009).

83
84 Predictions of sea level rise are useful in
85 determining what resources and facilities
86 could be affected. “Map 1. Sea Level Rise:
87 Golden Gate National Recreation Areal”
88 illustrates the likely effect of the projected 1.4
89 meter sea level rise on the coastal corridors of
90 the park by combining the effects of the sea
91 level rise with a modeled 100-year flood
92 (Heberger et al. 2009).

93
94 Also, the U.S. Geological Survey (USGS), in
95 cooperation with the National Park Service,
96 completed an assessment in 2005 (Pendleton,
97 Thieler, and Williams 2005) of Golden Gate
98 National Recreation Area’s vulnerability to
99 sea level rise using a tool called the Coastal
100 Vulnerability Index. The Coastal
101 Vulnerability Index provides insight into the

1 relative potential of coastal change due to
2 future sea level rise.
3
4 The Coastal Vulnerability Index allows six
5 variables (geomorphology, shoreline change,
6 regional coastal slope, relative sea level rise,
7 mean significant wave height, and mean tidal
8 range) to be related in a quantifiable manner
9 that expresses the relative vulnerability of the
10 coast to physical changes due to future sea
11 level rise. The index highlights those regions
12 where the physical effects of sea level rise
13 might be the greatest.
14
15 The most influential variables in the Coastal
16 Vulnerability Index are geomorphology,
17 coastal slope, and mean significant wave
18 height; therefore, these may be considered
19 the dominant factors controlling how Golden
20 Gate National Recreation Area will evolve as
21 sea level rises.
22
23 While climate change data reflect long-term
24 increases in sea levels, there may be specific
25 sites within Golden Gate National Recreation
26 Area that could be more vulnerable to rising
27 sea levels even within the lifespan of this
28 general management plan, particularly if the
29 melting of the polar ice caps increases more
30 rapidly than expected.
31

32 The colored shoreline depicted in “Map 2:
33 Coastal Vulnerability” represents the relative
34 Coastal Vulnerability Index determined from
35 the six variables. The very high vulnerability
36 shoreline is generally along sandy beaches
37 where significant wave heights are highest
38 and regional coastal slope is shallow; these
39 areas include sites such as Ocean Beach, Fort
40 Mason, Land’s End, and Fort Funston. The
41 lower vulnerability shoreline is along rock
42 cliffs mostly along the northern part of
43 Golden Gate National Recreation Area
44 where wave heights are lower and coastal
45 slope is steep.
46
47 Of the 59 miles evaluated at the park, 50%
48 were classified as having high (26%) or very
49 high (24%) vulnerability, with another 26%
50 classified as having moderate vulnerability
51 (Pendleton, Thieler and Williams 2005). This
52 information raises serious concern because
53 the most vulnerable shorelines are on the
54 southern peninsula where the largest
55 concentration of humans and built facilities
56 exist. This area also includes heavily visited
57 beaches such as Ocean Beach, China Beach,
58 and Baker Beach.



Map 1. Sea Level Rise: Golden Gate National Recreation Area



MAP 2. RELATIVE COASTAL VULNERABILITY TO SEA RISE

1 **Water Resources and** 2 **Hydrologic Processes**

3 Water resources in Golden Gate National
4 Recreation Area include springs, streams,
5 ponds, lakes, wetlands, lagoons, San
6 Francisco Bay, and the Pacific Ocean. Many
7 significant watersheds are wholly or partially
8 within the park. From north to south, the
9 major watersheds are Bolinas Lagoon,
10 Redwood Creek, Tennessee Valley (Elk
11 Creek), Rodeo Lagoon (including Gerbode
12 Valley subwatershed), Nyhan Creek, Lobos
13 Creek, Milagra and Sweeney Ridges, San
14 Pedro Creek, West Union Creek, San Pedro
15 Creek, Martini Creek, Denniston Creek, San
16 Vicente Creek, and the San Francisco
17 watershed lands in San Mateo County (see
18 “Map 3. Golden Gate National Recreation
19 Area Watersheds”). Many smaller watersheds
20 drain the steep coastal bluffs directly into San
21 Francisco Bay or the Pacific Ocean.

22
23 The National Park Service has been
24 monitoring water quality and quantity in
25 varying degrees within these aquatic systems.
26 Most water quality sampling to date has
27 focused on specific sites with known or
28 suspected water quality impacts, including
29 beach water quality monitoring. The
30 National Park Service is presently designing a
31 more comprehensive monitoring program
32 that should identify any existing impacts and
33 serve as baseline data to determine future
34 impacts. For the lands in the southern part of
35 the park (San Francisco and San Mateo
36 counties), this work will also include an
37 inventory of the largely unknown water
38 resources. The monitoring will be
39 coordinated through the San Francisco Bay
40 Area National Parks Science and Learning, a
41 network of regional national park sites. The
42 National Park Service is currently
43 participating in a stream flow monitoring
44 program with stations on Lobos Creek,
45 Redwood Creek, and Easkoot Creek.

46
47

48 **Freshwater Resources**

49 **Surface Water.** Watersheds in southern
50 Marin County, such as Rodeo Lagoon and
51 Tennessee Valley, are dominated by scrub
52 and grassland vegetation with the majority of
53 the trees in the riparian zone. These
54 watersheds also have extensive stream and
55 wetland complexes throughout their valley
56 floors. Other watersheds, such as the
57 Redwood Creek watershed, Bolinas Lagoon
58 watershed, and the San Pedro Creek
59 watershed, have denser forests beyond the
60 riparian zone. These watersheds have steeper
61 slopes and narrower valleys, and thus restrict
62 the extent of wetlands.

63
64 Freshwater resources include streams, lakes,
65 and freshwater wetlands. Most of the streams
66 in the park are not large and their tributaries
67 are frequently ephemeral. The overall
68 condition of these resources results from
69 more than a century of intensive human use,
70 combined with the instability associated with
71 soil types and the highly active San Andreas
72 Fault. The effects of past land use practices
73 (development, logging, agriculture, and
74 grazing) have changed watershed conditions
75 and reduced habitat for many aquatic
76 invertebrates, fish, and amphibians. Loss of
77 native perennial vegetation, soil compaction
78 and loss, hillside trailing, gullying, and
79 incision of swales and meadows have
80 changed the runoff patterns and reduced the
81 capacity of the watershed to attenuate
82 pollutant loading and surface runoff to
83 streams. Dam construction, channelization,
84 water diversions, and the increased water
85 demands of growing urban areas have
86 substantially altered fish passage, reduced
87 available habitats, and reduced stream flows
88 during summer-fall of dry years. Although
89 land use practices having lesser impacts are
90 being increasingly adopted by landowners,
91 present land use continues to influence water
92 quality conditions within many watersheds
93 (NPS 2007a).



Map 3. Golden Gate National Recreation Area Watersheds

1 Macroinvertebrates are commonly used as
 2 indicators of water quality and functional
 3 status of freshwater streams, but to date
 4 macroinvertebrate sampling has been
 5 infrequent and inconsistent across sites.
 6 Coho salmon have been more consistently
 7 monitored and their use as an indicator of
 8 stream condition is being evaluated (NPS
 9 2007a).

10
 11 Ponds and swales are also extremely
 12 important aquatic resources. As mentioned
 13 earlier, some of the largest endangered red-
 14 legged frog populations are in Point Reyes
 15 National Seashore and northern Golden Gate
 16 National Recreation Area where there are
 17 more than 120 breeding sites with a total
 18 adult population of several thousand frogs.
 19 Most of the breeding sites are artificial stock
 20 ponds constructed on lands that have been
 21 grazed by cattle for 150 years. There are also
 22 fairly large populations in some of the coastal
 23 drainages in San Mateo County just south of
 24 San Francisco in Golden Gate National
 25 Recreation Area (NPS 2007a).

26
 27 The U.S. Geological Survey also monitored
 28 sediment and stream flow in Audubon
 29 Canyon and Morses Creek (near Bolinas)
 30 between 1967 and 1969. University of
 31 California Berkeley staff monitored Lone
 32 Tree Creek (south of Stinson Beach) between
 33 1972 and 1974. Stream gauges were installed
 34 by the National Park Service at Redwood
 35 Creek (State Route 1 Bridge) and Easkoot
 36 Creek. Because of high toxic nutrient loads,
 37 algal blooms have occurred in Rodeo
 38 Lagoon. In addition to nutrient issues, Rodeo
 39 Lagoon sediments may contain elevated
 40 amounts of copper from copper sulfate
 41 (algaecide) treatment. Rodeo Lagoon
 42 sediments may contain elevated amounts of
 43 metals from past and current activities (NPS
 44 2005a).

45
 46 Due to its relatively small size, Alcatraz Island
 47 does not have streams—only ephemeral
 48 drainages that flow during rainfall.

49
 50 **Marin County Watersheds.** Most Marin
 51 County watersheds drain to the Pacific

52 Ocean. Watersheds relevant to park lands
 53 include Bolinas Lagoon, Redwood Creek,
 54 Marin Highlands, and others. The Bolinas
 55 Lagoon watershed extends from the Bolinas
 56 Ridges west to Inverness Ridge. Two-thirds
 57 of this watershed is in public ownership.
 58 Streams within this watershed are steep and
 59 flow through the highly erodible Franciscan
 60 Complex. The Redwood Creek watershed
 61 extends from the peaks of Mount Tamalpais,
 62 through Muir Woods National Monument,
 63 to the Pacific Ocean at Muir Beach— 95% of
 64 the watershed is owned and managed by
 65 public agencies. Several threatened animal
 66 species also occur in the watershed, including
 67 coho salmon (*Oncorhynchus kisutch*),
 68 steelhead trout (*Oncorhynchus mykiss*),
 69 California red-legged frog (*Rana draytonii*),
 70 and the northern spotted owl (*Strix*
 71 *occidentalis caurina*).

72
 73 In addition to draining into the Pacific Ocean
 74 and San Francisco Bay, the Marin Headlands
 75 drain into Rodeo Lagoon, which provides
 76 marine habitat, water recreation, saltwater
 77 habitat, and wildlife habitat. Rodeo Lagoon is
 78 a significant wetland/estuarine resource that
 79 provides important habitat for marine birds
 80 and other species including red-legged frog
 81 and tidewater goby (NPS 2005a).

82
 83 **San Francisco City and County**
 84 **Watersheds.** The majority of the watersheds
 85 in San Francisco are highly urbanized; their
 86 boundaries have been modified by storm
 87 drainage projects and other urban
 88 infrastructure. The National Park Service
 89 manages lands in San Francisco draining to
 90 San Francisco Bay, Golden Gate Channel,
 91 and the Pacific Ocean. Tennessee Hollow,
 92 managed by the Presidio Trust, and Lobos
 93 Creek, which is in Presidio areas A and B,
 94 remain in a relatively nonurban state and are
 95 significant water resources in the park. The
 96 Tennessee Hollow stream in the Presidio East
 97 watershed is the main freshwater source for
 98 the Crissy Field marsh, a recently completed
 99 wetland restoration project. Lobos Creek, in
 100 the Presidio West watershed, is the main
 101 water supply for the Presidio (NPS 2005a).

1 Although small, this spring-fed creek has the
2 highest summer baseflows in the park.

3
4 **San Mateo County Watersheds.** The
5 watersheds in San Mateo County have not
6 been comprehensively studied due to
7 piecemeal land management by various
8 agencies and private holdings. The
9 watersheds that wholly or partly contain park
10 land include Milagra, between Sweeney and
11 Milagra; Sweeney; San Pedro Creek; Crystal
12 Springs (part of the larger San Francisco
13 watershed); and West Union / San
14 Francisquito Creek. The 23-square-mile San
15 Francisco watershed is owned and managed
16 by the San Francisco Public Utilities
17 Commission and is part of the water supply
18 storage for the City and County of San
19 Francisco. This watershed includes San
20 Andreas Lake, Crystal Springs, Pilarcitos
21 Lake, and a portion of Pilarcitos Creek
22 watershed. The San Pedro Creek watershed
23 drains portions of the San Francisco
24 watershed lands and Picardo Ranch. The
25 West Union Creek watershed contains a
26 tributary to the Searsville Lake that drains the
27 Phleger Estate at the south end of Golden
28 Gate National Recreation Area (NPS 2005a).

30 **Groundwater**

31 **Marin County.** The underlying Franciscan
32 bedrock is relatively impermeable in Marin
33 County, creating a perched water table.
34 Numerous springs throughout the watershed
35 feed Rodeo Creek well into the summer
36 months. The total volume of water stored in
37 the aquifer is unknown. No wells are in
38 operation within NPS-managed lands in
39 Marin County. The water table is tidally
40 influenced in the lower areas such as Fort
41 Baker (NPS 2007b).

42
43 **San Francisco County.** Groundwater
44 sources in San Francisco County comprise
45 shallow unconsolidated alluvium underlain
46 by less permeable bedrock of the Franciscan
47 Complex. Average precipitation is
48 approximately 24 inches per year, but due to
49 high impervious cover rates, little infiltration
50 occurs. The primary water-bearing

51 formations are composed of unconsolidated
52 sediments and include alluvial fan deposits,
53 beach and dune sands, undifferentiated
54 alluvium, and artificial fill. Groundwater
55 within San Francisco County is subject to
56 high concentrations of nitrates and elevated
57 chloride, boron, and total dissolved solids
58 concentrations. High nitrate levels are
59 attributed to groundwater recharge from
60 sewer pipe leakage and possibly to fertilizer
61 introduced by irrigation return flows.
62 Elevated chloride and total dissolved solids
63 levels are most likely due to a combination of
64 leaky sewer pipes, historic and current
65 seawater intrusion, and connate water.
66 Current groundwater usage in the city of San
67 Francisco is primarily for irrigation of parks
68 and golf courses.

69
70 **San Mateo County.** Much of San Mateo
71 County is in the large, productive Santa Clara
72 Valley Groundwater Basin at the south end of
73 San Francisco Bay. The northwest portion of
74 the county is within the Westside
75 Groundwater Basin, which includes the
76 southwestern part of San Francisco. In the
77 coastal areas of San Mateo County, the main
78 groundwater sources are comparatively small
79 coastal marine terrace and stream valley
80 alluvial deposits.

82 **Floodplains**

83 Floodplains exist along streams and creeks
84 throughout Golden Gate National
85 Recreation Area and Muir Woods National
86 Monument. In Marin County, 100-year
87 floodplains run along Redwood Creek and
88 Rodeo Creek. Park facilities at Stinson Beach
89 (parking lots and picnic areas) and Muir
90 Beach (parking lot and Pacific Way) are in the
91 100-year floodplain.

92
93 In San Mateo County, 100-year floodplains
94 are along Denniston Creek, San Vicente
95 Creek, and the Middle Fork of San Pedro
96 Creek. The lower stables at the Rancho
97 Corral de Tierra property are in the San
98 Vicente Creek 100-year floodplain.

99

1 **Water Quality**

2 The size and nature of the park (including
3 high visitor use, the urban interface, and
4 multitude of land uses) create several issues
5 related to water quality. Accelerated erosion
6 due to roads, trails, and other uses and
7 developments threatens the sediment balance
8 and ecological health of several watersheds.
9 Grazing is no longer allowed on NPS-
10 managed lands in Golden Gate National
11 Recreation Area (NPS 1999b), but some of
12 the impacts remain. Bacteria and nutrient
13 inputs from equestrian operations, pet waste,
14 agricultural operations, and potentially from
15 sewer and septic systems can affect wildlife
16 and public health as well as the overall
17 ecological balance of water resources.
18 Alteration of channels (including dams and
19 culverts) affects the ecological health of park
20 watersheds. These primary issues occur to
21 varying extents within multiple park
22 watersheds (NPS 2005a).

23
24 Many park water quality issues are related to
25 facilities and structures. A roads and trails
26 inventory exists and many structures are
27 documented in the maintenance division's
28 facilities database. However, a
29 comprehensive inventory of park facilities
30 and structures (including dams, culverts, and
31 outfalls) has not been conducted (NPS
32 2005a).

33
34 Work is in progress to document facilities,
35 roads and trails, and other water quality
36 threats more thoroughly. For example, for
37 the Redwood Creek watershed, a sediment
38 budget study and a report of all sediment
39 sources in the watershed were completed.
40 Trail maps are being updated for the park and
41 erosion surveys continue throughout the
42 Marin Headlands. A dam inventory will be
43 included in an upcoming "Water Quality
44 Data Inventory and Analysis Report." Culvert
45 mapping has occurred in Rodeo Valley (NPS
46 2005a).

47
48 Golden Gate National Recreation Area has a
49 long history of water quality problems due to
50 its proximity to urban and rural land uses.

51 The park's surface waters and groundwater
52 provide important beneficial uses that serve
53 as a basis for establishing water quality
54 objectives and discharge prohibitions by the
55 California State Water Quality Control Board
56 and the Environmental Protection Agency.
57 These "beneficial" uses include agricultural
58 supply, cold freshwater habitat, fish
59 migration, municipal and domestic water
60 supply, preservation of rare and endangered
61 species, contact water recreation, noncontact
62 water recreation, shellfish harvesting, fish
63 spawning, warm freshwater habitat, and
64 wildlife habitat. Additional beneficial uses for
65 the Pacific Ocean include commercial and
66 sport fishing, industrial service supply, and
67 marine habitat. Some of the external issues
68 facing the park have to do with balancing the
69 historical and cultural traditions of ranching
70 and dairy establishments with the very high
71 water quality needed for endangered species
72 such as coho salmon, steelhead trout,
73 California freshwater shrimp, and California
74 red-legged frogs. In the park, particularly in
75 areas south of the Golden Gate, the primary
76 issues are stormwater discharge and legacy
77 contaminants from abandoned military
78 installations (NPS 2007a).

79
80 According to the California State Water
81 Quality Control Board, eight areas (three
82 creeks, three bays, and two beaches within
83 the park) are listed as impaired according to
84 the EPA list of impaired waters (the 303d
85 List) (see table 3). The San Francisco
86 Regional Water Quality Control Board has
87 established a time line for development of
88 total maximum daily loads associated with
89 the highest priority impairment listings. The
90 National Park Service is currently working
91 with state and local agencies to develop and
92 implement monitoring and enhancement
93 efforts to address additional impairment
94 issues. Additional water quality programs are
95 associated with the three counties within
96 Region 2: Marin, San Francisco, and San
97 Mateo. Water districts and some watershed
98 groups also monitor water quality (NPS
99 2007a). Water quality monitoring in coastal
100 areas at Rancho Corral De Tierra has also
101 been prepared by San Mateo County

1 Resources District (Critical Coastal Areas)
2 through volunteers and tenants over the
3 years.

4
5 Near-shore water quality has rarely been
6 monitored by the parks, while freshwater and
7 beach resources are measured principally in
8 areas where problems have been identified.
9 This lack of a probabilistic (randomized)
10 water sampling program means that
11 generalizations should be made with care; a
12 broad summary of park water quality, or even
13 watershed water quality, is likely to overstate
14 problems and overemphasize freshwater
15 resources (NPS 2007a).

17 **Marin Headlands / Redwood Creek /
18 Stinson Beach / Bolinas Lagoon Areas.**

19 Short-term data sets also exist for Rodeo
20 Creek and Tennessee Valley (1994–1996).
21 Rodeo Creek and Tennessee Valley were
22 monitored along with Green Gulch between
23 1998 and 2001 as part of intensive sampling
24 related to stable operations and other
25 potential sources of bacteria and nutrients.
26 Parameters typically monitored included
27 flow (although flow data has been sporadic),
28 pH, temperature, dissolved oxygen,
29 conductivity, biochemical oxygen demand,
30 salinity, total suspended solids, fecal and total
31 coliforms, nitrates, ammonia, phosphates,
32 total phosphorus (Total P), metals (emphasis
33 on copper), methylene blue active substance
34 (MBAS), and chloride. Not all parameters
35 were monitored at all sites (NPS 2005a).

36
37 Water quality monitoring has been
38 conducted in Redwood Creek and tributaries
39 (including Kent Creek, Camino del Canyon,
40 Banducci Tributary, Green Gulch, and
41 Golden Gate Dairy Tributary) at numerous
42 locations throughout the years. Several data
43 sets exist for discrete (i.e., short-term,
44 focused) monitoring projects. For example,
45 monitoring by the National Park Service in

46 the Redwood Creek watershed was
47 conducted in 1986, 1988, 1990 to 1991, and
48 1993 to 1996. Much of the water quality
49 monitoring within the park has focused on
50 lower Redwood Creek due to concerns
51 related to nutrient and bacteria inputs in this
52 locale, including recent data related to the
53 Golden Gate Dairy and Big Lagoon (NPS
54 2005a).

55
56 The U.S. Geological Survey also monitored
57 sediment and stream flow in Audubon
58 Canyon and Morses Creek (near Bolinas)
59 between 1967 and 1969. The University of
60 California at Berkeley monitored Lone Tree
61 Creek (south of Stinson Beach) between 1972
62 and 1974. Stream gauges were installed by the
63 National Park Service at Redwood Creek
64 (State Route 1 Bridge) and Easkoot Creek
65 (NPS 2005a).

66
67 Consultants, universities, the U.S. Geological
68 Survey, and other entities have also
69 conducted monitoring. For example, the
70 Stinson Beach County Water Agency
71 currently monitors Easkoot Creek for fecal
72 coliform bacteria. Limited monitoring has
73 been conducted in Oakwood Valley and
74 Nyhan Creek as part of an overall stormwater
75 monitoring project that includes Redwood
76 Creek, Tennessee Valley, and Rodeo Creek
77 (NPS 2005a).

78
79 Flow monitoring by various entities,
80 including the National Park Service, the U.S.
81 Geological Survey, local universities, and
82 consultants, has also been conducted. Flow
83 monitoring sites have typically corresponded
84 with water quality monitoring sites and
85 include the Redwood Creek watershed
86 (including Camino del Canyon, Kent Creek,
87 Banducci Tributary, and Green Gulch Creek)
88 as well as Easkoot Creek, Rodeo Creek, and
89 Tennessee Valley.

TABLE 4. IMPAIRED WATER BODIES WITHIN POINT REYES NATIONAL SEASHORE AND GOLDEN GATE NATIONAL RECREATION AREA AS INDICATED FROM THE 2006 303D LIST

Water Body	Park Unit	Pollutant
Lagunitas Creek	Point Reyes NS, Golden Gate NRA	Sediment, Nutrients
Richardson Bay*	Golden Gate NRA	High Coliform, Chlordane, DDT, Dieldrin, Dioxin, Furan compounds, Mercury, Polychlorinated Biphenyls (PCBs), Nonnative Species
San Francisco Bay	Golden Gate NRA	Chlordane, DDT, Dieldrin, Mercury, PCBs, Polycyclic Aromatic Hydrocarbon (PAHs), Nickel, Furan compounds, Nonnative Species, Dioxin, Selenium
San Francisquito Creek	Golden Gate NRA	Sediment
San Pedro Creek	Golden Gate NRA	High Coliform
Tomales Bay	Pointe Reyes NS, Golden Gate NRA	Sediment, Nutrients, Mercury
Pacific Ocean at Baker Beach	Golden Gate NRA	Indicator Bacteria
Pacific Ocean at Muir Beach	Golden Gate NRA	Indicator Bacteria

Source: San Francisco Water Quality Control Board 2009 adapted from 2006 Clean Water Act, Section 303d List.

* Note: Richardson Bay is not within Golden Gate NRA, although it does receive a relatively small volume of surface water run-off from the park.

1 **San Francisco and San Mateo Counties.**
 2 Water quality monitoring has been
 3 conducted periodically at the Presidio for
 4 several years. Until very recently, however,
 5 no monitoring of surface water had been
 6 conducted by the National Park Service in
 7 the southern Golden Gate National
 8 Recreation Area lands.
 9
 10 At Lobos Creek in the Presidio, the Urban
 11 Watershed Project, a nonprofit group, has
 12 conducted fecal coliform monitoring through
 13 a contract with the Presidio Trust. The City

14 and County of San Francisco also recently
 15 conducted monitoring in Lobos Creek.
 16 Limited sampling of Lobos Creek was also
 17 conducted through the Environmental
 18 Remediation Program. Likewise, basic water
 19 quality parameters have been collected in
 20 Tennessee Hollow by the Urban Watershed
 21 Project, funded by the Presidio Trust and by
 22 the National Park Service at the Crissy Field
 23 marsh. The Presidio Trust also regularly tests
 24 water quality throughout Trust-managed
 25 watersheds. Some limited water quality
 26 monitoring has been conducted within the

1 West Union / San Francisquito Creek
 2 watershed (West Union Creek is within this
 3 watershed), but no monitoring has been
 4 conducted on NPS lands. The San
 5 Francisquito Creek Watershed Council is
 6 actively involved in management and
 7 monitoring of this watershed. Through the
 8 watershed council, consultants have
 9 monitored the Bear Creek watershed
 10 (including West Union Creek). However, no
 11 sites have been found within Phleger Estate
 12 or the adjacent county park (NPS 2005a). San
 13 Francisquito Creek is listed on the Section
 14 303d list as being impaired by sediment.
 15 Concerns in West Union Creek, a San
 16 Francisquito Creek tributary within Phleger
 17 Estate, include erosion and runoff from trails.
 18 Landslides and substantial bank erosion have
 19 been observed (NPS 2005a).
 20
 21 Issues in Milagra, Sanchez, and Calera creeks
 22 are mostly unknown due to the lack of water
 23 quality data. However, suspected issues in
 24 these urban creeks include fertilizer or
 25 pesticide runoff from lawns and a golf course.
 26 In addition, pet waste, oil and chemical
 27 runoff from roads, and bacteria and nutrient
 28 inputs from leaky sewer pipes are also
 29 suspected concerns (NPS 2005a).
 30
 31

32 **Marine Resources**

33 ***Marine Environment –*** 34 ***Regional Overview***

35 The Golden Gate National Recreation Area
 36 coastal waters include coastal and marine
 37 habitats of central and northern California,
 38 which overlap with portions of the Gulf of
 39 the Farallones National Marine Sanctuary
 40 and Monterey Bay National Marine
 41 Sanctuary. The area shares many other
 42 features with the sanctuaries due to its
 43 proximity and the influence of similar
 44 currents, seasonal upwelling, and weather
 45 patterns. Geological features include a broad
 46 continental shelf; rocky shores; sandy
 47 beaches; coastal estuaries such as San
 48 Francisco Bay, Elkhorn Slough, and Tomales
 49 Bay; offshore banks; and the sloping edges of

50 the continental shelf, dissected by deepwater
 51 canyons such as the Monterey Submarine
 52 Canyon (NMS and NOAA 2006).
 53

54 This unique combination of oceanographic
 55 conditions and undersea topography make
 56 the area rich and diverse in a variety of
 57 marine species, including a wide array of
 58 temperate cold-water species and occasional
 59 influxes of warm-water species. The species
 60 diversity is directly related to the diversity of
 61 habitats and oceanic conditions, which are
 62 described in the following section, and the
 63 location of the sanctuaries within a broad
 64 transition zone providing a complex gradient
 65 of changing environments in which the
 66 relative proportions of species changes from
 67 north to south (NMS and NOAA 2006).
 68

69 The species north of Point Conception, an
 70 area encompassing the entire study region
 71 and extending through Washington State, are
 72 part of the Oregonian biogeographic
 73 province. The relative amount and location
 74 of upwelling and downwelling and,
 75 consequently, the amount of productivity
 76 seen along the coast, are affected by seasonal
 77 weather patterns and the influence of the
 78 California and Davidson currents. The
 79 distribution of each species in the ocean is
 80 determined by a multitude of factors,
 81 including temperature, salinity, oxygen
 82 content, nutrient availability, current speed
 83 and direction, species interaction, frequency
 84 of perturbation, and food availability (NMS
 85 and NOAA 2006).
 86

87 ***Habitats***

88 The nearshore marine environment includes
 89 bay and estuarine habitats created by
 90 mudflats, tidal wetlands, and rocky
 91 shorelines. It extends through the intertidal
 92 to the subtidal zone of the continental shelf.
 93 This shelf extends far from the coast because
 94 upwelling occurs near the shore—the coastal
 95 zone offers a relatively shallow, highly
 96 productive habitat for fish, invertebrates,
 97 marine mammals, and seabirds. Many
 98 portions of the park’s subtidal zone overlap
 99 with the federally protected Gulf of the

1 Farallones National Marine Sanctuary to the
2 north and the Monterey Bay National Marine
3 Sanctuary to the south. The area is
4 considered a biological hot spot; data that is
5 available for some species (seals,
6 invertebrates (abalone), fish (rockfish), and
7 shorebirds) indicate that most populations
8 are slowly recovering from historic declines.
9 Rocky and sandy substrates predominate
10 with kelp communities occurring in scattered
11 areas predominantly along the Point Reyes
12 National Seashore and Golden Gate National
13 Recreation Area coastlines north of San
14 Francisco Bay. Research on physical
15 processes is underway with promising new
16 approaches for coastal benthic mapping, such
17 as multibeam sonar, helping to elucidate
18 nearshore habitat complexity. This
19 knowledge is important for resource
20 assessments as an aid to find and predict
21 species distributions (NPS 2007a).

22
23 Along the open coast, intertidal habitats are
24 likely the most heavily impacted aquatic
25 areas. Despite park protection, these habitats
26 are impacted by recreational activities
27 including boating, fishing, and hiking; park
28 operations (beach cleaning); and nonpark
29 facilities and activities (sand movement by
30 the City of San Francisco). Substantial
31 impacts also occur from previously
32 constructed facilities and loss of
33 marine/estuarine habitats from filling (e.g.,
34 historic Crissy marsh filled, riprap, and
35 seawalls along San Francisco shoreline, and
36 Fort Baker marsh). The principal water
37 quality threats include bacterial and nutrient
38 pollution (ranches, dairies, septic, and
39 stormwater discharges), occasional oil spills
40 from offshore tankers, and legacy military
41 landfills. Although beach sampling and
42 damage incident reports have identified many
43 of these problems, the extent of these impacts
44 on intertidal organisms is not well studied
45 (NPS 2007a).

46
47 **Estuarine Resources.** Approximately 59
48 miles of ocean and bay coastline are included
49 in Golden Gate National Recreation Area
50 (NPS 2007a). Coastal and bay resources
51 comprise biologically diverse and complex

52 ecosystems that contain a rich array of
53 marine invertebrates and algae. Intertidal
54 communities within or adjacent to the
55 boundaries include islands, islets, reefs,
56 rocks, straits, lagoons, mudflats, beaches,
57 piers, wharves, the Gulf of the Farallones,
58 and the San Francisco Bay Estuary (NPS
59 1999b).

60
61 Golden Gate National Recreation Area
62 estuaries, bays, and lagoons have endured
63 considerable physical disturbance and
64 pollution due to their proximity to the highly
65 urbanized City of San Francisco. Some areas
66 were heavily modified in past eras, causing
67 major changes in habitat structure, including
68 Big Lagoon at Redwood Creek, Horseshoe
69 Bay, and Crissy Field. Restoration is either
70 planned or already accomplished in these
71 areas. In the recent past, the San Francisco
72 Peninsula experienced substantial bacterial
73 pollution from stormwater runoff; however,
74 treatment since the 1990s has significantly
75 reduced pollution levels. High levels of PCBs,
76 PAHs and heavy metals are still major issues
77 facing San Francisco Bay coastal waters, and
78 continued restoration is likely to improve
79 local water quality conditions in some areas
80 like the nearshore Presidio (NPS 2007a).

81
82 While active restoration efforts are
83 reclaiming wetlands, some bays are
84 accumulating too much sediment. Although
85 sedimentation is a natural process, Tomales
86 Bay, Drakes Bay, and Bolinas Lagoon appear
87 to be experiencing higher than normal
88 sedimentation rates. The evaluation of these
89 complex tidal system dynamics and the
90 possible impacts due to climate change will
91 depend on accurate habitat mapping
92 procedures. Currently, there is significant
93 emphasis in Point Reyes National Seashore
94 and Golden Gate National Recreation Area
95 on mapping wetland extent and quality;
96 however, these efforts are not yet completed
97 and historical information on wetland
98 habitats is limited. Where efforts are being
99 made to restore tidal marsh habitat, such as at
100 Redwood Creek and the Giacomini Ranch,
101 understanding of these systems is improving
102 (NPS 2007a).

1 **Intertidal Zone.** Intertidal habitat, by
 2 definition, is found between the lowest and
 3 highest tidal level. This transitional area
 4 between sea and land is the strip of shore
 5 between the uppermost surfaces exposed to
 6 wave action during high tides and the
 7 lowermost areas exposed to air during low
 8 tides. Intertidal habitats vary in type of
 9 material and the degree of exposure to surf.
 10 Bottom habitat types include those of fine
 11 mud, sand, gravel, shale, cobble, boulders,
 12 and bedrock. Intertidal habitat within Golden
 13 Gate National Recreation Area includes
 14 rocky and sandy beaches (NMS and NOAA
 15 2006).

16
 17 The south side of Alcatraz Island contains a
 18 sheer rock wall that terminates on a narrow
 19 rock reef about 30 to 50 feet wide. This
 20 narrow intertidal reef extends for only a short
 21 distance (about 660 feet), but represents one
 22 of the few rocky reefs in San Francisco Bay.
 23 Other rocky intertidal portions of the island
 24 are composed of riprap and rubble similar to
 25 the shorelines of much of San Francisco Bay.

26
 27 **Subtidal and Nearshore Waters.** Subtidal
 28 and nearshore waters refer to the area from
 29 the lowest low tide line to the point where the
 30 sea floor drops and the deeper offshore
 31 waters begin. This is on the land side of the
 32 continental shelf slope transition. The
 33 substrate can be sand, mud, or rock,
 34 providing essential habitat for various algae,
 35 zooplankton, and phytoplankton species
 36 (NMS and NOAA 2006). The nearshore
 37 coastal environment is highly variable along
 38 the park's shorelines, with a complex spatial
 39 distribution of marine resources due to
 40 diverse lithologies, active tectonic and
 41 geomorphic processes, topographic relief,
 42 and dynamic nearshore currents. This
 43 physical diversity coupled with high
 44 productivity results in an equally diverse
 45 distribution of organisms (NPS 2007a).

46
 47 Because the continental shelf extends far
 48 from the coast and upwelling occurs
 49 nearshore, the coastal portion of the park
 50 offers a shallow, highly productive habitat for
 51 seabirds, fish, and marine mammals.

52 Currents, bathymetry (depth), and substrate
 53 determine the distribution of marine
 54 communities in the subtidal zone. These
 55 factors in turn affect more inland habitats,
 56 such as the intertidal zone, bays, and
 57 estuaries, to varying degrees. Though much
 58 of this discussion focuses on coastal subtidal
 59 areas, it should be noted that estuarine areas
 60 also include subtidal areas. Subtidal habitats
 61 are particularly threatened in San Francisco
 62 Bay and the surrounding coastline due to
 63 intense coastal development and expansion
 64 of marine transportation systems. Dredging
 65 for port modernization, sand mining, and
 66 alteration of rocky reef habitats near
 67 navigation channels can severely impact
 68 subtidal habitats (NPS 2007a).

69
 70 **Continental Shelf and Slope.** The
 71 continental slope, which is still considered
 72 part of the continent, together with the
 73 continental shelf, is called the continental
 74 margin. Large areas of the Golden Gate
 75 National Recreation Area waters (and state
 76 lands lease waters) overlap with Gulf of the
 77 Farallones National Marine Sanctuary and
 78 Monterey Bay National Marine Sanctuary;
 79 these waters cover both the continental shelf
 80 and slope. The overlap occurs in Tomales
 81 Bay, and from Stinson Beach to Point Bonita.
 82 From the shoreline to a depth of about 328 to
 83 492 feet, the shelf is nearly horizontal, with
 84 rocky outcrops, gravel, sand, clay, silt, and
 85 deposits of broken shells covering it. About
 86 25 miles from the coast, the seafloor drops
 87 off, creating the continental slope with a
 88 grade of about 3 degrees. The slope extends
 89 to about 2 miles deep and is covered with
 90 uniform sandy sediment (NMS and NOAA
 91 2006).

92
 93

1 BIOLOGICAL RESOURCES

2 Habitat (vegetation and wildlife)

3 *Marine and Estuarine*

4 **Intertidal Zone.** The intertidal habitat (the
5 area between high tide and low tide lines) is
6 biologically rich, supporting diverse
7 assemblages of organisms. It is characterized
8 by extreme conditions caused by wind,
9 waves, and the fluctuation of tides. The
10 animals inhabiting intertidal zones are subject
11 to periodic immersion in water, followed by
12 exposure to air. They must withstand varying
13 degrees of wave shock, dramatic temperature
14 changes, changes in moisture, attacks from
15 both marine and terrestrial predators, and
16 human-caused effects such as trampling and
17 collecting (NMS and NOAA 2006).

18
19 Four zones of rocky intertidal organisms are
20 traditionally associated with different tidal
21 heights: splash, high intertidal, mid-intertidal,
22 and low intertidal. Species distributions are
23 restricted according to physiological
24 tolerance along the thermal and moisture
25 gradient in the intertidal zone. The splash
26 zone is almost always exposed to air, and has
27 relatively few species. The high intertidal
28 zone is exposed to air for long periods twice a
29 day. The mid-intertidal zone is exposed to air
30 briefly once or twice a day, and the low
31 intertidal zone is exposed only during the
32 lowest tides (NMS and NOAA 2006).

33
34 On unconsolidated muddy or sandy shores,
35 algae are rare; benthic diatoms are the only
36 marine algae that may be present. On sandy
37 beaches, much of the invertebrate life, such as
38 worms, crustaceans, snails, and clams, dwell
39 under unconsolidated substrate. Common
40 crustaceans and mollusks include the beach
41 hopper (*Megalorchestia californiana*), spiny
42 mole crab (*Blepharipoda occidentalis*), and
43 sand crab (*Emerita analoga*). Common
44 marine worms include *Anatides groenlandica*,
45 *Eteone dilate*, and *Euzonus* spp (NMS and
46 NOAA 2006).

47

48 Rocky shores support a richer assortment of
49 plants and animals. Algae include numerous
50 species of green, brown, and red algae, as well
51 as beds of surfgrass. A wide variety of
52 invertebrates, including anemones, barnacles,
53 limpets, and mussels, compete for space with
54 the algae in the intertidal zone. Mobile
55 invertebrates, such as sea stars, snails, and
56 crabs, often hide in crevices or under rocks,
57 emerging to graze on algae or prey on other
58 animals. Small fishes may also live in the small
59 pools of water that fill up with each tidal
60 cycle. Typical intertidal invertebrate species
61 of central and northern California include
62 lined shore crab (*Pachygrapsus crassipes*),
63 purple shore crab (*Hemigrapsus nudus*),
64 isopods (*Idotea* spp.), California mussels
65 (*Mytilus californianus*), periwinkles (*Littorina*
66 spp.), lemon nudibranch (*Anisodoris nobilis*),
67 troglodyte chiton (*Nuttallina californica*), bat
68 star (*Patiria miniata*), black turban snail
69 (*Chlorostoma funebris*), the giant green
70 anemone (*Anthopleura xanthogrammica*),
71 aggregating anemone (*Anthopleura*
72 *elegantissima*), and other species of
73 bryozoans, nudibranchs, sponges, and
74 tunicates. Intertidal fishes, such as the crevice
75 kelpfish (*Gibbonsia montereyensis*) and the
76 tide pool sculpin (*Oligocottus maculosus*), are
77 limited to tide pools or to passing through the
78 intertidal zone at high tide (NMS and NOAA
79 2006).

80

81 Birds forage in the intertidal zone at low tide
82 or nest and roost in the cliffs just above the
83 shore or on nearshore islands off the Marin
84 and San Mateo county coast. There are a
85 great many species of shorebirds along the
86 beaches, including sanderlings (*Calidris alba*),
87 short-billed dowitchers (*Limnodromus*
88 *griseus*), western gulls (*Larus occidentalis*),
89 glaucous-winged gulls (*Larus glaucescens*),
90 and California gulls (*Larus californicus*).
91 Shorebirds, such as sanderlings and
92 dowitchers, routinely forage in the receding
93 surf, an indication that there are sand-
94 dwelling crustaceans available. Another bird
95 found in this area is the snowy plover
96 (*Charadrius alexandrinus nivosus*) whose
97 threatened status has resulted in some
98 significant resource management actions in

1 central California, including restrictions on
 2 access or types of use in some shoreline areas.
 3 In addition to the snowy plover, typical
 4 shorebird breeders in this habitat include the
 5 black oystercatcher (*Haematopus bachmani*),
 6 killdeer (*Charadrius vociferus*), sanderlings,
 7 willets (*Catoptrophorus semipalmatus*), and
 8 marbled godwits (*Limosa fedoa*). Brown
 9 pelicans (*Pelecanus occidentalis*), surf scoters
 10 (*Melanitta perspicillata*), grebes (family
 11 *Podicipedidae*), cormorants (*Phalacrocorax*
 12 spp.), and many other seabird species can be
 13 found in water beyond the breaking waves or
 14 flying through the area. Caspian terns (*Sterna*
 15 *caspia*), Forster terns (*Sterna forsteri*), and
 16 whimbrels (*Numenius phaeopus*) are some of
 17 the summer migrants that forage along the
 18 coastal beaches. Winter migrants include
 19 loons (*Gavia* spp.), willets, black-bellied
 20 plovers (*Pluvialis squatarola*), godwits
 21 (*Limosa* spp.), and turnstones (*Arenaria*
 22 *melanocephala*) (NMS and NOAA 2006).

23
 24 Marine mammals are also found in this
 25 habitat. Pacific harbor seals (*Phoca vitulina*),
 26 and California sea lions (*Zalophus*
 27 *californianus*) are frequently seen seaward of
 28 the surf zone; sea otters (*Enhydra lutris*) and
 29 Steller sea lions (*Eumetopias jubatus*) are
 30 occasional visitors. Seals and sea lions haul
 31 out on intertidal shores for warming and
 32 breeding (NMS and NOAA 2006).

33
 34 At Alcatraz Island the rocky intertidal
 35 community on the Alcatraz reef is
 36 characterized by attached flora and fauna
 37 such as rockweed (*Fucus gairdneri*), turfweed
 38 (*Endocladia muricata*), and barnacles. Areas
 39 with crevices and overhangs often harbor
 40 mobile species such as shore crabs and
 41 seastars.

42 **Subtidal and Nearshore Waters**

44 Subtidal habitats (depths below mean low
 45 water) and nearshore waters (shallow inshore
 46 waters of the continental shelf) support many
 47 different species. Krill (*euphausiids*) is a
 48 crucial or “keystone” species in the area.
 49 They are small, shrimp-like crustaceans that
 50 congregate in large dense masses called

51 swarms or clouds. Two krill species form the
 52 primary forage for upper tropic levels in the
 53 adjacent sanctuary. Krill feed on phyto-
 54 plankton and are important in the food web
 55 because many other species feed on krill.
 56 Krill form a key trophic link in coastal
 57 upwelling systems between primary
 58 production and higher trophic level
 59 consumers. Most marine predators subsist at
 60 least part of the year on krill, which is the
 61 primary prey of seven of the 10 most
 62 important commercial fishes on the central
 63 California coast. Krill are also important food
 64 sources for baleen whales and seabirds (NMS
 65 and NOAA 2006).

66
 67 The nutrient-rich sanctuary waters near
 68 Golden Gate National Recreation Area
 69 provide forage for the largest concentration
 70 of breeding seabirds in the continental
 71 United States. More than 120 species of birds
 72 use these three sanctuaries for shelter, food,
 73 or as a migration corridor. Of these, over 40
 74 species are known to use the sanctuary
 75 during their breeding season (NMS and
 76 NOAA 2006).

77
 78 These same productive waters also support a
 79 variety of marine mammals, including gray
 80 whales (*Eschrichtius robustus*), humpback
 81 whales (*Megaptera novaeangliae*), blue
 82 whales (*Balaenoptera musculus*), Dall’s
 83 porpoise (*Phocoenoides dalli*), harbor
 84 porpoise (*Phocoena sinus*), Pacific white-
 85 sided dolphins (*Lagenorhynchus obliquidens*),
 86 northern right whale dolphins (*Lissodelphis*
 87 *borealis*), Risso’s dolphins (*Grampus griseus*)
 88 and killer whales (*Orcinus orca*). Some
 89 species, such as the gray whale, are only
 90 seasonal migrants; others, such as the blue,
 91 humpback, and killer whale, travel to the area
 92 to feed. Other marine mammals, such as
 93 harbor seals and sea lions, can be found in
 94 these areas year-round (NMS and NOAA
 95 2006).

96
 97 Six species of pinnipeds, some of which are
 98 federal listed, are found in the waters
 99 offshore of the park. Pinnipeds spend a large
 100 amount of time in offshore waters or on
 101 offshore islands, but some of the rookeries

1 (breeding places or breeding colonies usually
 2 crowded with the same species) and haul-out
 3 areas occur in this habitat. Species found in
 4 the area are California sea lion, Pacific harbor
 5 seal, Steller sea lion, northern elephant seal
 6 (*Mirounga angustirostris*), northern fur seal
 7 (*Callorhinus ursinus*), and on occasion, the
 8 Guadalupe fur seal (*Arctocephalus townsendi*).
 9 The various species have numerous seal
 10 rookeries or colonies and are found at
 11 different times of the year, feeding on the
 12 abundant fish and invertebrate resources of
 13 the island shelves or hauling out on rocks and
 14 beaches (NMS and NOAA 2006).

15
 16 A variety of fish species occur within these
 17 habitats, including rockfishes, cabezon,
 18 surfperch (family *Embiotocidae*), wrasses
 19 (family *Labridae*), and señorita, (*Oxyjulus*
 20 *californica*). Commercially harvested species
 21 include salmon, tuna, crab, squid, and various
 22 rockfish. Salmon and crab fisheries are the
 23 most important fisheries in the sanctuaries.
 24 The West Coast Dungeness crab fishery is
 25 considered the most sustainable large-scale
 26 commercial crab fishery in the world. Both
 27 Chinook and coho salmon are coastal
 28 migrants (NMS and NOAA 2006).

29
 30 Kelp forests support a variety of species,
 31 including sea otters and sea urchins. Other
 32 marine mammals, such as harbor seals and
 33 California sea lions, are common in and
 34 around kelp forests, as are a variety of fishes,
 35 such as the señorita, the kelp surfperch
 36 (*Brachyistius frenatus*), blue rockfish (*Sebastes*
 37 *mystinus*), blacksmith (*Chromis punctipinnis*),
 38 and olive rockfish (*S. serranoides*). The kelp
 39 canopy, stipes, and holdfasts increase the
 40 available habitat for nearshore species and
 41 offer protection to juvenile finfish. Bat star
 42 (*Asterina miniata*), sea lemon (*Anisidoris*
 43 *nobilis*), barnacles (*Balanus spp.*), red volcano
 44 sponge (*Acarnus erithacus*), and urchin are a
 45 few of the many types of invertebrates that
 46 inhabit the kelp forest and rocky subtidal
 47 habitats (NMS and NOAA 2006).

48
 49 Golden Gate National Recreation Area
 50 contains areas of sandy beaches, some barely
 51 accessible narrow strips along the shoreline

52 while others are large expanses readily
 53 accessed and heavily used by visitors. Beach
 54 wrack—a thick tangle of kelp and sea grass
 55 that washes ashore during high tides—
 56 supports an intricate food web and
 57 community. Until recently, beach wrack was
 58 removed from many park beaches; now this
 59 practice has been discontinued. Recreational
 60 activities on park beaches, unleashed dogs,
 61 and kayaks impact both shorebird and
 62 pinniped populations. Efforts to minimize
 63 disturbance during the past 5 to 10 years
 64 appear to have met with some success and
 65 certain species such as snowy plover and
 66 harbor seal populations seem stable after
 67 years of decline (NPS 2007a).

68
 69 Although local data are not comprehensive,
 70 notable trends and observations for key
 71 indicators in California nearshore marine and
 72 estuarine habitats likely to occur in the parks
 73 include the following:

- 74
- 75 ▪ a decline in populations of all
- 76 California abalone
- 77 ▪ northward spread of the rickettsial-
- 78 like bacteria responsible for withering
- 79 syndrome in black abalone, which
- 80 was recently observed just south of
- 81 Golden Gate National Recreation
- 82 Area
- 83 ▪ a decline in rockfish species such as
- 84 bocaccio (*Sebastes paucispinus*)
- 85 ▪ a decline in the extent of kelp forests
- 86 caused by pollution, wave damage due
- 87 to storms, and El Niño warming
- 88 ▪ stable Dungeness crab populations as
- 89 a result of successful fisheries
- 90 management
- 91 ▪ an increase in dune- and beach-
- 92 dependent snowy plovers after
- 93 substantial declines observed in the
- 94 mid 1990s resulted in protective
- 95 management
- 96 ▪ stable population levels of harbor and
- 97 elephant seals
- 98 ▪ a decline in pelagic seabirds due to
- 99 climate regime shifts and human

1 disturbance including bycatch, nest
2 disturbance, and oil spills

- 3 ■ an increase in tidal marsh lands due to
4 restoration activities and protective
5 measures (NPS 2007a)

7 **Estuarine and Lagoon**

8 Estuaries and lagoons serve as important
9 habitats for many fishes, birds, and mammals.
10 They provide suitable habitat for
11 reproduction, feeding, resting, and cover.
12 Estuaries and lagoons support unique
13 biological communities with both aquatic and
14 terrestrial characteristics. Halophytic
15 vegetation, such as pickleweed (*Allenrolfea*
16 *occidentalis*), grows higher in the marsh
17 where flooding occurs less frequently and salt
18 may become concentrated. However, little
19 vegetation can grow in areas characterized by
20 high evaporation and high soil salinity. A
21 diverse assemblage of wetland plants grows
22 in areas near tidal creeks where fresh water
23 input is high. As the plant matter breaks
24 down into detritus, it is consumed by various
25 filter feeders, deposit feeders, and other
26 omnivores and scavengers. These species, in
27 turn, provide abundant food resources for
28 other species of fish, birds, and mammals.
29 Brackish water supports a distinctive
30 assemblage of invertebrate and fish species,
31 including the endangered tidewater goby
32 (*Eucyclogobius newberryi*). Other estuarine
33 species can include jacksmelt (*Atherinopsis*
34 *californiensis*), Pacific sardine (*Sardinops*
35 *sagax caerulea*), Pacific herring (*Clupea*
36 *pallasii*), staghorn sculpins (*Leptocottus*
37 *armatus*), several rockfishes, salmonids, and
38 clupeids (*Clupeonella* spp.) (NMS and
39 NOAA 2006).

40
41 The estuaries and bays of coastal California
42 are part of the Pacific Flyway, one of the four
43 principal bird migration routes in North
44 America. San Francisco Bay supports a large
45 number of migratory and resident birds. Also
46 important for birds are Tomales Bay, Bolinas
47 Lagoon, Pescadero Marsh, and Elkhorn
48 Slough. Bolinas Lagoon and Tomales Bay are
49 designated wetlands of significant

50 international importance under the
51 Convention on Wetlands. Marine mammals,
52 including harbor seal, harbor porpoise, and
53 sea otter, occur in these bays (NMS and
54 NOAA 2006).

55
56 Seagrass beds, which occur in the bays and
57 lagoons, are highly productive habitats that
58 support a unique assemblage of invertebrates
59 and fishes. Many fishes, including Pacific
60 herring, spawn in seagrass beds among other
61 habitats. The structure of seagrass beds
62 provides protection from predation for
63 juvenile invertebrates and fishes. Large
64 numbers of shorebirds and waterfowl are
65 attracted to seagrass beds, where they feed on
66 seagrass, fishes, and invertebrate eggs and
67 young (NMS and NOAA 2006).

68
69 The marine environment around Slide Ranch
70 includes exposed outer coastlands with a rich
71 display of sponges, hydroids, bryozoans, and
72 tunicates. Muir Beach is also home to a
73 variety of submarine sponges, hydroids,
74 bryozoans, and tunicates. Tennessee Cove
75 contains unique geological features including
76 the only California central coast display of
77 highly polished and fossilized shells of
78 *Collisella digitalis*. Sea caves contain unusually
79 large isopod (*Ligia occidentalis*) specimens.
80 Kirby Cove contains giant isopods of
81 unusually large size and high densities of
82 starfish (*Pisaster ochraceous* and *Patiria*
83 *miniata*). Bird Island, with its guano-covered
84 sea stack, produces abnormally sized marine
85 invertebrates and plants, including large
86 California mussels and surfgrass, marine kelp
87 and giant kelp, sea anemones and purple
88 seastar, as well as high densities of marine
89 copepod (*Tigriopus californica*). The
90 underwater marine life is abundant and
91 includes high densities of sponges, hydroids,
92 bryozoans, and tunicates. The Alcatraz
93 intertidal zone ranks high in its abundance
94 and diversity of marine algae (NPS 1999b).

95
96 Estuaries, bays, and lagoons provide rich
97 habitats including subtidal seagrasses, tidal
98 mudflats, and marshes that support a rich
99 diversity of wildlife. Past shoreline
100 modifications, including wetland fill and

1 seawalls, dramatically reduced the extent of
 2 tidal marsh within the park. Inherently lower
 3 rates of hydrologic mixing in estuaries and
 4 especially in lagoons, enhances their
 5 vulnerability to pollution and invasive species
 6 (NPS 2007a).

7
 8 Although at much lower levels and not as well
 9 studied as in San Francisco Bay, invasive
 10 species are established in estuaries and
 11 lagoons in northern coastal areas of the park.
 12 Despite these threats, Tomales Bay and
 13 Drakes Estero are considered relatively
 14 pristine and support variable but healthy
 15 biological communities. Wetland restoration
 16 projects, such as the Muir Beach / Big Lagoon
 17 restoration project will further enhance
 18 resource condition (NPS 2007a).

19
 20 Due to its favorable currents and nearshore
 21 foraging areas, the waters around Alcatraz
 22 Island provide rich sources of food for the
 23 colonial waterbirds that nest on the island
 24 (NPS 2001). These waters are subject to the
 25 same influences as the rest of San Francisco
 26 Bay.

27

28 **Benthic Communities**

29 The benthic community is composed of
 30 organisms that live in and on the bottom of
 31 the ocean floor. Benthic species include
 32 worms, clams, crabs, lobsters, sponges, and
 33 other tiny organisms that live in the bottom
 34 sediments. Benthic species are divided into
 35 the filter feeders and the deposit feeders.
 36 Filter feeders filter their food by siphoning
 37 particles out of the water.

38

39 Various benthic habitats and substrates are
 40 found within the waters off Golden Gate
 41 National Recreation Area. In addition,
 42 benthic communities occur in a variety of the
 43 habitats described in this section, including
 44 subtidal rocky reefs, kelp forests, soft bottom
 45 habitats, and deep ocean floor habitats. The
 46 continental shelf descends gradually from the
 47 coast to the shelf break. Benthic communities
 48 along the continental shelf are covered in
 49 part by a layer of mud. Outcropping bedrock
 50 and sand cover the continental shelf at

51 depths greater than 295 feet. Benthic
 52 organisms play a critical role and make up a
 53 diverse group that is a major link in the food
 54 chain (NMS and NOAA 2006).

55

56

57 **Terrestrial/Freshwater**

58 **Plant Communities**

59 The vegetation of Golden Gate National
 60 Recreation Area is a result of the
 61 juxtaposition of physical landforms and
 62 water masses and associated geology, climate,
 63 and history. The moist maritime climate
 64 along the coastline is a dominant influence,
 65 while the park's east-facing sites are subject
 66 to drier inland conditions. Distinct changes
 67 in soils from the rich conditions of the
 68 Franciscan mélange to the unique chemistry
 69 of serpentinitic outcrops have created a
 70 diverse mosaic of vegetation communities.
 71 Natural processes, including landslides,
 72 rainfall patterns, and fires, affect these
 73 patterns and add another layer of complexity
 74 to the system. Golden Gate National
 75 Recreation Area is known to support 572
 76 native species, including 336 nonnative
 77 terrestrial plant species (NPS 2005a).

78

79 Alcatraz Island generally consists of grasses,
 80 shrubs, historic gardens, nonnative trees, and
 81 cliffs and other barren areas, along with
 82 buildings and other paved areas. Landscape
 83 vegetation consists of a diverse group of
 84 nonnative ornamental shrubs and trees,
 85 which provide the vegetation structure and
 86 habitat for wildlife on the island (NPS 2001).

87

88 **Coastal Scrub and Chaparral.** The coastal
 89 scrub community is dominated by coyote
 90 brush (*Baccharis pilularis*), California
 91 sagebrush (*Artemisia californica*), bush lupine
 92 (*Lupinus arboreus*), and poison oak
 93 (*Toxicodendron diversilobum*), with variations
 94 in dominant species based on moisture levels,
 95 soil types and slopes, and past land use
 96 history. This community intergrades and
 97 creates a mosaic with the grassland
 98 community and is found throughout the park
 99 from near sea level to 2,500 feet in elevation.

1 The coastal scrub community includes a wide
 2 variety of native perennial forbs (*Lupinus*
 3 *albifrons* and others) and large numbers of
 4 nonnative species; at times it is dominated by
 5 nonnative shrubs such as French broom
 6 (*Genista monspessulana*) and thoroughwort
 7 (*Ageratina adenophora*). Chaparral stands
 8 exist within the park, but are not all that
 9 abundant. Small communities of chaparral
 10 exist in Muir Woods National Monument
 11 and the Marin Headlands, as well as larger
 12 areas on Bolinas Ridge. There are several
 13 types of chaparral in the park, including
 14 chamise chaparral, ceanothus chaparral, and
 15 manzanita chaparral (NPS 2005a).

16
 17 **Grasslands.** The grassland community at
 18 Golden Gate National Recreation Area
 19 extends from sea level to nearly 2,600 feet in
 20 elevation. It forms a mosaic with the coastal
 21 scrub community and mixed evergreen
 22 forests. The coastal prairie areas appear to
 23 have evolved under light seasonal grazing
 24 pressure from native tule elk and other
 25 herbivores with occasional fire events (NPS
 26 2005a).

27
 28 Pristine grassland was thought to have been
 29 composed of evenly spaced bunchgrasses
 30 with annual forbs occupying areas between
 31 tussocks. It has been shown that purple
 32 needlegrass (*Nasella pulchra*)—the California
 33 state grass—was a major dominant of that
 34 grassland type along with other perennial
 35 grasses. These grasslands have had the
 36 greatest disturbance of any natural habitat in
 37 this area. Four main factors have contributed
 38 to this disturbance: (1) an increase in
 39 livestock grazing pressures from nonnative
 40 cattle, sheep, and horses, (2) the introduction
 41 of highly competitive nonnative plants, (3)
 42 cultivation, and (4) the elimination of fire
 43 (NPS 2005a). Today, the grasslands are
 44 dominated by nonnative annual grasses and
 45 forbs adapted to Mediterranean conditions.
 46 (NPS 2005a).

47
 48 The extirpation of large native mammals,
 49 exclusion of grazing by native herbivores, and
 50 suppression of wildfires have caused a
 51 marked increase in acreage covered by

52 coyote brush and the resulting coastal scrub
 53 community in the Bay Area. It should be
 54 noted that grassland and coastal scrub
 55 communities are a dynamic mosaic with
 56 changes in dominance over time, and in some
 57 areas these two communities are in
 58 equilibrium with no invasion occurring (NPS
 59 2005a).

60
 61 **Riparian Forest and Scrub.** These
 62 streamside forests and shrub lands are
 63 dominated by broad-leaved deciduous trees
 64 or shrubs, most commonly willows (*Salix*
 65 *lasiolepis* or *S. lucida* ssp. *lasiandra*) and
 66 occasionally red alder (*Alnus rubra*). The
 67 understory is typically dense, with a variety of
 68 shrubs including native berries—native
 69 salmonberry (*Rubus spectabilis*), thimbleberry
 70 (*R. parviflorus*), and California blackberry (*R.*
 71 *ursinus*)—as well as nonnative Himalayan
 72 blackberry and cape ivy. Numerous
 73 herbaceous species, including ferns, rushes,
 74 and sedges, dominate the shrub understory.
 75 Nonnative trees, including eucalypts
 76 (*Eucalyptus* spp.) and Monterey cypress
 77 (*Cupressus macrocarpa*), have become
 78 successfully established within the riparian
 79 forest strands in the park (NPS 2005a).

80
 81 **Douglas-fir and Coast Redwood.** The
 82 majestic old-growth redwood forest at Muir
 83 Woods National Monument, with Redwood
 84 Creek peacefully flowing through groves of
 85 tall trees, attracts much visitor attention. This
 86 tranquil scene is a rare sight close to a large
 87 metropolitan area. Many species contribute
 88 to this ecosystem. Major overstory and
 89 understory trees include coast redwood
 90 (*Sequoia sempervirens*), Douglas-fir
 91 (*Pseudotsuga menziesii*), California bay laurel
 92 (*Umbellularia californica*), tanoak
 93 (*Lithocarpus densiflorus*), California hazel
 94 (*Corylus californica*), and madrone (*Arbutus*
 95 *menziesii*) (NPS 2005a). Douglas-fir
 96 communities are found on Bolinas Ridge and
 97 within Muir Woods National Monument.
 98 The communities on Bolinas Ridge have been
 99 previously logged.

100
 101 **Nonnative Evergreen Forest.** Many
 102 nonnative tree species have become

1 established in Golden Gate National
 2 Recreation Area through both intentional
 3 and unintentional introductions, including
 4 ornamental plantings, plantings for
 5 windbreaks or shade for pastures, and
 6 escapes from cultivated and developed areas.
 7 Many of these trees—including a number of
 8 eucalypts (*Eucalyptus* spp.), acacia (*Acacia*
 9 spp.), Monterey pine (*Pinus radiata*), and
 10 Monterey cypress (*Cupressus macrocarpa*)—
 11 have invaded native communities. Most are
 12 very flammable, or substantially change the
 13 fire potential in areas that otherwise would
 14 support low-intensity or minimal fires, such
 15 as the coastal scrub and grassland areas of the
 16 park (NPS 2005a).

17

18 **Plant Communities of Alcatraz Island.**

19 Before occupation by Europeans, Alcatraz
 20 Island was sparsely vegetated. Trees and
 21 shrubs were planted as part of military fort
 22 and penitentiary life on the island. Soils
 23 brought from the mainland and surrounding
 24 islands in the bay contained seeds of native
 25 plants, including coyote brush, California
 26 poppy (*Eschscholzia californica*), and
 27 California blackberry (*Rubus ursinus*), which
 28 have become established on the island. Only
 29 about 5% of the island has native grasses or
 30 coastal scrub species; the rest is dominated by
 31 nonnative species (NPS 2001).

32

33 The landscape vegetation is nonnative, but it
 34 provides significant shelter and habitat on the
 35 island. Shrubs are common and include
 36 nonnative rose, mirrorbush, fig, blackberry,
 37 agave, Australian tea ivy, mimosa, plume
 38 acacia, Monterey cypress, and native coyote
 39 brush. A small stand of native grasses
 40 dominated by creeping wildrye (*Leymus*
 41 *triticooides*) is on the Northeast Perimeter
 42 Trail near the Power House complex.
 43 Another smaller stand is present in the
 44 Cistern area. Ruderal vegetation occurs along
 45 the edges of walkways, buildings, and
 46 building remains. Dominant species in these
 47 areas are wild oats, wild radish, mustard, and
 48 cheeseweed. Rocky cliffs and bluffs are found
 49 primarily along the island perimeter. The
 50 southwestern cliffs support various
 51 succulents, agave, sourgrass, sweet alyssum,

52 wild radish, and large shrubs in areas where
 53 Brandt's cormorants, western gulls, and
 54 pigeon guillemots nest. These plants provide
 55 nesting material and protection for the birds
 56 (NPS 2001).

57

58 **Wetlands.** Herbaceous wetlands are known
 59 as emergent wetlands in the Cowardin
 60 wetlands classification. They consist of a mix
 61 of low-growing species of native sedges
 62 (*Carex* spp.), rushes (*Juncus* spp.), and other
 63 wetland-dependent species (*Scirpus*
 64 *microcarpus*, *Typha* spp. *Cyperus eragrostis*,
 65 *Equisetum* spp.), as well as some nonnative
 66 species of grasses and forbs. The nonnative
 67 grasses include velvet grass (*Holcus lanatus*)
 68 and harding grass (*Phalaris aquatica*) and the
 69 forbs include cape ivy (*Delairea odorata*) and
 70 vinca (*Vinca major* and *V. minor*). Also
 71 included are areas covered with various reeds
 72 along the shores of lagoons and ponds,
 73 herbaceous strips of vegetation along
 74 perennial and ephemeral stream courses, and
 75 isolated wetland patches where seeps spring
 76 from the hill slopes. Some special status plant
 77 species—locally to regionally rare—occur
 78 within this community (NPS 2005a).

79

80 Golden Gate National Recreation Area has
 81 abundant wetland resources, including wet
 82 meadows, seeps, streams, riparian forests,
 83 lakes, ponds, and lagoons. Wetlands,
 84 according to the definition developed by the
 85 U.S. Fish and Wildlife Service (USFWS) and
 86 adopted by the National Park Service, are
 87 lands transitional between terrestrial and
 88 aquatic systems, where the water table is
 89 usually at or near the surface or the land is
 90 covered by shallow water. Wetlands generally
 91 include marshes, riparian zones, mudflats,
 92 rocky intertidal zones, and gravel beaches.
 93 Deepwater habitats such as rivers, lakes, and
 94 estuaries are not technically wetlands, but are
 95 classified as aquatic sites using the same
 96 classification system. Wetland ecosystems act
 97 to buffer hydrologic and erosional cycles,
 98 control and regulate cycles of nitrogen and
 99 other key nutrients, and create valuable
 100 habitat for animal species.

101

1 The wetlands in Golden Gate National
 2 Recreation Area have been field-mapped in
 3 several watersheds, including the Rodeo
 4 Creek watershed, the Presidio of San
 5 Francisco, and portions of the Redwood
 6 Creek and Bolinas Lagoon watersheds. The
 7 remainder of the park has not been field-
 8 mapped, but likely contains areas of wetland
 9 vegetation based on parkwide vegetation
 10 mapping results that need field verification.
 11 The majority of wetlands in Golden Gate
 12 National Recreation Area are in the valley
 13 bottoms, with seeps and small intermittent
 14 streams reaching into the higher portions of
 15 the watersheds (NPS 2005a).

16

17 **Wildlife**

18 The entire park is included within the Central
 19 California Coast International Biosphere
 20 Region. The park's diverse habitats support a
 21 rich assemblage of wildlife. At least 387
 22 vertebrate species are known to occur within
 23 the park boundaries. Species lists compiled
 24 from a variety of sources and incomplete
 25 inventories include 11 amphibians, 20
 26 reptiles, 53 fish, 53 mammals, and 250 birds.
 27 Terrestrial invertebrates in the park are less
 28 well known; however, two areas of the park
 29 (Marin Headlands and Milagra Ridge)
 30 support diverse butterfly populations.
 31 Wildlife habitats within the park include
 32 introduced eucalyptus and closed-cone
 33 Monterey pine and cypress forests;
 34 hardwood, mixed evergreen, Douglas-fir,
 35 redwood, and riparian forests; coastal scrub;
 36 annual and perennial grasslands; freshwater
 37 and saline wetlands and wet meadows; and
 38 estuarine, lacustrine, marine, and riverine
 39 aquatic habitats (NPS 2005a).

40

41 Alcatraz Island is a valuable natural habitat
 42 for colonial waterbirds due to favorable
 43 currents and nearshore foraging areas. The
 44 island supports a diverse assembly of marine
 45 and estuarine colonial nesting birds. Species

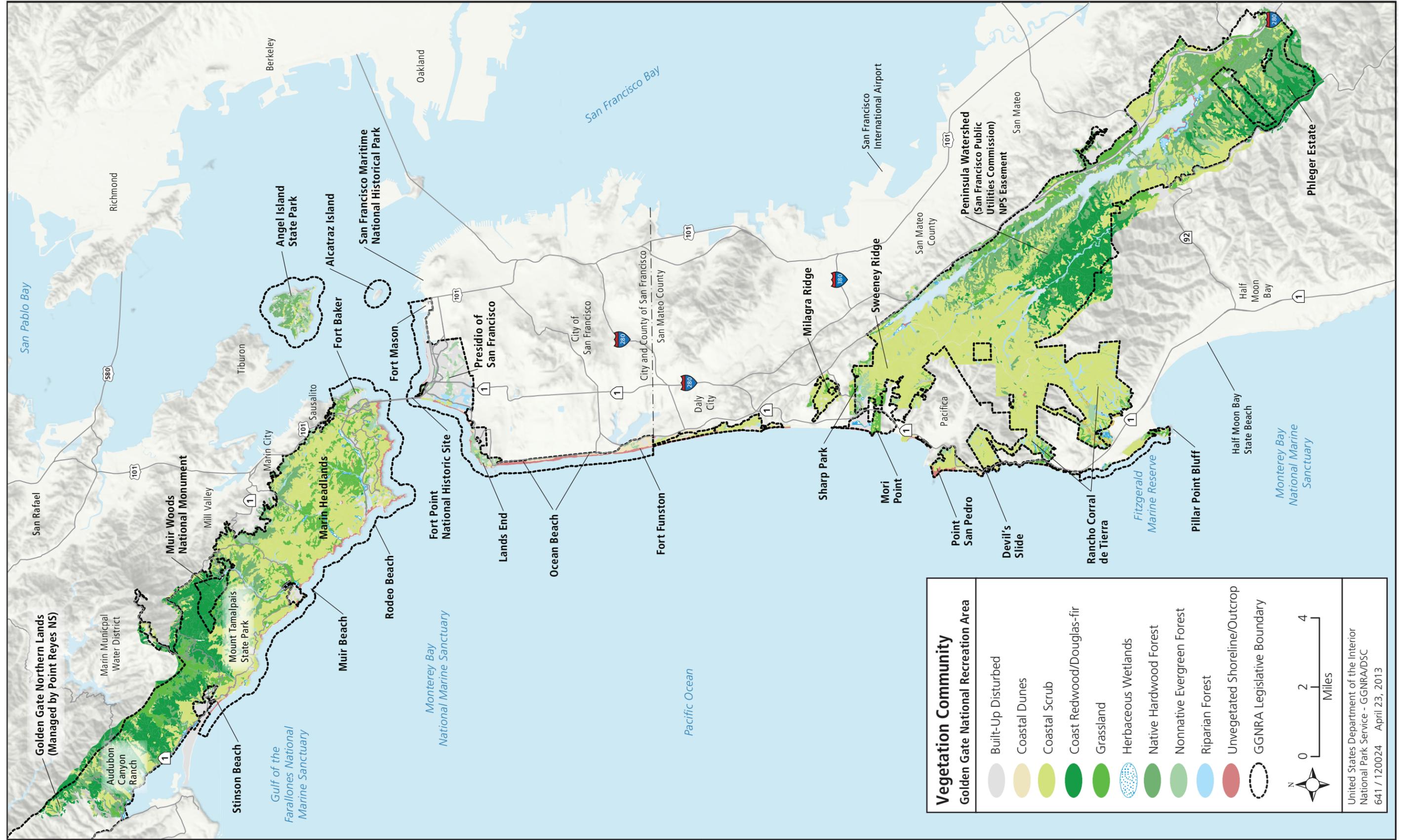
46 of particular interest are black-crowned night
 47 herons, pigeon guillemots, Brandt's and
 48 pelagic cormorants, and western gulls (NPS
 49 2001).

50

51 **Mammals.** Terrestrial habitats within the
 52 planning area support a diversity of
 53 mammals. Meso-carnivores, including the
 54 gray fox (*Urocyon cinereoargenteus*), bobcat
 55 (*Felis rufus*), and the recently reestablished
 56 coyote (*Canis latrans*), inhabit coastal scrub
 57 and grasslands. Mountain lions (*Felis*
 58 *concolor*) have been sighted in some
 59 undeveloped areas of the park. These
 60 carnivores feed on a variety of small and large
 61 mammals such as the Pacific black-tailed deer
 62 (*Odocoileus hemionus columbianus*), broad-
 63 footed mole (*Scapanus larimanus*), pocket
 64 gopher (*Thomomys bottae*), deer mouse
 65 (*Peromyscus maniculatus*), western harvest
 66 mouse (*Reithrodontomus megalotis*),
 67 California vole (*Microtus californicus*), and
 68 brush rabbit (*Sylvilagus bachmani*). Badgers
 69 (*Taxidea taxus*) are also infrequently
 70 encountered. Some species, such as the
 71 western harvest mouse, appear to be
 72 restricted to areas where native perennial
 73 grasses persist (NPS 2005a).

74

75 In addition to many of the aforementioned
 76 mammals, Muir Woods National Monument
 77 and other forested areas within the planning
 78 area support vagrant shrew (*Sorex vagrans*),
 79 Trowbridge's shrew (*Sorex trowbridgii*),
 80 Sonoma chipmunk (*Tamias sonomae*),
 81 western gray squirrel (*Sciurus griseus*),
 82 opossum (*Didelphis virginiana*), and dusky-
 83 footed woodrats (*Neotoma fuscipes*). Other
 84 mammalian carnivores include the raccoon
 85 (*Procyon lotor*), striped skunk (*Mephitis*
 86 *mephitis*), and spotted skunk (*Spilogale*
 87 *gracilis*), long-tailed weasel (*Mustela frenata*),
 88 and the recently returned river otter (*Lontra*
 89 *Canadensis*) (NPS 2005a).



Map 4. Vegetation Community

United States Department of the Interior
 National Park Service - GGNRA/DSC
 641 / 120024 April 23, 2013

1 Seventeen species of bats have been detected
 2 within the park. Ten species of bats have
 3 been documented in Muir Woods National
 4 Monument, including four at-risk species:
 5 Townsend’s western big-eared bat
 6 (*Corynorhinus townsendii townsendii*),
 7 fringed myotis (*Myotis thysanodes*), long-
 8 legged myotis (*Myotis volans*), and Yuma
 9 myotis (*Myotis yumanensis*). Many of the bats
 10 have been observed using redwood fire-scar
 11 cavities for roosting. At the Marin Headlands,
 12 several historic World War II structures were
 13 found to be occupied by the Townsend’s
 14 western big-eared bat and the Yuma myotis.
 15 The Brazilian free-tailed bat (*Tadarida*
 16 *brasiliensis*) forages over coastal scrub habitat
 17 within the Marin Headlands (NPS 2005a).

18
 19 Isolated coastal rocks, beaches, and lagoon
 20 sand flats in the park serve as haul-outs for
 21 harbor seals (*Phoca vitulina*) and California
 22 sea lions (*Zalophus californianus*). Up to 250
 23 harbor seals haul out in Point Bonita Cove
 24 along the slopes of the Marin Headlands. As
 25 the northern elephant seal (*Mirounga*
 26 *angustirostris*) population rapidly increases,
 27 the seals are encountered more frequently on
 28 sandy beaches throughout the region.
 29 California gray whales (*Eschrichtius robustus*),
 30 humpback whales (*Megaptera novaeangliae*),
 31 and harbor porpoises (*Phocoena phocoena*)
 32 use offshore waters; young whales
 33 occasionally wander into San Francisco Bay.
 34 Southern sea otters (*Enhydra lutris nereis*) are
 35 infrequently seen offshore with numbers
 36 increasing as the population spreads north
 37 (NPS 2005a).

38
 39 Alcatraz Island is home to deer mice and
 40 several bat species. Small numbers of seals
 41 and sea lions haul out on the island’s rocky
 42 areas (NPS 2001).

43
 44 **Birds.** Golden Gate National Recreation Area
 45 is along the Pacific Flyway and provides
 46 habitat for a great diversity of breeding, over-
 47 wintering, and migratory birds. Nineteen
 48 species of diurnal raptors have been detected
 49 in migration over the ridges of the Marin
 50 Headlands. Red-tailed hawks (*Buteo*
 51 *jamaicensis*), red-shouldered hawks (*Buteo*

52 *lineatus*), and great horned owls (*Bubo*
 53 *virginianus*) nest in many of the large
 54 nonnative eucalyptus trees in the park. A
 55 wide range of other raptors and at least 10
 56 owl species occur within the planning area.
 57 Numerous species of waterbirds also occur
 58 within the park in marine and rocky intertidal
 59 habitats, cliffs, beaches, and tidal and wetland
 60 areas (NPS 2005a).

61
 62 Point Reyes Bird Observatory (now Point
 63 Reyes Bird Observatory Conservation
 64 Science) encountered 83 bird species during
 65 1997 breeding landbird censuses in coastal
 66 grassland, coastal scrub, riparian, and mixed
 67 hardwood habitats. From point count
 68 censuses in 1999 and 2000, white-crowned
 69 sparrows (*Zonotrichia leucophrys*), red-
 70 winged blackbirds (*Agelaius phoeniceus*),
 71 savannah sparrows (*Passerculus*
 72 *sandwichensis*), and song sparrows (*Melospiza*
 73 *melodia*) were the most commonly detected
 74 species in grasslands. The most abundant
 75 species in coastal scrub were white-crowned
 76 sparrows, spotted towhees (*Pipilo maculatus*),
 77 and wrentits (*Chamaea fasciata*). In forested
 78 habitats, bushtits (*Psaltriparus minimus*),
 79 chestnut-backed chickadees (*Poecile*
 80 *rufescens*), dark-eyed juncos (*Junco hyemalis*),
 81 Pacific-slope flycatchers (*Empidonax*
 82 *difficilis*), and winter wrens (*Troglodytes*
 83 *troglodytes*) were commonly detected. Based
 84 on songbird nest monitoring in riparian
 85 habitats along Redwood and Lagunitas
 86 creeks, the song sparrow, Swainson’s thrush
 87 (*Catharus ustulatus*), warbling vireo (*Vireo*
 88 *gilvus*), and Wilson’s warbler (*Wilsonia*
 89 *pusilla*) were the most commonly observed
 90 nesters. The brown-headed cowbird
 91 (*Molothrus ater*) is a nest parasite that
 92 negatively affects the reproductive success of
 93 open-cup nesting songbirds and occurs
 94 throughout the planning area. Many of the
 95 landbirds in the planning area are
 96 Neotropical migrants, with others identified
 97 as species of management concern and
 98 riparian species of conservation priority by
 99 California Partners in Flight (NPS 2005a).

100
 101 Alcatraz Island is a particularly important site
 102 for birds. A number of colonial waterbird

1 species inhabit Alcatraz Island. Waterbird
 2 species of interest include Brandt's
 3 cormorants (*Phalacrocorax penicillatus*),
 4 pelagic cormorants (*P. pelagicus*), western
 5 gulls (*Larus occidentalis*), pigeon Guillemots
 6 (*Cepphus columba*), black oystercatchers
 7 (*Haematopus bachmani*), black-crowned
 8 night herons (*Nycticorax nycticorax*), snowy
 9 egrets (*Egretta thula*), great egrets
 10 (*Casmerodius albus*), great blue herons
 11 (*Ardea herodias*), and California gulls (*Larus*
 12 *californicus*). The Brandt's cormorant colony
 13 on Alcatraz Island is one of the few known
 14 estuarine breeding sites for this species.
 15 Pigeon Guillemots breed nowhere else in the
 16 San Francisco Bay, and the western gull and
 17 black-crowned night heron colonies are
 18 among the largest in the Bay (Acosta et al.
 19 2008). None of the waterbird species on
 20 Alcatraz Island are special status species.

21
 22 This diversity of species exists in a delicate
 23 balance with the considerable human
 24 presence both on and around Alcatraz Island.
 25 Colonial waterbird populations on the island
 26 experience substantial disturbance from a
 27 number of different sources. A large number
 28 of visitors tour the island annually, and
 29 associated historic preservation and safety
 30 construction projects, public access to
 31 breeding areas, gardening activities that are
 32 part of a historic garden restoration program,
 33 and special events could disrupt the breeding
 34 efforts of Alcatraz Island seabirds.
 35 Encroachment near the Alcatraz Island
 36 shoreline by large numbers of commercial or
 37 recreational boaters (e.g., tour boats, anglers,
 38 kayakers), and uncontrolled aircraft
 39 overflights (e.g., air tour operators), may have
 40 similar effects. In addition, dredging and
 41 other projects that disturb and alter the
 42 subtidal environment are potentially
 43 disruptive to seabird populations, as these
 44 activities may remobilize contaminants,
 45 increase turbidity, and destroy essential
 46 foraging habitat (Acosta et al. 2008).

47
 48 In 1993, Golden Gate National Recreation
 49 Area completed a management plan for
 50 Alcatraz Island, which included provisions
 51 for maintaining breeding populations of

52 colonial waterbirds. This plan emphasized
 53 protection of the island's natural resources,
 54 while maintaining opportunities for visitor
 55 access, special events, and other island uses.
 56 The plan called for natural resource
 57 monitoring and the development of
 58 protocols to determine baseline information
 59 for key wildlife populations (Acosta et al.
 60 2008).

61
 62 In addition to colonial waterbirds at Alcatraz
 63 Island, other islands within the park
 64 boundaries provide important habitat for
 65 waterbirds. More specifically, Bird Island
 66 supports nesting seabirds, including Brandt's
 67 and pelagic cormorants, pigeon guillemots,
 68 and common murres (*Uria aalge*). Brandt's
 69 cormorant numbers on the island are
 70 variable, ranging from several hundred to
 71 zero nesting birds in recent years. Pelagic
 72 cormorants and pigeon guillemots nest in
 73 relatively low numbers. Common murres
 74 were first confirmed nesting on Bird Island in
 75 2008, with several hundred birds breeding on
 76 the island over the next several years.

77
 78 Devil's Slide Rock and adjacent mainland
 79 also provide important nesting habitat for
 80 waterbirds, including common murres,
 81 Brandt's and pelagic cormorants, pigeon
 82 guillemots and western gulls. Common
 83 murres were attracted to reestablish a
 84 breeding population in 1996. Recent counts
 85 indicate from 421 to 862 common murres.
 86 Brandt's cormorant numbers range from over
 87 500 nests to zero in recent years.

88
 89 Lastly, small numbers of nesting western gulls
 90 exist on San Pedro Rock. Efforts were made
 91 to attract common murres to reestablish
 92 breeding populations, but these proved
 93 ineffective.

94
 95 **Amphibians and Reptiles.** Small
 96 populations of the federal listed threatened
 97 California red-legged frog (*Rana aurora*
 98 *draytonii*) occur within the planning area.

99
 100 Within San Mateo County, historic and
 101 current records indicate the presence of the
 102 federal listed endangered San Francisco

1 garter snake (*Thamnophis sirtalis tetrataenia*).
 2 More common terrestrial amphibians in the
 3 planning area include ensatina (*Ensatina*
 4 *eschscholtzii*) and California slender
 5 salamander (*Batrachoseps attenuatus*).
 6 Common species spending a substantial
 7 amount of time at streams or ponds for
 8 breeding or rearing purposes include
 9 California newts (*Taricha torosa*), rough-
 10 skinned newts (*Taricha granulosa*), Pacific
 11 treefrog (*Hyla regilla*), and California giant
 12 salamander (*Dicamptodon ensatus*). Common
 13 reptiles include the Western fence lizard
 14 (*Sceloporus occidentalis*), northern alligator
 15 lizard (*Gerrhonotus coemleus*), Pacific gopher
 16 snake (*Pituophis melanoleucus*), and western
 17 terrestrial garter snake (*Thamnophis elegans*)
 18 (NPS 2005a).

19
 20 Alcatraz Island has large populations of
 21 California slender salamanders, which are
 22 small lungless salamanders that do not
 23 require water for breeding. The northern end
 24 of the island has moist substrate, which
 25 supports the salamanders. Neither the eggs
 26 nor the salamanders can tolerate salt spray, so
 27 they are limited to upland areas of the island
 28 (NPS 2001).

29
 30 **Fish.** The planning area includes both
 31 resident and transitory fish species that
 32 occupy marine, estuarine, and freshwater
 33 habitats. Common, nearshore resident
 34 estuarine and marine fish include Pacific
 35 staghorn sculpin, arrow goby (*Clevelandia*
 36 *ios*), and topsmelt (*Atherinops affinis*). The
 37 brackish Rodeo Lagoon in the Marin
 38 Headlands supports a large population of the
 39 federal listed endangered tidewater goby
 40 (*Eucyclogobius newberryi*) (NPS 2005a).

41
 42 Freshwater streams within the planning area
 43 are characterized by naturally limited species
 44 diversity. Perennial streams may include
 45 resident fish such as threespine stickleback
 46 (*Gasterosteus aculeatus*) and prickly sculpin
 47 (*Cottus asper*). Several important
 48 anadromous fish species are present in the
 49 creeks and watersheds within the planning
 50 area. Anadromous species are those that
 51 spawn or breed in streams and rivers and

52 then migrate to and mature in the ocean.
 53 Anadromous species that breed and rear their
 54 young in streams within the planning area
 55 include endangered coho salmon
 56 (*Oncorhynchus kisutch*) and steelhead trout
 57 (*Oncorhynchus mykiss*). Coho salmon are
 58 listed as endangered and steelhead trout are
 59 listed as threatened under the Endangered
 60 Species Act. Intermittent streams or the
 61 intermittent headwater streams may support
 62 only steelhead trout (NPS 2005a).

63
 64 **Invertebrates.** Two coastal grassland/scrub
 65 areas in the park are known for their high
 66 numbers and diversity of butterflies—Marin
 67 Headlands and Milagra Ridge. The federal
 68 listed endangered mission blue butterfly
 69 (*Icaricia icarioides missionensis*) occurs at
 70 both sites, while the San Bruno elfin butterfly
 71 (*Euphydryas editha bayensis*) is found at
 72 Milagra Ridge, where it inhabits rocky
 73 outcrops. At least 44 species of butterflies
 74 occur in the Marin Headlands and 34 species
 75 occur at Milagra Ridge, illustrating the
 76 importance of habitat fragments within
 77 largely developed landscapes. Various species
 78 of skippers, swallowtails, hairstreaks, blues,
 79 ladies, admirals, and crescents inhabit these
 80 areas. Monarch butterflies (*Danaus*
 81 *plexippus*) are found in clusters overwintering
 82 in many areas of the park, often in groves of
 83 nonnative trees. Other terrestrial
 84 invertebrates have not been well documented
 85 (NPS 2005a).

86
 87 Limited information is available regarding the
 88 freshwater invertebrates that are present
 89 within the planning area. Targeted
 90 inventories have been conducted in streams
 91 such as Redwood Creek—223 freshwater
 92 species are known. The only federal listed
 93 species is the endangered California
 94 freshwater shrimp, which is found within the
 95 Lagunitas Creek watershed, an area managed
 96 by Point Reyes National Seashore. Limited
 97 information is also available regarding
 98 invertebrates from marine and estuarine
 99 habitats within the planning area—279
 100 marine and estuarine species are known
 101 (NPS 2005a).

1 Alcatraz Island includes a small but
2 significant site used briefly by Monarch
3 butterflies in their fall migration. The
4 butterflies are usually on the island for one to
5 five days during this period and have been
6 reported on vines on the east side of the
7 island and near the chapel (NPS 2001).

8

9 **Nonnative Wildlife.** Many species of
10 nonnative wildlife have been identified as
11 problem species within the park. These
12 species negatively affect populations of native
13 animals through competition for resources,
14 predation, and as vectors for disease.

15 Nonnative terrestrial mammals include
16 fallow deer (*Cervus dama*), feral hogs (*Sus*
17 *scrofa*), red fox (*Vulpes vulpes*), opossum,
18 house cats (*Felis domestiells*), and Norway
19 and black rats (*Rattus norvegicus* and *R.*
20 *rattus*). Nonnative birds found in the
21 planning area include wild turkeys (*Meleagris*
22 *gallopavo*), European starlings (*Sturnus*
23 *vulgaris*), peafowls (*Pavo eristatus*), house
24 sparrows (*Passer domestiellus*), and rock doves
25 (*Columba livia*). Nonnative invertebrates
26 present in the planning area include
27 Argentine ant (*Iridomyrmex humilis*).
28 Nonnative fish present within various
29 human-made ponds include mosquitofish
30 (*Gambusia affinis*) and various sunfish, while
31 estuarine areas may support yellowfin goby
32 (*Acanthogobius flavimanus*). Nonnative
33 amphibian and reptile species include
34 bullfrog (*Rana catesbeiana*), red-eared slider
35 (*Chrysemys pieta*), and the occasional caiman
36 (NPS 2005a).

37

38 Norway rats have been observed on Alcatraz
39 Island since 1998. The Norway rats are a
40 concern because of their potential as
41 predators of waterbird eggs and chicks on the
42 island. These rats have been known to reduce
43 native rodent populations (NPS 2001).

44

45

46 **Special Status Wildlife Species**

47 Habitat for numerous rare or special status
48 wildlife species (i.e., federal and state listed
49 species, species of special concern, and
50 candidate species) exists within the lands and

51 waters of the park's legislative boundary.
52 These special status species are permanent
53 residents of the park, seasonal residents of
54 the park, or rely on the land and waters of the
55 park for migration. Twenty-seven wildlife
56 species that occupy the land and waters of
57 Golden Gate National Recreation Area are
58 listed as threatened or endangered under the
59 Endangered Species Act as amended (16 USC
60 1536 [a] [2] 1982). Of these, 14 are federal
61 endangered and 14 are federal threatened. It
62 is important to note that three separate
63 populations of the Chinook salmon species
64 and two populations of the steelhead trout
65 species exist in the planning area. Since the
66 federal status of the Chinook salmon varies
67 across populations (two are threatened, one
68 is endangered), the sum of federal
69 endangered and federal threatened species
70 (28) does not directly coincide with the
71 previously noted 37 protected species under
72 the Endangered Species Act.

73

74 Fourteen of the wildlife species that occupy
75 the lands and waters of the park are also
76 listed as threatened or endangered by the
77 California Endangered Species Act. Of these,
78 10 species are state endangered, and 4 are
79 state threatened. All but three of these state-
80 listed wildlife species are also federal listed:
81 the exceptions being the bald eagle, bank
82 swallow, and California black rail.

83

84 Numerous other wildlife species (birds in
85 particular) are considered sensitive by the
86 Audubon Society, Partners in Flight, or the
87 California Department of Forestry, or are
88 designated Migratory Nongame Birds of
89 Management Concern by the U.S. Fish and
90 Wildlife Service. Nearly all of the native birds
91 documented in the park are protected under
92 the Migratory Bird Treaty Act (16 USC 528-
93 531). Thirty-eight rare or special status plant
94 species are currently identified within the
95 park. Of those species, 9 are federal listed
96 endangered, 1 is federal listed threatened,
97 and 15 are included or proposed for
98 inclusion by the California Native Plant
99 Society (NPS 2005a).

100

1 The U.S. Fish and Wildlife Service and the
 2 National Oceanic and Atmospheric
 3 Administration, National Marines Fisheries
 4 Service, provided a list of federal listed
 5 threatened and endangered species for
 6 consideration during development of the fire
 7 management plan in 2005. This list was used
 8 as the initial baseline of information for the
 9 development of this general management
 10 plan, because the planning areas for the two
 11 plans are identical (NPS 2005a). To refine
 12 and update the list of special status species in
 13 the planning area, the NPS Endangered
 14 Species Act Database, the California
 15 Department of Fish and Game’s California
 16 Natural Diversity Database, and park staff
 17 data were referenced.

18
 19 The table in appendix D identifies the
 20 threatened and endangered species that
 21 could occur in the planning area. Their
 22 current federal and state status and county-
 23 specific habitat location are also identified in
 24 the table. Appendix D also identifies which of
 25 these species have been retained for further
 26 analysis of impacts (also see the summary
 27 table of impact topics at beginning of part 9
 28 of this document, “Resources and Values that
 29 could be Affected by the Alternatives
 30 [Affected Enviroment]”).

31
 32 To evaluate the effects on special status
 33 species, a set of species considered likely or
 34 possible to experience impacts from GMP
 35 actions was selected for assessment based on
 36 the presence of suitable habitat within the
 37 project area and discussions with NPS
 38 biologists.

39
 40
 41 **Marin County**

42 **Mission Blue Butterfly –**
 43 **Federal Endangered**

44 Mission blue butterflies (*icaria icaroides*
 45 *missionensis*) are closely tied to the lupine
 46 larval host plants *Lupinus albifrons*, *L.*
 47 *variicolor*, and *L. formoslls*, with *L. albifrons*
 48 considered to be the preferred host. These
 49 host plants tend to occur in grasslands on

50 thin, rocky soils within broader coastal scrub
 51 habitats. Lupine are susceptible to fungal
 52 outbreaks, which have been documented to
 53 cause rapid contractions of lupine
 54 distribution at the Marin Headlands.
 55 Competition from nonnative plants,
 56 including eucalyptus, Monterey pine, grasses,
 57 and broom, also threatens lupine host plants.
 58 Lupine is a fire-adapted species, and fire may
 59 enhance suitable lupine habitat for mission
 60 blue butterflies. Adults feed on nectar from
 61 numerous plants, though they may prefer
 62 wild buckwheat (*Erigonum latifolium*),
 63 golden aster (*Chrysopsis vilosa*), blue dicks
 64 (*Brodiaea pulchella*), and Ithuriel's spear
 65 (*Brodiaea laxa*). Habitat loss is probably the
 66 primary threat to mission blue butterflies,
 67 with trampling of host and nectar plants,
 68 larvae, and pupae also of concern. Other
 69 threats to mission blue butterflies at various
 70 stages of their life cycles include parasites,
 71 predators, and desiccation and disease during
 72 diapause (dormancy) (NPS 2005a).

73
 74 Adults have one generation per year, with a
 75 flight period from mid-March to mid-May at
 76 Marin Headlands and late May to mid-June
 77 at San Bruno Mountain. Analyses suggest that
 78 warmer air temperatures are associated with
 79 higher numbers of adults at the seasonal peak
 80 and that rainfall is not related to the peak
 81 number of adults. Eggs are usually laid on the
 82 dorsal surface of larval host plants. Ants
 83 (*Prenolepis imparis* and *Formica lasioides*)
 84 may tend the later-instar mission blue larvae.
 85 Mission blue butterflies occur at Marin
 86 Headlands, Tennessee Valley, Milagra Ridge,
 87 and Sweeney Ridge within the planning area
 88 (NPS 2005a).

89
 90 **California Red-legged Frog –**
 91 **Federal Threatened**

92 The California red-legged frog (*Rana aurora*
 93 *draytonii*) is found primarily in wetlands and
 94 streams in coastal drainages of central
 95 California. Red-legged frogs found north of
 96 the Marin-Sonoma county border exhibit
 97 intergrade characteristics of the California
 98 red-legged frog and the northern red-legged
 99 frog. The frog requires specific aquatic and

1 riparian features. Adults require a dense,
 2 shrubby or emergent riparian vegetation
 3 closely associated with deep (>2.3 feet) still or
 4 slow-moving water. The highest densities of
 5 California red-legged frogs have been
 6 associated with deep-water pools with dense
 7 stands of overhanging willows and an
 8 intermixed fringe of cattails. Breeding sites
 9 are up to 85 feet from water in dense riparian
 10 vegetation. Nonbreeding sites can be found
 11 up to 98 feet from water in adjacent dense
 12 riparian vegetation (Rathbun et al. 1993). A
 13 final rule designating critical habitat
 14 identified a small sliver near Sweeney Ridge,
 15 San Mateo (UFWS 2006). A recent court
 16 decision eliminated critical habitat within the
 17 planning area by changing the habitat
 18 definition. Critical habitat had been defined
 19 to include essential aquatic habitat,
 20 associated uplands, and dispersal habitat
 21 connecting essential aquatic habitat (NPS
 22 2005a).

24 ***Tidewater Goby – Federal*** 25 ***Endangered***

26 The tidewater goby (*Eucyclogobius*
 27 *newberryi*) is a small benthic fish that occurs
 28 in the upper end of California coastal lagoons
 29 in salinities less than 10 parts per thousand.
 30 While generally found in coastal
 31 embayments, gobies are also known to occur
 32 in streams. In San Antonio Creek in Santa
 33 Barbara County, the goby is known to occur
 34 up to 5 miles upstream of the lagoon habitat.
 35 Within the planning area, tidewater goby is
 36 known only from Rodeo Lagoon in the
 37 Marin Headlands (NPS 2005a).

39 ***Chinook Salmon – Federal*** 40 ***Threatened and Endangered; State*** 41 ***Threatened and Endangered***

42 Chinook salmon (*Oncorhynchus tshawytscha*)
 43 spawning and juvenile rearing habitat occurs
 44 in the Sacramento River and its tributaries
 45 and large streams and rivers connected to the
 46 Pacific Ocean. Chinook salmon have unique
 47 populations with distinguishable “runs”
 48 based on the timing of upstream migration

49 and their spawning period. Winter-run
 50 Chinook are listed as endangered (federal
 51 and state). Central Valley spring-run
 52 Chinook are listed as threatened (federal and
 53 state). Adult and juvenile migratory corridors
 54 exist along the San Francisco Bay portion of
 55 Golden Gate National Recreation Area lands.
 56 Critical habitat for winter-run Chinook
 57 includes San Francisco Bay to the Golden
 58 Gate Bridge.

59 Recent data indicate that most juvenile
 60 Chinook salmon are using the Central Bay as
 61 a migratory corridor with most juvenile
 62 Chinook moving along the northern corridor
 63 through Raccoon Strait and around the
 64 Tiburon peninsula, by Fort Baker, and out to
 65 the Golden Gate. Based on the occurrence of
 66 juvenile Chinook at the Delta pumps and a
 67 one month transit time from Chipp’s Island
 68 to the Golden Gate, winter-run Chinook
 69 juveniles would be present near the Fort
 70 Baker area from January through June, while
 71 spring-run Chinook juveniles would be
 72 present from March through June
 73 (MacFarlane 2002).

76 ***Coho Salmon – Federal Endangered*** 77 ***and State Endangered***

78 Coho salmon occur in several creeks within
 79 the planning area, as well as the nearshore
 80 waters of the Pacific Ocean and estuarine
 81 sites such as Bolinas Lagoon and San
 82 Francisco Bay. Coho salmon are found in
 83 Redwood Creek in Marin County. A single
 84 cohort of coho salmon was found in Easkoot
 85 Creek (Marin County). Coho are an
 86 anadromous species. They are born and
 87 reared in freshwater streams; as juveniles,
 88 they migrate to estuaries, adjust to saltwater,
 89 and then migrate to the ocean to mature into
 90 adults. Designated critical habitat for coho in
 91 Golden Gate National Recreation Area
 92 includes accessible estuarine and stream
 93 areas in the coastal watersheds of Marin
 94 County, except areas above longstanding
 95 naturally impassable barriers. Optimal habitat
 96 conditions for juvenile coho seem to be deep
 97 pools created by rootwads and boulders in
 98 heavily shaded stream sections (NPS 2005a).

1 **Steelhead Trout – Federal Threatened**

2 Steelhead trout occur in several creeks within
 3 the planning area. Steelhead are found in
 4 Redwood Creek in Marin County, as well as
 5 in the drainages to Bolinas Lagoon and
 6 Rodeo Lagoon. In San Mateo County,
 7 steelhead are found in West Union Creek, a
 8 tributary to San Francisquito Creek. Like
 9 coho, steelhead are an anadromous species.
 10 Adult steelhead enter Golden Gate National
 11 Recreation Area streams in late winter
 12 through spring to reach spawning sites,
 13 typically well-aerated areas with small- to
 14 medium-sized gravel. Habitat preferences for
 15 juvenile steelhead are deep pools created by
 16 rootwads and boulders in heavily shaded
 17 stream sections, although young-of-the-year
 18 steelhead are often forced into shallow-water
 19 habitats. The amount of time steelhead rear
 20 in freshwater and marine/estuarine habitats is
 21 variable, ranging between one to three years.
 22 For most drainages, surveys have been
 23 conducted for presence or absence of
 24 salmonids, while in watersheds supporting
 25 coho salmon, abundance data on both
 26 species are available. The variable life cycle of
 27 steelhead makes population analysis more
 28 difficult, but also makes steelhead more
 29 resilient to adverse environmental
 30 conditions. In general, if the habitat
 31 requirements for coho were met, steelhead
 32 habitat requirements would also be met (NPS
 33 2005a).

34
 35 Designated critical habitat for steelhead in
 36 Golden Gate National Recreation Area
 37 includes the width of the stream channel
 38 defined by the ordinary high water line (U.S.
 39 Department of Commerce, NOAA 2005).

40
 41 **Northern Spotted Owl –**
 42 **Federal Threatened**

43 Lands within Marin County support a
 44 northern spotted owl population of possibly
 45 75 pairs. This population is isolated from
 46 spotted owl populations to the north by large
 47 areas of grassland and shrubs and constitutes
 48 the southern end of the subspecies range.

49 Genetic analysis has shown low levels of
 50 genetic diversity within and low levels of gene
 51 flow between spotted owl populations in
 52 Marin County and Mendocino National
 53 Forest. The Marin County population
 54 supports the highest known density of
 55 northern spotted owls throughout their
 56 range. Threats to spotted owls in the
 57 planning area include urbanization, intense
 58 recreational pressure, disturbance from
 59 wildlife photographers and birders, genetic
 60 isolation, West Nile virus, possible
 61 catastrophic wildfire, expansion in the range
 62 of the barred owl (*Strix varia*), and habitat
 63 changes due to sudden oak death.

64
 65 Spotted owls in Marin inhabit coniferous
 66 forest, including second growth and remnant
 67 stands of Douglas-fir, bishop pine (*Pinus*
 68 *muricata*), coast redwood (*Sequoia*
 69 *sempervirens*), and mixed conifer-hardwood
 70 habitats composed of tanoak, coast live oak
 71 (*Quercus agrifolia*), and California bay
 72 (*Umbellularia californica*).

73
 74 Spotted owls tend to nest in older stands of
 75 conifer and hardwood trees that create a tall
 76 overstory. Spotted owls often select larger
 77 trees with defects, such as broken tops or
 78 mistletoe (*Arceuthobium* spp.) infestations,
 79 for nesting, but also have been found nesting
 80 in young bay trees in smaller stands.
 81 Preliminary pellet analyses indicate that
 82 spotted owls forage primarily on dusky-
 83 footed woodrats (*Neotoma fuscipes*) in
 84 addition to other forest dwelling small
 85 mammals and songbirds. Within the planning
 86 area, known spotted owl locations are
 87 currently limited to Muir Woods and the
 88 Stinson Gulch area (NPS 2005a).

89
 90
 91 **San Francisco County**

92 **Chinook Salmon – Federal**
 93 **Threatened and Endangered; State**
 94 **Threatened and Endangered**

95 Chinook salmon spawning and juvenile
 96 rearing habitat occurs in the Sacramento
 97 River and tributaries and large streams and

1 rivers connected to the Pacific Ocean.
 2 Chinook salmon have unique populations
 3 with distinguishable “runs” based on the
 4 timing of upstream migration and spawning
 5 period. Winter-run chinook are listed as
 6 endangered. Central Valley spring-run
 7 chinook are listed as threatened. Adult and
 8 juvenile migratory corridors exist along the
 9 San Francisco Bay portion of Golden Gate
 10 National Recreation Area lands. Critical
 11 habitat for winter-run chinook includes San
 12 Francisco Bay to the Golden Gate Bridge. See
 13 further description under Marin County.
 14 Chinook within the vicinity of Alcatraz Island
 15 are assumed to be present as migrating
 16 juveniles and adults. Research indicates that
 17 juvenile chinook salmon are using the Central
 18 Bay as a migratory corridor. The waters
 19 around Alcatraz Island have been designated
 20 as critical habitat for chinook salmon (NPS
 21 2001).

22
 23 **Western Snowy Plover –**
 24 **Federal Threatened**

25 The Pacific Coast breeding population of the
 26 western snowy plover is federal listed as
 27 threatened. On March 22, 2004, the U.S. Fish
 28 and Wildlife Service determined that
 29 substantial information existed to support the
 30 possible delisting of the species, and a status
 31 review was initiated. This population of
 32 snowy plovers occurs along coastal beaches;
 33 they nest primarily on sand spits, dune-
 34 backed beaches, beaches at creek and river
 35 mouths, and salt pans at lagoons and
 36 estuaries. Snowy plovers nest in coastal
 37 Marin County. The western snowy plover
 38 occurs within the park at Ocean Beach and
 39 Crissy Field from mid-July through early
 40 May. Snowy plovers have been observed on
 41 rare occasions and for short periods of time
 42 (over a few days) at Rodeo Beach and
 43 overwintering on Ocean Beach; they have
 44 been periodically sighted at other beaches.
 45 Snowy plovers breed primarily on coastal
 46 beaches from southern Washington to
 47 southern Baja California, Mexico (NPS
 48 2005a).

49

50 **Bank Swallow – State Threatened**

51 Bank swallows (*Riparia riparia*) are colonial
 52 nesters, nesting primarily in riparian and
 53 other lowland habitats west of the desert.
 54 Bank swallows require vertical banks or cliffs
 55 near streams, rivers, lakes, or the ocean; they
 56 need fine-textured or sandy soils in which to
 57 dig nesting holes. Erosion by water and wind
 58 is important in creating and maintaining
 59 banks and bluffs suitable for nesting.
 60 Proximity to water is important at all seasons.
 61 During migration and in winter, wetlands
 62 provide a steady source of insects and a
 63 buffer against extreme temperatures. This
 64 species nests in the Fort Funston cliffs (NPS
 65 2005a).

66

67

68 **San Mateo County**

69 **Mission Blue Butterfly –**
 70 **Federal Endangered**

71 See prior discussion under Marin County.

72

73 **San Bruno Elfin Butterfly –**
 74 **Federal Endangered**

75 The larval host plant for San Bruno elfin
 76 butterflies (*Callophrys mossii bayensis*) is
 77 *Sedum spathulifolium*, a succulent that grows
 78 on rocky, north-facing slopes along the coast
 79 (Lambert 2002). Adults are thought to stay
 80 within about 330 feet of host plants. Adults
 81 have one generation per year, with flight
 82 season from late February to early April. Eggs
 83 are laid on the ventral surface of the leaves of
 84 host plants. The fourth instar larvae pupate at
 85 the base of host plants where they remain
 86 through the summer, fall, and early winter.
 87 Habitat loss and trampling of host plants,
 88 larvae, and pupae are the primary threats to
 89 these butterflies. The San Bruno elfin
 90 butterfly is known to occur only at Milagra
 91 Ridge within the planning area (NPS 2005a).

92

1 **San Francisco Garter Snake –**
 2 **Federal Endangered; State**
 3 **Endangered**

4 The San Francisco garter snake (*Thamnophis*
 5 *sirtalis tetrataenia*) is endemic to the San
 6 Francisco peninsula and is currently
 7 restricted to localities within San Mateo
 8 County. This listed species is primarily
 9 threatened by the loss and alteration of
 10 suitable wetland habitat due to urban
 11 development, freeway and road construction,
 12 illegal collection, agricultural practices, and
 13 trampling. It is considered semiaquatic and is
 14 found along the margins of ponds, lakes,
 15 streams, and estuaries (above tidal influx). It
 16 feeds on small amphibians and fish, especially
 17 the federal listed threatened California red-
 18 legged frog (*Rana aurora draytonii*). The
 19 planning area contains three sites (Sweeney
 20 Ridge, Milagra Ridge, Mori Point / Sharp
 21 Park) that appear to have suitable habitat for
 22 the San Francisco garter snake; however, no
 23 recent surveys specifically designed to locate
 24 the snake and assess habitat have been
 25 conducted. Only Mori Point / Sharp Park has
 26 had a documented occurrence of the San
 27 Francisco garter snake; however, no recent
 28 population data are available (NPS 2005a).

30 **California Red-legged Frog –**
 31 **Federal Threatened**

32 See prior discussion under Marin County.

34 **Steelhead Trout – Federal Threatened**

35 Adult and juvenile steelhead trout migratory
 36 corridors exist along the San Francisco Bay
 37 portion of Golden Gate National Recreation
 38 Area lands for two listed population segments
 39 (California Central Valley and California
 40 Central Coast).

42 **Marbled Murrelet – Federal**
 43 **Threatened; State Endangered**

44 The marbled murrelet (*Brachyramphus*
 45 *marmoratus*) nests in old-growth forests or
 46 on the ground at higher altitudes where trees

47 cannot grow. The marbled murrelet has
 48 experienced a decline in numbers due to loss
 49 of nesting habitat. This member of the auk
 50 family feeds at sea in pelagic offshore areas
 51 and inshore in protected bays.

54 **Special Status Plant Species**

55 The lands and waters of the park provide
 56 natural conditions for several special status
 57 plant species (i.e., federal and state listed
 58 species, species of special concern, candidate
 59 species). Fourteen plant species that are
 60 present in Golden Gate National Recreation
 61 Area are listed as threatened or endangered
 62 under the Endangered Species Act as
 63 amended (16 USC 1536 [a] [2] 1982). Of
 64 these, 12 are federal endangered and 2 are
 65 federal threatened.

67 Eleven of the plant species that are present in
 68 the park planning area are also listed as
 69 threatened or endangered by the California
 70 Endangered Species Act. Of these species,
 71 nine are state endangered, and two are state
 72 threatened. All but one of these state listed
 73 plant species (San Francisco popcornflower)
 74 are also federal listed.

76 Other plant species in the park planning area
 77 are also of management concern to the park
 78 and are listed by the California Native Plant
 79 Society on List 4 – “Plants of Limited
 80 Distribution” (locally rare). Although these
 81 species are not actually listed as threatened or
 82 endangered under the federal Endangered
 83 Species Act, NPS *Management Policies 2006*
 84 states that the National Park Service will
 85 inventory, monitor, and manage state listed
 86 and locally listed species in a manner similar
 87 to its treatment of federal listed species.
 88 Management policies also state that the
 89 National Park Service will inventory other
 90 species that are of special management
 91 concern to parks such as locally rare,
 92 declining, sensitive, or unique species (NPS
 93 2005a).

1 ***San Francisco Lessingia – Federal***
2 ***Endangered; State Endangered***

3 The San Francisco lessingia (*Lessingia*
4 *germanorum*) is federal listed as endangered.
5 It is found in open sandy soils and dunes in
6 coastal scrub. San Francisco lessingia has

7 historically been endangered by competition
8 with invasive nonnative vegetation and native
9 scrub vegetation, development, sand
10 quarrying, trampling and recreational
11 activities, incidental use of fertilizers, and
12 other activities (NPS 2005a).

NATURAL RESOURCES – MUIR WOODS NATIONAL MONUMENT

1 INTRODUCTION

2 Muir Woods National Monument is a part of
3 Golden Gate International Biosphere
4 Reserve—one of the planet’s richest and most
5 threatened reservoirs of plant and animal life.
6 Muir Woods National Monument occupies
7 558 acres of the Central California Coast
8 Range in Marin County, California, only a
9 few miles north of San Francisco.

10

11 Muir Woods National Monument preserves
12 one of the last remaining ancient redwood
13 forests on the Pacific Coast and in the world.
14 The monument was established in 1908 to
15 protect a unique old-growth redwood forest.
16 Specifically, it was created in recognition of
17 the “extraordinary scientific interest and
18 importance because of the primeval character
19 of the forest in which the monument is
20 located, and the character, age, and size of the
21 trees” (Proclamation No. 793, Jan. 9, 1908, 35
22 STAT. 2174). These protected redwoods are
23 the “last contiguous stand of old-growth
24 coastal redwood (*Sequoia sempervirens*) and
25 Douglas-fir in Marin County.” From its
26 inception, the monument was designed to
27 protect the primeval character of the
28 redwood forests, and today, ecological
29 integrity is a major driving force (Hall 2009).

30

31 The area surrounding Muir Woods National
32 Monument is largely protected lands,
33 including other units of Golden Gate
34 National Recreation Area and lands managed
35 by the state (Mount Tamalpais State Park)
36 and by the Marin Municipal Water District.
37 Muir Woods National Monument is entirely
38 within the watershed of Redwood Creek.
39 Originating on Mount Tamalpais (over 2,400
40 feet in elevation), Redwood Creek flows
41 through the heart of Muir Woods National
42 Monument, bisects Frank Valley, and
43 discharges into the Pacific Ocean at Muir
44 Beach.

45

46 In addition to preserving the California Coast
47 Redwood, Muir Woods National Monument
48 is home to several federal endangered and
49 threatened species, including the northern
50 spotted owl, coho salmon, and steelhead
51 trout.

52

53

54 PHYSICAL RESOURCES

55 Air Quality

56 Muir Woods National Monument is within a
57 class II air quality area and is in the San
58 Francisco Bay air basin. There are no air
59 quality monitoring stations at or near the
60 monument. Therefore, no specific data are
61 available. See the Golden Gate National
62 Recreation Area section for a description of
63 monitoring information for the general area.

64

65

66 Carbon Footprint

67 See description under Golden Gate National
68 Recreation Area.

69

70

71 Soils and Geologic Resources 72 and Processes

73 Muir Woods National Monument is subject
74 to many of the same geologic processes
75 described for Golden Gate National
76 Recreation Area. Slopes are inherently
77 unstable. Intense shearing associated with
78 faulting along the plate margin has reduced
79 the strength of the rock. Ongoing uplift of the
80 mountains causes continued erosion as the
81 landscape strives to become stable. Surface
82 disturbances, such as cuts for trails and roads,
83 vegetation clearing, and alteration of surface
84 water drainages, can trigger or lead to slope
85 failures (NPS 2005a).

86

1 Auwaerter and Sears (2006, p. 18–19)
2 describe the California Coast Range as

3
4 *a narrow band of low mountains*
5 *along four hundred miles of coastline*
6 *on the western edge of the North*
7 *American tectonic plate. . .*
8 *characterized by bedrock formed*
9 *from ancient sea floor sediments and*
10 *igneous rock that was heavily folded*
11 *and uplifted due to lateral slipping*
12 *along the juncture of the North*
13 *American and Pacific plates.*

14
15 Within Muir Woods National Monument,
16 elevations range from 120 feet to 1,340 feet
17 above sea level. Redwood Creek loses
18 approximately 50 feet in elevation from
19 where it enters the monument on the north
20 to where it exits approximately 0.5 mile
21 downstream. Redwood Creek Canyon is the
22 major topographical feature within the
23 monument, and its hillslopes are steep, often
24 exceeding 65%. These steep slopes provide
25 considerable shade within the canyon. The
26 monument extends a short distance into Kent
27 Canyon on the northwest, and the newer
28 additions on the southeast occupy a side
29 canyon.

31 **Soils**

32 Based on the lands included within the
33 monument in 1978, six soil complexes were
34 identified within Muir Woods National
35 Monument, which are distinguished by their
36 soil type and slope. Howell et al. (no date)
37 noted that the primary types are Centissima-
38 Barnabe (derived from chert), basalt, and
39 Franciscan formation sandstones. The
40 Redwood Creek canyon floor is
41 characterized as consisting of mostly “gray-
42 podzolic soils” with clay-silt and clay-sand
43 (Hall 2009).

45 **Geology**

46 Faulting and uplift in the Coast Range have
47 left relatively unstable slopes subject to
48 landslides and mass wasting. Valley bottoms
49 have deep alluvial or colluvial fills. The

50 mainstem alluvial valley fill in lower Frank
51 Valley (about 4 miles downstream of the
52 monument) is at least 37 feet deep, and may
53 be locally as deep as 90 feet. Nearly half of the
54 Redwood Creek watershed’s hillslopes are
55 landslide deposits. There are outcrops of
56 rock dispersed throughout the watershed; in
57 the headwaters, rocks have weathered to soils
58 that can be very thin (<1 foot), although there
59 are reports that soils in the upper Redwood
60 Creek watershed can be as deep as 10 feet
61 (Hall 2009).

62
63

64 **Water Resources and Hydrologic** 65 **Processes**

66 **Surface Water**

67 The Redwood Creek watershed extends from
68 Mount Tamalpais to Muir Beach. Redwood
69 Creek is the dominant hydrologic feature
70 within Muir Woods National Monument.
71 The Redwood Creek watershed encompasses
72 approximately 8.9 square miles (including
73 Green Gulch Creek, which flows into Big
74 Lagoon). Above the monument, the
75 precipitous headwater tributaries of
76 Redwood Creek (Fern, Spike Buck, and
77 Rattlesnake) descend the steep south slope of
78 Mount Tamalpais with many waterfalls.
79 These upper tributaries flow through deep,
80 steep canyons, with step-pool channel
81 morphology. Redwood Creek, which is
82 formed by the confluence of Bootjack and
83 Rattlesnake creeks, flows through the heart
84 of the monument for approximately 0.5 mile,
85 being fed by several intermittent streams.
86 Fern Creek, which originates on Mount
87 Tamalpais, flows into Redwood Creek just
88 within the northern boundary of the
89 monument. Once Redwood Creek enters the
90 monument, the channel flattens considerably,
91 to less than a 2% grade, with a bed composed
92 of mixed gravel and cobble. During the 1930s,
93 Redwood Creek within the monument was
94 lined with rock revetments, and check dams
95 were installed to channelize the creek and
96 protect the old-growth redwoods. Since that
97 time, the check dams have been removed and
98 the creek is being returned to a more natural

1 state. Consequently, the section of Redwood
 2 Creek that flows through the monument has
 3 more riffles and fewer deep water pools than
 4 would occur in a highly natural creek with a
 5 similar slope (Hall 2009).

6
 7 Below the monument, Redwood Creek is
 8 joined by Kent Canyon Creek as it flows
 9 through Frank Valley and becomes a
 10 relatively broad alluvial floodplain. This
 11 stretch has experienced considerable impact
 12 from agriculture and pasturing and is incised
 13 and isolated from its floodplain. Below Frank
 14 Valley, the creek enters the ocean at Muir
 15 Beach, through a 2.2-acre intermittent tidal
 16 lagoon, typically referred to as Big Lagoon,
 17 which is also fed by Green Gulch Creek.
 18 During winter and spring the lagoon
 19 experiences tidal influences. As streamflow
 20 declines in late spring or summer, the beach
 21 berm builds up across the mouth of the creek,
 22 blocking surface flow from Redwood Creek
 23 to the Pacific Ocean and tidal exchange
 24 between the lagoon and Pacific Ocean. Lower
 25 Redwood Creek in the Muir Beach area has
 26 been altered through water diversions,
 27 agricultural levees, the construction of an
 28 NPS parking lot, and stream bank alterations.
 29 One outcome of this cumulative change has
 30 been substantial aggradation of the channel
 31 (Hall 2009).

32
 33 **Groundwater and Municipal**
 34 **Water Use**

35 Although most of the Redwood Creek
 36 watershed is managed as state and federal
 37 park lands, it also provides water for local
 38 firefighting, residential, and agricultural uses.
 39 Marin Municipal Water District stores water
 40 from springs in the upper watershed
 41 (upstream of the monument) for firefighting.
 42 Downstream of the monument, the Muir
 43 Beach Community Services District supplies
 44 the Muir Beach Community with water from
 45 a well near the creek, and Green Gulch Farm
 46 impounds and diverts flow in the Green
 47 Gulch subwatershed. Diversions in Big
 48 Lagoon have been abandoned, though the
 49 water right remains in place (Hall 2009).

50

51 **Floodplains**

52 Within Muir Woods National Monument,
 53 100-year floodplains are along Redwood
 54 Creek. As a result of natural weather events
 55 and the topography and soil characteristics of
 56 the area, runoff in the Redwood Creek
 57 watershed is high in the winter, with
 58 occasional flash floods. Two-year flood
 59 magnitudes are estimated at approximately
 60 800 cubic feet per second (cfs), while the 50-
 61 year flood magnitude estimate is just over
 62 4,000 cfs. However, during summer, flows are
 63 much lower—often below 1 cfs at the State
 64 Route 1 bridge—and many tributary streams
 65 are intermittent (NPS 2005b).

66
 67 **Water Quality**

68 Water quality monitoring has been
 69 conducted at various times and with differing
 70 intensity within Redwood Creek and its
 71 tributaries. Monitoring has mostly been
 72 conducted outside of the monument because
 73 most inputs are from agricultural uses and
 74 other sources outside the monument. In
 75 2005, Stillwater Sciences designed a water
 76 quality monitoring protocol for the
 77 watershed that can be used to isolate general
 78 areas of contaminant sources. This protocol
 79 was implemented once in 2005 as a baseline
 80 and may be implemented in future years
 81 depending on the availability of funding. A
 82 review of a history of water quality sampling
 83 in the watershed is compiled in the Existing
 84 Conditions Report for the Big Lagoon
 85 Wetland and Creek Restoration (Philip
 86 Williams and Associates 2003). Don Weeks
 87 (2006) issued the Water Resources
 88 Foundation Report, a background document
 89 on water resources that also identifies
 90 relevant laws and policies. Lendvay and
 91 Benning (2004) collected baseline water
 92 quality data, including pH, alkalinity, metals
 93 and ions, temperature, dissolved oxygen,
 94 nutrients, and turbidity, at five locations
 95 throughout the watershed. Their extensive
 96 study compares findings to an earlier, similar
 97 study by Madej (1989). In 2008, the Regional
 98 Water Quality Control Board established
 99 monitoring sites along the length of Redwood

1 Creek as part of their Surface Water Ambient
2 Monitoring Program that is focusing on
3 benthic macroinvertebrates, periphyton,
4 nutrients, and basic water quality parameters
5 (Hall 2009).
6
7 Field surveys and aerial photograph analysis
8 have been conducted to identify and quantify
9 current and potential future sediment supply
10 from roads, trails, culvert stream crossings,
11 and (to some extent) bank erosion in the
12 Redwood Creek watershed. Sediment
13 sources were assessed for 27 miles of roads
14 and 40 miles of trails, leading to
15 recommendations for erosion control
16 priorities to protect fish and other aquatic
17 species within the watershed. These results
18 were incorporated into a more
19 comprehensive watershed sediment budget
20 developed for the Lower Redwood Creek
21 Restoration Project (Hall 2009).
22
23 Madej (1989) summarized water quality
24 monitoring that was performed between 1986
25 and 1989 in the lower Redwood Creek
26 watershed (below the monument). Most
27 metals were not detected, although there was
28 one unusually high reading for copper (80
29 $\mu\text{g/L}$). Later reports attribute this to pesticide
30 use, although this appears to be speculation
31 (NPS 1991). Park staff report that this may
32 have been related to the use of copper hoof
33 treatment used at the stables, a practice that
34 has been discontinued. Levels of coliform
35 bacteria and nitrogen were high, evidently
36 due to horse pastures and agricultural
37 activities at Green Gulch Farm, as well as
38 septic leach. Phillip Williams and Associates
39 (1995) reported the lowest levels of nutrients
40 and bacteria in the headwaters of Redwood
41 Creek and the highest downstream of the
42 monument; the number of organisms per 100
43 ml was 50 upstream of Banducci, 300 below
44 Banducci, and 1,900 at Pacific Way. Stillwater
45 Sciences (2005) also report that NPS testing
46 during the 1990s at Muir Woods National
47 Monument found fecal coliform levels within
48 the monument to be within California state
49 thresholds (Hall 2009).
50

51 Several studies have found that temperatures
52 in Redwood Creek are within the tolerances
53 of salmonids. Lendvay and Benning (2004)
54 reported temperatures across their sample
55 locations to range from 10.8°C to 11.0°C in
56 early March and from 14°C to 16°C in late
57 April. They concluded that temperatures
58 during spawning season should be cool
59 enough for coho. Their study, conducted
60 from March through April, found dissolved
61 oxygen levels to be adequate for insects and
62 salmon. However, others have found
63 dissolved oxygen levels to be reduced in Big
64 Lagoon in the summer, and this is considered
65 a key factor limiting juvenile fish survival
66 (Hall 2009).
67

68 Lendvay and Benning (2004) determined that
69 most water quality parameters were within
70 EPA standards for aquatic life. Here pH
71 ranged from 7.3 at Muir Beach to 8.0 at
72 Bootjack Creek. Nitrate, though variable, was
73 far below the standard of 90.0 mg/L,
74 suggesting little concern about eutro-
75 phication. Somewhat high ammonia readings
76 at specific sites on specific dates might
77 suggest some concern, but the authors said
78 that typical levels were well below the
79 threshold for salmonids in most parts of the
80 watershed. Sulfate levels were extremely low.
81 This study found low levels of copper, in
82 contrast to the levels reported by Madej
83 (1989). Turbidity levels were high on
84 sampling dates following storms, but quickly
85 fell to levels within EPA standards. The low
86 turbidity found in the Redwood Creek
87 watershed suggests conditions suitable for
88 salmonids, aquatic vegetation, and benthic
89 macroinvertebrate populations (Hall 2009).
90

91 Other parameters reported by Lendvay and
92 Benning (2004) were out of compliance with
93 EPA standards. Alkalinity measures exceeded
94 the EPA minimum standard for freshwater
95 aquatic habitat of 20.0 mg/L (even the lowest
96 reading, 42.8 at Fern Creek, was significantly
97 above the standard). Phosphate readings,
98 though highly variable, exceeded the
99 guideline of 0.1 mg/L at every site. Aluminum
100 concentrations exceeded the recommended
101 limit for fish at all sites on one date and at two

1 sites on other dates, and the authors
 2 concluded that “aluminum may be a threat to
 3 aquatic species in Redwood Creek.”
 4 Similarly, zinc concentrations were
 5 frequently above the EPA limit for freshwater
 6 ecosystems, indicating possible negative
 7 effects (Hall 2009).

8
 9 Overall, Lendvay and Benning (2004)
 10 conclude that the water quality of Redwood
 11 Creek is excellent. Despite the fact that some
 12 parameters were elevated, in the context of
 13 other parameters, such as very healthy
 14 benthic macroinvertebrates, these do not
 15 seem to be posing significant threats (Hall
 16 2009).

19 **BIOLOGICAL RESOURCES**

20 The majority of Muir Woods National
 21 Monument (approximately 80%) is occupied
 22 by old-growth coastal redwood / Douglas-fir
 23 forests in uneven aged stands (NPS 2005b).
 24 Although it is difficult to age old-growth
 25 redwoods, individual trees on alluvial flats in
 26 the monument are estimated to be as much as
 27 1,000 years old.

28
 29 Muir Woods National Monument is in the
 30 center of the California Floristic Province,
 31 one of only five regions in the world with a
 32 Mediterranean climate. At the landscape
 33 scale, plant associations are shaped by aspect,
 34 marine influence, and elevation (NPS 2005a).
 35 Generally, within the San Francisco Area
 36 Network, the three provinces represented are
 37 the California Coastal Chaparral Forest and
 38 Shrub; the California Dry Steppe; and the
 39 California Coastal Steppe, Mixed Forest and
 40 Redwood Forest. The redwood forests of
 41 Muir Woods National Monument fall within
 42 the last of these, while around the edges of
 43 the monument are small patches of other
 44 plant communities that are much more
 45 common in parts of Mount Tamalpais and
 46 the Marin Headlands (NPS 2005a). To the
 47 southwest is coastal scrub dominated by
 48 coyote brush, grasses and forbs; and to the
 49 northeast is a mosaic of coast live oak,
 50 California bay, and chaparral. At the south

51 end of the monument, the Redwood Creek
 52 riparian area loses the redwoods and
 53 becomes dominated by deciduous trees like
 54 red alder and broadleaf evergreen trees such
 55 as California bay and tanoak (Hall 2009).

56
 57 The monument provides important habitat
 58 for federal listed threatened or endangered
 59 species, namely northern spotted owls, coho
 60 salmon and steelhead, and several species of
 61 bats that are listed as sensitive species. All of
 62 these species breed within the monument.
 63 Redwood Creek has been identified as “a
 64 high priority restoration area for coho
 65 salmon” under the California Department of
 66 Fish and Game’s 2004 Recovery Strategy.
 67 While suitable marbled murrelet habitat has
 68 been identified in the monument, there has
 69 been no confirmation that this species uses
 70 the park for breeding (Hall 2009).

73 **Habitat (vegetation and wildlife)**

74 ***Plant Communities***

75 Muir Woods National Monument is the most
 76 intact old-growth coastal redwood forest in
 77 the Bay Area. It is estimated that nearly 2
 78 million acres of forest similar to those in Muir
 79 Woods National Monument once covered a
 80 narrow strip along the coasts of California
 81 and Oregon. Today, 97% of this forest area
 82 has been displaced or degraded and most
 83 coastal redwoods now grow in protected
 84 second- and third-growth forests or managed
 85 timber plantations. Muir Woods National
 86 Monument remains as a very accessible yet
 87 prime example of an old-growth forest.

88
 89 Sudden oak death is a common name given a
 90 pathogen (*Phytophthora ramorum*)
 91 responsible for widespread tree death
 92 throughout northern and central California.
 93 This pathogen first appeared in Muir Woods
 94 National Monument during the mid-1990s,
 95 and although many plants in the redwood
 96 forest are affected, the tanoaks have suffered
 97 the most.

1 “NPSpecies,” a National Park Service
 2 database, documents 263 vascular plant
 3 species present in the monument.
 4 Approximately 29 other species are probably
 5 present, but have not been verified, and 17
 6 species are unconfirmed. Forty-four species
 7 are listed as historic, meaning they were
 8 previously present but are believed to be
 9 extirpated. The basis for this determination is
 10 staff knowledge of the site, although no field
 11 inventory of plants has yet been completed. A
 12 1966 lichen inventory identified seven
 13 fruticose lichens, nine foliose lichens, and
 14 several unidentified species of crustose
 15 lichens (Hall 2009).

16
 17 There do not appear to be many native plant
 18 species of concern in the monument. The
 19 1980 general management plan (NPS 1980)
 20 identified the San Francisco wallflower
 21 (*Erysimum franciscanum* var. *franciscanum*)
 22 and Presidio clarkia (*Clarkia franciscana*) as
 23 being species of special status, but no further
 24 mention is made of these in subsequent
 25 planning documents, and they are not
 26 mentioned in current lists of species of
 27 management concern. They have never been
 28 documented within the monument and
 29 evidently their inclusion on the list and in the
 30 1980 plan was an error. Oakland star tulip or
 31 mariposa lily (*Calochortus umbellatus*) is
 32 described in the fire management plan (NPS
 33 2005a) as a California Native Plant Society
 34 listed species, which has been found “in the
 35 vicinity of Muir Woods” in grasslands.
 36 Additionally, the California bottle-brush
 37 grass (*Elymus californicus*) is a federal species
 38 of concern; this species prefers coniferous
 39 forests and riparian woodlands and has been
 40 documented in the monument (NPS 2005a).
 41 The only active management for rare plant
 42 species within the monument has been some
 43 fencing along the valley floor to protect
 44 California bottle-brush grass, which appears
 45 to have been effective (Hall 2009).

46
 47 **Coast Redwood / Douglas-fir Forests.** As
 48 noted earlier, most of the monument is
 49 composed of mixed age coast redwood and
 50 Douglas-fir (NPS 2005a). In the monument,
 51 the redwood forest “extends along the

52 canyon floor north beyond the monument,
 53 across most of the northeastern-facing
 54 canyon wall up to the Dipsea Trail, and along
 55 portions of the lower southwest-facing wall
 56 and adjoining side canyons extending to
 57 Ocean View Trail. In these areas, the
 58 redwoods thrive in a cool microclimate with
 59 loamy soils and ample moisture from fog,
 60 rain, and groundwater” (Hall 2009).

61
 62 Although this forest is largely isolated within
 63 the larger landscape due to natural
 64 conditions such as physiography and the
 65 restricted environmental requirements of
 66 redwoods, as well as logging and conversion
 67 of lands in the surrounding area, the tracts of
 68 forest within the monument have had a
 69 serendipitous history of protection that has
 70 preserved many of the structural and
 71 functional ecological features. The
 72 monument’s redwood forests were never
 73 logged (McBride and Jacobs 1978), although
 74 logging did occur in Conlon Canyon. While it
 75 is true that substantial impacts were
 76 historically imposed by recreation and
 77 tourism (e.g., trampling, campfires, and
 78 collecting plants) and park management (e.g.,
 79 stream alteration, removal of woody debris),
 80 it is possible to recover from some of these
 81 impacts within a period of years or decades.
 82 Indeed, studies have shown that areas
 83 formerly devoid of vegetation along
 84 Redwood Creek have recovered to the point
 85 that it is not possible to discern restoration
 86 plantings from natural vegetation. On the
 87 steep hillsides away from Redwood Creek, it
 88 appears that impacts on ecosystems were
 89 even more limited. Stillwater Sciences (2005)
 90 noted that “understory cover today is
 91 probably the most extensive that it has been
 92 in a century.” National Park Service staff
 93 considers the health of the redwood forest to
 94 be good. Public ownership of surrounding
 95 lands is an aspect that helps maintain certain
 96 ecosystem functions within the monument’s
 97 redwood forests.

98
 99 **Other Terrestrial Vegetation Types.**
 100 Outside the redwood and Douglas-fir forests,
 101 there are small patches of other vegetation
 102 types in the monument that are much more

1 extensive in other parts of the watershed
 2 outside the monument. McBride and Jacobs
 3 (1978) described five vegetation types:
 4 hardwoods, brush, grassland/brush,
 5 hardwood/brush, and grassland. These
 6 include the habitat types identified in the fire
 7 management plan (NPS 2005b) as native
 8 hardwood, coastal scrub/chaparral,
 9 grassland, nonnative evergreen, and
 10 developed. While the redwood forests are
 11 largely intact or recovering, these other
 12 habitat types have been more extensively
 13 altered (Hall 2009).

14
 15 The native hardwood forest (or mixed
 16 hardwoods) covers 800 acres of the Redwood
 17 Creek watershed (Stillwater Sciences 2005),
 18 of which only 59 are within Muir Woods
 19 National Monument. These forests have not
 20 been well studied. In places like the Monte
 21 Vista tract in the Camino del Canyon and
 22 Camp Hillwood areas, where development
 23 and residential uses have occurred, the
 24 hardwood forests have been substantially
 25 reduced in extent. Presumably, under NPS
 26 management, these areas will begin to return
 27 to a more natural state, although there are
 28 concerns about invasive species such as
 29 eucalyptus, which can dramatically alter
 30 forest structure and composition. In areas
 31 along Camino del Canyon, various landscape
 32 plants have escaped, and invasive nonnatives
 33 such as yellow starthistle (*Centaurea*
 34 *solstitialis*) and French broom (*Genista*
 35 *monspessulana*) are problems. Additionally,
 36 the native hardwoods are at great risk from
 37 sudden oak death (Hall 2009).

38
 39 The remaining native vegetation types—
 40 coastal scrub/chaparral and grassland—have
 41 been highly altered due to a combination of
 42 fire suppression, land use practices, and
 43 invasion by nonnative species (Stillwater
 44 Sciences 2005; NPS 2005b). The coastal
 45 scrub/chaparral occurs at upper elevations
 46 and seems to be invading grasslands as a
 47 result of fire suppression (NPS 2005a). In
 48 turn, coniferous forests are invading the
 49 lower elevations of the scrublands. Within
 50 the Redwood Creek watershed, most native
 51 grasslands, which occupy ridgetops and

52 slopes, have become dominated by
 53 nonnative, Mediterranean annual grasses
 54 (Stillwater Sciences 2005).

55
 56 **Invasive Plants.** Invasive nonnative plants
 57 are a considerable problem within all other
 58 habitat types. In fact, approximately one-
 59 third of the plants (108 species) identified
 60 within the monument are nonnatives, many
 61 of which are landscape plants found in the
 62 Monte Vista additions.

63
 64 Within the redwood forests, McBride and
 65 Jacobs (1978) identified three nonnative
 66 forbs, but considered them to be rare and not
 67 a threat. There are isolated patches of
 68 nonnative aquatic plants, but these seem to
 69 be limited in extent and are relatively stable.
 70 Today, there are two main nonnative species
 71 of concern in the riparian redwoods: the
 72 forget-me-not (*Myosotis sylvatica* and
 73 *Myosotis latifolia*) and panic veldtgrass
 74 (*Ehrharta erecta*). Originally introduced to
 75 improve the aesthetics of the forest, forget-
 76 me-nots quickly spread throughout the
 77 monument. Fortunately, diligent work by
 78 park staff and volunteers has kept this species
 79 in check along the canyon floor, although
 80 there is concern about the ability to eliminate
 81 it from steep, inaccessible slopes. Along
 82 Redwood Creek, removal of this species has
 83 led to an increase in native plant cover.
 84 Outside the riparian forests, the park has
 85 worked to eliminate other invasive species,
 86 including cape ivy, brooms (*Genista*
 87 *monspessulana*, *Cytisus scoparius*, *Spartinum*
 88 *junceum*), acacia (*Acacia melanoxylon*, *Acacia*
 89 *decurrens*), and other species (Hall 2009).

90 91 **Aquatic Systems**

92 The major ecosystem elements within the
 93 monument that have been altered include the
 94 aquatic and riparian systems. For decades,
 95 concerted efforts were made to “clean up”
 96 the Redwood Creek valley to alleviate
 97 problems with flooding and provide an
 98 aesthetically pleasing visitor experience. This
 99 amounted to removing woody debris from
 100 the forests and engineering the creek to
 101 create a more consistent gradient and protect

1 its banks from erosion. Most of this was a
 2 result of intensive Civilian Conservation
 3 Corps work during the 1930s, when
 4 Redwood Creek within the monument was
 5 leveled and rock revetment was installed
 6 (Auwaerter and Sears 2006; Stillwater
 7 Sciences 2005). The revetment occupies 57%
 8 of the total streambank length (3,541 feet)
 9 within Muir Woods National Monument. As
 10 late as the early 1990s, woody material was
 11 being removed from the stream to prevent
 12 log jams that might increase flooding.
 13 Channelization has decreased flooding and,
 14 consequently, deposition. It has also
 15 drastically altered instream morphology,
 16 reducing the number and depth of pools and
 17 eliminating undercut banks (Fong 2002).
 18 Fong's survey showed that pools occupied
 19 only 32% of that portion of Redwood Creek
 20 within the monument, with flatwater or
 21 shallow riffles being much more extensive. In
 22 summer, some riffles become so shallow that
 23 fish are forced downstream. A survey in 2003
 24 showed a lower biomass of salmonids was
 25 associated with the presence of riprap. The
 26 channel immediately downstream of the
 27 monument's boundary, where riprap was
 28 never installed, appears more natural than the
 29 area within the monument. However,
 30 Redwood Creek within the monument has
 31 the least amount of fine substrate and more
 32 riffles, and therefore, the largest number of
 33 spawning areas (Hall 2009).

34
 35 Other impacts on Redwood Creek, both
 36 upstream and downstream of Muir Woods
 37 National Monument, have impacted
 38 ecosystem functions. Sedimentation from
 39 upstream associated with roads and culverts
 40 have impacted the entire length of the creek.
 41 However, sedimentation from roads and
 42 culverts is not the major player in channel
 43 habitat downstream of the monument. The
 44 watershed sediment budget identified and
 45 quantified sediment sources to Redwood
 46 Creek for three historical periods and
 47 included future projections. In the recent
 48 past, channel incision was the largest source
 49 of sediment to the creek downstream of the
 50 monument (57% of total supply from 1921 to
 51 1980). As channel incision slows or ceases,

52 erosion from roads and trails is expected to
 53 contribute 23% to total sediment yield in the
 54 lower creek. In addition to roads and trails,
 55 future sediment sources include hillslope
 56 erosion (19%), tributary bank erosion (29%),
 57 and channel incision (28%). Additionally,
 58 changes at Lower Redwood Creek at Muir
 59 Beach appear to have had a considerable
 60 impact on habitat characteristics necessary
 61 for salmon, steelhead, and red-legged frogs.
 62 Nevertheless, despite its degraded condition,
 63 Lower Redwood Creek appears to be a major
 64 holding area for run-back steelhead adults,
 65 and its important ecological role has led to it
 66 being a high priority for restoration (NPS
 67 1999b; NPS and Marin County 2007; Hall
 68 2009).

69
 70 Philip Williams and Associates (1995)
 71 characterized the Redwood Creek watershed
 72 as a whole as

73
 74 *unique among California coastal*
 75 *watersheds of its size in that it*
 76 *remains largely undeveloped and is*
 77 *protected as state and federal park*
 78 *lands. The creek has largely*
 79 *recovered from historical grazing*
 80 *activities in the watershed, and now*
 81 *supports sustainable populations of*
 82 *coho salmon.*

83
 84 Thus, there clearly have been alterations to
 85 cover and habitat that have influenced
 86 ecological functioning. However, within the
 87 larger landscape, the Redwood Creek
 88 watershed is a primary target for restoration
 89 and maintenance of important habitats. The
 90 facts that there are no impoundments, except
 91 in the Green Gulch subwatershed (Martin
 92 2000; Philip Williams and Associates 2003)
 93 that would severely fragment habitat, and
 94 most watershed land is in local, state, or
 95 federal government ownership, create
 96 opportune conditions for protection (Hall
 97 2009).

98
 99

1 **Wildlife**

2 Within the Redwood Creek watershed,
3 riparian woodlands provide breeding habitat
4 and forage for 85 bird species and 16
5 mammal species. Two mammals (the shrew-
6 mole and the broad-footed mole) were found
7 only in this habitat. Nineteen of the bird
8 species and one mammal are species of
9 management concern. Cape ivy—which is
10 present in the Monte Vista tract but not yet in
11 the redwoods—has had documented impacts
12 on the diversity of bird species (Hall 2009).

13
14 Redwood/Douglas-fir forest in the Redwood
15 Creek watershed provide habitat for 30 bird
16 species and 20 mammals. Hall observed that
17 “this habitat supports an average-to-high bird
18 diversity and low bird abundance compared
19 to other habitat types in the watershed.”
20 Mammals that are preferentially associated
21 with these forests include deer mouse
22 (*Peromyscus maniculatus*), gray fox (*Urocyon*
23 *cinereoargenteus*), opossum, trowbridge
24 shrew (*Sorex trowbridgii*), Sonoma chipmunk
25 (*Tamias sonomae*), western gray squirrel
26 (*Sciurus griseus*), and raccoon (*Procyon lotor*)
27 (Howell et al. no date); 17 species of concern
28 (4 bats and 13 birds) have been detected in
29 this habitat type (Hall 2009).

31 **Mammals**

32 According to NPSpecies, 27 mammal species
33 are confirmed present in Muir Woods
34 National Monument, while 9 are
35 unconfirmed. Domestic and feral cats, local
36 dogs, and turkeys are presently considered
37 pests. None of the mammals is considered at
38 risk of exploitation. Howell et al. (no date), in
39 a mammal survey, documented black-tailed
40 deer (*Odocoileus hemionus*), meadow vole
41 (*Microtus pennsylvanicus*), and opossum,
42 which do not appear in the NPSpecies list.
43 Additionally, they documented domestic
44 dogs (“unconfirmed” in NPSpecies) and
45 western spotted skunk (*Spilogale gracilis*)
46 (“false report” in NPSpecies). NPSpecies lists
47 no “historic” (extirpated) species, but various
48 historic documents suggest that several large
49 mammals, like bears, were historically

50 present but disappeared as long ago as the
51 late 1800s. The NPSpecies data provide no
52 information on nativity, abundance, or
53 residency for mammals in the monument
54 (Hall 2009).

55
56 Among the mammal species, bats have
57 received significant investigation. Habitat for
58 bats in Muir Woods National Monument is
59 considered of high quality, and the diversity
60 of species is notable—Heady and Frick
61 (2004) reported 10 species foraging and/or
62 roosting in the monument; this number
63 represents 69% of the species that are likely
64 to occur in the region. Redwoods are
65 particularly good habitat because they
66 provide hollows and crevices for roosting.
67 The Townsend’s big-eared bat (also called
68 the Pacific western big-eared bat) occupies
69 humid coastal regions of California, roosting
70 in caves, mines, buildings, and fire scars (NPS
71 2005a). It is very sensitive to disturbance and
72 suffers from a lack of suitable roosting sites;
73 because of their large cavities, large diameter
74 redwoods offer some of the only suitable
75 habitat. The fringed myotis occurs in a wide
76 variety of habitats, although it prefers foothill
77 hardwoods and hardwood-conifer forests
78 and has been considered preferentially
79 associated with redwood forests. The long-
80 legged myotis is most common above 4,000
81 feet in elevation in primarily coniferous forest
82 habitats. It uses trees as day roosts and
83 creates nursery colonies in hollow trees. This
84 has led to increased protection of fire scars.
85 The Yuma myotis prefers open woodlands
86 and forests, and requires still water sources
87 that attract prey insects. It is tolerant of
88 human habitation. Little is known about the
89 western red bat (U.S. Forest Service sensitive
90 species), although it is known to roost in
91 cottonwoods and willows and is thought to
92 be migratory (Hall 2009).

94 **Birds**

95 Over 50 species of birds have been identified
96 in Muir Woods National Monument during a
97 one-year period. Their abundance and
98 periods of song vary with time of day, season,
99 and weather conditions. A deep, wooded

1 redwood canyon is a specialized habitat.
 2 Although this old-growth forest supports
 3 northern spotted owls and pileated
 4 woodpeckers (*Dryocopus pileatus*), the
 5 overall lack of food is the primary reason for
 6 the apparent scarcity of birds. There are few
 7 insects in a redwood forest, as the tannin
 8 repels insects and the deep shade limits the
 9 number of flowers and fruits produced.

10
 11 In addition, federal threatened northern
 12 spotted owls nest in coniferous and mixed-
 13 hardwood forests surrounding Muir Woods
 14 National Monument. The monument also
 15 contains potential marbled murrelet habitat,
 16 but no breeding murrelets have been
 17 detected in two years of surveys.
 18 The following quotation from the
 19 superintendent's annual report for 1923
 20 indicates little change during the past 80
 21 years in the bird life found in Muir Woods:

22
 23 *Birds, as is generally the case in a*
 24 *redwood forest, are conspicuous by*
 25 *their absence—Steller's jays being the*
 26 *only bird seen in any numbers.*

27
 28 Fifty-nine bird species are confirmed present
 29 in the monument, according to NPSpecies,
 30 although the 1999 resource management plan
 31 indicated that “at least 69 bird species occupy
 32 Muir Woods” (NPS 1999b). Seven are
 33 migratory species and 23 are known to breed
 34 within the monument. The only federal listed
 35 threatened species is the northern spotted
 36 owl, which breeds in and near the
 37 monument. Although Muir Woods National
 38 Monument appears to provide habitat
 39 suitable for marbled murrelets, which nest
 40 only in redwood trees, none have been
 41 detected despite a focused inventory.
 42 Appendix D, which provides detailed
 43 information about all special status species,
 44 lists two state species of concern in Muir
 45 Woods National Monument: Cooper's hawk
 46 (*Accipiter cooperi*) and sharp-shinned hawk
 47 (*A. striatus*). Inventories in 2000 did not
 48 detect either hawk species. However, Allen's
 49 hummingbird (*Selasphorus sasin*) and hermit
 50 thrush (*Catharus guttatus*)—both species of
 51 management concern—were observed, as

52 well as the chestnut-backed chickadee (*Parus*
 53 *rufescens*), which is on the Audubon watch
 54 list. According to their point count data, the
 55 Pacific-slope flycatcher (*Empidonax difficilis*),
 56 a species of management concern, was the
 57 most common bird; it was observed at 93% of
 58 the census points. The other most common
 59 species were winter wrens (65%), chestnut-
 60 backed chickadees (56%), golden-crowned
 61 kinglets (54%), brown creepers (47%), and
 62 dark-eyed juncos (30%) (Hall 2009).

63 64 **Amphibians and Reptiles**

65 NPSpecies lists five amphibians as present
 66 within the monument, along with two species
 67 that were documented historically, but are no
 68 longer present—the foothill yellow-legged
 69 frog and yellow-eyed ensatina (*Ensatina*
 70 *eschscholtzii xanthoptica*). Yellow-legged
 71 frogs were collected in 1954, but they were
 72 not found in 1993 within the monument, and
 73 Hall noted that this species is “now very rare
 74 or absent” in areas where it formerly was
 75 abundant. Very little information is available
 76 about the abundance or status of many of
 77 these amphibian species (Hall 2009).

78
 79 The nonnative signal crayfish has long been
 80 established in Redwood Creek and Fern
 81 Creek. It is the only nonnative aquatic species
 82 in the monument. It is possible that this
 83 species displaced the native sooty crayfish
 84 (*Pacifastacus nigrescens*) (Hall 2009).

85
 86 The California giant salamander is found
 87 from Sonoma County to Santa Cruz County,
 88 particularly in humid coastal conifer forests.
 89 A recent survey found that salamander larvae
 90 were rare in the main stem of Redwood
 91 Creek, but more abundant in tributaries.
 92 Fong and Howell noted that the signal
 93 crayfish and giant salamander were rarely
 94 found together in any stream habitat type, but
 95 they were unable to determine whether the
 96 crayfish were displacing the salamanders
 97 from preferred habitats. They noted that,
 98 because crayfish tend to favor pools, actions
 99 that might be taken to restore stream features
 100 such as pools could increase the abundance
 101 of crayfish (Hall 2009).

1 NPSpecies lists 12 reptile species as present
 2 within Muir Woods National Monument.
 3 The abundance, residency, and nativity of
 4 most of these species are unknown. Very
 5 little is reported about any of these species in
 6 any planning or research reports. However,
 7 the Pacific (western) pond turtle
 8 (*marmorata*, formerly *Clemmys marmorata*),
 9 a federal species of concern, is listed as
 10 present in the monument, although none of
 11 the recent aquatic habitat assessments make
 12 mention of it (Hall 2009).

14 **Fish**

15 An old-growth forest is very interconnected;
 16 through time, many of the plants and animals
 17 become reliant on one another. One example
 18 at Muir Woods National Monument is found
 19 in Redwood Creek. The redwoods depend
 20 on the creek for most of their water and the
 21 trees help keep the gravel in the creek clean
 22 by stabilizing the soil. The trees also help
 23 keep the temperature of the stream cool and
 24 constant. As the trees die and fall into the
 25 creek, they create pools and enrich the
 26 stream with their nutrients. Because salmon
 27 need clean gravel, constant water
 28 temperature, and pools for spawning,
 29 Redwood Creek provides good habitat for
 30 salmon. It is one of the last streams in
 31 California to have its native stock of salmon,
 32 due largely to the undisturbed forest
 33 surrounding it. Both coho salmon and
 34 steelhead trout are found in Redwood Creek.

35
 36 There are four native fish species present in
 37 the monument, although additional species,
 38 including some nonnative fish, occupy lower
 39 reaches of Redwood Creek. The two most
 40 significant species—targets of extensive
 41 monitoring—are coho salmon (recently
 42 upgraded federally to endangered status) and
 43 steelhead (federal listed as threatened).
 44 Redwood Creek is critical habitat for both;
 45 Muir Woods National Monument provides
 46 good spawning habitat but, due to loss of
 47 pools and structure, juvenile rearing habitat is
 48 very limited. Both runs have been considered
 49 stable, although substantially reduced from
 50 historic times (Hall 2009).

51 The Redwood Creek coho are part of the
 52 Central California Evolutionarily Significant
 53 Unit (ESU), found in three watersheds in the
 54 NPS San Francisco Bay Area Network (NPS
 55 1999a). However, genetic analysis shows that
 56 the coho in Redwood Creek are a genetically
 57 distinct subgroup that is not closely related to
 58 other coho in the same ESU (NPS and Marin
 59 County 2007). Spawning occurs between
 60 December and February, depending on when
 61 storm flows increase enough to permit
 62 returning adults to breach the sandbar at Big
 63 Lagoon. Emergence occurs in March and
 64 April, and the juveniles remain in fresh water
 65 for approximately 15 months before heading
 66 to the ocean for 16 months. This cycle creates
 67 three “year classes” of fish; for instance, the
 68 fish returning to spawn in 2007 and 2008
 69 were from the 2004/2005 year class. Given
 70 their lifecycle, habitat requirements vary; fish
 71 need habitat for spawning, juvenile rearing
 72 and migration, growth to adulthood, and
 73 adults need migration corridors (NPS and
 74 Marin County 2007). Juvenile rearing habitat
 75 with refugia and shelter appears to be
 76 especially limiting in Redwood Creek. Big
 77 Lagoon’s altered environment does not
 78 provide high-quality salmonid-rearing
 79 habitat (Hall 2009).

81 **Nonnative Wildlife**

82 A few nonnative mammals have been of
 83 concern to the monument. In the past, feral
 84 hogs were widespread in Golden Gate
 85 National Recreation Area (including Muir
 86 Woods National Monument), but they have
 87 been largely controlled (NPS 1999b). They
 88 can seriously degrade habitat, disturb soils,
 89 compete for food, and transmit diseases.
 90 Feral cats and domestic dogs (unconfirmed),
 91 though not major concerns, can present
 92 problems for native wildlife (Hall 2009).

93
 94 There have been anecdotal reports of
 95 chukars (*Alectoris chukar*), a nonnative
 96 species, near but not yet within the
 97 monument. Also, wild turkeys are considered
 98 nonnative and increasing in and around Muir
 99 Woods National Monument. This species
 100 was introduced by California Department of

1 Fish and Game for hunting, but Golden Gate
2 National Recreation Area considers it
3 invasive and uncontrolled. It competes with
4 native species for food and has been known
5 to harass people. NPS staff are contemplating
6 small pilot removals (Hall 2009).

9 **Special Status Species**

10 ***Coho Salmon – Federal Endangered;*** 11 ***State Endangered***

12 Coho salmon occur in several creeks within
13 the planning area, as well as the nearshore
14 waters of the Pacific Ocean and estuarine
15 sites such as Bolinas Lagoon and San
16 Francisco Bay. Coho salmon are found in
17 Redwood Creek in Muir Woods National
18 Monument. A single cohort of coho salmon
19 was found in Easkoot Creek (Marin County).
20 Coho are an anadromous species; born and
21 reared in freshwater streams, as juveniles they
22 migrate to estuaries, adjust to saltwater, and
23 then migrate to the ocean to mature into
24 adults. Designated critical habitat for coho in
25 Golden Gate National Recreation Area
26 includes accessible estuarine and stream
27 areas in the coastal watersheds of Marin
28 County except areas above longstanding
29 naturally impassable barriers. Optimal habitat
30 conditions for juvenile coho seem to be deep
31 pools created by rootwads and boulders in
32 heavily shaded stream sections (NPS 2005a).

34 See previous discussion under Golden Gate
35 National Recreation Area.

37 ***Steelhead Trout – Federal Threatened***

38 Steelhead are found in Redwood Creek
39 which flows through Muir Woods National
40 Monument, as well as the nearshore waters of
41 the Pacific Ocean and estuarine sites such as
42 Bolinas Lagoon and San Francisco Bay. Like
43 coho, steelhead are an anadromous species.
44 Adult steelhead enter Golden Gate National
45 Recreation Area streams in the late winter
46 through spring to reach spawning sites,
47 typically well-aerated areas with small- to
48 medium-size gravel. Habitat preferences for

49 juvenile steelhead are deep pools created by
50 rootwads and boulders in heavily shaded
51 stream sections, although young-of-the-year
52 steelhead are often forced into shallow-water
53 habitats. The amount of time steelhead rear
54 in freshwater and marine/estuarine habitats is
55 variable, ranging between one and three
56 years. For most drainages, presence/absence
57 salmonid surveys have been conducted, while
58 in watersheds supporting coho salmon,
59 abundance data on both species are available.
60 The variable life cycle of steelhead makes
61 population analysis more difficult, but also
62 makes steelhead more resilient to adverse
63 environmental conditions. In general, if the
64 habitat requirements for coho were met,
65 steelhead habitat requirements would also be
66 met (NPS 2005a).

68 In April 2002, the U.S. District Court for the
69 District of Columbia approved a National
70 Marine Fisheries Service consent decree
71 withdrawing a February 2000 critical habitat
72 designation for steelhead trout. Designated
73 critical habitat for coho includes all accessible
74 estuarine and stream areas in the coastal
75 watersheds of Marin County except areas
76 above longstanding, naturally impassable
77 barriers. Through this designation, NOAA-
78 Fisheries identified 10 essential features of
79 critical habitat: substrate, water quality, water
80 quantity, water temperature, water velocity,
81 cover/shelter, food, riparian vegetation,
82 space, and safe passage conditions (NPS
83 2005a).

85 See previous discussion under Golden Gate
86 National Recreation Area.

88 ***Northern Spotted Owl – Federal*** 89 ***Threatened***

90 Marin County supports a northern spotted
91 owl population of possibly 75 pairs. This
92 population is isolated from spotted owl
93 populations to the north by large areas of
94 grassland and shrubs and constitutes the
95 southern end of the subspecies range.
96 Genetic analysis has shown low levels of
97 genetic diversity within and low levels of gene
98 flow between spotted owl populations in

1 Marin County and Mendocino National
 2 Forest. The Marin County population
 3 supports the highest known density of
 4 northern spotted owls throughout its range
 5 (NPS 2005a).
 6
 7 Spotted owls tend to nest in older stands of
 8 conifer and hardwood trees that create a tall
 9 overstory. Spotted owls often select larger
 10 trees with defects, such as broken tops or
 11 mistletoe infestations, for nesting, but also
 12 have been found nesting in young bay trees in
 13 smaller stands. Preliminary pellet analyses
 14 indicated that spotted owls forage primarily
 15 on dusky-footed woodrats (*Neotoma*
 16 *fuscipes*) in addition to other forest dwelling
 17 small mammals and songbirds. Within the
 18 planning area, known spotted owl sites are
 19 currently limited to Muir Woods National
 20 Monument and the Stinson Gulch area (NPS
 21 2005a) (see discussion under Marin County).
 22
 23 Northern spotted owls within the monument
 24 are at the southernmost extreme of the
 25 species range, and the population in Marin
 26 County is genetically isolated, although
 27 relatively large; 161 distinct nests were
 28 documented between 1998 and 2003
 29 (Stillwater Sciences 2005). This species was
 30 listed at the federal level as threatened in
 31 1990. Monitoring in the county over the past
 32 several years has shown stable fecundity, with
 33 approximately 0.5 female young fledged per
 34 breeding female and nearly 90% of nests
 35 being occupied for the past several years. Old
 36 redwood forests are important nesting
 37 habitat; 43% of nests in Marin County are in
 38 redwood trees and 36% are in Douglas-fir
 39 trees. Across northern California, owls were
 40 found to select locations with large-diameter
 41 conifer overstory and an understory of large
 42 hardwoods. The mean diameter of platform
 43 nest trees in Marin County is 36 inches. Two
 44 pairs have historically nested within Muir
 45 Woods National Monument or immediately
 46 adjacent to the monument (Hall 2009).
 47
 48 There are several threats to spotted owls in
 49 the region, although the habitat conditions
 50 within the monument itself are presently of
 51 high quality. Urban development destroys

52 habitat, owls are especially susceptible to
 53 West Nile virus (first confirmed in Marin
 54 County in 2005), and sudden oak death may
 55 affect both nesting habitat and prey species.
 56 Additionally, there are anecdotal reports of
 57 people disturbing nests and luring owls with
 58 mice. Finally, the barred owl is suspected of
 59 displacing spotted owls in Marin County.
 60 This species, once limited to the eastern
 61 United States, has been extending its range
 62 over the past century and is now found
 63 throughout the Pacific Northwest and in
 64 California. Aggressive behavior toward
 65 spotted owls has been documented in Marin
 66 County, and in 2005, a male barred owl was
 67 detected in the monument for the fourth year
 68 in a row, which coincided with the second
 69 year of spotted owl nest failure in the
 70 monument. In 2007, the first breeding pair of
 71 barred owls was observed, and breeding was
 72 observed again in 2008 (Hall 2009).
 73
 74 Kelly et al. (2003) conducted extensive
 75 historical analysis of the location of spotted
 76 owl and barred owl territories at five study
 77 areas in Oregon and Washington from 1987
 78 to 1999. The study concluded that there had
 79 been a steady increase in the number of
 80 barred owls at all long-term spotted owl
 81 monitoring sites, and that when barred owls
 82 invade, the occupancy of territories by
 83 spotted owls declines considerably. The
 84 study concludes that “land managers and
 85 regulatory agencies should regard barred
 86 owls as a threat to spotted owls.” There is
 87 some debate about whether the barred owl in
 88 Muir Woods National Monument should be
 89 considered native or not (it is listed as such in
 90 NPSpecies, but other park planning
 91 documents list it as invasive and
 92 uncontrolled). Nevertheless, barred owls
 93 have been identified as the primary threat to
 94 spotted owl recovery in the USFWS final
 95 recovery plan. National Park Service staff
 96 consider the barred owl to be a species of
 97 concern and feel a need to track and
 98 potentially manage the species due to its
 99 potential impact on spotted owls. It appears
 100 that the presence of the breeding barred owls
 101 in the monument has displaced the
 102 historically nesting spotted owls (Hall 2009).

- 1 ***Marbled Murrelet – Federal***
- 2 ***Threatened; State Endangered***

- 3 See description in the discussion of habitat in
- 4 San Mateo County.

CULTURAL RESOURCES: GOLDEN GATE NATIONAL RECREATION AREA

1 INTRODUCTION

2 Golden Gate National Recreation Area is
3 home to a remarkable constellation of
4 cultural resources, among the most diverse in
5 the entire national park system. A cultural
6 resource may be a tangible entity or a cultural
7 practice. For NPS management purposes,
8 tangible cultural resources are categorized as
9 districts, sites, buildings, structures, and
10 objects for the National Register of Historic
11 Places, and as archeological resources,
12 cultural landscapes, structures, museum
13 objects, and ethnographic resources. The
14 park's planning area covered by this general
15 management plan includes over 366 historic
16 structures, 5 national historic landmark
17 (NHL) districts, 13 National Register of
18 Historic Places properties, 7 national
19 register-eligible properties, 9 documented
20 cultural landscapes, 365 identified and over
21 500 predicted archeological sites, and the
22 fourth-largest museum collection in the
23 National Park Service. Most of these cultural
24 resources are related to military and maritime
25 commercial themes stretching over a period
26 of more than 200 years, with many precontact
27 archeological resources associated with the
28 Coast Miwok and Ohlone cultures extending
29 back thousands of years. See table 5 for a list
30 of these properties.

31
32 The park's nationally significant seacoast
33 fortifications and military installations span
34 the Spanish, Mexican, and American eras and
35 illustrate the military architectural and
36 engineering heritage of the United States and
37 the broad patterns of the nation's history.
38 Other cultural resources include an array of
39 buildings, sites, and features that reflect the
40 local and regional historical industrial,
41 commercial, and recreational development of
42 the San Francisco Bay Area, including the
43 bay's European discovery (San Francisco Bay
44 Discovery Site National Historical
45 Landmark); maritime-related resources such

46 as historic lighthouses, shipwrecks, wharves,
47 piers, docks, and other shoreside
48 embarkation points; and remnants of the
49 area's historic ranching, agricultural, logging,
50 and mining activities.

51
52 Some 370 archeological sites have been
53 inventoried, including properties constituting
54 the tangible connection between the Coast
55 Miwok and Ohlone communities and park
56 lands. Historic archeological properties
57 constitute significant, yet incompletely
58 documented, elements of existing national
59 historic landmarks, national register-listed
60 properties, and cultural landscapes. Nine
61 documented cultural landscapes in the park
62 include rural landscapes and dairy ranches.
63 Remnants associated with agricultural
64 pursuits that were carried on by the same
65 families for generations remain extant in the
66 park, comprising a rich legacy of folkways,
67 rural landscapes, and architecture.

68
69 Alcatraz Island, a 22.5-acre island in San
70 Francisco Bay, is best known for its
71 reputation as the maximum security,
72 minimum-privilege federal penitentiary that
73 housed some of America's most notorious
74 criminals between 1934 and 1963. However,
75 the island also contains layers of history from
76 its prior uses as a military fort, military
77 prison, federal penitentiary, and as the site of
78 the occupation by Indians of All Tribes from
79 1969 to 1971.

80
81 Although numerous cultural resource studies
82 have been undertaken for Golden Gate
83 National Recreation Area, the park's cultural
84 resource surveys are limited for some
85 significant resource types. Less than 10% of
86 the park has been surveyed for archeological
87 resources. Fifteen cultural landscapes have
88 been identified in the park, but only nine
89 have been inventoried or evaluated. Detailed
90 surveys for archeological, cultural landscape,
91 and ethnographic resources, as well as

92 historic resource studies, national register
 93 eligibility determinations, and inventory
 94 updates for the park's List of Classified
 95 Structures (LCS), Cultural Landscape
 96 Inventory (CLI), and Archaeological Sites
 97 Management Information System (ASMIS)
 98 will provide critical information needed for
 99 park planning and historic property
 100 preservation.

101
 102 Golden Gate National Recreation Area
 103 includes recently acquired lands in San
 104 Mateo County, which are the subject of a
 105 recently completed historic resource study
 106 that further identifies historic properties and
 107 themes associated with these park lands. The
 108 primarily Spanish colonial and Mexican
 109 settlement history and the agricultural,
 110 military, maritime, and transportation themes
 111 of the area are not dissimilar to those of other
 112 park lands, and evidence of numerous
 113 precontact sites, both inside and adjacent to
 114 park lands, suggest important opportunities
 115 for joint stewardship between the park and
 116 its neighbors.

117
 118

119 **AREA OF POTENTIAL EFFECT**

120 Section 106 of the National Historic
 121 Preservation Act requires federal agencies to
 122 take into account the effects of their
 123 undertakings on historic properties. The
 124 Advisory Council on Historic Preservation
 125 (ACHP) regulations that implement section
 126 106 require that impacts on historic resources

127 be identified and evaluated by determining
 128 the area of potential effect (APE) and by
 129 identifying cultural resources present in the
 130 area of potential effect that are either listed in
 131 or eligible for listing in the national register
 132 (36 *Code of Federal Regulations* [CFR] Part
 133 800, "Protection of Historic Properties"). The
 134 area of potential effect is the geographic area
 135 or areas within which an undertaking may
 136 directly or indirectly cause alterations to the
 137 character or use of historic properties, and it
 138 is influenced by the scale and nature of an
 139 undertaking. The area of potential effect
 140 encompasses both those areas where
 141 proposed actions might occur that would
 142 directly impact cultural resources, as well as
 143 adjacent areas that contain resources that
 144 might be indirectly affected (see map 5). The
 145 area of potential effect for this general
 146 management plan was discussed in a meeting
 147 between the National Park Service and the
 148 California state historic preservation office
 149 on March 16, 2010, and is generally defined
 150 as the park boundary and those properties
 151 adjacent to the park boundary where
 152 potential indirect impacts may occur. A
 153 description of the key cultural resources
 154 within the area of potential effect follows and
 155 is organized by National Register of Historic
 156 Places properties, resources that are either
 157 eligible or in need of a determination of
 158 eligibility for listing in the national register,
 159 archeological resources, and ethnographic
 160 resources. See the following table for a listing
 161 of these properties.

TABLE 5. KEY CULTURAL RESOURCES WITHIN THE AREA OF POTENTIAL EFFECT

Area of Potential Effect: Historic Properties within the Park Boundary (Organized by County, Alphabetically)				
Resource	County	Listed on National Register	National Historic Landmark	Areas of Significance
Alcatraz Island	San Francisco	Yes	Yes	Social History, Engineering, Military, Commerce (District), Historic Archeology
Fort Point National Historic Site	San Francisco	Yes	Yes	Architecture, Maritime History, Military, Historic Archeology
Presidio of San Francisco	San Francisco	Yes	Yes	Hispanic, Historic - Non-Aboriginal, Military, Exploration/Settlement (District), Architecture, Landscape Architecture, Historic Archeology
San Francisco Port of Embarkation	San Francisco	Yes	Yes	Military (District), Architecture
San Francisco Bay Discovery Site	San Mateo	Yes	Yes	Exploration/Settlement
Golden Gate Bridge	San Francisco, Marin (owned by Golden Gate Bridge District, on parkland)	Eligible	Eligible	Engineering, Transportation History
Dipsea Trail	Marin (part of trail is on parkland)	Yes	No	Entertainment/Recreation (Sports) (Structure)
Forts Baker, Barry, and Cronkhite	Marin	Yes	No	Military (District), Architecture, Cultural Landscape, Historic Archeology
Muir Beach Archeological Site	Marin	Yes	No	Coast Miwok History And Archeology
Muir Woods National Monument	Marin	Yes	No	Conservation (District), Architecture, Landscape Architecture
Point Bonita Historic District	Marin	Yes	No	Architecture, Maritime History, Commerce, Transportation (District)
Steamship Tennessee Remains	Marin	Yes	No	Invention, Transportation, Commerce, Maritime Archeology
Hill 640 Military Reservation	Marin	Eligible	No	Military
Hillwood Camp	Marin	Eligible	No	Social History
Olema Valley Historic District	Marin (administered by Point Reyes National Seashore)	Eligible	No	District, Cultural Landscape, Agriculture (Dairy Ranching), Historic Archeology
Ranch M (Golden Gate Dairy)	Marin	Eligible	No	District, Cultural Landscape, Agriculture (Dairy Ranching), Historic Archeology
Ranch A/B (Miwok Stables)	Marin	Eligible	No	District, Cultural Landscape, Agriculture (Dairy Ranching)

TABLE 5. KEY CULTURAL RESOURCES WITHIN THE AREA OF POTENTIAL EFFECT

Area of Potential Effect: Historic Properties within the Park Boundary (Organized by County, Alphabetically)				
Resource	County	Listed on National Register	National Historic Landmark	Areas of Significance
Sara Seaver Randall House	Marin (administered by Point Reyes National Seashore)	Eligible	No	Agriculture (Dairy Ranching)
Camera Obscura	San Francisco	Yes	No	Engineering (Structure)
Fort Mason Historic District	San Francisco	Yes	No	Architecture, Military, Transportation, Landscape Architecture (District), Historic Archeology
Fort Miley Military Reservation	San Francisco	Yes	No	Military (District)
<i>King Philip and Reporter</i> Shipwreck Site	San Francisco	Yes	No	(Naval) Architecture, Transportation, Commerce, Maritime History
Merrie Way Stands Site	San Francisco	Eligible	No	Recreation History, Historic Archeology
Mile Rock Tunnel	San Francisco	Eligible	No	Engineering
Point Lobos Archeological Site	San Francisco	Yes	No	Ohlone History, Archeology
Pumping Station 2, San Francisco Fire Department Auxiliary Water Supply System	San Francisco (on park land owned by City of San Francisco)	Yes	No	Community Planning And Development, Engineering (Structure)
Six-inch Rifled Gun No. 9 (Baker Beach)	San Francisco	Yes	No	Military (Object)

Table 5. Key Cultural Resources Within the Area of Potential Effect (continued)

Area of Potential Effect: Historic Properties Adjacent to Park Boundary				
Resource	County	Listed on National Register	National Historic Landmark	Areas of Significance
Aquatic Park Historic District	San Francisco (owned and managed by San Francisco Maritime National Historical Park)	Yes	Yes	Architecture, Community Planning And Development, Art, Military (District)
Point Montara Light Station	San Mateo (owned and managed by U.S. Coast Guard)	Yes	No	Architecture, Maritime History, Commerce, Transportation (District)

Table 5. Key Cultural Resources Within the Area of Potential Effect (continued)

**Area of Potential Effect:
Historic Properties Adjacent to Park Boundary**

Resource	County	Listed on National Register	National Historic Landmark	Areas of Significance
San Francisco Veterans Affairs Medical Center	San Francisco (owned and managed by Department of Veterans Affairs)	Yes	No	Architecture, Engineering, Health/Medical (District)

Table 5. Key Cultural Resources Within the Area of Potential Effect (continued)

**Area of Potential Effect:
Other Properties Within the Park, Potentially Eligible for National Register of Historic Places
(In Need of Determination of Eligibility)**

Resource	County	Property Type	Acres of Significance	Management Jurisdiction
Bolinas Copper Mines	Marin	Site	Mining and Industrial history	Point Reyes National Seashore
Bolinas Lagoon Coast Miwok Sites	Marin	District	Coast Miwok history, archeology, and heritage	Multiple
Druid Heights	Marin	District	Social History	NPS
Muir Beach Coast Miwok Sites	Marin	District	Coast Miwok history, archeology, and heritage	NPS
Muir Woods Inn	Marin	Structure	Tourism, architecture and heritage	NPS
Elk Valley Coast Miwok Site	Marin	Site	Coast Miwok history, archeology, and heritage	NPS
Marin Headlands Coast Miwok Sites	Marin	District	Coast Miwok history, archeology, and heritage	Multiple
Miwok Trail	Marin	Structure	Coast Miwok history, heritage and recreation	Multiple
Tomaes Bay and Olema Valley Coast Miwok Sites	Marin	District	Coast Miwok history, archeology, and heritage	Point Reyes National Seashore
Fort Mason Ohlone Sites	San Francisco	District	Ohlone history, archeology, and heritage	NPS
Crissy Field Ohlone Sites	San Francisco	District	Ohlone history, archeology, and heritage	NPS
China Beach	San Francisco	District	Architecture, recreation	NPS
Cliff House	San Francisco	Structure	Architecture, recreation	NPS

Area of Potential Effect: Other Properties Within the Park, Potentially Eligible for National Register of Historic Places (In Need of Determination of Eligibility)				
Resource	County	Property Type	Acres of Significance	Management Jurisdiction
Seacoast Fortifications of San Francisco Bay	Marin, San Francisco, San Mateo	Individual properties already listed in National Register: may be eligible as NHL	Military (District), architecture, engineering, cultural landscape, historic archeology	NPS
Sutro Baths	San Francisco	Site	History, engineering, historic archeology	NPS
Sutro Heights District	San Francisco	Multiple Sites	History, cultural landscape, historical archeology	NPS
Ocean Terrace Site	San Francisco	Site	Historical archeology	NPS
Marine Exchange Lookout (Octagon House)	San Francisco	Structure	Maritime history, architecture	NPS
O'Shaughnessy Seawall (Ocean Beach)	San Francisco	Structure	Engineering, urban design, recreation	NPS
Neptune Shipwreck Site	San Francisco	Shipwreck	Maritime archeology	Multiple
Rancho Corral de Tierra	San Mateo	District	Agriculture	NPS
Martini Creek Ohlone Sites	San Mateo	District	Ohlone history, archeology, and heritage	NPS
Francisco Guerrero Adobe Site	San Mateo	Site	social history, Mexican California	Multiple
Phleger Estate Logging Sites	San Mateo	District	1850s redwood logging history	NPS
Shelldance Nursery	San Mateo	Site	Agriculture (floriculture), conservation	NPS
Devil's Slide WWII Coastal Defense Facilities	San Mateo	Site	Military history	Caltrans
Shipwrecks of the Golden Gate	Marin, San Francisco, San Mateo	Sites	Maritime archeology	Multiple

1 **CULTURAL RESOURCES LISTED IN**
2 **OR ELIGIBLE TO BE LISTED IN**
3 **THE NATIONAL REGISTER OF**
4 **HISTORIC PLACES**

5 **National Historic Landmarks**

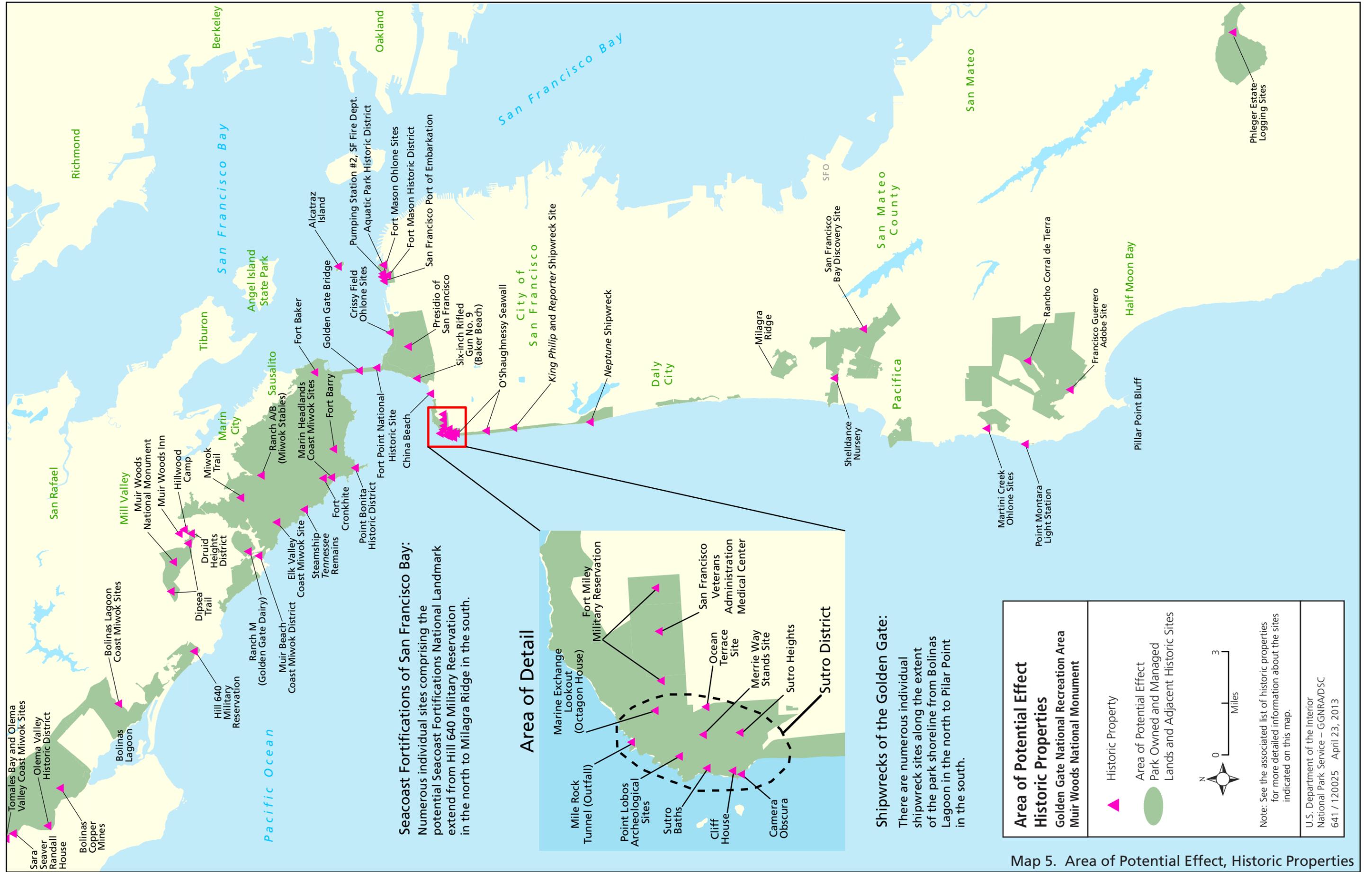
6 National historic landmarks are buildings,
7 sites, districts, structures, and objects that
8 have been determined by the Secretary of the
9 Interior to be nationally significant in
10 American history and culture. National
11 historic landmarks possess exceptional value
12 or quality in illustrating or interpreting the
13 heritage of the United States in history,
14 architecture, archeology, technology, and
15 culture, and possess a high degree of integrity
16 of location, design, setting, materials,
17 workmanship, feeling, and association.
18 National historic landmarks are significant
19 because they

- 20
- 21 ▪ are associated with events that have
22 made a significant contribution to,
23 and are identified with, or that
24 outstandingly represent, the broad
25 national patterns of U.S. history; or
- 26 ▪ are associated importantly with the
27 lives of persons nationally significant
28 in the history of the United States; or
- 29 ▪ represent some great idea or ideal of
30 the American people; or
- 31 ▪ embody the distinguishing
32 characteristics of an architectural type
33 specimen exceptionally valuable for
34 the study of a period, style, or method
35 of construction, or that represent a
36 significant, distinctive, and

- 37 exceptional entity whose components
38 may lack individual distinction; or
- 39 ▪ are composed of integral parts of the
40 environment not sufficiently
41 significant by reason of historical
42 association or artistic merit to warrant
43 individual recognition, but
44 collectively compose an entity of
45 exceptional historical or artistic
46 significance, or outstandingly
47 commemorate or illustrate a way of
48 life or culture; or
- 49 ▪ have yielded or may be likely to yield
50 information of major scientific
51 importance by revealing new cultures,
52 or by shedding light on periods of
53 occupation over large areas of the
54 United States.

55

56 All national historic landmarks are included
57 in the National Register of Historic Places,
58 which is the official list of the nation's
59 historic properties worthy of preservation.
60 National historic landmarks constitute more
61 than 2,400 of the almost 83,000 entries in the
62 national register; the other entries in the
63 national register are of state and local
64 significance. The process for listing a
65 property in the national register is different
66 from that for national landmark designation,
67 with different criteria and procedures. Some
68 properties are recommended as nationally
69 significant when they are nominated to the
70 national register, but before they can be
71 designated as national historic landmarks,
72 they must be evaluated by the NPS National
73 Historic Landmark Survey, reviewed by the
74 National Park System Advisory Board, and
75 recommended to the Secretary of the
76 Interior.



Seacoast Fortifications of San Francisco Bay:
 Numerous individual sites comprising the potential Seacoast Fortifications National Landmark extend from Hill 640 Military Reservation in the north to Milagra Ridge in the south.

Area of Detail

Marine Exchange Lookout (Octagon House)
 Fort Miley Military Reservation
 San Francisco Veterans Administration Medical Center
 Ocean Terrace Site
 Merrie Way Stands Site
 Sutro Heights
 Sutro District

Mile Rock Tunnel (Outfall)
 Point Lobos Archeological Sites
 Sutro Baths
 Cliff House
 Camera Obscura

Shipwrecks of the Golden Gate:
 There are numerous individual shipwreck sites along the extent of the park shoreline from Bolinas Lagoon in the north to Pillar Point in the south.

Map 5. Area of Potential Effect, Historic Properties

1 Within the park’s boundaries, the Secretary
2 of the Interior has designated five national
3 historic landmarks:

- 4
- 5 1. Alcatraz Island
- 6 2. Fort Point National Historic Site
- 7 3. Presidio of San Francisco
- 8 4. San Francisco Bay Discovery Site
- 9 5. San Francisco Port of Embarkation

10
11 In addition, Aquatic Park Historic District, a
12 national historic landmark managed by San
13 Francisco Maritime National Historical Park,
14 is adjacent to the Golden Gate National
15 Recreation Area and could be affected by
16 actions proposed in the general management
17 plan. Brief descriptions of all of these
18 properties are included here.

19 20 **Alcatraz Island National** 21 **Historic Landmark**

22 Alcatraz Island includes cultural landscapes,
23 historic structures, archeological sites, object
24 collections, and stories associated with its use
25 as a Civil War fort, military prison, federal
26 penitentiary, and the site of the Indian
27 occupation of 1969 to 1971. Because of its
28 strategic location in San Francisco Bay, the
29 island has been the site of events that have
30 had a substantial impact on the nation as a
31 whole, from before the Civil War through the
32 Indian occupation. Its significance in the
33 areas of military history, social history
34 (penology), and maritime commerce (related
35 to the Gold Rush and the Civil War) is
36 enhanced by the integrity of its resources,
37 which has resulted from the fact that access
38 to the island has been strictly limited
39 throughout its history.

40
41 Maritime commerce was aided by the first
42 U.S. lighthouse on the Pacific Coast built on
43 the island in 1854; its successor still serves.
44 First garrisoned on December 30, 1859, the
45 post was officially designated Alcatraz Island
46 but was often referred to as Fort Alcatraz. By
47 the start of the Civil War, Alcatraz was the
48 key fort in the center of the most significant

49 Pacific port in 19th century America. It
50 mounted the first permanent cannon on the
51 west coast of the United States, and featured
52 a brick and masonry defensive barracks
53 known as the “Citadel,” which may have been
54 unique in the annals of U.S. military
55 architecture. Alcatraz was designated as the
56 official military prison for the entire
57 Department of the Pacific on August 27,
58 1861, and was the first official army prison in
59 the nation.

60
61 When Alcatraz became a civilian penitentiary
62 in 1934, it quickly gained nationwide
63 attention due to its association with many of
64 the most infamous criminals of the gangster
65 era and the bloody escape attempts made
66 from there. It is representative of the far end
67 of the penology spectrum because it was a
68 prison designed for punishment and
69 incarceration only, not rehabilitation. It is of
70 national importance in this regard because of
71 its use as a repository of incorrigibles
72 throughout the federal prison system,
73 including Robert Stroud (“Birdman of
74 Alcatraz”), Alphonse Capone, and George
75 Kelly Barnes (“Machine Gun Kelly”).
76 Alcatraz Island is certainly the best known
77 prison in U.S. history and arguably, along
78 with France’s “Devil’s Island,” is among the
79 most infamous prisons in the world.

80
81 Alcatraz Island was occupied by Indians of
82 All Tribes from November 1969 to June 1971
83 during an internationally publicized protest
84 to focus attention on the plight of American
85 Indians and to assert the need for Indian
86 unity and solidarity for achieving self-
87 determination and securing political rights.
88 Thus, the occupation increased awareness of
89 the American Indian’s political, economic,
90 and social concerns and provided the
91 foundation for what would become a political
92 movement—the American Indian
93 Movement—to promote racial pride and
94 secure and protect Indian rights. Tangible
95 evidence of their occupancy on the island
96 includes graffiti and physical alterations
97 attributed to their actions.

98

1 The period of significance for Alcatraz
 2 stretches from 1847, when the island was first
 3 surveyed for military fortifications, to 1971
 4 when the National Park Service acquired the
 5 land. This period of significance covers the
 6 military fortifications period (1847–1907),
 7 military prison period (1861–1933), federal
 8 prison period (1933–63), and American
 9 Indian occupation period (1969–71). Alcatraz
 10 Island was opened to the public as part of
 11 Golden Gate National Recreation Area in
 12 1973, listed in the National Register of
 13 Historic Places in 1976, and designated as a
 14 national historic landmark in 1986.

15
 16 The current landscape of Alcatraz consists of
 17 features and characteristics from each of the
 18 island’s historically significant periods that
 19 are used to define cultural landscapes—
 20 buildings, structures, spatial organization,
 21 circulation, small-scale features, topography,
 22 vegetation, natural systems and features,
 23 archeological sites, and land use. It includes
 24 numerous contributing buildings and
 25 structures and 81 areas of historic
 26 archeological concern not yet listed in the
 27 landmark inventory.

28 29 **Fort Point National Historic Site**

30 Fort Point National Historic Site is within the
 31 Presidio of San Francisco, near the south
 32 anchorage of the Golden Gate Bridge.
 33 Though this landmark is within the park
 34 boundary, it is not included in the planning
 35 area. Constructed between 1853 and 1861,
 36 Fort Point is the only example of a casemated
 37 Third System fort completed on the Pacific
 38 Coast. It is also the most unaltered such fort
 39 left in the United States. Situated on the
 40 southern tip of the Golden Gate, the fort was
 41 a vital part of San Francisco’s harbor defense
 42 during the Civil War and played a role in
 43 defending the harbor entrance during World
 44 War I and World War II. Associated historic
 45 resources include Battery East, built to
 46 supplement the obsolete brick fort, the
 47 historic seawall and promenade, and
 48 numerous historic landscape features and
 49 historic archeological sites.

50

51 **Presidio of San Francisco** 52 **National Historic Landmark**

53 Established in 1776 by the Spanish and
 54 continued as a military post under the
 55 Mexicans and the Americans, the Presidio
 56 possesses a visual unity and a high degree of
 57 integrity that relates well to its historical
 58 importance and continuity through
 59 successive periods of development. The
 60 Presidio of San Francisco was the oldest
 61 Army installation operating in the American
 62 West and was one of the longest-garrisoned
 63 posts in the country. More than 200 years of
 64 military occupation of the Presidio have
 65 resulted in the development of a complex
 66 historic district of several overlaying historic
 67 landscapes, each composed of buildings,
 68 structures, objects, sites, and other features
 69 that represent multiple phases of develop-
 70 ment. Among the Presidio’s over 450 historic
 71 buildings are examples of every major
 72 building period of U.S. military history since
 73 the 1850s. Over the years, the U.S. Army’s
 74 careful site planning and extensive landscape
 75 design complemented the natural beauty of
 76 the site and made the Presidio unique among
 77 U.S. Army posts. As headquarters for the
 78 protection of the Bay and for military
 79 expeditions throughout the West, the
 80 Presidio remained strategically the most
 81 significant military post on America’s Pacific
 82 Coast during most of its extended history,
 83 until its closure in 1994. In 1994, the U.S.
 84 Army transferred the Presidio to the National
 85 Park Service. In 1996, the Presidio Trust Act
 86 enacted by Congress, gave jurisdiction of the
 87 inland area of the Presidio (known as Area B)
 88 to the Presidio Trust; the National Park
 89 Service continues to manage the shoreline
 90 areas, known as Area A. The Presidio is not
 91 part of the planning area covered by this
 92 general management plan. The Presidio Trust
 93 has prepared a revised national historic
 94 landmark document, which is currently being
 95 reviewed by the National Park Service.
 96 Additionally, under the terms of a 2008
 97 programmatic agreement, Caltrans and the
 98 San Francisco County Transportation
 99 Authority are committed to updating the

1 NHL document upon completion of the
2 Doyle Drive project.

3
4 **San Francisco Bay Discovery Site**
5 **National Historic Landmark**

6 The city of Pacifica, California, the site of the
7 discovery of San Francisco Bay is the place
8 where the Portola Expedition of 1769 crossed
9 Sweeney Ridge and viewed one of the world's
10 largest sheltered anchorages for the first time.
11 From the crest of Sweeney Ridge, the view
12 extends inland to the bay and north along the
13 Pacific coastline as far as Point Reyes. This
14 landmark is on the crest of Sweeney Ridge
15 and commemorates the place from which the
16 main body of Spanish explorer Gaspar de
17 Portola's expedition first sighted San
18 Francisco Bay on November 4, 1769. The bay
19 would become the most important harbor on
20 the Pacific Coast of the United States and one
21 of the great anchorages of the world.
22 Following this discovery by the Spaniards, a
23 presidio and two missions were established in
24 what is now San Francisco. No structures are
25 on the site nor are any in the immediate
26 vicinity. It is likely that no structures ever
27 existed there. The Portola Expedition shaped
28 the history of San Francisco Bay and the
29 surrounding region. The discoveries made
30 during this expedition influenced a variety of
31 peoples, particularly the American Indian
32 inhabitants. Today, the site consists
33 essentially of two knolls from which the
34 Portola Expedition members first saw the
35 bay. This site comprises approximately 18.15
36 acres. There are two commemorative
37 monuments that celebrate the Gaspar de
38 Portola Expedition. The view has changed
39 considerably with the growth of the Bay Area,
40 now including widespread suburban
41 development.

42
43 **San Francisco Port of Embarkation**
44 **National Historic Landmark**

45 This historic district is listed as a national
46 historic landmark for its association with
47 World War II in which it was defined as the
48 principal port on the West Coast for
49 delivering personnel, material, weapons, and

50 ammunition to the military campaigns in the
51 Pacific. During the months after the United
52 States first entered World War II, the U.S.
53 Army's San Francisco Port of Embarkation
54 shipped more military supplies than all other
55 military ports in the United States combined.

56
57 The statistical returns for the entire war
58 showed that San Francisco was second only
59 to New York in the numbers and amounts of
60 personnel shipped to the war zones. Between
61 December 1941 and August 1945, 1,745,000
62 personnel embarked at San Francisco. In
63 addition, more than half a million veterans of
64 the war debarked at San Francisco during the
65 same period. An equal number came through
66 the Golden Gate after conclusion of
67 hostilities. All American dead being returned
68 to the United States from the Pacific were
69 brought through the port. Japanese and
70 German prisoners of war were processed
71 through this port's facilities, as well.

72
73 During the war years, more than 25 million
74 measurement tons of cargo were shipped
75 through San Francisco. For various periods
76 of time between 1941 and 1944, the ports of
77 Los Angeles, California; Portland, Oregon;
78 and Seattle, Washington were administered
79 by San Francisco. In the Bay Area, Fort
80 Mason oversaw port operations for no fewer
81 than 13 other installations. San Francisco was
82 the primary port for Army troops and
83 supplies in the central, south, and southwest
84 Pacific areas. Moreover, the task force that
85 drove the Japanese from Alaska's Aleutian
86 Islands was mounted from San Francisco.

87
88 The district is significant within the area of
89 military history for the period from 1912 to
90 1945. It encompasses 210 acres, 14 buildings,
91 and 5 structures at lower Fort Mason.
92 Building 201 at upper Fort Mason, currently
93 the park headquarters, is a contributing
94 resource to the district.

95
96 **Aquatic Park Historic District**
97 **National Historic Landmark**

98 This property is outside the general
99 management plan planning area but is

1 adjacent to the park’s Fort Mason Historic
 2 District in San Francisco. Aquatic Park
 3 Historic District is bounded by Van Ness
 4 Avenue and Hyde and Polk streets and has an
 5 important interrelationship with Golden
 6 Gate National Recreation Area. Developed
 7 from 1936 to 1939, the park was one of
 8 California’s largest Works Progress
 9 Administration (WPA) projects, reflecting
 10 President Franklin D. Roosevelt’s policy of
 11 creating employment during the Great
 12 Depression. The centerpiece of this group of
 13 “streamline moderne” structures, all
 14 employing nautical metaphors, is a
 15 multipurpose structure containing the
 16 bathhouse, concession stand, and lounge. Its
 17 rounded walls, recessed upper stories,
 18 tubular steel railings, and porthole windows
 19 were designed to create the illusion of an
 20 ocean liner. Murals and other artwork carry
 21 out the nautical theme. This main building,
 22 lifeguard stations, stadium, Sea Scout
 23 building, a seawall, and a semicircular pier
 24 form the Aquatic Park Historic District,
 25 which now is part of the San Francisco
 26 Maritime National Historical Park. The
 27 district contains 10 acres of land with three
 28 buildings and five structures that are
 29 significant for the period from 1920–1945.

30
 31

32 **Potential National Historic** 33 **Landmark Properties**

34 ***Coastal Seacoast Fortifications*** 35 ***of San Francisco Bay***

36 The coastal fortifications of San Francisco
 37 Bay, which are currently being evaluated for
 38 designation as a national historic landmark,
 39 today comprise what is widely considered the
 40 most comprehensive collection of military
 41 architecture and coastal defense systems and
 42 the finest surviving examples of military
 43 engineering for coastal defense in the United
 44 States. The significance of the seacoast
 45 fortifications structures of the Bay Area as a
 46 group is of the highest order. These
 47 fortifications span San Mateo (Milagra
 48 Ridge), San Francisco (Presidio, Fort

49 Funston, Fort Mason, Fort Miley, Alcatraz
 50 Island and Fort Winfield Scott in the
 51 Presidio), and Marin County (Forts Baker,
 52 Barry and Cronkhite) and encompass over 40
 53 major caliber gun batteries and scores of
 54 other supporting structures. Moreover, as
 55 well-preserved examples of nearly every
 56 important development in military
 57 fortification architecture and engineering
 58 from before the Civil War to the guided
 59 missile era, they embody an extraordinary
 60 range of distinguishing characteristics of
 61 military architecture, engineering, style, and
 62 construction and outstandingly illustrate
 63 military culture and technique. They are
 64 tangible manifestations of changing periods
 65 in U.S. history and the changing military
 66 responses, and provide associative links with
 67 people important to the history of the nation
 68 as a whole—from John C. Fremont and “Kit”
 69 Carson to Irvin McDowell and Douglas
 70 MacArthur. The military reservations that
 71 provide a relatively unchanged physical
 72 context for these fortifications also provide a
 73 spectacular scenic backdrop of largely
 74 undeveloped open space at the edge of a
 75 great urban metropolis.

76

77 ***Golden Gate Bridge***

78 The Golden Gate Bridge is on park property
 79 but is owned and managed by the Golden
 80 Gate Bridge, Highway, and Transportation
 81 District. It was determined eligible for listing
 82 in the national register in 1980 and was
 83 designated a California State Historic
 84 Landmark in 1990. The Golden Gate Bridge
 85 has not yet been listed in the national register.
 86 In 1997, the National Park Service prepared a
 87 national historic landmark nomination for
 88 the Golden Gate Bridge, but it has not yet
 89 been designated as a landmark. The National
 90 Park Service was a concurring party to a
 91 memorandum of agreement for the Golden
 92 Gate Bridge Physical Suicide Deterrent
 93 System Project to complete and submit a
 94 landmark nomination for the Golden Gate
 95 Bridge that includes significant associated
 96 buildings, structures, roadways, and
 97 pedestrian circulation features and
 98 landscaping.

1 **Olema Valley Historic District**

2 This rural historic landscape consists of
3 former dairy ranches in west Marin County
4 and, although within the authorized
5 boundaries of Golden Gate National
6 Recreation Area, is managed by Point Reyes
7 National Seashore for reasons of geographic
8 proximity.

11 **National Register of Historic Places**

12 The National Register of Historic Places is a
13 list of properties (districts, sites, buildings,
14 structures, and objects) that possess the
15 quality of significance in U.S. history,
16 architecture, archeology, engineering, and
17 culture, as well as integrity of location,
18 design, setting, materials, workmanship,
19 feeling, and association. Properties listed in
20 the national register are significant because
21 they

- 22
- 23 ▪ are associated with events that have
24 made a significant contribution to the
25 broad patterns of our history; or
- 26 ▪ are associated with the lives of
27 persons significant in our past; or
- 28 ▪ embody distinctive characteristics of a
29 type, period or method of
30 construction, or represent the work of
31 a master, or possess high artistic
32 values, or represent a significant and
33 distinguishable entity whose
34 components may lack individual
35 distinction; or
- 36 ▪ have yielded, or may be likely to yield,
37 information important in prehistory
38 or history.

41 **Properties Listed in the National**
42 **Register of Historic Places**

43 **Marin County**

44 **Dipsea Trail.** The historic Dipsea Trail,
45 which extends from Mill Valley to Stinson

46 Beach, runs through parts of Muir Woods
47 and is host to one of the oldest foot races in
48 the nation.

49

50 **Forts Baker, Barry, and Cronkhite.** These
51 military fortifications and installations
52 comprise some of the earliest coastal defense
53 artillery batteries in Marin County and are
54 significant landmarks for tracing the
55 development of the U.S. defense system. The
56 land, on which the forts were constructed,
57 sited strategically at the northern point of the
58 Golden Gate, commands the approaches to
59 the entrance of San Francisco Bay. The
60 batteries and their ancillary structures
61 (observation posts and cantonments) created
62 a coordinated system of defense at the
63 Golden Gate from the Civil War to the Cold
64 War. The scope of the landscape afforded by
65 the three military fortifications includes both
66 American Indian and European-associated
67 attributes.

68

69 In 1866, Forts Baker and Barry were
70 purchased to be used for military defense.
71 Fort Cronkhite was acquired in the same
72 manner in 1914, but was considered a portion
73 of Fort Barry until officially designated as
74 Fort Cronkhite in 1937. The fortifications
75 proposed for construction at the northern
76 point of the Golden Gate were to augment
77 those at the Presidio of San Francisco and
78 elsewhere in San Francisco to prevent
79 successful passage of hostile ships through
80 the Golden Gate into the bay. The batteries
81 and their ancillary structures (observation
82 posts and garrisons) created a coordinated
83 system of defense at the Golden Gate. From
84 the Civil War to the Cold War eras, this
85 system of defense offered equipment ranging
86 from smooth-bore, muzzle-loading cannon
87 to rifled, breach-loading artillery, including
88 anti-aircraft and anti-breach-landing defense
89 from World War II and NIKE anti-aircraft
90 missiles from the Cold War. The Fort
91 Cronkhite cantonment is not only highly
92 representative of the once ubiquitous 700-
93 Series World War II mobilization
94 cantonments; it is considered the best-
95 preserved example of its type in the United
96 States. The district is spread over 1,400 acres

1 and encompasses over 100 historic
2 structures.

3
4 **Muir Beach Archeological Site.** This Coast
5 Miwok archeological site dating from about
6 AD 1300 is one of only a few such properties
7 known in southwestern Marin County. It was
8 recorded in 1909 and appears to be part of a
9 series of periodic villages or encampments
10 formed between AD 1100 and as late as 1800
11 around the estuary at the mouth of Redwood
12 Creek below present-day Muir Woods.

13
14 **Muir Woods National Monument.** In
15 2008, Muir Woods National Monument
16 Historic District was listed in the National
17 Register of Historic Places for its significance
18 as an early and lasting example of natural
19 resource conservation by the federal
20 government. In addition to the forest of giant
21 redwood trees, the monument's collection of
22 historic buildings, structures, and cultural
23 landscapes are representative of the NPS
24 rustic design style. It is a 425-acre historic
25 district with five contributing buildings and
26 numerous historic structures that comprise
27 the principal elements of the cultural
28 landscape. See the "Cultural Resources—
29 Muir Woods National Monument" section of
30 this document for more detailed information.

31
32 **Point Bonita Historic District.** The Point
33 Bonita Historic District, at the entrance to
34 San Francisco Bay from the Pacific Ocean,
35 includes both the Point Bonita Light Station
36 and the Point Bonita Life-Saving Station and
37 associated landscape features. Established in
38 1855 to mark the entrance to San Francisco
39 Bay and to warn of local navigational hazards,
40 the district is linked to the historic growth of
41 commercial shipping along the West Coast
42 and to California's critical reliance on
43 maritime transportation and the aids that
44 made navigation possible. The light station
45 contains an intact lighthouse tower with an
46 intact lens and an associated fog signal
47 building. The tower and fog signal building,
48 clustered together at the end of the rocky
49 point, retain a high degree of integrity and
50 give cohesiveness to the light station site. This
51 is heightened by the buildings' separation

52 from the main access path by a pedestrian
53 suspension bridge; Point Bonita is the only
54 lighthouse in the United States approached
55 by a suspension bridge. The light station
56 retains the general form of a formal late 19th /
57 early 20th century light complex.

58
59 **Steamship Tennessee Remains.** The SS
60 *Tennessee*, a side-wheel commercial
61 passenger-cargo steamer, owned by the
62 Pacific Mail Steamship Company and
63 destined for Panama, crashed against the
64 rocks in Indian (Tennessee) Cove, some three
65 miles north of Point Bonita on March 6, 1853,
66 amid dense fog and high surf. Today, the
67 Tennessee Valley Trail leads visitors to the
68 cove where the ship's remains are
69 occasionally revealed by the restless surf.

71 **San Francisco County**

72 **Camera Obscura.** The Camera Obscura was
73 added to the National Register of Historic
74 Places in 2001 on the basis of the engineering
75 significance of the camera mechanism—the
76 largest camera obscura remaining in situ in
77 the United States. The exterior of the
78 building was extensively modified in 1957 to
79 appear as a giant camera, and may be
80 reevaluated for historical significance upon
81 reaching 50 years of age.

82
83 **Fort Mason Historic District.** Beginning in
84 1797 and lasting through the Spanish and
85 Mexican administrations of Alta California,
86 Fort Mason (including Batteria San José,
87 Punta Medanos, Battery Yerba Buena, Point
88 San José, Black Point, and the Post of Point
89 San José) was one of two sites in San
90 Francisco Bay that was armed with artillery
91 for the defense of the harbor. For over 40
92 years of U.S. administration, from the Civil
93 War to the post-Spanish-American War era,
94 Fort Mason played a role in the coastal
95 defenses of the Bay. It also served as an
96 important element in the first submarine
97 mining of San Francisco Bay during the
98 Spanish-American War. From the Spanish-
99 American War to the Korean War, Fort
100 Mason was the headquarters of the San
101 Francisco Port of Embarkation.

1 Fort Mason contains a collection of military
 2 structures dating from the 1850s to the
 3 Korean Conflict that illustrates the evolution
 4 of an army post and seacoast fortifications
 5 over a period of some 100 years. The variety
 6 and contrasts among many styles of the
 7 architecture, the effect of the U.S. Army's
 8 caste system on the quarters, the charm of the
 9 earliest officers' row, the simple lines of the
 10 Endicott battery, the WPA architecture of the
 11 Great Depression, and the U.S. Army's
 12 determination in landscaping all blend
 13 together to present a history of this place and
 14 its times. The district includes 146 historic
 15 buildings and structures spread over 68 acres
 16 of land. A wooden pier (Pier 4) and small
 17 buildings at its terminus are associated with
 18 prison operations on Alcatraz Island. The
 19 historic landscape is also a contributing
 20 feature of the district. Five archeological sites
 21 associated with Ohlone native peoples and
 22 other historic archeological sites are at Fort
 23 Mason; however, they are listed in a
 24 separately themed historic district
 25 nomination.

27 **Fort Miley Military Reservation.** This
 28 historic district is a military landscape
 29 comprised of battery emplacements, fire
 30 control stations, and searchlight facilities that
 31 served as part of the defense system for the
 32 strategic harbor of San Francisco. These
 33 features of East and West Fort Miley were
 34 part of the defense system for the strategic
 35 harbor of San Francisco, long regarded by
 36 Army engineers and strategists as the most
 37 important harbor on the west coast of the
 38 United States. The fortification of Point
 39 Lobos in 1899 marked the final phase of the
 40 Endicott system of seacoast defense, when it
 41 was determined that the guns and mortars
 42 should be placed as far toward the sea as
 43 possible and that the inner harbor defense
 44 represented by the early Endicott-type
 45 batteries was of less importance.

47 The guns of Fort Miley, together with those
 48 of Fort Barry on the northern side of the
 49 Golden Gate, became San Francisco Bay's
 50 important outer line of defense at the turn of
 51 the last century. The massive concrete and

52 earth batteries, Chester and Livingston,
 53 represented the latest in design and
 54 engineering of the Endicott works as of 1900.
 55 Later installations at Fort Miley, such as a
 56 coastal searchlight powerhouse and fire
 57 control stations for other and later batteries,
 58 mark further advances in the theory, practice,
 59 and technology of seacoast defenses.

61 Fort Miley's continuing importance in the
 62 harbor defenses of San Francisco is
 63 illustrated by construction of a 6-inch gun
 64 battery during World War II and the
 65 subsequent arming of this battery as late as
 66 1948—the last of the coastal guns to be
 67 mounted in the San Francisco Bay Area.

69 **King Philip / Reporter Shipwreck Site.**
 70 The *King Philip*, a three-masted wooden
 71 clipper ship named for the Indian chief who
 72 was involved in King Philip's War in 1675,
 73 crashed on Ocean Beach amid heavy surf on
 74 January 25, 1878, after leaving San Francisco
 75 without cargo. First launched in 1856, the
 76 ship went into the lumber trade working for
 77 Pope and Talbot of San Francisco after its
 78 glory days as a clipper. The site and the ship's
 79 remains have also been associated with the
 80 1876 three-masted schooner *Reporter*, which
 81 wrecked at the same location March 13, 1902.
 82 The remains appear whenever storm surf
 83 scours the beach sands low enough to expose
 84 the hull.

86 **Point Lobos Archeological Sites.** The
 87 Point Lobos sites include two precontact
 88 Ohlone archeological sites dating from about
 89 AD 300–1100. These sites are encampments
 90 in the dunes of western San Francisco that
 91 evidence harvesting of sea mammals and
 92 shellfish from the nearby Pacific shoreline.
 93 They are among a handful of precontact sites
 94 left in San Francisco.

96 **Pumping Station 2, San Francisco Fire
 97 Department Auxiliary Water Supply
 98 System.** Pumping Station 2 of the San
 99 Francisco Fire Department Auxiliary Water
 100 Supply System represents an example of an
 101 innovatively planned and designed
 102 earthquake proof fire fighting system for San

1 Francisco. The pumping station is significant
2 within the areas of community planning and
3 engineering for the City of San Francisco. Its
4 period of significance is 1912 to 1975.
5 Although the building is sited on park land in
6 the Fort Mason Historic District, the facility
7 is still owned and used today by the City of
8 San Francisco.

9
10 **Six-inch Gun No. 9 (Baker Beach).** The
11 Six-inch Gun Number 9 and disappearing
12 carriage were received by the National Park
13 Service in 1977 from the Smithsonian
14 Institution. The gun and carriage were
15 installed at gun emplacement Number Four
16 at Battery Chamberlin, in the Presidio of San
17 Francisco, and are the same type originally
18 used there. Battery Chamberlin is an
19 Endicott-era battery completed and armed in
20 1904 with four 6-inch guns mounted on
21 disappearing carriages. The battery was built
22 to protect underwater minefields laid outside
23 the Golden Gate during the time of war. The
24 original guns were dismounted in 1917 for
25 use in World War I, but the battery was
26 modified to receive two 6-inch guns on
27 simple barbette carriages in 1920. During
28 World War II, the Sixth Coast Artillery
29 (Harbor Defense) Regiment, Battery “D,”
30 manned the two guns at Battery Chamberlin,
31 which were placed under camouflage netting
32 to hide them from potential air attack. In
33 1948, the Coast Artillery Corps was
34 deactivated, the battery disarmed, and the
35 guns scrapped. Today, an underground
36 magazine contains photos and small exhibits
37 on the harbor defenses of San Francisco.
38 Operation of the gun and the magazine are
39 open to the public periodically.

40
41 In addition to these properties that are within
42 the park boundaries, there are two additional
43 properties within the area of potential effect
44 that are adjacent to the park boundary and
45 could be affected through actions proposed
46 in this plan. These properties include:

47
48 **Point Montara Light Station.** Point
49 Montara Light Station District covers 73
50 acres containing three contributing buildings
51 and one contributing structure. The Light

52 Station was established in 1875 as the Point
53 Montara Fog Signal, and the house was built
54 for the keepers. The first light was not
55 installed until 1900—a simple lantern hung
56 on a post. In 1912, a Fresnel lens was
57 mounted on a skeleton tower, and in 1928,
58 the existing cast-iron lighthouse was built to
59 house the lens. The old-fashioned fog horn
60 continued to be important because the fog on
61 this part of the coast is often thick enough to
62 restrict even the bravest beam. The property
63 is owned and managed by the U.S. Coast
64 Guard, but will likely be added to the park in
65 the near future.

66
67 **San Francisco Veterans Affairs Medical**
68 **Center.** This property occupies a 29-acre
69 campus in the northwest corner of San
70 Francisco, of which the historic district is
71 approximately 12 acres. It is surrounded on
72 three sides by Fort Miley and is owned and
73 managed by the Department of Veterans
74 Affairs.

75 76 77 **Properties Determined to be Eligible** 78 **for Listing in the National Register** 79 **of Historic Places**

80 Several properties within the park boundary
81 have been identified, evaluated, and assessed
82 for their eligibility for listing in the National
83 Register of Historic Places. The term eligible
84 for inclusion in the national register refers to
85 properties formally determined as such in
86 accordance with regulations of the Secretary
87 of the Interior and to all other properties that
88 meet national register criteria without a
89 formal determination. For purposes of park
90 management and planning, these properties
91 are treated as contributing resources.

92 93 **Marin County**

94 **Sara Seaver Randall House.** Habitation of
95 one of the earliest Anglo settlers in Marin
96 County. The property is managed by Point
97 Reyes National Seashore.

1 **Hill 640 Military Reservation.** This
2 reservation, including the cultural landscape
3 and the remains of its radar set and fire
4 control stations are prime examples of the
5 methods that evolved for the better direction
6 of coast artillery fire against enemy vessels at
7 sea. Overlooking the Pacific Ocean and the
8 southern end of Stinson Beach, they are the
9 best surviving representatives of the most
10 northerly complexes of fire control
11 installations for the defense of San Francisco
12 Bay during the critical years of World War II.
13 The radar, a surface detector set, was the first
14 of its type assigned to the San Francisco
15 Harbor defenses. These features are little
16 disturbed from World War II and retain very
17 high integrity.

18
19 **Ranch M (Golden Gate Dairy).** The
20 Golden Gate Dairy at the lower end of
21 Redwood Creek is one of the last agricultural
22 operations remaining with historic integrity
23 intact. It was originally one of dozens of
24 Portuguese-owned dairies in southern Marin
25 County. The main house was built circa
26 1898–1900 by Azorean immigrant M. A.
27 Mattos. The Lopez family operated a Grade
28 A dairy here from approximately 1943 to
29 1962. The site contains several residences,
30 corrals, utilitarian structures, fence lines,
31 pastures, windbreaks, and historic
32 archeological deposits. The cultural
33 landscape of the Golden Gate Dairy includes
34 residences, corrals, utilitarian structures,
35 fence lines, pastures, and windbreaks.

36
37 **Ranch A/B (Miwok Stables).** The Rapozo
38 Ranch in the Tennessee Valley of the Marin
39 Headlands, currently operated as the Miwok
40 Ranch or Stables, is one of the last
41 agricultural operations remaining with intact
42 historic integrity. It was originally one of
43 dozens of Portuguese-owned dairies in
44 southern Marin County. The main house was
45 probably built circa 1903 by Azorean
46 immigrant M. F. DaCunha, the first single
47 owner of the ranch. The ranch was used by
48 the Rapozo family from 1945 to the present.
49 The site contains a hay barn, riding barn,
50 sanitary (dairy) barn, two residences, corrals,

51 a eucalyptus windbreak, and other ranching
52 features.

53
54 **Hillwood Camp.** The earliest surviving
55 example in Marin County of a rural camp
56 reflective of an effort to immerse urban-
57 dwelling youth in a natural environment. The
58 property includes the main lodge and
59 associated features.

60
61 **Olema Valley Historic District.** A collection
62 of properties along State Route 1, north of
63 Bolinas representing a cultural landscape of
64 rural farming from the late 19th and early
65 20th century period. The district is managed
66 by Point Reyes National Seashore.

67 68 **San Francisco County**

69 **Merrie Way Stands Site.** A historic
70 archeological site associated with an early San
71 Francisco amusement park established by
72 Adolph Sutro at Land's End in 1895. The
73 pleasure ground and its concession stands
74 lining Lobos Avenue existed until about 1920,
75 when the last of the amusement structures
76 were demolished.

77
78 **Mile Rock Tunnel.** Completed in 1915, the
79 tunnel is an example of the reconstruction
80 and reconfiguration of the City of San
81 Francisco's public works system following
82 the 1906 earthquake. Designed by M. M.
83 O'Shaughnessy, a San Francisco city engineer
84 best known for his design of the Hetch
85 Hetchy Water System, the tunnel was the first
86 constructed in the city using a combination of
87 open-cut timber cribbing and boring through
88 solid rock, a technological and engineering
89 innovation for the city. It served as the storm
90 drainage facility for the Sunset and West
91 Mission districts and portions of the
92 Richmond and Ingleside districts.

93
94

1 **Properties Potentially Eligible for**
 2 **Listing in the National Register of**
 3 **Historic Places**

4 Potentially eligible properties include those
 5 that have been identified by park staff and
 6 other cultural resource professionals as being
 7 potentially eligible for listing in the national
 8 register. These properties need to be further
 9 assessed and evaluated in order to make a
 10 determination of eligibility in the near future.
 11 A determination of eligibility would be made
 12 in advance of activity or work that could
 13 directly affect them.

14
 15 **Marin County**

16 **Bolinas Copper Mine.** The scenic Wilkins
 17 Ranch, at the head of Bolinas Lagoon,
 18 witnessed three waves of mining fever on the
 19 upper slopes of Bolinas Ridge, beginning in
 20 the 1860s. The Chetco Mining Company,
 21 more successful than its predecessors, closed
 22 its doors in 1918; it was the last operation to
 23 work the vein. Cultural landscape features
 24 include the mine's adit and shaft, a mining
 25 road, concrete foundations and cabin site, a
 26 rusty boiler and cable, and other large debris.
 27 The property is managed by Point Reyes
 28 National Seashore.

29
 30 **Bolinas Lagoon Coast Miwok Sites.** A
 31 series of four precontact archeological sites
 32 that contain significant information on Coast
 33 Miwok history in southwestern Marin
 34 County.

35
 36 **Druid Heights.** Potentially significant as the
 37 site of a colony of artists, writers, Zen
 38 philosophers (Alan Watts) influential in the
 39 development of the counterculture of the
 40 1960s.

41
 42 **Muir Woods Inn.** Potentially significant for
 43 its contribution to local tourism at Muir
 44 Woods National Monument.

45
 46 **Marin Headlands Coast Miwok Sites.** A
 47 series of three precontact archeological sites
 48 that contain significant information on Coast

49 Miwok history near Rodeo Lagoon in Fort
 50 Barry and Fort Cronkhite.

51

52 **Miwok Trail.** Potentially significant as one of
 53 the earliest trails in the region.

54

55 **Muir Beach Coast Miwok Sites.** A district
 56 of three precontact archeological sites,
 57 including the national register Muir Beach
 58 Archeological Site that encompass the Big
 59 Lagoon area of the mouth of Redwood
 60 Creek.

61

62 **San Francisco County**

63 **China Beach.** Potentially significant for its
 64 architecture and design as an early post-
 65 World War II civic recreational complex.

66

67 **Crissy Field Ohlone Sites.** A district of two
 68 precontact archeological sites along Crissy
 69 Field in the Presidio of San Francisco.

70

71 **Fort Mason Ohlone Sites.** A district of six
 72 precontact archeological sites in Fort Mason,
 73 constituting the densest archeological site
 74 cluster remaining in the City of San
 75 Francisco.

76

77 **Marine Exchange Lookout Station**
 78 **(Octagon House).** Potentially significant in
 79 maritime history and commerce as well as for
 80 its rare and unusual style of architecture.

81

82 **O'Shaughnessy Seawall.** Potentially
 83 significant in the fields of engineering, city
 84 planning, and recreation as part of the long
 85 recreational history of Ocean Beach.

86

87 **Ocean Terrace Site.** A historic archeological
 88 site of a commercial district associated with
 89 Adolph Sutro's Lands End properties.

90

91 **Sutro Baths.** Archeological remains of a
 92 major public natatorium (building containing
 93 a swimming pool) constructed by Adolph
 94 Sutro in the 1890s and lasting until its
 95 destruction by fire in 1966. The site is a
 96 significant historic landmark in San Francisco

1 and maintains key engineering features that
2 facilitated its operation.

3

4 **Neptune Shipwreck.** Remains of the
5 shipwreck of the 1882-constructed schooner
6 *SS Neptune* that wrecked on Ocean Beach
7 near Fort Funston in 1900. Exposed by
8 winter scour of beach sands in 1983.

9

10 **San Mateo County**

11 **Phleger Estate.** The Phleger Estate cultural
12 landscape contains historic archeological
13 sites relating to the area's logging history such
14 as numerous skid roads, camps, and mill sites,
15 as well as potential Ohlone archeological
16 sites.

17

18 **Rancho Corral de Tierra.** The cultural
19 landscape of Rancho Corral de Tierra may
20 include structures, landscape features, and
21 archeological sites associated with historic
22 ranching operations dating back as far as the
23 Mexican rancho era. These could include the
24 site of the historically documented 1840s
25 adobe residence of Francisco Guerrero y
26 Palomares, original grantee of the northern
27 part of Rancho Corral de Tierra; and the
28 Martini Creek Ohlone sites: a district of
29 precontact Ohlone sites north of Montara

30

31 **Sheldance Nursery.** Potentially significant
32 as representative of the cut-flower industry in
33 west San Mateo County.

34

35

36 **Properties Ineligible for Listing in the** 37 **National Register of Historic Places** 38 **with Special Management**

39 The state historic preservation office
40 determined the Sutro Heights District at
41 Point Lobos in San Francisco to be ineligible
42 for listing in the National Register of Historic
43 Places in 1979 and again in 2000, although the
44 recently restored Cliff House and the remains
45 of the water pumping system may be
46 reassessed for eligibility as further
47 information is developed. The district
48 comprises approximately 78 acres and

49 includes Cliff House, Sutro Heights, and
50 Sutro Baths ruins. The park has chosen to
51 manage the district and associated features,
52 including the historic designed landscape, as
53 a cultural resource.

54

55

56 **ARCHEOLOGICAL RESOURCES**

57 **Definition**

58 Archeological resources are the physical
59 evidence of past human activity, including
60 evidence of the effects of that activity on the
61 environment. Information revealed through
62 the study of archeological resources is critical
63 to understanding and interpreting prehistory
64 and history. Although archeological and
65 ethnographic resources (which are covered
66 in the following section) are considered as
67 separate cultural resource types by the
68 National Park Service—the two are closely
69 interrelated.

70

71 Baseline archeological surveys, required
72 under Executive Order 11593 and section 110
73 of the National Historic Preservation Act,
74 have not been conducted for most of the
75 original park lands or newly acquired lands.
76 Currently, less than 7% of Golden Gate
77 National Recreation Area has been surveyed
78 for precontact and historic archeological
79 sites. Only 2% (925 acres) of the lands
80 considered for discussion in the general
81 management plan have been surveyed. Of
82 those sites inventoried, the significance of
83 many of these sites requires further study and
84 evaluation. Furthermore, comprehensive
85 consultations with Coast Miwok and Ohlone
86 tribes and descendants regarding
87 archeological sites with ethnographic
88 significance in the park will continue into the
89 future. As a result of this need for additional
90 survey, assessment, and consultation,
91 archeological resources in the park are
92 subject to deterioration from natural erosion
93 processes, inadvertent but deleterious visitor,
94 park management, or partner activities,
95 vandalism, and looting.

96

1 On Alcatraz Island, some 81 areas of historic
2 archeological interest have been identified
3 through documentary research, including
4 substantial buried resources worthy of
5 consideration for future incorporation into
6 the visitor experience on the island. There is a
7 clear need for a comprehensive archeological
8 survey and evaluation of the island to
9 incorporate contributing archeological
10 properties and issues into both the national
11 historic landmark documentation and the
12 park's future planning. Consultation with
13 American Indian tribes regarding
14 ethnographic significance is also needed.

17 Resources

18 Currently, there are about 263 inventoried
19 archeological sites in the park; 171 are within
20 the area of potential effects for this planning
21 study. Continuing research and expanding
22 knowledge of the park's resources has
23 resulted in a logical increase in known and
24 expected archeological sites. Amendments to
25 existing national historic landmark and
26 National Register property documentation
27 with this new information has lagged.
28 Archeological sites and related historic
29 property types in the park and monument are
30 associated with the following themes or
31 topics:

- 32
- 33 ▪ Precontact Period (Prior to contact
34 between indigenous and European
35 peoples)
- 36 ▪ Historic/Spanish, Mexican, and
37 American periods
- 38 ▪ Military Reservations/Installations
- 39 ▪ Seacoast Fortifications
- 40 ▪ Ranching/Agriculture
- 41 ▪ Logging
- 42 ▪ Lighthouse/Life Saving Reservations
- 43 ▪ Shipwrecks and Associated Remains
- 44 ▪ Recreational Development

45
46

47 ETHNOGRAPHIC RESOURCES

48 Definition

49 Ethnographic resources include sites,
50 structures, objects, landscapes, or natural
51 resource features assigned traditional and
52 contemporary legendary, religious,
53 subsistence, or other significance in the
54 cultural system of a group associated with
55 them.

56
57 Traditional cultural properties are ethno-
58 graphic resources eligible for listing in the
59 National Register of Historic Places.
60 Traditional cultural properties are associated
61 with cultural practices, beliefs, the sense of
62 purpose, or existence of a living community
63 that is rooted in that community's history or
64 is important in maintaining its cultural
65 identity and development as an ethnically
66 distinctive people.

67
68 Currently, there are no known ethnographic
69 resources within the boundaries of Golden
70 Gate National Recreation Area. Research and
71 consultation with affiliated tribes and
72 descendants is still needed to clarify this
73 issue. Alcatraz Island great significance for
74 American Indians, and every Coast Miwok or
75 Ohlone precontact site has significant
76 heritage values to park-affiliated native
77 people.

80 History

81 Native peoples have called the San Francisco
82 Bay region home for more than 10,000 years,
83 and the park still contains archeological sites
84 and landscapes influenced by native land
85 management and activities. Park areas south
86 of the Golden Gate, from the San Francisco
87 Peninsula to the East Bay and south to
88 Monterey, are the aboriginal lands of the
89 Ohlones (also called Costanoans). Park lands
90 north of the Golden Gate, primarily in Marin
91 County and southern Sonoma County, are
92 the aboriginal lands of Coast Miwoks.

93

1 Both the Ohlone and Coast Miwok peoples
2 were organized into small, politically
3 independent societal groups or tribes; the
4 Ohlones had about 50 tribes and the Coast
5 Miwoks had approximately 14 tribes.
6 Ethnohistory suggests that small villages were
7 maintained along the marshlands. In San
8 Francisco, villages were in the park at
9 present-day Fort Mason, Crissy Field, and
10 Point Lobos. In Marin County, the Coast
11 Miwok encampments were in the Rodeo and
12 Tennessee valleys and along Redwood Creek,
13 and at Bolinas Lagoon. Groups moved
14 annually between temporary and permanent
15 village sites in a seasonal round of hunting,
16 fishing, and gathering. Periodic burning of
17 the landscape was conducted to promote the
18 growth of native grasses for seed gathering
19 and to create forage for deer and elk. The
20 worldview and spirituality of both the
21 Ohlones and Coast Miwoks were expressed
22 in a complex woven tapestry of stories, myth,
23 song, dance, and ritual.

24
25 In 1776, when Spanish military and civilian
26 settlers arrived in the San Francisco Bay area
27 to establish military garrisons (presidios),
28 Franciscan missions, and civilian settlements
29 (pueblos), life abruptly and dramatically
30 changed for the region's native peoples. With
31 Spanish colonization came the introduction
32 of new diseases and the establishment of
33 mission communities meant to supplant the
34 existing tribal organization.

35
36 Because they lived close to the Presidio's
37 military garrison, members of the Ohlone
38 tribes that inhabited the San Francisco
39 Peninsula, called the Yelamu, were baptized
40 and taken into the missions as early as the
41 1770s and 1780s. Because the Coast Miwok
42 tribes lived farther north, their indoctrination
43 occurred somewhat later. In 1783, several
44 members of the Huimen community, who
45 inhabited the southernmost part of Marin
46 County, were the first of the Coast Miwok to
47 leave their homeland for Mission, San
48 Francisco. By 1810, introduced ideas, forced
49 labor, and efforts to indoctrinate the
50 indigenous peoples into an alien society and

51 religion led to the destruction of the way of
52 life of the Ohlones and Coast Miwoks.

53
54 Today, descendants of Ohlone and Coast
55 Miwok peoples live throughout the San
56 Francisco Bay area. Ohlones are organized
57 into eight tribal bands, none of which are
58 federally recognized, although several are
59 seeking recognition. While participating in
60 contemporary society, they are actively
61 involved in the preservation and
62 revitalization of their native culture.
63 Restoration of native language, protection of
64 ancestral sites, practice of traditional plant
65 uses, story telling, dance, song, and basket
66 weaving are all aspects of these restoration
67 efforts. The National Park Service works with
68 Ohlones in stewarding the preservation and
69 interpretation of ancestral sites and
70 landscapes in the Presidio and throughout
71 the park south of the Golden Gate.
72 Additionally, the National Park Service has a
73 government-to-government relationship with
74 the Coast Miwoks who today form a single,
75 federally recognized tribe—the Federated
76 Indians of Graton Rancheria, whose
77 recognized status was restored by
78 congressional legislation in 2000. If and when
79 any of the Ohlone tribes receive federal
80 recognition, the nature of the park's
81 relationship with these tribes will become
82 government-to-government.

83

84

85 Sites

86 Native peoples were severed from their
87 homelands in the park for two centuries due
88 to European and American colonialism,
89 irreparably rupturing their traditional
90 connections to place; this magnifies the
91 significance of indigenous archeological sites
92 as focal points of native heritage today.

93

94 Archeological sites related to indigenous
95 peoples, such as the Point Lobos
96 Archeological Sites, the Muir Beach
97 Archeological Site, and sites at or near
98 Tomales Bay, Olema Valley, Bolinas Lagoon,
99 Redwood Creek, Tennessee Valley, Rodeo
100 Lagoon, Angel Island, Fort Mason, Land's

1 End, Crissy Field, Mori Point, Montara, and
 2 Phleger Estate, constitute the most tangible
 3 connection between Coast Miwok and
 4 Ohlone peoples and park lands and provide a
 5 basis for understanding the history of their
 6 lifeways and cultures.

9 **Collaboration**

10 In the late 1990s—in equal measures due to
 11 evolving NPS policy and to the rekindling of
 12 California Indian tribal life—the National
 13 Park Service made its first efforts to reach out
 14 and work with the Coast Miwok and Ohlone
 15 communities. Since the late 1990s, the
 16 National Park Service has worked on a
 17 consistent basis with the Federated Indians of
 18 Graton Rancheria (the federally recognized
 19 tribe comprising park-associated Coast
 20 Miwoks and Southern Pomos), with the
 21 many Ohlone tribes seeking federal
 22 recognition, and with Ohlone individuals
 23 who partake in the stewardship of Ohlone
 24 heritage. Cooperative work has encompassed
 25 a broad range of park activities such as
 26 consultation on the identification, inventory,
 27 and treatment of cultural resources;
 28 collaboration on the interpretation of native
 29 history, genealogy, and culture; development
 30 of Indian-led educational programs; teacher
 31 training for American Indian curricula;
 32 permanent and temporary exhibits on native
 33 history and culture; annual commemorative
 34 festivals with native components; and the
 35 permitting of religious activities on park lands
 36 and gathering of natural materials for use in
 37 traditional crafts. Recent natural resource
 38 restoration projects involving the identifi-
 39 cation and preservation of archeological sites
 40 related to indigenous peoples (i.e., the Crissy
 41 Field tidal marsh and planned Big Lagoon
 42 restoration projects) have inspired an interest
 43 in exploring the re-creation of ethnographic
 44 landscapes as a value-added component of
 45 natural resource restoration.

48 **Alcatraz Island**

49 Although there are no identified
 50 ethnographic resources in Golden Gate
 51 National Recreation Area, Alcatraz Island has
 52 very important historical significance to
 53 American Indians. After Alcatraz became part
 54 of Golden Gate National Recreation Area,
 55 each November the International Tribal
 56 Council conducted an annual “Unthanks-
 57 giving” sunrise ceremony on the island. The
 58 island was occupied by “Indians of All
 59 Tribes” from November 1969 to June 1971 as
 60 an internationally publicized protest to focus
 61 attention on the plight of American Indians
 62 and to assert the need for Indian unity and
 63 solidarity for achieving self-determination
 64 and securing political rights. Thus, the
 65 occupation increased awareness of the
 66 American Indian’s political, economic, and
 67 social concerns and provided foundation for
 68 what would become a political movement—
 69 the American Indian Movement—to promote
 70 cultural pride and secure and protect Indian
 71 rights. The occupation resulted in the
 72 nation’s increased awareness of American
 73 Indian concerns and issues and the
 74 establishment of D-Q University at Davis,
 75 California, as well as other institutions
 76 throughout the nation. Commemorations
 77 were held on the island to remember the 20th
 78 and 30th anniversaries of the Indian
 79 occupation. Tangible evidence of the
 80 occupation on the island includes painted
 81 political slogans and symbols on the buildings
 82 and physical alterations attributed to the
 83 Indians’ activities. Since the occupation, the
 84 island has become a symbolic focal point of
 85 American Indian pride and solidarity among
 86 relocated American Indians in the San
 87 Francisco Bay area as well as the nation at
 88 large. Thus, the National Park Service
 89 recognizes the ethnographic significance of
 90 Alcatraz Island for American Indians and the
 91 island’s potential for listing in the national
 92 register as a traditional cultural property.

1 **PARK COLLECTIONS**

2 **Definition**

3 Park collections are precontact and historic
4 objects, artifacts, works of art, archival
5 documents, and natural history specimens
6 valuable for the information they provide
7 about processes, events, and interactions
8 among people and the environment.

11 **Resources**

12 U.S. Military history, from 1846 to the 1990s,
13 is one of Golden Gate National Recreation
14 Area’s major themes. Much of the park land
15 is comprised of former military fortifications
16 and installations. The park’s collections and
17 its cultural and natural resource holdings are
18 inextricably bound. The two largest
19 collection types in the park are archives and
20 archeology. The park has a park collection of
21 more than 4.2 million objects, including
22 archeological and historical objects and
23 archives, oral histories, maps, and historic
24 documents and records, which are directly
25 associated with the wealth of historic
26 properties in the park. Of particular
27 importance are the documents, maps, and
28 engineering drawings relating to the layout,
29 construction, development, and operation of
30 the park’s military sites and installations as
31 well as its fortifications.

33 The park’s collections consist of the
34 following components:

- 35
- 36 ■ Archival collections (3.8 million)
37 include subjects related to lands
38 governed by the park covering the
39 span of history from the mid-19th
40 century through the present, and
41 include all media types such as
42 architectural drawings, maps,
43 photographs, documents, books, and
44 oral history recordings. Representa-
45 tive topics include Alcatraz and penal
46 history in the Bay Area; Sutro Baths,
47 Sutro Heights and Cliff House
48 properties and history; military

49 fortifications from the early 19th
50 century forward; U.S. Army infantry,
51 cavalry, and coastal artillery on the
52 Presidio of San Francisco and at
53 multiple other sites around the mouth
54 of San Francisco Bay; Pacific Theatre
55 of military operations originating in
56 the San Francisco Bay Area; military
57 life in the 19th and 20th centuries;
58 historic structures and cultural
59 landscapes; farming and ranching in
60 the Marin Headlands; and Muir
61 Woods and the early conservation
62 movement. Archival collections
63 support ongoing park management as
64 well as diverse uses by both park staff
65 and the public.

- 66 ■ History collections (19,757) include
67 such things as original FBI evidence
68 from the 1962 Alcatraz escape;
69 original uniforms, accoutrements, and
70 everyday objects from the U.S. Army;
71 swimsuits and advertising materials
72 from Sutro Baths; architectural
73 features from historic structures;
74 NIKE Missile Site collections; and
75 California-related materials from the
76 former Presidio Army Museum.
- 77 ■ Archeological collections (378,901)
78 include formally and informally
79 recovered precontact and historic
80 artifacts derived from park lands and
81 from specific sites listed in the NPS
82 Archeological Sites Management
83 Information System. These historic
84 properties include two national
85 historic landmarks (Presidio of San
86 Francisco and Alcatraz Island), as well
87 as many sites listed in or eligible for
88 listing in the National Register of
89 Historic Places.
- 90 ■ The natural history collection (2,030)
91 includes a small herbarium, insect
92 collection, and invertebrate speci-
93 mens. The park’s active inventory and
94 monitoring program documents
95 significant and endangered or
96 threatened species collected from
97 scientific research as well as
98 paleontological specimens. While the

1 park only maintains a small collection,
2 other Golden Gate National
3 Recreation Area natural history
4 specimens are maintained in other
5 repositories in California and New
6 York State. The purpose of natural
7 history collections is to support
8 scientific research, resource
9 management, and education; provide
10 baseline data of park resources; and
11 document changes that these
12 resources are undergoing because of
13 internal park conditions and external
14 effects. These collections preserve
15 locally significant species collected in
16 response to specific research or
17 interpretation needs, and guarantee
18 the protection of important
19 specimens whose preservation cannot
20 be assured. The natural history
21 collection is divided into three
22 disciplines: biology, geology, and
23 paleontology.

24
25 Golden Gate National Recreation Area
26 houses its park collections in 15 separate
27 facilities throughout the park that function as
28 visitor centers, interpretive exhibits, or
29 dedicated storage areas. Of the four largest

30 storage repositories, two are in buildings
31 owned by the Presidio Trust with no lease
32 agreements in place. The lack of a lease places
33 park collections in a vulnerable position due
34 to potential eviction, and deteriorating
35 structural conditions. There is a historic tie
36 between the park's collection and that of San
37 Francisco Maritime National Historical Park,
38 which was part of the park until 1988. The
39 themes and resources of the two parks are
40 inextricably tied together. Under an
41 agreement between the two parks, San
42 Francisco Maritime National Historical Park
43 continues to house and provide limited
44 management of most of the non-Presidio
45 materials in Building E of Lower Fort Mason,
46 which is part of Golden Gate National
47 Recreation Area.

48
49 The current conditions for park collections
50 in the park do not meet NPS standards for
51 long-term preservation, protection, and use
52 of park collections. Staffing for the park
53 collections has never been stable, thus
54 precluding realistic access for researchers,
55 the general public, and park staff. Although
56 planning has been underway for some 15
57 years, a suitable site for the park's park
58 collections has yet to be finally determined.

CULTURAL RESOURCES: MUIR WOODS NATIONAL MONUMENT

1 INTRODUCTION

2 Muir Woods National Monument remains an
3 enduring and renowned example of natural
4 resource conservation in the United States.
5 The redwood forest, long recognized for its
6 significance as a natural resource, is also
7 historically significant—along with its overlay
8 of cultural resources—for its association with
9 the history of the American conservation
10 movement, early conservation efforts in the
11 Bay Area, and the legacy of rustic design in
12 the National Park Service.

13
14 Muir Woods National Monument is
15 nationally significant as an early and lasting
16 example of natural resource conservation by
17 the federal government. The monument was
18 designated on January 9, 1908, by President
19 Theodore Roosevelt, who acted in large part
20 on the advice and support of Gifford Pinchot,
21 chief of the U.S. Forest Service. The creation
22 of Muir Woods National Monument
23 occurred at the beginning of the federal
24 government’s proactive role in conservation
25 and preservation of natural and historic
26 resources. Muir Woods National Monument
27 was the tenth monument designated under
28 the Antiquities Act of 1906, and the first
29 designated through donation of private
30 land—a gift from William and Elizabeth
31 Thacher Kent. The proclamation of Muir
32 Woods as a national monument helped spur
33 conservation efforts elsewhere, notably
34 protection of resources not under federal
35 ownership. During the four decades
36 following its establishment, Muir Woods
37 National Monument—the first national
38 monument in proximity to a major city—
39 gained national and international renown as a
40 place that expressed the ideals of American
41 conservation. This perception culminated
42 historically in a ceremony held on May 19,
43 1945, by the United Nations Conference on
44 International Organization in memory of
45 President Franklin D. Roosevelt. During the

46 service in Cathedral Grove, speakers often
47 referred to the spiritual quality of the site,
48 thus attesting to the power of Muir Woods to
49 function as a transcendent sacred space.

50
51 Muir Woods is also significant in the area of
52 conservation for its association with early
53 conservation achievements in the San
54 Francisco Bay Area. It was the first public
55 park established in an extensive conservation
56 district that today extends along much of the
57 western Marin Peninsula, directly across the
58 Golden Gate from the City of San Francisco.
59 This area is administered at the federal, state,
60 and local levels by Golden Gate National
61 Recreation Area, Mount Tamalpais State
62 Park, Marin Municipal Water District, and
63 Marin County Open Space District, an
64 administrative structure that traces its origins
65 back to the management structure William
66 Kent established for Muir Woods and the
67 adjoining lands under his ownership.

70 NATIONAL REGISTER OF 71 HISTORIC PLACES

72 In 2008, a 425-acre Muir Woods National
73 Monument Historic District was listed in the
74 National Register of Historic Places. The
75 historic district includes the 295 acres within
76 the original national monument boundaries
77 and additions of some 130 acres before 1940.

78
79 The district’s historic buildings and
80 structures were built during the first 32 years
81 of Muir Woods National Monument’s
82 existence. In addition to the national
83 monument’s primary significance in the area
84 of conservation, its buildings and major
85 structures are also significant in the area of
86 architecture. Dating from 1922 to 1940, the
87 structures are representative examples of
88 pre-World War II vernacular rustic
89 architectural and engineering design in the
90 National Park Service. The buildings were

1 designed by well-known NPS architects and
 2 landscape architects and built in part through
 3 New Deal-era federal work-relief programs
 4 including the Civilian Conservation Corps.
 5 They reflect the systemwide effort that
 6 advocated a high degree of craftsmanship and
 7 the use of native materials to help harmonize
 8 built features with the national monument's
 9 forested natural landscape.

10
 11 The most visible building, the Administra-
 12 tion-Concession Building (1940) constructed
 13 through federal work relief programs,
 14 remains the focal point of the entry area and
 15 retains overall massing and details that reflect
 16 the early development of the NPS modern
 17 style that became popular in the national park
 18 system after World War II. To the rear of the
 19 administration-concession building is the
 20 utility area, which retains an intact collection
 21 of historic buildings, including the
 22 superintendent's residence (1922 with 1930s
 23 additions), garage (1931), and equipment
 24 shed (1934) that reflects the NPS rustic style
 25 with exposed timber framing details that
 26 were consistently employed on all monument
 27 buildings up until the late 1930s.

28
 29 Historic structures, which comprise the
 30 principal elements of the cultural landscape
 31 in the historic district, include trails, bridges,
 32 roads, erosion-control structures, walls and
 33 stairs, and monuments. The cultural
 34 landscape of Muir Woods National
 35 Monument historically illustrated
 36 characteristics of the NPS rustic style through
 37 design of buildings, naturalistic design of
 38 trails and roads, use of natural stone for
 39 Redwood Creek revetments, and a pervasive
 40 log motif applied to footbridges, signs, gates,
 41 benches, and drinking fountains. Within the
 42 boundaries of Muir Woods National
 43 Monument Historic District is the heart of
 44 the old-growth redwood forest. This area
 45 includes the Cathedral Grove and Bohemian
 46 Grove; main buildings and structures in the
 47 administrative and utility area that remain
 48 from the historic period; main trails and
 49 roads and their associated landscape
 50 structures that fan out from this headquarters
 51 to the northwest and south; and four

52 monuments, one each to Ralph Waldo
 53 Emerson, Gifford Pinchot, Franklin D.
 54 Roosevelt, and William Kent.

55
 56 The heart of the redwood forest on the
 57 canyon floor along the main trail retains
 58 much of the character it had during the latter
 59 part of the historic period. The forest retains
 60 its overall spatial organization formed by a
 61 corridor along Redwood Creek and the main
 62 trail, with secondary corridors along the side
 63 trails. Central focal points and nodal spaces
 64 within the forest remain Cathedral Grove and
 65 Bohemian Grove, with secondary nodal
 66 spaces at the entrance area / administration-
 67 concession building and the utility area, all
 68 retaining much of their historic character.

69
 70 The trail system is composed of the main trail
 71 (pre-1883) and its extension, Camp Alice
 72 Eastwood Trail (circa 1906); Ben Johnson
 73 Trail (circa 1904); Bohemian Grove Trail
 74 (circa 1905-07); Dipsea Trail (pre-1883); Fern
 75 Creek Trail (pre-1883); Hillside Trail (1908);
 76 and Ocean View Trail (1908). The Dipsea
 77 Trail, which extends from Mill Valley to
 78 Stinson Beach and runs through parts of
 79 Muir Woods, is the site of one of the oldest
 80 foot races in the nation. It was listed in the
 81 national register in 2010.

82
 83 The main trail retains three bridges dating
 84 from the trails improvement by the Civilian
 85 Conservation Corps in 1934: most notably
 86 the Fern Creek Bridge, a stone-faced
 87 concrete-arch vehicular bridge, and two
 88 small wood stringer bridges over minor
 89 tributaries. There are also two log bridges
 90 remaining on the Ben Johnson Trail,
 91 probably built by the Civilian Conservation
 92 Corps between 1933 and 1937. With the
 93 exception of the three previously noted, most
 94 of the bridges on the canyon floor spanning
 95 Redwood Creek have been removed or
 96 replaced since 1947.

97
 98 Roads in the historic district include a
 99 portion of the Dipsea Fire Road (possibly
 100 built by the Civilian Conservation Corps
 101 between 1934 and 1935) and the service
 102 drive, originally built in 1892 by the

1 Bohemian Club as Sequoia Valley Road and
2 realigned in circa 1906. Between 1934 and
3 1938, the Civilian Conservation Corps
4 constructed an extensive system of stone
5 revetments along Redwood Creek, portions
6 of which have collapsed or been removed.
7 Additionally, a log dam (1932) was
8 constructed near the Emerson monument.
9 Historically significant monuments to Ralph
10 Waldo Emerson (1903), Gifford Pinchot
11 (1910), William Kent (1929), and Franklin D.
12 Roosevelt (1947) retain their integrity.
13
14 Legislation to acquire the Camp Monte Vista
15 Tract south of the monument's main
16 entrance was approved in 1972. Intended to
17 support park operations relocated from
18 within the redwood forest, it contains
19 Hillwood Camp and Druid Heights.
20 Hillwood is the earliest surviving example in
21 Marin County of a rural camp reflective of an
22 effort to immerse urban-dwelling youth in a
23 natural environment. The property includes
24 the main lodge and associated features and is
25 eligible for listing in the national register.
26 Druid Heights is potentially eligible for listing
27 in the national register as the site of a colony
28 of artists, writers, and Zen philosophers (Alan
29 Watts) influential in the development of the
30 counter-culture of the 1960s.

31
32

33 **ARCHEOLOGICAL RESOURCES**

34 Although archeological sites were not
35 comprehensively inventoried or evaluated as
36 part of the study to nominate Muir Woods
37 National Monument Historic District to the
38 National Register of Historic Places, eight

39 historic archeological sites have been
40 identified in the historic district; all are
41 associated with vestiges of early uses of the
42 monument. Additionally, numerous
43 precontact artifacts have been identified in
44 the national monument suggesting pre-
45 monument native occupation. A compre-
46 hensive archeological survey of the national
47 monument and adjoining related lands is
48 warranted to determine if there are resources
49 of both precontact and historic significance.
50 An archeological survey could provide
51 information on issues not presently well
52 documented, such as the area's use by
53 American Indians; the exact sites of early
54 buildings, structures, and landscape features
55 that have been removed; the limits and use of
56 the picnic areas; and construction and
57 alignment of roads and trails.

58
59

60 **ETHNOGRAPHIC RESOURCES**

61 The National Park Service has not identified
62 any ethnographic resources or traditional
63 cultural properties within the national
64 monument. However, an ethnographic
65 survey and assessment needs to be
66 conducted.

67
68

69 **PARK COLLECTIONS**

70 The park collections of Muir Woods
71 National Monument are incorporated into
72 the collections of Golden Gate National
73 Recreation Area, and are discussed in that
74 section of this document.

VISITOR USE AND EXPERIENCE: GOLDEN GATE NATIONAL RECREATION AREA

1
2 *These are the places I go*
3 *when...urban life becomes too*
4 *stressful. To be able to walk in these*
5 *beautiful places; to watch the birds,*
6 *hang gliders, surfers, children at play,*
7 *and fishermen is a balm to the soul.*

8 —Golden Gate National Recreation
9 Area visitor during public scoping

10
11 Golden Gate National Recreation Area lands,
12 which stand in sharp contrast to the nearby
13 metropolitan areas, span three Bay Area
14 counties and afford visitors outstanding
15 recreational opportunities. Residents and
16 visitors alike value the “wilderness next
17 door,” an appropriate description for the
18 park lands and waters that abut the highly
19 developed areas of Marin, San Francisco, and
20 San Mateo counties. Astounding scenic
21 views, diverse recreational opportunities, and
22 educational experiences coexist within
23 Golden Gate National Recreation Area,
24 making it a place for all ages.

25 26 27 **DIVERSITY OF RECREATIONAL** 28 **OPPORTUNITIES AND NATIONAL** 29 **PARK EXPERIENCES**

30 The wide-open spaces preserved here are a
31 dramatic contrast to the surrounding city
32 environment. Visitors to the park have
33 expressed enjoyment in the open space and
34 clean air; quiet and solitude; and the ability to
35 commune with nature, slow down, and relax.
36 Activities such as walking along a quiet beach,
37 discovering a deserted coastal fortification,
38 and watching a hawk soar high overhead
39 become spiritual experiences for many.
40 These places, where city, nature, and history
41 combine in breathtaking beauty, call deeply
42 to the psyche of urban dwellers.

44 The spectacular setting of ocean, windswept
45 coastal headlands, the bay, islands, and the
46 iconic Golden Gate Bridge has afforded San
47 Francisco international recognition as one of
48 the world’s most beautiful cities. The Golden
49 Gate National Recreation Area serves as the
50 panoramic backdrop to the Bay Area. Some
51 of the most scenic views in the region are of
52 the ocean and bay from lands within the park.
53 Views of the Golden Gate Bridge, Alcatraz
54 Island, and the Marin Headlands from sites in
55 San Francisco have been captured in
56 countless photographs. The Marin
57 Headlands offer dramatic views of San
58 Francisco Bay and the City of San Francisco.
59 Another important viewshed in the park is
60 Marin County park lands in the darkness.
61 These lands are undeveloped; from San
62 Francisco, they appear truly dark and wild,
63 especially in comparison to the city lights on
64 the peninsula. During scoping for this plan,
65 the public expressed significant appreciation
66 for the scenic qualities of the park and
67 concern about long-term protection of the
68 park’s scenic integrity.

69
70 Viewing nature is another popular activity for
71 visitors. Raptors can be spotted from the
72 Marin Headlands and shorebirds can be
73 viewed along beaches. The park has an
74 abundance of protected land populated with
75 1,200 plant and animal species. The area has
76 been designated as the Golden Gate
77 Biosphere Reserve due to the diversity of its
78 natural habitat. Visitors have strongly
79 expressed a belief that the unique fauna and
80 flora should be protected.

81
82 Learning about the area’s history is also an
83 important part of the visitor experience at the
84 park. Military coastal defense sites are a
85 major reason the park is preserved today.
86 Signs of U.S. military history are scattered
87 throughout the park lands. Forts Baker,
88 Barry, and Cronkhite, and the fortifications
89 along Presidio Bluffs offer interpretation of

1 the structures and strategies used to defend
2 the Bay Area. Other interpretive exhibits and
3 programs offered by both park staff and park
4 partners give visitors an opportunity to learn
5 about the diverse and extensive history of the
6 area.

7
8 Beaches play an important role in
9 recreational activities available to visitors in
10 the park. Over 25% of surveyed visitors to the
11 park lands in southern Marin County went to
12 the beach (Godbe Research and Analysis
13 2002). Stinson, Rodeo, Tennessee Valley, and
14 Muir beaches in Marin County and Ocean
15 Beach, Fort Funston, and China Beach in the
16 City of San Francisco provide places for
17 visitors to walk, jog, sunbathe, swim, surf,
18 fish, play volleyball, and picnic. Visitation to
19 these areas is highly weather dependent;
20 heaviest use occurs during the summer
21 months (Godbe Research and Analysis 2002).

22
23 Trails are a significant part of the park. Trails
24 provide access so people can connect to the
25 area's natural and historic treasures. With 196
26 miles of trails that range from paved surfaces
27 to single-track paths, much of Golden Gate
28 National Recreation Area is a paradise for
29 walkers and hikers. Multiuse trails also serve
30 mountain bikers and equestrians. Scenic
31 touring on both roads and trails, including
32 viewing scenery from overlooks reached by
33 foot or vehicle, is a related and important
34 visitor opportunity.

35
36 The public has expressed strong support for
37 the diversity of trail opportunities provided
38 in the park. They also noted how much they
39 enjoy the diversity of natural landscapes,
40 historic sites, wildlife, and native plants that
41 are visible along the trails. Some visitors,
42 however, are concerned about conflicts
43 between some trail uses, particularly safety
44 concerns between bicyclists and equestrians.
45 In addition, some of the public is concerned
46 that certain trail activities, such as dog
47 walking, horseback riding, and mountain
48 biking, might be more restricted in the future.
49 A desire to increase the number of trails that
50 meet the Americans with Disabilities Act of

51 1990 (ADA) requirements was also
52 mentioned during scoping for this plan.

53
54 Overnight lodging facilities exist within the
55 park provided by both the National Park
56 Service and partners, including hostels at
57 Fort Mason, Montara Lighthouse, and the
58 Marin Headlands, and camping areas in
59 Marin County. Overnight accommodations
60 allow visitors to explore a trail or area more
61 extensively than would be possible in a day
62 trip. Overnight areas can also serve as hubs
63 for activities, such as at Fort Mason, where
64 visitors can explore the park and its setting
65 from a convenient location. Camping
66 overnight is an important experience in itself.
67 It is an experience most often associated with
68 more distant national parks, but made
69 available to local populations. It also provides
70 appreciation of the night sky and natural
71 sounds that cannot be appreciated during
72 other times.

73
74 The park and partner programs offer many
75 opportunities to get involved in stewardship
76 of the park. In 2008, the National Park
77 Service, Presidio Trust, and Golden Gate
78 National Parks Conservancy team brought
79 thousands of volunteers to the park for
80 activities such as trail building, habitat
81 restoration and conservation, and organized
82 youth programs. In 2008, community
83 volunteerism yielded over 300,000 hours of
84 service to the park. Stewardship activities
85 bring in thousands of school-aged children to
86 the park, allowing all who participate to forge
87 a deeper connection with park lands and the
88 resources within those lands. Environmental
89 education programs exist through partners at
90 several sites, including Slide Ranch and Fort
91 Cronkite. These mutually beneficial
92 relationships between the park, its partners,
93 and park visitors, allow park lands to thrive at
94 a level much higher than could be
95 accomplished through federal funding alone.

96
97

1 VISITOR OPPORTUNITIES 2 AT ALCATRAZ ISLAND

3 Alcatraz Island sits in a highly visible location
4 in San Francisco Bay and is a major visitor
5 attraction within Golden Gate National
6 Recreation Area, with a significant demand
7 for visitation. Although it has been used for a
8 variety of purposes over the years, it is best
9 known for its service as a federal prison from
10 1934 to 1963. The island was opened to the
11 public in 1973 and has become a popular
12 tourist destination. The National Park
13 Service and its partners offer visitors
14 extensive interpretation of the federal
15 penitentiary period of the island, as well as
16 the military prison and American Indian self-
17 determination movement. In addition, the
18 ferry trip to the island and many locations on
19 the island itself offer great scenic viewing of
20 the Golden Gate Bridge, the Pacific Ocean,
21 San Francisco Bay, the City of San Francisco,
22 and the Marin Headlands. Further, learning
23 about the island's role in the ecological
24 system of the bay, including its contribution
25 as important bird habitat, is another highlight
26 of a visit to the island. Alcatraz Island also
27 offers overnight experiences a few times a
28 year through special organized events that
29 typically involve the use of volunteers.

30

31

32 VISITOR USE AND CHARACTERISTICS

33 Golden Gate National Recreation Area lands
34 and waters serve many millions of visitors a
35 year, making Golden Gate National
36 Recreation Area one of the largest urban
37 parks in the world. Extending 80 miles from
38 north to south, the various sites of Golden
39 Gate National Recreation Area form an
40 expansive public green space for both the
41 local urban population and tourists to enjoy.

42

43 In 1972, the first year that Golden Gate
44 National Recreation Area was established,
45 the park had over 42,000 visitors. There have
46 been substantial increases and a few
47 intermittent decreases since then, but annual

48 visitation has remained around 14 million
49 visitors over the last 10 years (see figure 4)
50 (NPS 2009d).

51

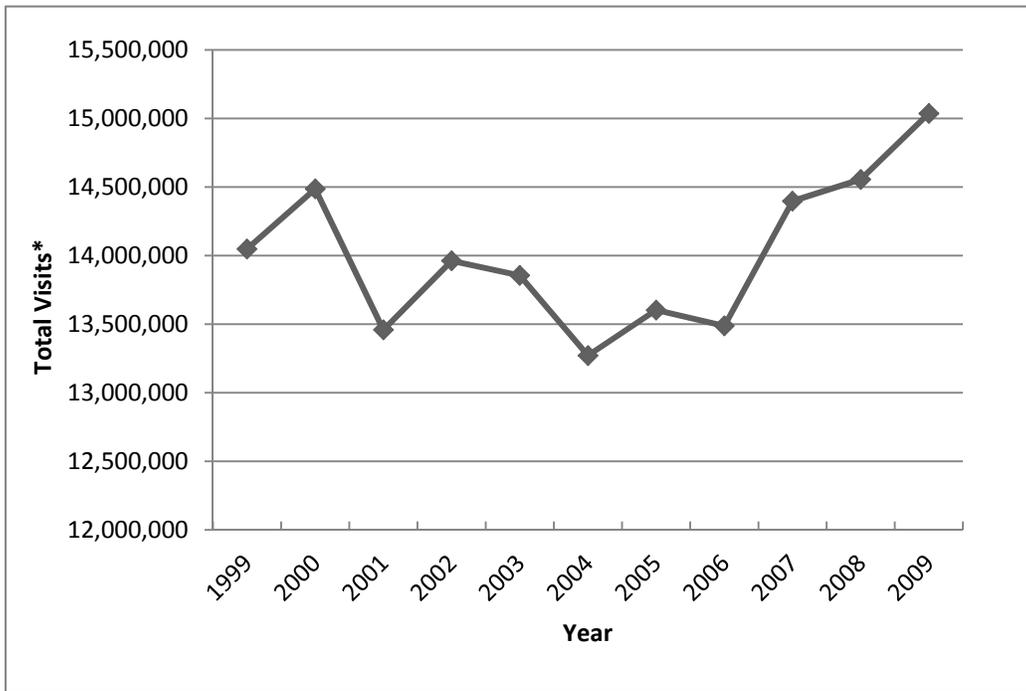
52 Golden Gate National Recreation Area
53 receives about 5% of the total visitation to
54 national parks across the nation, ranking it as
55 the second-most visited park in the national
56 park system (NPS 2009d). Many of the sites
57 within Golden Gate National Recreation
58 Area are in the “backyard” of Bay Area
59 residents who use park lands for recreation
60 and exercise. At many of the park sites,
61 visitors from the local area account for the
62 majority of visitors. Other sites, such as
63 Alcatraz Island and the park lands of the
64 Marin Headlands, are major tourist
65 destinations, receiving visitors from across
66 the nation and around the world. Visitor use
67 levels remain relatively stable to Golden Gate
68 National Recreation Area throughout the
69 year, given the area's temperate climate and
70 year-round attractions and support services.
71 However, the park does experience higher
72 visitation in the spring and summer and on
73 holidays (NPS 2009d). See figure 5.

74

75 The National Park Service and others have
76 conducted numerous visitor studies in
77 Golden Gate National Recreation Area in
78 order to provide greater insight into the
79 current visitor profile in terms of
80 demographics, trip characteristics, and
81 preferences. Although visitor populations to
82 the various sites within the park often vary
83 substantially—there are several specific
84 characteristics that the majority of park
85 visitors share.

86

87 The collection of surveys and studies of park
88 visitors reveal that most arrive in personal
89 vehicles (Sheffield 2008). Visitors most often
90 come alone or in small groups of up to four
91 people. Day users are coming to the park to
92 sightsee, hike, walk, spend time with friends
93 and family, escape, find respite, enjoy nature,
94 and participate in events. A large majority of
95 visitors come from the local area and enjoy
96 the undeveloped open space that is nearby



*Visitation counts are estimates that include some areas outside them planning area, but within the park boundary, i.e., Crissy Field

FIGURE 4. GOLDEN GATE NATIONAL RECREATION AREA RECREATIONAL VISITORS BY YEAR 1999–2009

1 and easily accessible. For instance, it was
2 found in a recent study of visitors to park
3 lands in San Mateo County that a majority of
4 visitors live close to the park—some within 2
5 miles—and use the park on a regular basis
6 (Manning 2007). However, at some specific
7 sites, such as Alcatraz Island, studies indicate
8 a much greater mix of local and out-of-town
9 visitors (Sheffield 2008).

10
11 Several visitor surveys of trail users have been
12 completed at Golden Gate National
13 Recreation Area. The surveys found that trail
14 users come primarily for exercise, rest, and

15 relaxation, as well as to spend time with
16 friends and family (Sheffield 2008). Some of
17 the areas surveyed include Point Bonita and
18 the Marin Headlands (2006), Land’s End
19 (2005 and 2007), and Mori Point and
20 Sweeney Ridge (2004). Trails are used by
21 both local and out-of-town visitors, although
22 many users are frequent visitors; up to 75% to
23 85% are return visitors. Trail users are
24 generally split evenly between men and
25 women and are generally between the ages of
26 20 and 55, well educated, and coming to trails
27 alone or in pairs (Sheffield 2008).

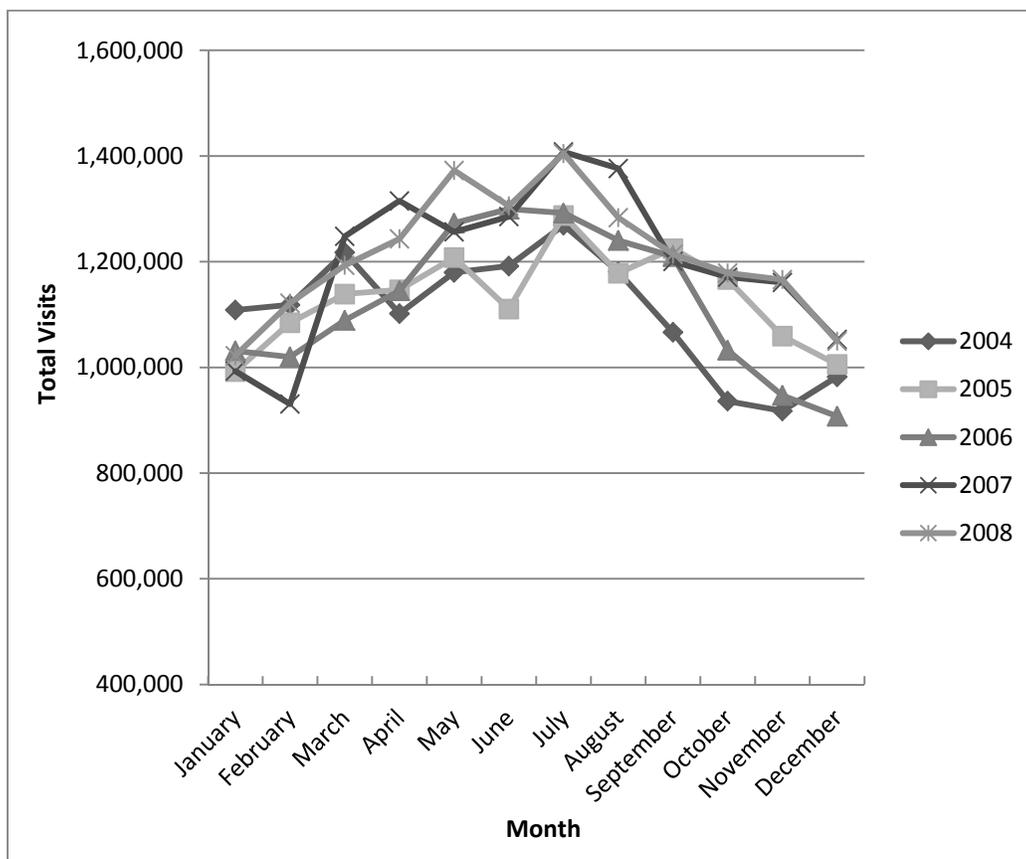


FIGURE 5. GOLDEN GATE NATIONAL RECREATION AREA VISITOR USE BY MONTH 2004–2008

1 Visitors to Alcatraz Island

2 Over 1.4 million visitors tour Alcatraz Island
 3 each year; this number has been holding
 4 fairly steady over the recent past (NPS
 5 2009d). On peak use days, up to 4,400 visitors
 6 travel to the island and up to 5,000 visitors
 7 travel there on days when evening programs
 8 are offered.

9
 10 Several visitor studies, conducted since 1988,
 11 reveal that Alcatraz Island has a distinct
 12 visitor profile compared to the rest of Golden
 13 Gate National Recreation Area. The island
 14 gets far more first time visitors than does the
 15 rest of the park. It also gets a larger
 16 percentage of nonlocal and international
 17 visitors. Over 70% of visitors surveyed stayed
 18 between two and three hours on the island
 19 (Manning et al. 2007).

20 Characteristics of Infrequent 21 and Nonusers

22 Many of the diverse groups living in the San
 23 Francisco Bay Area have not traditionally
 24 been park visitors. However, some of the
 25 factors that have served to keep them from
 26 the park have recently been studied. Some of
 27 these barriers include lack of public
 28 transportation, language differences, lack of
 29 access to information, equipment costs, and
 30 lack of time. Other barriers include a minimal
 31 representation of ethnicity and race in the
 32 park staff and perceived intolerance. Lack of
 33 knowledge, experience, and awareness of
 34 where to go, what to do, and the skills needed
 35 to partake in activities were additional factors
 36 in not visiting (Roberts 2007; Winter, Jeong,
 37 and Godbey 2004).

38

1 Although some of these groups visit the park
2 infrequently, their interests for park visits are
3 much the same as those of more frequent
4 visitors. In Roberts’s study (2007) of ethnic
5 minorities and visitation constraints,
6 participants expressed a range of preferences
7 for recreational activities (indoor and
8 outdoor). All groups in the study expressed a
9 clear desire to enjoy the numerous benefits
10 associated with outdoor recreation, along
11 with an interest in education about national
12 parks. Cultural connections to nature and the
13 natural environment ranged from mental and
14 physical benefits to spiritual and religious
15 gains in personal life. Participants identified
16 the benefits of parks in relation to nature
17 being healthy, with a typical emphasis on
18 mental health (parks as reducing stress or
19 strains of everyday life) and in reference to
20 increasing their connection to “God or
21 spirituality” (Roberts 2007).

22
23

24 **VISITOR UNDERSTANDING, 25 **EDUCATION, AND INTERPRETATION****

26 Golden Gate National Recreation Area offers
27 unique and varied experiences to visitors
28 through the interpretation, education, and
29 stewardship programs offered by the park
30 and park partners. Interpretation is delivered
31 through a variety of media and at a variety of
32 locations. Opportunities to learn range from
33 self-guided to formal educational programs,
34 and these opportunities appeal to a variety of
35 people and learning styles.

36

37 Participation in interpretation programs
38 helps visitors to form their own intellectual
39 and emotional connections with the
40 meanings and significance of park resources.
41 The park interprets its resources by several
42 methods, including visitor center exhibits,
43 audio tours at Alcatraz Island, ranger talks,
44 educational brochures, and interpretive signs.
45 Visitor and park information centers are in
46 Fort Mason, Marin Headlands, Pacifica, and
47 Crissy Field. According to the 2008 *Golden
48 Gate National Recreation Area Visitor Survey
49 Card Data Report*, the park is meeting visitor
50 needs, and excelling in categories such as

51 visitor centers and sightseeing facilities (NPS
52 2008a). It was frequently noted during this
53 planning process that the public places a high
54 value on the educational and stewardship
55 programs offered at the park and would like
56 to see those opportunities maintained and
57 even expanded. The public expressed specific
58 interest in having more signs, maps, and
59 interpretive programs available. Another
60 request was for more opportunities to learn
61 about American Indian history related to the
62 park.

63

64 Partners of Golden Gate National Recreation
65 Area are vital to the success of park efforts at
66 promoting visitor understanding, education,
67 and interpretation. A wide range of
68 enthusiastic and committed partners operate
69 within the park lands, offering visitor
70 opportunities such as environmental
71 education, art appreciation, children’s
72 programs, equestrian programs, marine
73 mammal conservation, agricultural
74 education, and conservation of the parks.
75 Partners operate park bookstores, hostels,
76 and other facilities that offer visitor-related
77 services on park lands, thus enhancing and
78 deepening visitor experiences and creating a
79 community of park stewards. Partners also
80 fund interpretation and volunteer efforts, as
81 well as capital construction projects such as
82 rehabilitation of historic structures for visitor
83 programs. Their advocacy is integral to
84 engaging people in the parks and facilitating
85 visitor understanding of park history and
86 resources.

87

88

89 **SAFE AND ENJOYABLE ACCESS 90 **AND CIRCULATION TO AND 91 **WITHIN THE PARK (SEE ALSO 92 **TRANSPORTATION SECTION)********

93 Safe and enjoyable transportation to and
94 within park lands is important to the visitor
95 experience at Golden Gate National
96 Recreation Area. The many roads, trails, and
97 overlooks throughout the park provide
98 scenic viewing opportunities for visitors.
99 There are also many transportation options

1 for connecting visitors to park sites, including
2 auto, bicycle, and public transit.

3
4 Further, within Golden Gate National
5 Recreation Area are miles of trails, making it
6 possible for hikers, bikers, and equestrians to
7 travel great distances through park lands. The
8 Trails Forever Program was launched in 2003
9 to build a world-class system of trails, which
10 has been vital to the improvement of trails
11 within Golden Gate National Recreation
12 Area. Public scoping comments sometimes
13 focused on the need for trail design
14 improvements to make the trails safer, and
15 the need for loop trails. Trails in all areas of
16 the park lands could be improved to connect
17 to neighborhoods, nearby public lands, and
18 the regional trail network.

19
20 Currently, the majority of visitors, especially
21 those from outside San Francisco, arrive by
22 personal vehicle. This sometimes causes
23 congestion problems along roadways, in
24 parking areas, and in nearby neighborhoods.
25 Public transportation connections to the park
26 are limited outside of San Francisco, so the
27 large population of regional residents without
28 personal vehicles cannot easily travel to the
29 park. Although there is an extensive public
30 transportation system that serves the City of
31 San Francisco, some connections stop short
32 of the park, or serve the park only on
33 weekends and holidays. Further, there are
34 some portions of park roads that have limited
35 options for bicycle access. The limitations
36 with the public transit system and bicycle
37 access are being addressed as part of a
38 systemwide strategic planning effort.

39
40 The ferry pier to Alcatraz Island is accessible
41 by public transportation. However, once on
42 the island, visitors must walk up steep roads
43 to get to the cell house and other attractions.
44 There is a tram available for visitors who
45 need assistance, but the road is narrow and
46 steep, with few turn around points or pull-off
47 areas. Although very few incidents have
48 occurred, conflicts between visitors and
49 vehicles are a concern to park staff.

50

51 The “Transportation” section of this
52 document goes into more detail about the
53 intricacies of the transportation environment
54 to and within Golden Gate National
55 Recreation Area.

56

57

58 VISITOR SAFETY

59 Golden Gate National Recreation Area
60 experiences safety issues similar to those
61 found in any national park and also faces
62 additional visitor safety challenges due to its
63 urban location. The park staff make
64 considerable effort to provide safety
65 information in easily accessible places and
66 formats. However, there are many points of
67 entry to the park, and visitors are sometimes
68 unaware and unprepared for dangers.

69

70 Urban challenges include criminal activity,
71 crowding, and congestion that affect the
72 ability of law enforcement to respond in a
73 timely manner. Additionally, as visitors to the
74 park are moving from urban areas to
75 undeveloped open space, they may fail to
76 bring adequate food and water, become lost
77 in unknown areas, or get into a situation too
78 difficult for their skill or experience level.
79 The Point Bonita and Marin Headlands
80 visitor survey identified a lack of trail signs
81 that makes it difficult to stay on the correct
82 trail (Tierney 2007). At Mori Point and
83 Sweeney Ridge, visitors identified the lack of
84 good information about the area as a concern
85 (Tierney 2004).

86

87 The physical features of the land and the
88 natural habitat can also pose safety risks. The
89 park encompasses ocean and bay waters,
90 which have associated dangers. At ocean
91 beaches, rip tides are common and can be
92 dangerous for swimmers. Visitor risks are
93 associated with steep and crumbling cliffs.

94

95 Conflicts between users can also pose safety
96 problems, such as those between vehicles and
97 pedestrians, or between equestrians and
98 bicyclists. During public scoping, people
99 expressed concern that some trails were not

1 designed appropriately or managed to help
2 users avoid conflicts.
3
4 Road safety is also a component of visitor
5 safety. Access to and from State Route 1
6 poses a problem at several points in Golden
7 Gate National Recreation Area such as at

8 Montara Lighthouse and Sheldance Nursery
9 in San Mateo County. In some areas, closed
10 or unmaintained facilities may pose risks to
11 visitors who explore them and require area
12 closures. In particular, Alcatraz Island has a
13 number of buildings in very poor condition
14 that can pose safety hazards to visitors.

VISITOR USE AND EXPERIENCE: MUIR WOODS NATIONAL MONUMENT

1
2 *Time stands still in Muir Woods.*

3 —Visitor to Muir Woods

4
5 Surrounded by the tallest living tree species
6 in the world, visitors to Muir Woods
7 experience a majestic and awe-inspiring
8 setting. These majestic giants, in combination
9 with Redwood Creek, cannot help but awe
10 visitors and take them to a more serene place
11 and time. The monument offers a quiet
12 sanctuary in a growing urban setting.
13 Conservationist John Muir summed it up best
14 when he said “this is the best tree-lovers
15 monument that could possibly be found in all
16 the forests of the world.”

17 18 19 **DIVERSITY OF RECREATIONAL** 20 **OPPORTUNITIES AND NATIONAL** 21 **PARK EXPERIENCES**

22 Muir Woods National Monument offers
23 outstanding opportunities to walk and hike
24 among the giant redwoods. There are 6 miles
25 of trails within the monument, including
26 three loop trails. One and a half miles of trail
27 are paved surface or boardwalk, thus
28 providing greater access to the forest for
29 disabled visitors. Other more challenging
30 trails extend out of the monument and
31 connect to nearby public lands such as
32 Mount Tamalpais State Park and Muir Beach.
33 Opportunities for visitors include self-guided
34 walking tours, ranger-led talks and tours,
35 volunteer activities, and educational and
36 restoration programs.

37
38 In visitor surveys at the monument, people
39 identified the trees, beauty, peacefulness,
40 trails, and other aspects of the natural
41 surrounding as the features they most
42 enjoyed. One visitor commented on the
43 special ability to commune with nature while
44 at the monument. Some visitors expressed

45 their dislike for the crowds, noise from
46 groups, lack of parking, and closed trails.
47 Crowding issues primarily occur at peak
48 times in the monument, especially on
49 weekends and holidays in the summer. While
50 most visitors had no suggestions for
51 improvement, some visitors mentioned that
52 more information and interpretation, more
53 trails, and more parking would be
54 appreciated (Manning et al. n.d.).

55
56 The natural soundscape at Muir Woods
57 National Monument is a highly valued part of
58 visitor experience. Some members of the
59 public complained about the noise from
60 other visitors, particularly noise from large
61 groups. The monument has recently
62 implemented “quiet days” and “quiet zones”
63 to encourage visitors to voluntarily modify
64 their behavior to enhance the contemplative
65 feeling of the monument’s natural setting.

66 67 68 **VISITOR USE AND CHARACTERISTICS**

69 While annual visitation to Muir Woods
70 National Monument peaked in the late 1990s,
71 it has since stabilized over the last 10 years at
72 around 750,000 (figure 6). Monthly visitation
73 varies significantly, with the summer months
74 attracting the highest number of visitors. This
75 is likely due to the greater numbers of out-of-
76 town visitors who often travel during the
77 summer (figure 7) (NPS 2009d). Local
78 residents may also visit Muir Woods more
79 often in the summer when children are out of
80 school.

81
82 Muir Woods National Monument, like
83 Alcatraz Island, has been the focus of many
84 visitor surveys. Studies conducted between
85 2003 and 2005 provide good demographic
86 information on visitors (Manning et al. n.d.).
87 For example, 72% of visiting groups are
88 families with the majority of groups
89 consisting of 2 to 4 people. Over half of the

1 survey respondents were first-time visitors,
2 suggesting that Muir Woods is an important
3 urban gateway to the national park
4 experience. Ninety-two percent of visitors
5 were from the United States, with almost
6 40% of domestic visitors residing in
7 California. The educational attainment of
8 visitors was very high; about 80% of all
9 visitors had a post-secondary degree. Most
10 visitors were there for less than four hours
11 (Manning et al. n.d.).
12
13

14 **VISITOR UNDERSTANDING,**
15 **EDUCATION, AND INTERPRETATION**

16 The stories of Muir Woods are many: the
17 ecology of the watershed, the natural history

18 of the redwood forest, the history of the
19 conservation movement, and the
20 establishment of the biosphere reserve. There
21 are various ways in which visitors can
22 experience this information: (1) at the visitor
23 center with exhibits and books and
24 brochures; (2) on a self-guiding walk; (3) by
25 attending ranger talks, tours, or evening
26 programs; and (4) by attending a junior
27 ranger program. In addition, monument staff
28 collaborate with many local organizations
29 that offer learning and educational programs,
30 thus expanding the interpretive and
31 educational offerings available to visitors.
32
33
34

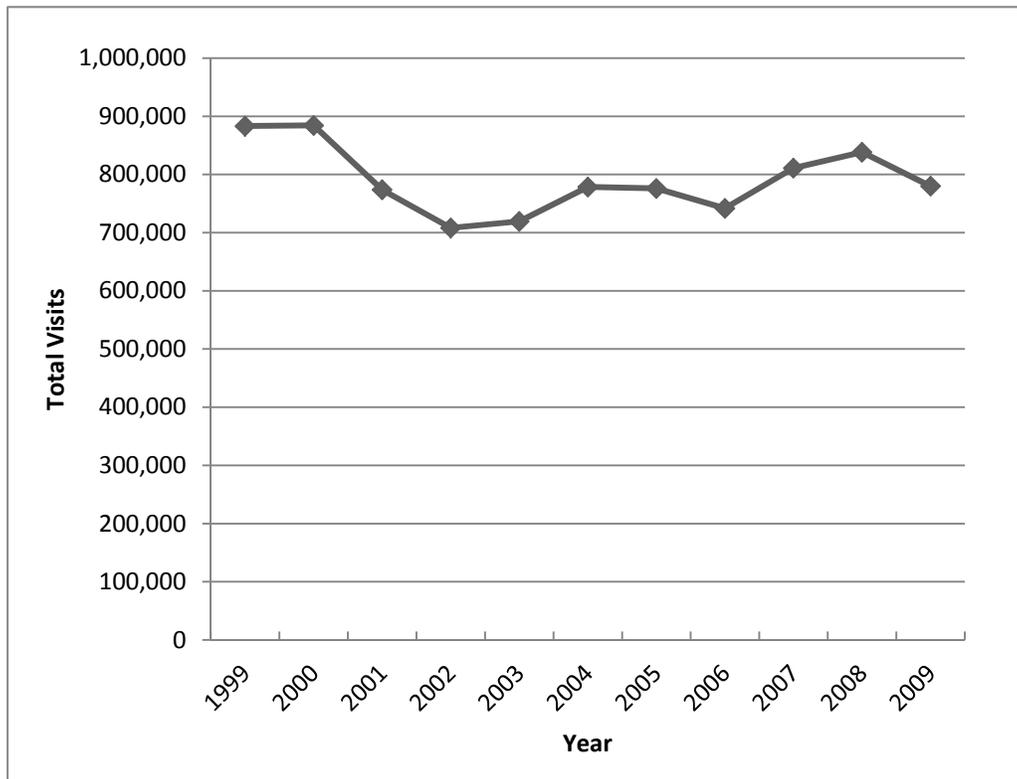


FIGURE 6. MUIR WOODS NATIONAL MONUMENT RECREATION VISITORS BY YEAR, 1999–2009

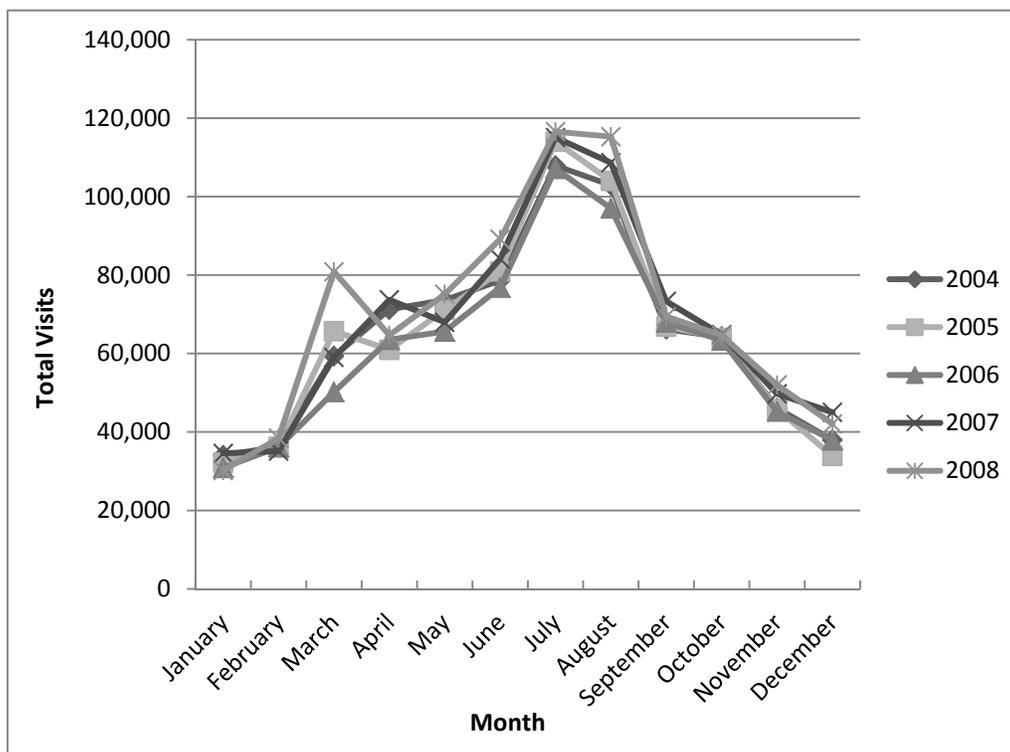


FIGURE 7. MUIR WOODS NATIONAL MONUMENT VISITOR USE BY MONTH, 2004–2008

1 In public scoping for this plan, some people
 2 commented that they particularly appreciate
 3 the messages associated with the preservation
 4 values of the monument and its connection to
 5 conservation history. A few others noted that
 6 additional information and signage at Muir
 7 Woods National Monument would be
 8 desirable to enhance knowledge about the
 9 ecosystem processes.

10
 11

12 **SAFE AND ENJOYABLE ACCESS**
 13 **AND CIRCULATION TO AND**
 14 **WITHIN THE PARK (SEE ALSO**
 15 **TRANSPORTATION SECTION)**

16 For many visitors, traveling to Muir Woods
 17 National Monument at peak times can be a
 18 frustrating experience. The parking lot fills
 19 up quickly and often people resort to parking
 20 along the road. For example, during the 2003
 21 visitor study, researchers found that 92% of

22 visitors arrived by car, and of those, 76%
 23 were able to park in parking lots, with the
 24 remainder having to park along the road
 25 (Manning et al. n.d.).

26

27 It is likely that some visitors who drove to the
 28 monument may have left when faced with no
 29 easily accessible parking options. Public
 30 transportation via shuttle is now available on
 31 weekends and holidays in the summer, but at
 32 other times there is no public transportation
 33 service to the monument. The shuttle system,
 34 implemented in 2004 to help ease the parking
 35 limitations at the monument, has improved
 36 access for visitors. Once within the
 37 monument, visitor access is by walking and
 38 hiking on trails. The monument has three
 39 loop trails, and 1.5 miles of accessible paved
 40 or boardwalk trail. There is also trail access
 41 from nearby public lands, including Mount
 42 Tamalpais State Park.

43
 44

1 VISITOR SAFETY

2 A safety concern mentioned by members of
3 the public relates to access to the monument.
4 The road to Muir Woods National
5 Monument is narrow, winding, and steep in
6 places. Comments indicated that larger
7 vehicles do not always stay in their lanes on

8 the curves, causing danger to oncoming
9 traffic, including other vehicles and bicycles.
10 In addition, roadside parking at the
11 monument results in real and perceived
12 safety dangers for visitors who must traverse
13 the road to gain access to the monument's
14 entrance.

SOCIAL AND ECONOMIC ENVIRONMENT (INCLUDING BOTH GOLDEN GATE NATIONAL RECREATION AREA AND MUIR WOODS NATIONAL MONUMENT)

1 INTRODUCTION

2 The social and economic conditions of the
3 Bay Area and the gateway counties of Marin,
4 San Francisco, and San Mateo influence
5 Golden Gate National Recreation Area and
6 Muir Woods National Monument and how
7 they are managed. Conversely, the park and
8 monument directly contribute to the social
9 and economic conditions of these three
10 counties and the Bay Area as a whole. This
11 section describes the existing conditions
12 related to this relationship by highlighting the
13 park's quality of life benefits as well as the
14 Bay Area's demographic and economic
15 trends.

16
17 The San Francisco Bay Area is not only one of
18 the most diverse metropolitan areas in the
19 United States, it also has a unique culture and
20 community ethic that distinguishes itself
21 from most other American urban centers.
22 Generally speaking, the Bay Area's cultural
23 identity exhibits an intrinsic sense of
24 awareness, stewardship, and activism toward
25 social and environmental issues.

26
27 This section summarizes the existing social
28 and economic conditions in the Bay Area, as
29 well as in the three counties most affected by
30 Golden Gate National Recreation Area and
31 Muir Woods National Monument (Marin,
32 San Francisco, and San Mateo). The section
33 also includes projections of how some of
34 these conditions may change over the next 20
35 years, which is the planning horizon of the
36 park's general management plan. To maintain
37 consistency with regional demographic
38 analyses, the term "Bay Area" in this section
39 will refer to the nine-county region defined
40 by the Association of Bay Area Governments.
41 The nine counties of the Bay Area are
42 Alameda, Contra Costa, Marin, Napa, San

43 Francisco, San Mateo, Santa Clara, Solano,
44 and Sonoma.

45 46 47 THE IMPORTANCE OF PARKS 48 TO A COMMUNITY

49 Park and open space areas in and around an
50 urban area are key contributors to the quality
51 of life in the community. This becomes even
52 more significant in very large metropolitan
53 areas where population densities and the
54 travel distance to public lands are greater.
55 The San Francisco Bay Area is the fifth-
56 largest metropolitan area in the United States.
57 Thus, the park and monument play a vital
58 role in sustaining and enhancing the quality
59 of life for the residents of the Bay Area. The
60 significance of this role becomes more
61 evident when we consider the following four
62 specific ways parks and open space
63 contribute to quality of life.

64 65 66 "Woven into the Fabric" 67 of the Bay Area

68 In a literal sense, the size, geographic
69 orientation, and location of Golden Gate
70 National Recreation Area within the Bay Area
71 make the park a large physical component of
72 this metropolitan area. The public lands of
73 Golden Gate National Recreation Area serve
74 as a natural and scenic backdrop to the urban
75 landscape of the Bay Area by day and an open
76 expanse of darkness by night. In addition, the
77 park's close proximity to the urban centers of
78 the Bay Area elevates its importance.
79 However, equally important and in a more
80 figurative sense, Golden Gate National
81 Recreation Area is "woven into the fabric" of
82 the Bay Area community. The park is part of
83 the community and the community's identity.

1 The themes and aesthetics of the various park
2 components help feed the conservation ethic
3 of the Bay Area community. In turn, this
4 community ethic fuels the residents'
5 valuation and appreciation of the park and its
6 intrinsic natural and cultural resources. This
7 cyclical dynamic helps strengthen the bond
8 between the community and the park and
9 helps sustain a heightened quality of life for
10 community residents.

13 **Community Building**

14 On a related but distinct note, Golden Gate
15 National Recreation Area helps instill a sense
16 of community in the Bay Area. This
17 community-building effect occurs on two
18 primary levels. First, the many diverse park
19 resources and features help provide a sense
20 of community identity for Bay Area residents.
21 Many of the landmarks, natural wonders, and
22 amenities of the park are not only known on
23 a local or state level, but also admired at a
24 national and international level. For example,
25 many people around the United States and
26 throughout the world identify with the Bay
27 Area by thinking of the coastal redwoods of
28 Muir Woods National Monument, historic
29 sites such as Alcatraz Island, or even the
30 idyllic views of open lands and water around
31 the San Francisco Bay. This local and global
32 admiration contributes to a sense of identity
33 and pride in being a resident of the Bay Area
34 community. Just as residents may identify
35 with the community via its cultural diversity,
36 culinary quality, free spirit, or even 49ers or
37 Raiders, they also find a sense of identity with
38 the many attractions of Golden Gate
39 National Recreation Area.

40
41 Secondly, Golden Gate National Recreation
42 Area contributes to community building by
43 providing numerous park sites and open
44 lands for the diverse residents of the Bay Area
45 to congregate and socialize. Parks are one of
46 the most effective ways to build a sense of
47 community and enhance quality of life by
48 providing common places for people to
49 interact in a shared environment (Francis
50 2006). Urban parks are one of the few public

51 places where people of diverse cultures,
52 ethnicities, ages, and lifestyles can congregate
53 and communicate openly in a community.

56 **Health Benefits for 57 Bay Area Residents**

58 In addition to community benefits, Golden
59 Gate National Recreation Area also helps
60 enhance the Bay Area quality of life by
61 improving the psychological and
62 physiological health of the Bay Area
63 residents. A recent report by California State
64 Parks indicates that, "Two-thirds of
65 Californians consider outdoor recreation
66 important to their quality of life" (California
67 State Parks 2005).

68
69 An urban interface park such as Golden Gate
70 National Recreation Area can help improve
71 the community's health by offering residents
72 opportunities for personal fitness, active
73 recreation, and other physical exercise. A
74 2001 Center for Disease Control (CDC) task
75 force report indicated that regular physical
76 activity correlates with a prolonged life
77 expectancy and enhanced health, including a
78 reduced risk for cardiovascular disease,
79 obesity, diabetes, some cancers, and
80 musculoskeletal conditions. The report also
81 notes that only 25% of U.S. adults report
82 engaging in adequate physical activity. As a
83 result of this shortfall, the CDC task force
84 "strongly recommended" that communities
85 improve access to places that offer physical
86 activity (e.g., hiking and biking trails, parks)
87 (CDC 2001). In turn, evidence shows that
88 when people have access to parks, they tend
89 to exercise more. Research also indicates that
90 contact with the natural world improves
91 physical and psychological health (Sherer
92 2006). Golden Gate National Recreation Area
93 helps satisfy these essential community needs
94 in the Bay Area.

95
96 In terms of psychological or mental health
97 benefits, regular physical activity can reduce
98 the severity of many mental health disorders,
99 alleviate depression, and decrease stress and
100 anxiety (California State Parks 2005).

1 Furthermore, even if a park visitor opts for a
 2 less-active, more relaxing park experience, an
 3 urban park such as Golden Gate National
 4 Recreation Area can provide an open and
 5 free feeling that helps offset the more
 6 congested feeling that can be generated by
 7 high-density urban living.

8
 9 The park also contributes several other
 10 community health benefits for Bay Area
 11 residents. For example, the numerous
 12 attractions and open areas of the park offer a
 13 place for children to stay active, safe, and
 14 socially engaged. A community that offers a
 15 healthy environment for children reaps
 16 numerous social benefits in the short and
 17 long term, as the kids have ample
 18 opportunities to learn, socialize, exercise, and
 19 get “hands-on” exposure to the natural
 20 world. During the comment period for the
 21 preliminary alternatives for this plan, many
 22 children submitted letters that expressed the
 23 importance of various park features to them.
 24 Comments such as “It teaches kids how to
 25 love nature” and “kids learn and discover lots
 26 of cool stuff” were plentiful.

29 **The Increasing Value of Golden** 30 **Gate National Recreation Area**

31 A fourth contributor to the Bay Area’s quality
 32 of life relates to how the community value of
 33 park open spaces increases over time as
 34 population growth and urban sprawl
 35 continue in the region. As of 2007, the Bay
 36 Area had a population of roughly 7 million.
 37 By 2035, the Association of Bay Area
 38 Governments projects that the population of
 39 this nine-county region will grow by 2 million
 40 people (ABAG 2007). With this population
 41 growth on the horizon, housing production
 42 will need to increase as well. In recent
 43 decades, a significant amount of Bay Area
 44 housing growth has occurred along the
 45 fringes of the Bay Area to accommodate
 46 population growth. This fringe development
 47 resulted in an expanded urban area and a
 48 decrease in open and agricultural land in the
 49 Bay Area. This trend will likely continue over
 50 the next 20 years, along with additional infill

51 development in existing urban areas. As a
 52 result, the anticipated population and
 53 housing growth in the future will displace a
 54 significant volume of land that is currently
 55 open, undeveloped, or agricultural.
 56 Moreover, with every acre of open land that
 57 is displaced by urban development, the
 58 community value of every acre of existing
 59 park land will increase.

60
 61 This “increasing park value” dynamic has
 62 other implications that need to be considered
 63 in park planning. As Golden Gate National
 64 Recreation Area lands become more and
 65 more important (and unique) as urban
 66 growth continues, pressure will likely mount
 67 to allow more intense and nontraditional uses
 68 on these park lands. With higher population
 69 densities and less available open land in the
 70 Bay Area, both public and private interests
 71 may petition for uses such as municipal
 72 infrastructure corridors, public parking, or as
 73 places for more active and consumptive
 74 recreational uses. So, just as park lands may
 75 become more precious to the community,
 76 they also may become more at risk from
 77 demands other than the demand for
 78 preservation of open space.

81 **POPULATION AND** 82 **COMMUNITY TRENDS**

83 The current and future management of the
 84 park and monument is directly affected by
 85 the population dynamics and composition of
 86 the communities that surround it. With the
 87 majority of visitors being Bay Area residents,
 88 the visitation and involvement from the local
 89 Bay Area communities play an integral role in
 90 sustaining the park. As the population grows,
 91 there will be an increase in visitor use and
 92 demands for the park to accommodate
 93 traditional and new outdoor recreation
 94 opportunities.

1 **General Description of Overall**
2 **Bay Area Community**

3 The nine-county Bay Area is generally
4 centered on San Francisco Bay. The urban
5 lands of the Bay Area include 101 cities, with
6 three primary urban centers (San Francisco,
7 Oakland, and San Jose). About half of the
8 projected population increase in the Bay Area
9 over this planning horizon is due to the
10 difference between the number of births and
11 deaths; the other half is due to expected
12 migration into the area as a result of
13 abundant employment opportunities (ABAG
14 2008).

15
16
17 **The Population...by the Numbers**

18 The Bay Area population grew steadily from
19 2,681,332 in 1950 to 6,783,760 in 2000 (U.S.
20 Census Bureau 2009). As of 2006, the Bay
21 Area population estimate was 7,167,500. Over
22 the next 20 years, the region's population will
23 continue to grow to a projected 8,709,000
24 people by 2030. Although the projected
25 population growth is significant, the growth
26 will not be distributed evenly throughout the
27 Bay Area's nine counties. The vast majority of
28 the growth (both numerically and by
29 percentage) will be occurring in the eastern
30 counties, such as Alameda, Contra Costa,
31 Santa Clara, and Solano counties, where
32 more developable land exists. This
33 substantial population growth in the fringe
34 areas of the Bay Area will contribute to future
35 increases in park visitation. Also, given the
36 longer travel distance and more limited
37 transportation options from these eastern
38 areas to the park, shifts may occur in visitor
39 use patterns (e.g., duration of stay, preferred
40 park destinations, number of vehicles in
41 park).

42

43 Although most population growth is forecast
44 for these eastern fringe counties, a modest
45 level of infill population growth is also
46 expected in the park's gateway counties of
47 Marin, San Francisco, and San Mateo (see
48 following two figures). Given San Francisco's
49 larger population on its relatively small land
50 area of the peninsula, San Francisco's
51 population density is over 30 times greater
52 than the Bay Area average.

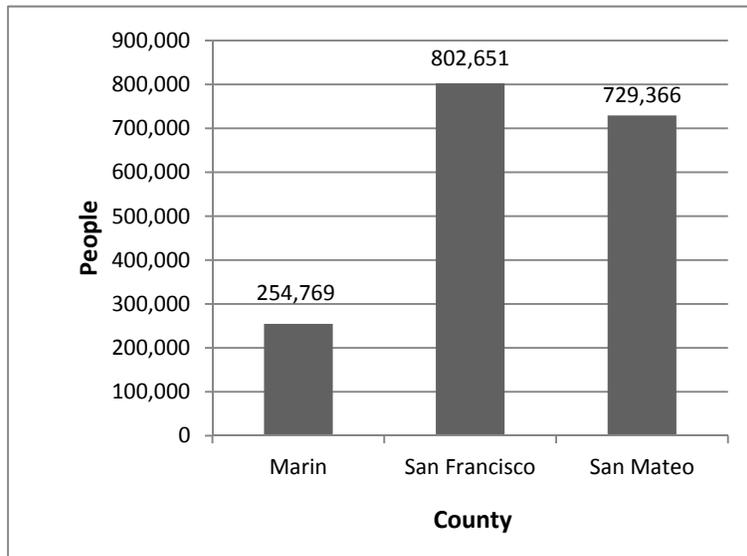
53
54 Cumulatively, the three gateway counties will
55 account for about 8% of the projected
56 population growth in the overall Bay Area by
57 2030. As displayed in the following figure, the
58 three counties of Marin, San Francisco, and
59 San Mateo will become an increasingly
60 smaller component of the overall Bay Area
61 population, given the west-to-east shift in
62 future population growth. In 1970, these
63 three counties accounted for roughly one-
64 third of the total Bay Area population. Over
65 the next few decades, Marin, San Francisco,
66 and San Mateo will account for only about
67 one-fifth of the Bay Area population. Despite
68 having access to other local and regional
69 parks closer to home, it is likely that people in
70 these more distant communities of the Bay
71 Area will still seek the unique and distinct
72 experiences provided at the park and
73 monument.

74

75

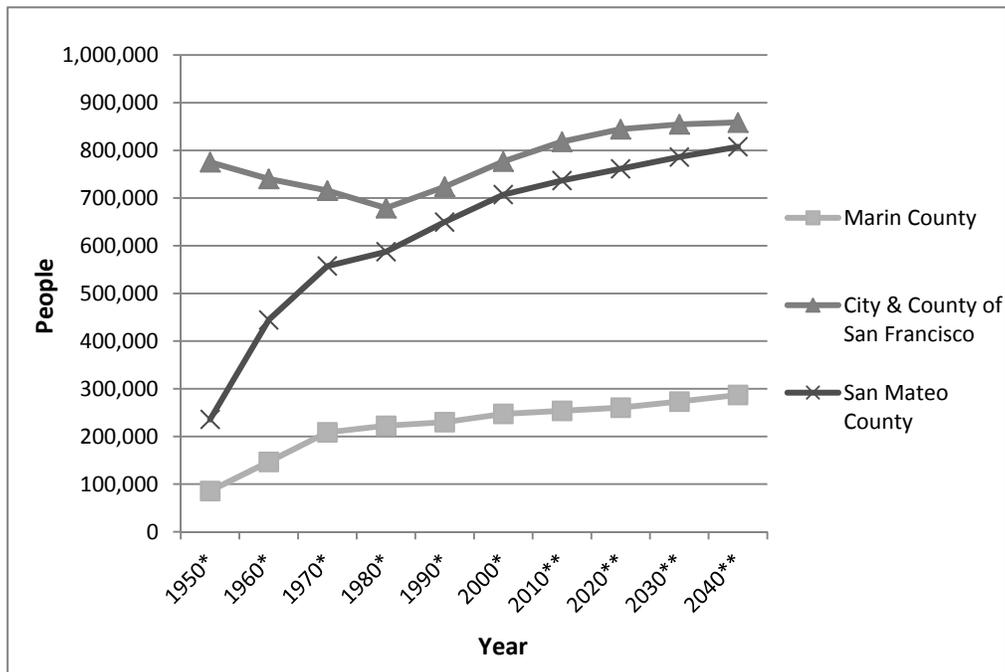
76 **The People and the Households**

77 In addition to assessing the status and
78 forecast for overall population growth in the
79 Bay Area, it is also important to understand
80 the changing characteristics of area residents
81 and the composition of the community's
82 households. This section discusses the
83 community characteristics of median age,
84 household size, race, income, poverty levels,
85 and education levels.



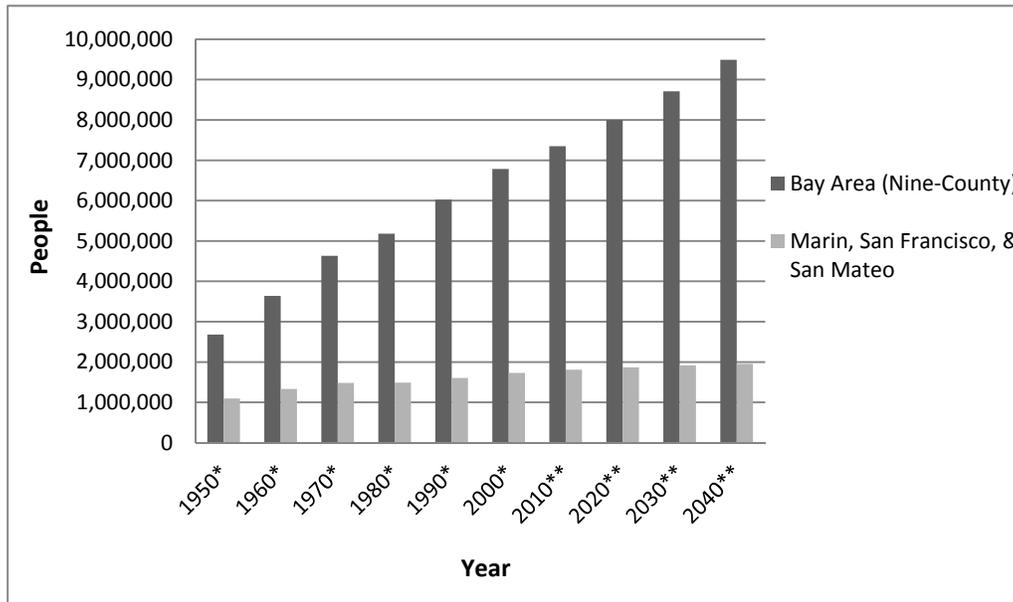
Source: California Department of Finance, Demographic Research Unit and Economic/Financial Research Unit, 2009. <http://www.dof.ca.gov/>

FIGURE 8. 2006 ESTIMATED POPULATIONS OF GATEWAY COUNTIES



Source: * U.S. Census Bureau, 2009.; ** California Department of Finance – Demographic Research Unit, 2009

FIGURE 9. PAST AND PROJECTED POPULATION GROWTH OF GOLDEN GATE NATIONAL RECREATION AREA GATEWAY COUNTIES



Source: * U.S. Census Bureau, 2009.; ** California Department of Finance – Demographic Research Unit, 2009

FIGURE 10. PAST AND PROJECTED POPULATION GROWTH OF GOLDEN GATE NATIONAL RECREATION AREA GATEWAY COUNTIES RELATIVE TO OVERALL BAY AREA

1 **Median Age and Household Size**

2 As of 2007, the Bay Area had a median age of
3 37.7 years. Marin, San Francisco, and San
4 Mateo counties had median ages of 43.8, 39.5,
5 and 39.7, respectively. The average
6 household size in the Bay Area at that same
7 time was 2.70 people per household. Marin
8 County and the City and County of San
9 Francisco both had lower average household
10 occupancies, which were 2.35 and 2.30
11 people per household, respectively. San
12 Mateo County’s average household size of
13 2.75 people per household was slightly higher
14 than the Bay Area average (U.S. Census
15 Bureau 2008).

16
17 These community characteristics are
18 expected to shift over the next 25 years due
19 to societal changes and economic conditions.
20 By 2035, the Association of Bay Area
21 Governments is anticipating an increase in
22 the Bay Area’s median age to 42.5 years. The
23 expansion of these older age groups will

24 primarily be due to an aging population and
25 increasing average life spans (ABAG 2007).
26 This is consistent with other projections for
27 the entire state of California, which indicate
28 that the number of citizens over the age of 65
29 in California will double by 2020 (Roberts
30 2007). The Association of Bay Area
31 Governments also anticipates that more and
32 more people will likely be working beyond
33 their “retirement years” over the next few
34 decades. With a larger number of older
35 people employed, the Association of Bay Area
36 Governments predicts that a higher
37 percentage of older people will be living in
38 urban areas, which provide better public
39 transportation opportunities and job
40 opportunities. This trend may eventually
41 place higher demands on public transit
42 systems in the Bay Area, and may perhaps
43 generate a greater need for water transport
44 across San Francisco Bay and other bays in
45 the region.

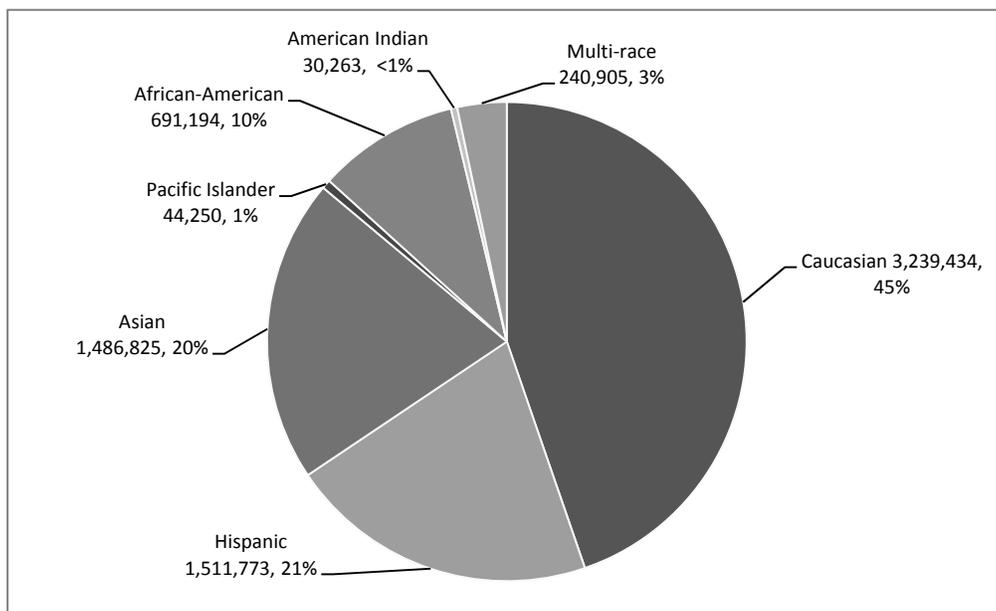
46

1 In addition, by 2035, the Association of Bay
2 Area Governments anticipates that the
3 average household size will decrease due to a
4 percentage increase in one- and two-person
5 households. This projection is based on the
6 likelihood that (1) more young professionals
7 will continue to choose not to have children
8 or will wait longer before having them; and
9 (2) children will be growing up and leaving
10 the existing family households (ABAG 2007).

11
12 **Race**

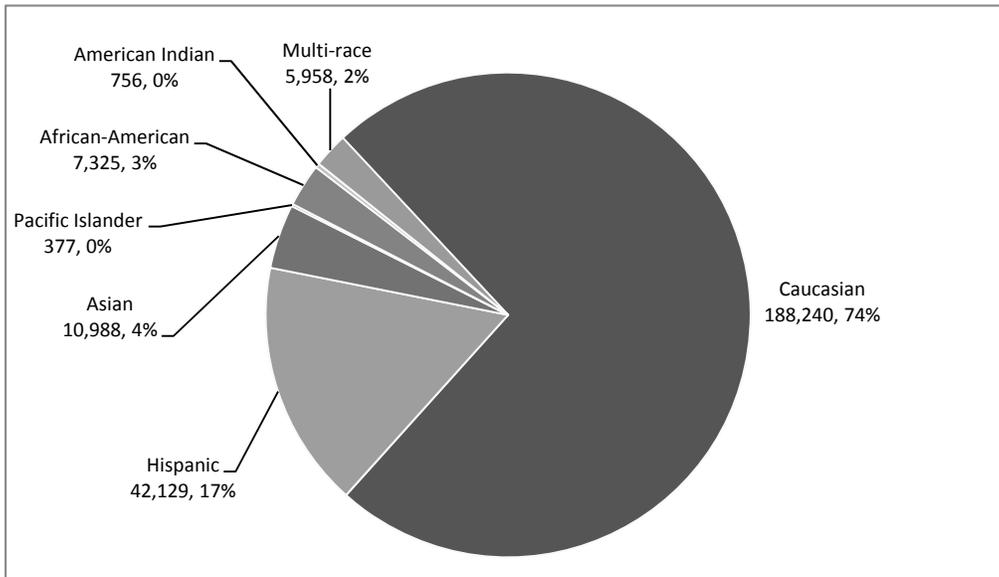
13 Racial diversity is one of the Bay Area's
14 unique characteristics. The following four
15 figures show the 2007 population estimates

16 and percentages for each racial group in the
17 Bay Area as a whole and in each of the three
18 adjacent counties. From a park management
19 standpoint, understanding the racial makeup
20 of the community can help shed light on ways
21 to make the park more inviting, develop
22 better outreach with the community, and
23 improve park program relevance. In addition,
24 this awareness contributes to improving the
25 quality of life in the community. As discussed
26 in the "Visitor Use and Experience" section,
27 many people from the Bay Area's diverse
28 racial, ethnic, and cultural groups are not
29 visiting Golden Gate National Recreation
30 Area due to social "barriers" (Roberts 2007).



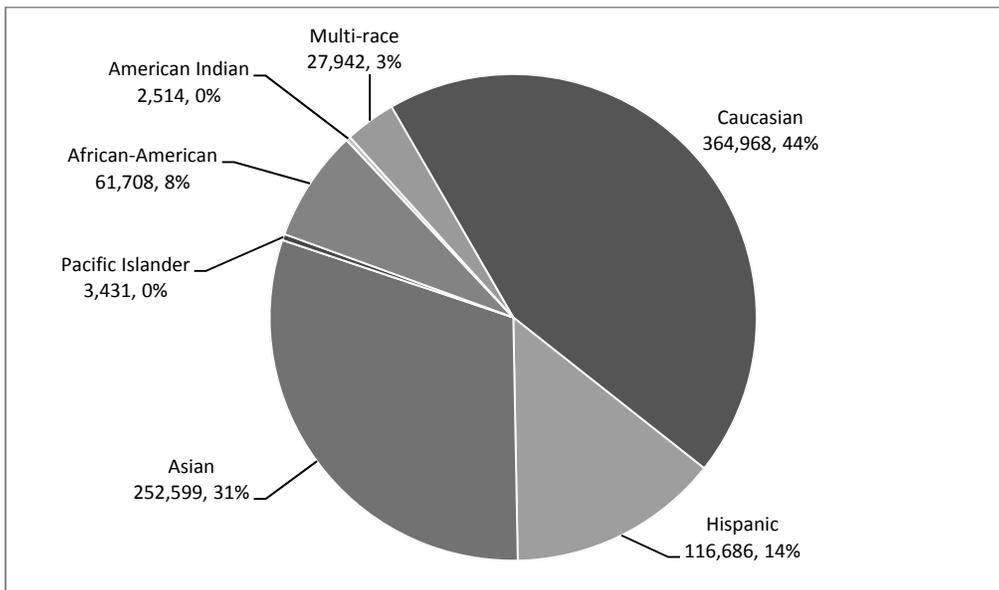
Source: California Department of Finance – Demographic Research Unit, 2009

FIGURE 11. 2007 POPULATION ESTIMATES IN BAY AREA, BY RACE



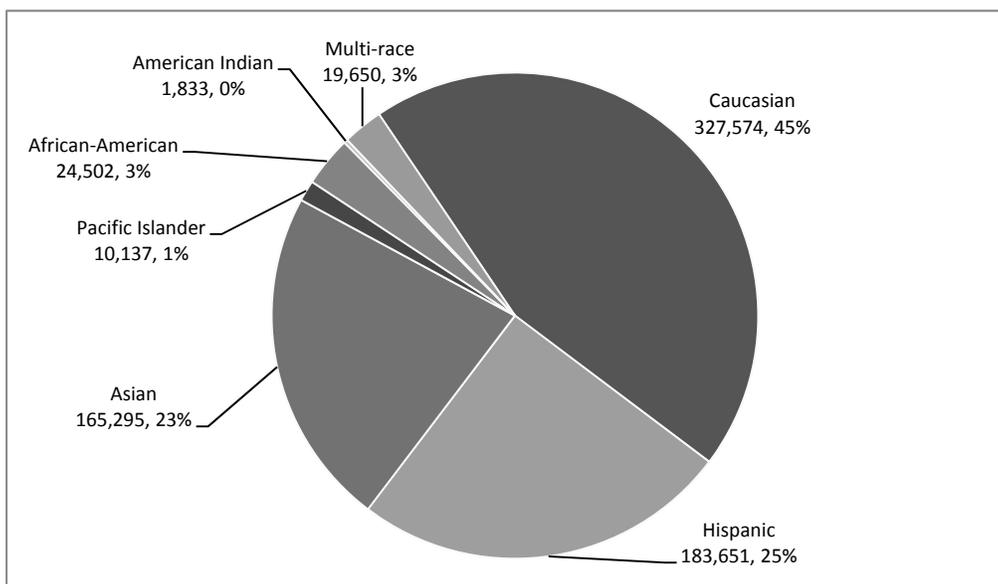
Source: California Department of Finance – Demographic Research Unit, 2009

FIGURE 12. 2007 POPULATION ESTIMATES IN MARIN COUNTY, BY RACE



Source: California Department of Finance – Demographic Research Unit, 2009

FIGURE 13. 2007 POPULATION ESTIMATES IN SAN FRANCISCO, BY RACE

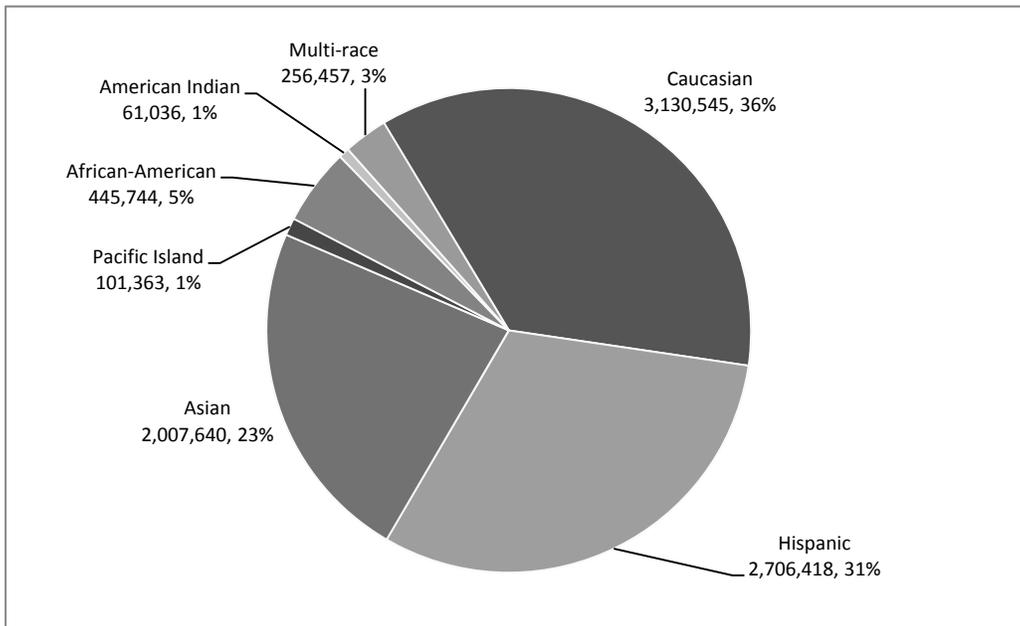


Source: California Department of Finance – Demographic Research Unit, 2009

FIGURE 14. 2007 POPULATION ESTIMATES IN SAN MATEO COUNTY, BY RACE

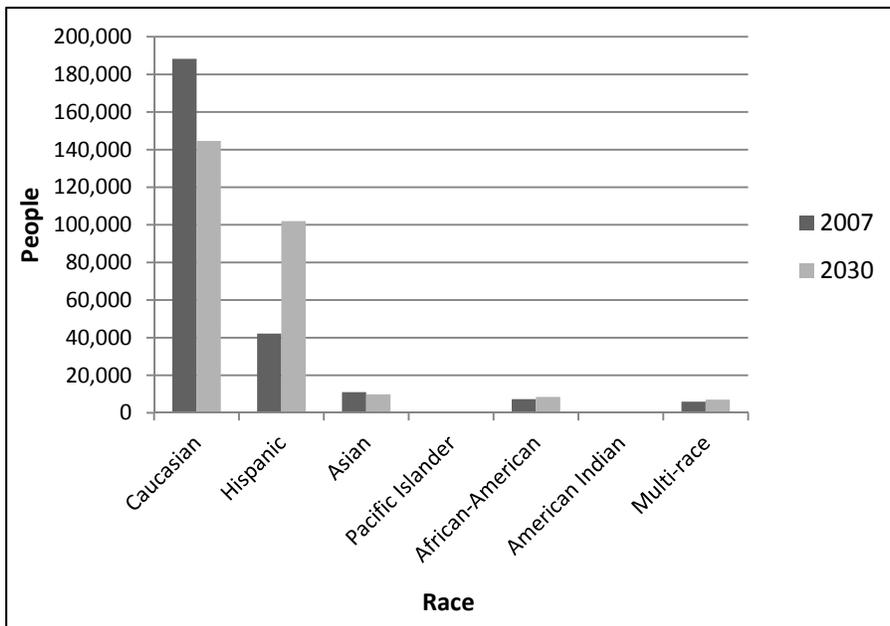
1 Just like the other community attributes, race
 2 percentages in the Bay Area will be shifting
 3 over the next few decades. By 2030, the
 4 California Department of Finance
 5 Demographic Research Unit projects that
 6 roughly 90% of the overall Bay Area
 7 population will be somewhat evenly divided
 8 among Caucasian, Hispanic, and Asian
 9 residents. This shift can be seen by
 10 comparing the following figure with figure 16
 11 for Bay Area racial composition. This
 12 significant increase in the population of

13 various minority racial and ethnic groups
 14 over the next 20 years further emphasizes the
 15 importance and need for the National Park
 16 Service to improve outreach and eliminate
 17 barriers that might keep people of all races
 18 and ethnic groups from experiencing the
 19 park.
 20
 21 In the three gateway counties, the racial
 22 percentage shift from the present to 2030
 23 varies considerably (see the following
 24 figures).



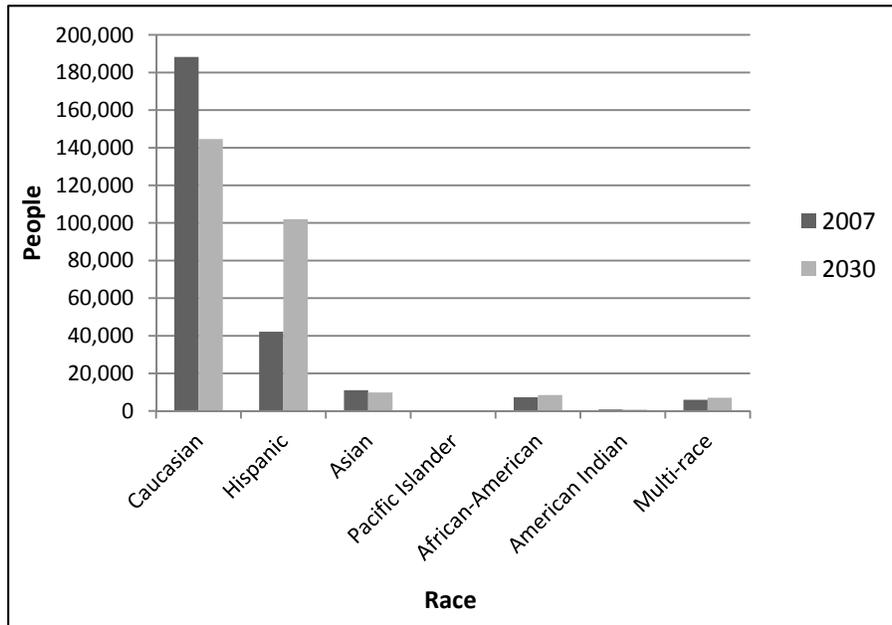
Source: California Department of Finance – Demographic Research Unit, 2009

FIGURE 15. 2007 POPULATION ESTIMATE IN BAY AREA, BY RACE



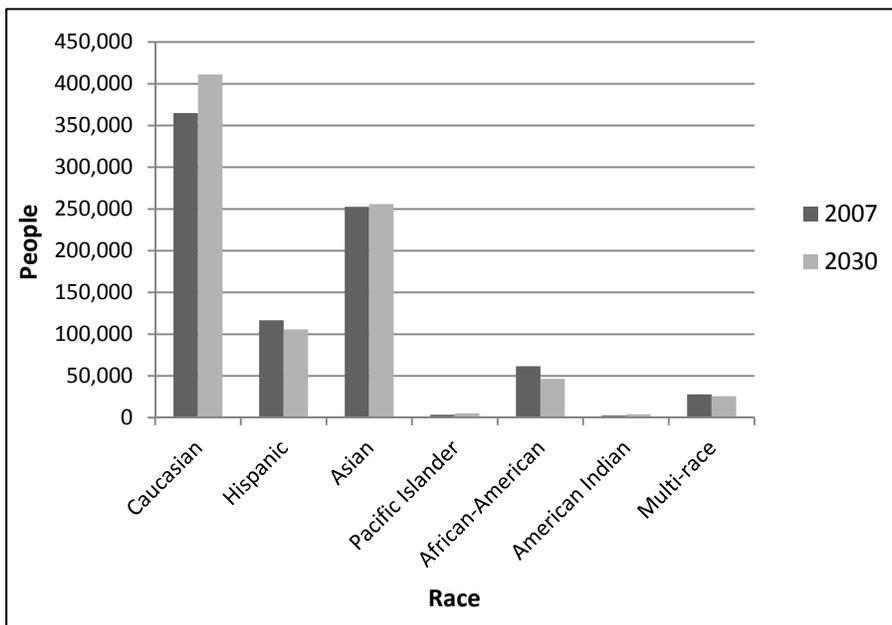
Source: California Department of Finance – Demographic Research Unit, 2009

FIGURE 16. POPULATION ESTIMATE IN 2007 AND 2030 IN MARIN COUNTY, BY RACE



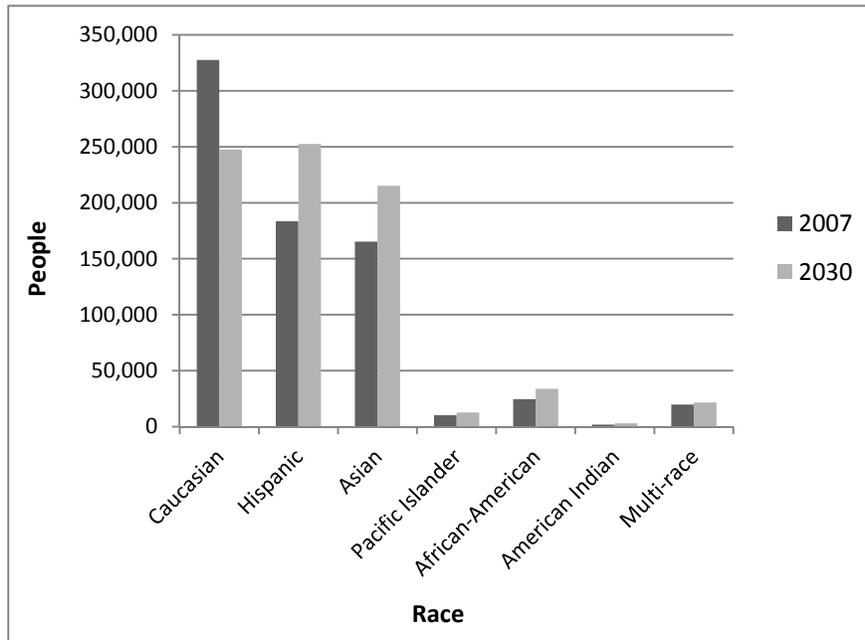
Source: California Department of Finance – Demographic Research Unit, 2009

FIGURE 17. POPULATION ESTIMATE IN 2007 AND 2030 IN MARIN COUNTY, BY RACE



Source: California Department of Finance – Demographic Research Unit, 2009

FIGURE 18. POPULATION ESTIMATE IN 2007 AND 2030 IN CITY AND COUNTY OF SAN FRANCISCO, BY RACE



Source: California Department of Finance – Demographic Research Unit, 2009

FIGURE 19. POPULATION ESTIMATE IN 2007 AND 2030 IN SAN MATEO COUNTY OF SAN FRANCISCO, BY RACE

1 Income, Poverty, and Education

2 Another factor that plays a role in park
3 management and visitation trends is the
4 income levels and poverty levels of residents
5 who live in the vicinity of the park. A statistic
6 from the California Department of Finance
7 indicates that the three counties with the
8 highest per capita incomes in the state as of
9 2005 were Marin, San Francisco, and San
10 Mateo. In 2005, Marin County had a per
11 capita income of \$75,844 (the highest in the
12 state), with San Francisco at \$62,614 and San
13 Mateo at \$59,213 (California Department of
14 Finance 2009).

15
16 As of 2007, 9.3% of the Bay Area’s population
17 was living below the poverty level, which was

18 notably lower than the statewide figure of
19 12.7% (U.S. Census Bureau 2005–2007;
20 American Community Survey 2008). Marin
21 and San Mateo counties had even lower
22 poverty rates in 2007: 7.0% and 6.7%,
23 respectively. The City and County of San
24 Francisco had a 2007 poverty rate of 11.7%.

25
26 The level of education attained by
27 community residents can often correlate to
28 the aforementioned income and poverty
29 characteristics. Table 6 lists the percentage of
30 residents in each area (25 years or older) who
31 attained various levels of education as of
32 2007. Generally, the Bay Area education
33 levels are notably higher than that of the state
34 of California as a whole (U.S. Census Bureau
35 2008).

**TABLE 6. PERCENTAGE OF 2007 POPULATION (25 OR OLDER)
REACHING VARIOUS LEVELS OF EDUCATION**

	California	Bay Area	Marin	San Francisco	San Mateo
No high school diploma (or equal)	20%	14%	8%	15%	12%
High school diploma (or equal)	23%	20%	14%	15%	19%
Some college, but no degree	20%	19%	18%	14%	19%
Associates degree	8%	7%	6%	5%	7%
Bachelors degree	19%	25%	31%	31%	27%
Graduate or professional degree	10%	16%	23%	19%	16%

Source: U.S. Census Bureau, 2005–2007 American Community Survey, 2008

1 Housing and Urban Growth

2 This section will identify current and
3 projected trends in the housing market and
4 highlight housing indicators such as home
5 values, housing affordability, own/rent ratios,
6 and single-family / multifamily dwelling
7 ratios. One of the most notable
8 characteristics of the Bay Area housing
9 market is its very high home prices and
10 values. Several variables affect home prices in
11 this area. However, generally speaking, the
12 Bay Area's expensive housing is a result of a
13 high level of housing demand (due to
14 population growth over the past several
15 decades) coupled with a low level of housing
16 construction (ABAG 2008). Compounding
17 matters, high housing costs also result from
18 an imbalance in available housing types, as

19 primarily large, single-family housing units
20 have been planned and built in many
21 suburban Bay Area communities; these
22 housing options may not meet the needs of
23 area residents (ABAG 2007).

24
25 According to the U.S. Census Bureau's 2005–
26 2007 American Community Survey, the 2007
27 median home value in the Bay Area was
28 \$676,800. In the same year, Marin County
29 had a median home value of \$895,100; San
30 Francisco's median home value was \$789,400;
31 and San Mateo County had a median home
32 value was \$807,400. However, because the
33 majority of San Francisco housing consists of
34 attached, multifamily units, the price per
35 square foot in San Francisco is likely higher
36 than that in surrounding areas (table 7) (U.S.
37 Census Bureau 2008).

TABLE 7. PERCENTAGE OF 2007 HOUSING STOCK, DETACHED, AND ATTACHED HOUSING

	Bay Area	Marin	San Francisco	San Mateo
Single-family, Detached	64%	71%	34%	68%
Multifamily, Attached	34%	28%	66%	31%

Source: U.S. Census Bureau, 2005–2007 American Community Survey, 2008

1 Given the high housing costs, many Bay Area
 2 residents cannot afford to own a home. In
 3 2007, only about 15% of Bay Area households
 4 could afford a median-priced home. With the
 5 projected decrease in Bay Area household
 6 size, and the projected increase in the
 7 number of senior citizens who may be living
 8 (and possibly still working) in urban areas,
 9 demands for more compact urban housing
 10 units will likely increase. This demand may
 11 shift the housing production trends in the
 12 high demand urban areas of the Bay Area.
 13 The Association of Bay Area Government’s
 14 FOCUS initiative is one multijurisdictional
 15 effort that may complement this dynamic.
 16 FOCUS is a regional planning strategy that

17 promotes efficient and compact land
 18 development, which in turn maximizes open
 19 land conservation. The strategy also
 20 acknowledges the transportation link by
 21 encouraging the development of livable
 22 communities in areas served by public
 23 transportation.
 24

25 As discussed earlier, the projected population
 26 growth in the eastern counties (Solano,
 27 Alameda, Contra Costa, and Santa Clara) will
 28 likely spur additional low-density, single-
 29 family housing development, and a
 30 subsequent reduction of open space or
 31 undeveloped lands in these areas.

TABLE 8. PERCENTAGE OF 2007 HOUSING STOCK, OWNER OCCUPIED AND RENTER OCCUPIED HOUSING

	Bay Area	Marin	San Francisco	San Mateo
Owner occupied	60%	65%	38%	63%
Renter occupied	40%	35%	62%	37%

Source: U.S. Census Bureau, 2005–2007 American Community Survey, 2008

1 **ECONOMIC EFFECTS OF THE PARK** 2 **ON THE COMMUNITY**

3 Just as population growth and community
4 demographics have effects on the manage-
5 ment and use of Golden Gate National
6 Recreation Area, the park has effects on the
7 economy of the community around it. Like
8 many other economic engines in the Bay Area
9 (e.g., high-tech and finance industries),
10 Golden Gate National Recreation Area and
11 Muir Woods National Monument contribute
12 to the local and regional economy by
13 generating business and revenue, creating
14 jobs, and indirectly fueling economic growth
15 in other industries. This section identifies
16 these economic impacts of the park and
17 monument and provides a synopsis of the
18 overall Bay Area economy.

21 **The Park's Contribution to the** 22 **Economic Stability of the Bay Area**

23 The park and monument have many direct
24 and indirect positive effects on the Bay Area's
25 economy. This impact can be traced to
26 several sources and attributes, such as money
27 spent by visitors at local businesses, jobs
28 created at these local businesses due to the
29 visitor demands, NPS jobs created at the park
30 and monument, NPS contracts with local
31 businesses, and other Bay Area tourism
32 generated by the park and monument. This
33 section will highlight some of these factors
34 and explain the relevance to the overall Bay
35 Area economy.

37 **Contributions to Local Economy from** 38 **Golden Gate National Recreation** 39 **Area Visitor Expenditures**

40 Each year, millions of park and monument
41 visitors contribute hundreds of millions of
42 dollars to the Bay Area economy. This money
43 directly sustains the revenue stream and jobs
44 at hotels, restaurants, and stores that serve
45 park visitors. Primarily, businesses in the
46 gateway counties of Marin, San Francisco,
47 and San Mateo are the direct beneficiaries of

48 this economic contribution. In addition, the
49 visitor money stream can also have other
50 indirect, or secondary, effects. For example,
51 this injected money that directly supports
52 local businesses and jobs eventually
53 recirculates farther into the Bay Area
54 economy and beyond. This recirculation
55 happens when the gateway local businesses
56 buy products or services from other sources
57 (e.g., from wholesale suppliers), or when
58 employees at the local businesses use their
59 income earned at the local gateway business
60 at other businesses in the area to sustain their
61 lifestyle (e.g., grocery shopping, entertain-
62 ment). This secondary effect is often referred
63 to as an economic "multiplier," as one dollar
64 injected into the local economy often has
65 more than one dollar of effect in the local
66 economy.

68 With funding from the NPS Social Science
69 Research Program, researchers at Michigan
70 State University have created the NPS
71 "Money Generation Model 2" (MGM2) to
72 measure these direct and indirect contribu-
73 tions from visitors to local economies. Dr.
74 Daniel Stynes and Dr. Dennis Propst used the
75 MGM2 to analyze the effect that park and
76 monument visitors had on the local economy
77 in 2003. The following table lists the 2003
78 visitation totals and the associated spending
79 for each visitor type. "Visitor Party Days"
80 refers to the number of days each visitor
81 party or group spends in the Bay Area.

83 As noted in the table, local day trips
84 accounted for 80% of all park and monument
85 visitation in 2003, with each local day trip
86 party spending an average of \$32 per day.
87 Understandably, hotel-based visitor parties
88 spent much more locally per day (\$229 per
89 day). When all visitor types are included, the
90 average park visitor party spent \$43 at local
91 businesses per day. When these visitor
92 expenditures are totaled for the entire year,
93 the MGM2 estimates that park and monu-
94 ment visitors directly injected \$226,810,000
95 into the local economy in 2003.

97 The model estimates in table 10 show how
98 this injected money circulated through the

1 local economy. Both direct and secondary
2 effects are included. The direct effects of
3 these visitor expenditures include sales,
4 income, and jobs in businesses selling goods
5 and services directly to park visitors. Thus,
6 the \$226.81 million in visitor spending
7 supported an estimated 4,107 jobs, as well as
8 \$176.96 million in sales and \$67.05 million in
9 personal income (wages and salaries.) As for
10 secondary, or multiplier effects, an additional
11 \$94.13 million in sales and \$34.31 million in

12 personal incomes were generated by park
13 spending as the money circulated through the
14 local economy. An additional 1,194 jobs were
15 supported by this secondary effect. When all
16 of these effects are totaled, the \$226.81
17 million in visitor spending supported a total
18 of \$271.09 million in sales, \$101.35 million in
19 personal income and 5,300 jobs in the
20 community.
21

TABLE 9. 2003 VISITS AND ESTIMATED SPENDING BY VISITATION TYPE

	Local Day Trips	Nonlocal Day Trips	Hotel	Camp	Total
Recreation Visits	11,036,074	2,069,264	730,271	19,141	13,854,750
Percentage of Recreation Visits	80%	15%	5%	<1%	100%
Visitor Party Days	4,216,401	790,575	244,090	5,915	5,257,245
Avg. Spending Per Party Day	\$ 32	\$ 47	\$ 229	\$ 91	\$ 43
Total Spending (million's)	\$ 132.89	\$ 37.48	\$ 55.87	\$ 0.55	\$ 226.81

Source: Daniel Stynes, PhD and Dennis Propst, PhD, Michigan State University, "Economic Impacts of Visitor Spending, by Parks" NPS Money Generation Model 2 (MGM2), 2003

TABLE 10. 2003 ESTIMATED ECONOMIC CONTRIBUTIONS OF GOLDEN GATE NATIONAL RECREATION AREA VISITOR SPENDING, BY SECTOR

Sectors	Sales (millions)	Personal Incomes (millions)	Jobs Supported	Value Added (millions)
Direct Effects				
Motel, Hotel, B&B and Cabins	\$ 26.39	\$ 9.34	489	\$ 14.19
Campsites	\$ 0.13	\$ 0.05	2	\$ 0.07
Restaurants and Bars	\$ 63.84	\$ 22.67	1,725	\$ 31.58
Admissions and Fees	\$ 30.03	\$ 10.61	819	\$ 17.36
Retail	\$ 35.49	\$ 18.10	870	\$ 28.28

TABLE 10. 2003 ESTIMATED ECONOMIC CONTRIBUTIONS OF GOLDEN GATE NATIONAL RECREATION AREA VISITOR SPENDING, BY SECTOR

Sectors	Sales (millions)	Personal Incomes (millions)	Jobs Supported	Value Added (millions)
Others	--	\$ 6.28	201	\$ 9.80
Total	\$ 176.96	\$ 67.05	4,107	\$ 101.29
Secondary Effects	\$ 94.13	\$ 34.31	1,194	\$ 58.51
Total Effects	\$ 271.09	\$ 101.35	5,300	\$ 159.80

Source: Daniel Stynes, PhD and Dennis Propst, PhD, Michigan State University, "Economic Impacts of Visitor Spending, by Parks"; NPS Money Generation Model 2 (MGM2), 2003

1 **Contributions to Local Economy from** 2 **National Park Service Operations**

3 The employment offered by the National
4 Park Service also contributes to the local
5 economy. The social and economic benefits
6 of this job base are two-fold. First, the jobs
7 made available by the park and its partners
8 provide hundreds of Bay Area residents with
9 a steady income that helps sustain their lives
10 and those of their families. Secondly, similar
11 to the economic effects of revenue generated
12 by park and monument visitation (as
13 previously explained), the income earned by
14 park and partner employees also has direct
15 and secondary effects on the local economy.
16 These employees contribute to the local
17 economy by spending the money they earn
18 on goods and services in the community. This
19 spending directly supports local businesses
20 and their growth. The local communities also
21 benefit directly via the sales tax generated by
22 this spending. In addition, secondary
23 economic benefits (i.e., the multiplier effect)
24 are realized when this money eventually
25 circulates further into the Bay Area economy
26 and beyond.
27

28 Because NPS employees reside throughout
29 the entire Bay Area, the economic effect of
30 their earned salaries (and subsequent
31 spending in their respective communities)
32 extends throughout the area as well. Table 11
33 summarizes the job base provided by the
34 National Park Service as well as the salary
35 totals for these jobs. It also identifies where
36 NPS employees live, which hints at where the
37 most direct contributions to the local
38 economy occur.

39
40 As highlighted in table 11, the operation of
41 Golden Gate National Recreation Area and
42 Muir Woods National Monument creates
43 341 NPS jobs. The salaries for these jobs total
44 to \$22.8 million per year. Although each
45 individual employee spends and saves their
46 earned salary money according to their own
47 personal standards, one can conclude that a
48 large percentage of this \$22.8 million
49 circulates back into the local economy via the
50 purchase of goods and services. All but
51 \$465,400 of this salary total goes to
52 employees who reside and spend directly
53 within the Bay Area. In addition, nearly two-
54 thirds of the park employees reside in the
55 three gateway counties (totaling to 217 jobs
56 and \$14,577,638 in salary).

TABLE 11. 2009 NATIONAL PARK SERVICE JOBS AND SALARIES, BY LOCATION OF RESIDENCE

Location of Golden Gate National Recreation Area Employee Residence	Jobs	Salary Totals
Marin County	88	\$ 6,354,302
San Francisco City and County	96	\$ 6,192,113
San Mateo County	33	\$ 2,031,223
Other Bay Area Counties	116	\$ 7,755,854
Beyond Bay Area in California	8	\$ 465,400
Totals	341	\$22,798,892

Source: Golden Gate National Recreation Area, National Park Service, 2009.

1 In addition to the employee salaries, the NPS
2 operation also supports the local economy by
3 contracting out services with private
4 enterprises in the Bay Area. These
5 government contracts help support other
6 businesses and their employees, which also
7 has secondary multiplier effects when this
8 money circulates through the community. In
9 the NPS fiscal year of 2008, the National Park
10 Service spent \$14,807,075 on contracts with
11 private entities.

12
13 **Tourism Attraction that**
14 **Complements San Francisco**
15 **and Other Bay Area Sites**

16 In addition to injecting money directly into
17 the local economy and supporting other local
18 institutions, Golden Gate National
19 Recreation Area and Muir Woods National
20 Monument also contribute to the economy
21 by helping generate tourism to other Bay
22 Area attractions. This economic value
23 primarily applies to visitors who come from
24 outside of the Bay Area. From a tourist
25 perspective, the allure of visiting the Bay Area
26 is notably enhanced by the many sites,
27 amenities, and resources of the park and
28 monument. When these attractions are
29 considered collectively with other Bay Area

30 attractions, the Bay Area becomes a very
31 appealing region to visit.

32
33 The value of this synergistic effect extends
34 well beyond the state of California, and the
35 nation. International tourism in the Bay Area
36 is a strong and growing industry. In addition,
37 Golden Gate National Recreation Area
38 contributes to the Bay Area's international
39 tourism draw. For example, nearly 25% of
40 visitors to Alcatraz Island came from other
41 countries (Manning et al. 2007). When
42 combined with the Bay Area's other diverse
43 attractions, the many sites and resources of
44 Golden Gate National Recreation Area play
45 an important role in sustaining and
46 expanding this international tourism market.

47
48
49 **Bay Area Commerce**
50 **and Industry Trends**

51 As the Bay Area population has grown and
52 diversified over the past 100 years, the local
53 economy has also expanded and evolved.
54 These changes have been brought on by local,
55 state, national, and international attributes
56 and events. For example, events such as
57 World War II and the technology boom have
58 played integral roles in the Bay Area's
59 economic development. The Bay Area's

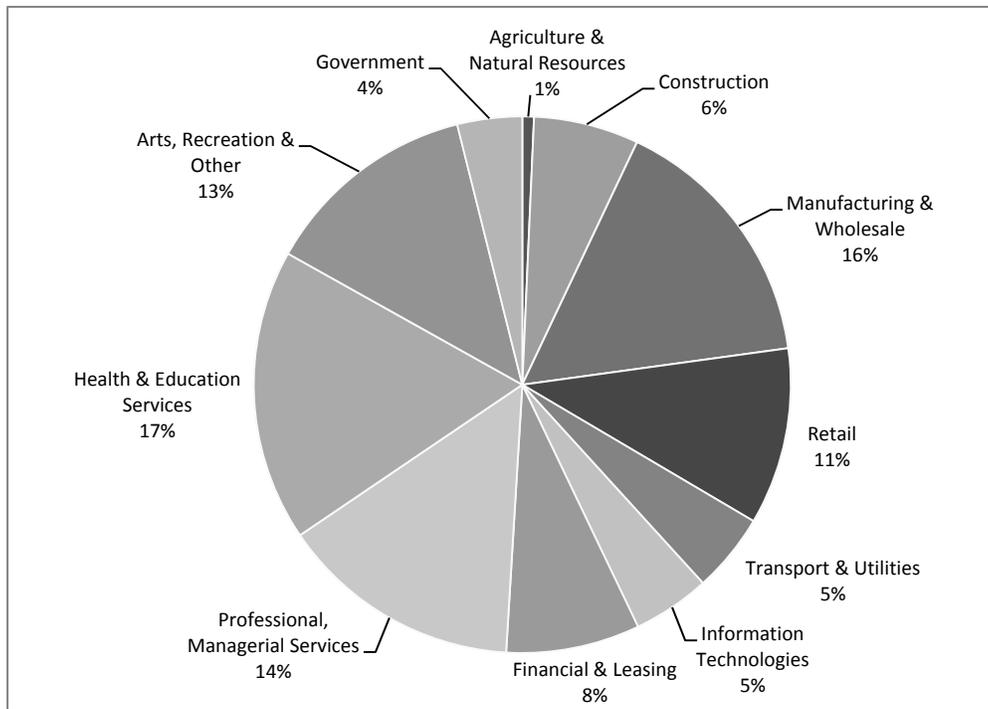
1 economic history over the past 100 years can
 2 be defined by three general eras:

- 3
- 4 ▪ **1900s to World War II** – This
 5 economic era can be described as
 6 being somewhat pastoral, with the
 7 local economy driven by industries
 8 such as seaport commerce, dairy
 9 farming, and fishing.
- 10 ▪ **World War II era** – The Bay Area
 11 served as Central Command for the
 12 U.S. Army Pacific operations during
 13 World War II. As a result, the driving
 14 force on the local economy shifted
 15 toward military sea base and air base
 16 activities and manufacturing.

- 17 ▪ **Post-World War II through late**
 18 **20th century to present** – Over the
 19 past several decades, the Bay Area’s
 20 economy has evolved, grown, and
 21 diversified considerably. The notable
 22 driving forces of the diversified
 23 economy include finance, education,
 24 local and regional tourism, health,
 25 arts, information technology, and
 26 expanding Asian markets.

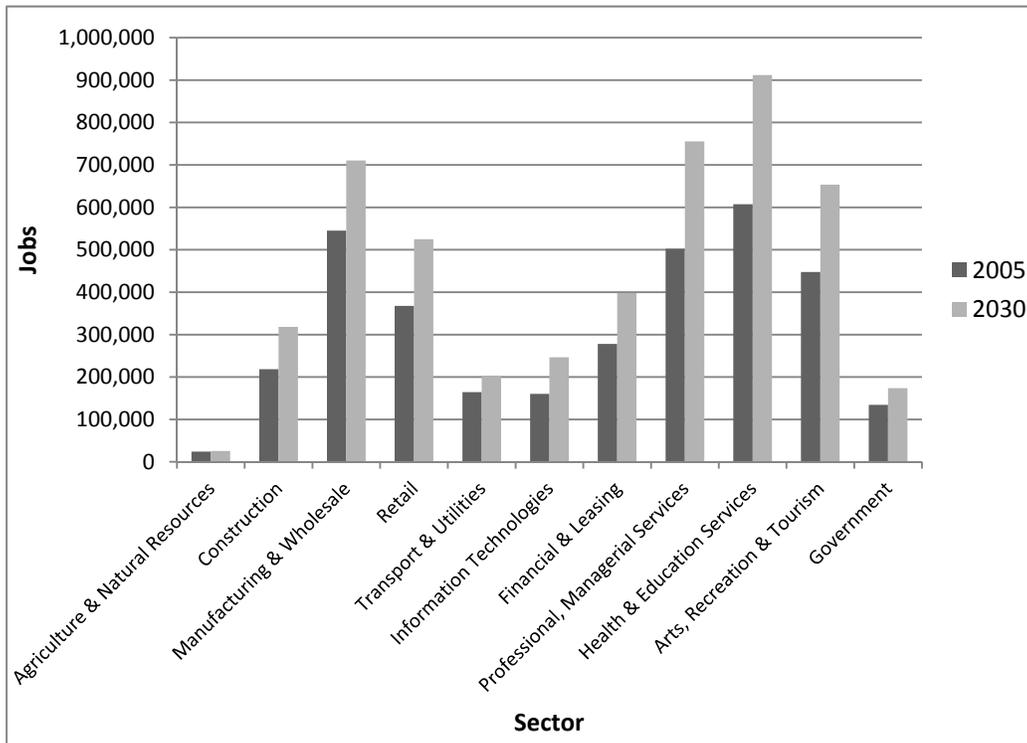
27

28 Figures 20 and 21 display the current and
 29 future projected distribution of jobs across
 30 various sectors or industries.



Source: Association of Bay Area Governments, "Projections 2007"

FIGURE 20. 2005 BAY AREA JOBS BY SECTOR



Source: Association of Bay Area Governments, "Projections 2007"

FIGURE 21. 2005–2030 BAY AREA EMPLOYMENT PROJECTIONS, BY SECTOR

TRANSPORTATION (INCLUDING GOLDEN GATE NATIONAL RECREATION AREA AND MUIR WOODS NATIONAL MONUMENT)

1 This section summarizes existing transpor-
2 tation conditions for the planning area in
3 Golden Gate National Recreational Area and
4 Muir Woods National Monument. It
5 addresses both internal circulation and access
6 by all modes, including automobile, public
7 transportation, bicycle, and pedestrian.
8 Descriptions of conditions for Golden Gate
9 National Recreation Area park sites are
10 grouped by county (Marin, San Francisco,
11 and San Mateo), with the exception of two
12 park sites, Alcatraz Island and Muir Woods
13 National Monument, which are addressed
14 separately.

15
16 Analysis was conducted using a range of
17 available materials, most of which are
18 referenced directly within the text. Primary
19 sources included the Phase 1 Transportation
20 Analysis developed for this general
21 management plan, for which a database
22 incorporating information from close to 100
23 sources was developed by Golden Gate
24 National Recreational Area staff. Raw data on
25 transportation conditions collected in recent
26 years were provided to the authors by
27 Golden Gate National Recreation Area staff.
28 Additional sources, such as California
29 Department of Transportation traffic counts,
30 were also used.

31 32 33 **REGIONAL TRANSPORTATION** 34 **CONTEXT**

35 **Existing and Projected** 36 **Travel Demand**

37 The Golden Gate National Recreation Area is
38 within the San Francisco Bay Area, a
39 metropolitan region of approximately 7
40 million residents. In the counties surrounding
41 the Bay Area, there are another 3.9 million

42 residents (U.S. Census Bureau 2009). In all,
43 approximately 11 million people live within
44 roughly a two-hour drive of Golden Gate
45 National Recreation Area park sites.

46
47 This urban context, along with their
48 popularity among tourists, places heavy
49 demands on park sites. In 2007, Golden Gate
50 National Recreation Area experienced total
51 visitation of 20.8 million. While park sites in
52 San Francisco are generally accessible to
53 motorists, transit users, cyclists, and
54 pedestrians, roads to and within many park
55 sites in Marin and San Mateo counties are
56 winding and narrow; both parking and public
57 transit are limited in many places. These
58 locations can “feel” remote during nonpeak
59 periods despite their relative proximity to
60 millions of residents; they are served by rural
61 roads that were not designed to accommo-
62 date the level of traffic demand of major
63 destinations, such as a national park. On busy
64 summer weekends, two-lane roads leading to
65 popular park sites can become severely
66 congested.

67
68 Already, the Bay Area is America’s second
69 most-congested metropolitan region, behind
70 only Los Angeles (Schrank and Lomax 2007),
71 with an average yearly delay per motorist
72 caused by congestion of 60 hours. By 2030,
73 the population of the Bay Area is expected to
74 grow to 8.7 million, and the surrounding
75 counties are projected to reach 5.7 million,
76 resulting in a total population within a two-
77 hour drive of Golden Gate National
78 Recreation Area park sites of approximately
79 14.4 million. The total number of vehicle
80 miles traveled in the Bay Area on an average
81 weekday is projected to increase from
82 approximately 136 million in 2006 to as much
83 as 179 million by 2035 (Metropolitan
84 Transportation Commission 2008). Still,
85 residents of the San Francisco-Oakland

1 urbanized area take more trips, per capita, on
 2 public transportation than do residents of
 3 any other U.S. urbanized area except New
 4 York: about 130 per year, on average
 5 (American Public Transportation Association
 6 2008).

7 8 9 **Regional Transportation Policy**

10 In order to accommodate population growth
 11 without compromising the regional
 12 environment or economy, Bay Area
 13 policymakers have increasingly sought to
 14 steer development and transportation trends
 15 in more sustainable directions. In its
 16 introduction to the *Transportation 2035 Plan*
 17 *for the San Francisco Bay Area*, the
 18 Metropolitan Transportation Commission,
 19 stated that:

20
 21 *By means of its investment choices*
 22 *and adopted policies, the Draft*
 23 *Transportation 2035 Plan aims to*
 24 *stimulate the use of public transit,*
 25 *increase the safety, utility and appeal*
 26 *of bicycling and walking, and reduce*
 27 *emissions by private automobiles in*
 28 *the Bay Area while increasing the*
 29 *efficiency of the roadway systems for*
 30 *all users.*

31
 32 While the Metropolitan Transportation
 33 Commission (through the regional
 34 transportation plan and related Transpor-
 35 tation Improvement Program) sets funding
 36 priorities regionally, most transportation
 37 planning decisions in the Bay Area are made
 38 either at the county level by congestion
 39 management agencies or by transit agencies
 40 as part of their short range transit plans.
 41 Regional and local transit agencies are
 42 identified on the following pages. Congestion
 43 management agencies in counties with
 44 Golden Gate National Recreation Area park
 45 sites include the Transportation Authority of
 46 Marin, San Francisco County Transportation
 47 Authority, and City/County Association of
 48 Governments of San Mateo County. Marin,
 49 San Francisco, and San Mateo are all “self-
 50 help” counties under California law, meaning

51 that voters have approved local sales taxes
 52 devoted to transportation.

53 54 55 **Regional Transportation Network**

56 The Bay Area is home to one of the nation’s
 57 most expansive highway systems. The
 58 regional transit network is less developed,
 59 although regional rail systems and ferry
 60 routes provide access to some Golden Gate
 61 National Recreation Area park sites via local
 62 rail and feeder bus connections.

63
 64 Three major highways provide primary
 65 access to Golden Gate National Recreation
 66 Area park sites:

- 67
68 ■ *Highway 101*, which is a freeway in
69 Marin and San Mateo counties and
70 southern San Francisco and an
71 arterial surface route in northern San
72 Francisco, provides access to park
73 sites in all three counties.
- 74 ■ *State Route 1*, which transitions from a
75 two-lane highway in Marin County to
76 an urban arterial in San Francisco and
77 a freeway in northern San Mateo
78 County before returning to a two-lane
79 highway in southern San Mateo
80 County, also provides access to park
81 sites in all three counties. [Note:
82 While many segments of this road
83 have local names (e.g., Shoreline
84 Highway, 19th Avenue, Pacific Coast
85 Highway), throughout this document
86 it is referred to as State Route 1.]
- 87 ■ *Interstate 280*, a freeway, provides
88 access to Golden Gate National
89 Recreation Area park sites in San
90 Francisco and in San Mateo County.

91
 92 Two regional railways and several ferry
 93 routes provide transit access to Golden Gate
 94 National Recreation Area park sites:

- 95
96 ■ *Bay Area Rapid Transit*, or BART, is a
97 metro system serving San Francisco,
98 Alameda, and Contra Costa counties,
99 as well as northern San Mateo

1 County. From BART stations in San
2 Francisco and San Mateo counties,
3 local transit service is available to park
4 sites in San Mateo, San Francisco, and
5 Marin counties.

- 6 ■ *Caltrain* is a 77-mile-long commuter
7 rail line operating from Santa Clara
8 County through eastern San Mateo
9 County to San Francisco. Local buses
10 provide connections from Caltrain
11 stations to park sites in San Mateo,
12 San Francisco, and Marin counties.
- 13 ■ *Ferry* service is provided by the
14 Golden Gate Bridge, Highway and
15 Transportation District as Golden
16 Gate Ferry, and by a private operator,
17 Blue & Gold Fleet. At Sausalito in
18 Marin County and in San Francisco,
19 ferry service provides connections to
20 transit or bike routes that can then be
21 used to reach Golden Gate National
22 Recreation Area park sites. Ferries
23 also provide the only public access to
24 Alcatraz Island. The *2007 Golden Gate
25 National Recreation Area Water
26 Shuttle Access Study and Conceptual
27 Plan* proposed additional ferry service
28 to three Golden Gate National
29 Recreation Area park sites: Fort
30 Baker, Fort Mason, and the
31 Presidio/Crissy Field in San
32 Francisco.

33
34 “Transbay” buses operated by the East Bay’s
35 AC Transit also connect to San Francisco
36 Municipal Railway (Muni) routes serving
37 Golden Gate National Recreation Area park
38 sites at San Francisco’s Transbay Transit
39 Center. While most Transbay routes are
40 commuter-oriented—offering the greatest
41 amount of service during weekday morning
42 and evening commuting periods—a few
43 provide midday and weekend service.
44
45

46 Summary

47 In general, the Bay Area transportation
48 network is oriented toward commuters;
49 access to Golden Gate National Recreation

50 Area park sites, which are generally relatively
51 remote, is limited. In San Francisco, park
52 destinations are closer to the community and
53 well-served by transit. Even there, however,
54 many Golden Gate National Recreation Area
55 park sites are on the city’s west side, some
56 distance from regional road and public transit
57 networks. Transit access to park sites in
58 Marin and San Mateo counties is especially
59 limited. Demand exists for expanded transit
60 options.
61
62

63 PARK TRANSPORTATION NETWORK

64 In this section, transportation conditions are
65 first described for the two most-visited park
66 sites in the planning area, Muir Woods
67 National Monument and Alcatraz Island.
68 Then conditions are described for park sites
69 in each county: Marin, San Francisco, and
70 San Mateo. Within each section, conditions
71 are first summarized, then described by
72 mode. Conditions are analyzed both in terms
73 of access to park sites and internal
74 circulation. Detailed maps of each county’s
75 transportation network can be found at the
76 end of the transportation discussion.
77
78

79 Muir Woods National Monument

80 Muir Woods National Monument is a fee
81 site, where an entrance fee is collected, and is
82 a major tourist destination with an annual
83 visitation of more than 800,000. For visitors
84 accessing the site from Highway 101, the trip
85 requires travel on almost 10 miles of winding
86 two-lane county and state roads. Traffic on
87 the two-lane roads leading to the site is often
88 congested, especially at intersections of State
89 Route 1 (Shoreline Highway). In addition,
90 parking lots regularly fill by midmorning on
91 busy summer weekends. Private tour buses
92 serve Muir Woods National Monument year
93 round. With the exception of summer and
94 “shoulder season” weekends, there is no
95 public transit service. Bicycle and pedestrian
96 access to the remote canyon site is arduous.
97 Parking at the site is especially problematic;
98 on busy days, more cars are parked

1 informally along the shoulder of Muir Woods
2 Road than in the designated lots, resulting in
3 traffic congestion near the park entrance,
4 resource damage, and conflicts between
5 autos and pedestrians.

6 7 **Traffic and Parking**

8 Auto access to Muir Woods National
9 Monument is along a narrow, twisting route
10 that approaches from the east by way of a
11 steep descent (with an average grade of more
12 than 8%).

13
14 Traffic congestion along State Route 1
15 (Shoreline Highway) approaching the
16 monument can be severe during peak
17 periods, as noted previously. In the 2004
18 report from HDR, Inc. *Transportation*
19 *Planning to Address Access and Congestion*
20 *Issues – Muir Woods National Monument*,
21 traffic studies indicated a peak season
22 intersection level of service (LOS) of “F,”
23 where State Route 1 intersects with
24 Tennessee Valley Road and Flamingo Road;
25 and a LOS of “D” where State Route 1
26 intersects Muir Woods Road and Panoramic
27 Highway. “F” is the lowest level of service,
28 indicating average delay per vehicle of more
29 than 50 seconds. The *Comprehensive*
30 *Transportation Management Plan* also
31 reported an accident rate along Panoramic
32 Highway, a two-lane but relatively direct
33 route along the spine of Dias Ridge between
34 State Route 1 and Muir Woods Road, that
35 was 140% higher than the statewide average
36 for similar roads (Robert Peccia & Associates
37 2004a).

38
39 It is estimated that even on summer
40 weekends when Muir Woods Shuttle service
41 is available, more than 60% of Muir Woods
42 National Monument visitors arrive by private
43 automobile (Nelson/Nygaard 2008a). Golden
44 Gate National Recreation Area has estimated
45 average vehicle occupancy of 2.5 persons,
46 meaning that close to 1,200 autos might arrive
47 at the National Monument over the course of
48 a busy day. In 2004, as many as 2,855 cars
49 were counted on Upper Muir Woods Road in
50 a single day, suggesting that the actual

51 number of cars arriving at the National
52 Monument on a busy day might be even
53 higher. Also in 2004, up to 344 cars were
54 observed arriving at the monument in a single
55 hour (Robert Peccia & Associates 2004b).

56
57 There are no current mode share data
58 indicating how many visitors reach Muir
59 Woods National Monument by tour bus,
60 bicycle, or hiking.

61
62 This traffic results not only in congestion on
63 roads approaching the national monument,
64 but in congestion in the main and satellite
65 parking lots, as cars circle in search of
66 parking. It also results in congestion and
67 auto-pedestrian conflicts along Muir Woods
68 Road where overflow parking is
69 accommodated along the shoulder and
70 pedestrians must at some points walk in the
71 roadway. For planning purposes, there are
72 179 parking spaces at Muir Woods National
73 Monument in the main and satellite lots, and
74 accommodations for approximately 175
75 additional spaces along Muir Woods Road;
76 the total then is approximately 350 parking
77 spaces. However, up to 475 cars have been
78 observed parked along the road near the
79 monument at one time (Robert Peccia &
80 Associates 2004b). This is possible because
81 motorists will park along the shoulder of
82 Muir Woods Road up to a mile from the
83 monument entrance, and walk along or in the
84 road to the trail that leads to the entrance.

85 86 **Transit**

87 **Muir Woods Shuttle.** Established in 2005 as
88 a pilot program, the Muir Woods Shuttle is
89 now funded on an annual basis by Golden
90 Gate National Recreation Area and the Marin
91 County Transit District, or Marin Transit.
92 These partners have continued to improve
93 service each year, and ridership has likewise
94 increased each year.

95
96 The shuttle is a seasonal service, operating on
97 weekends during the five months from May
98 through September. From Memorial Day
99 weekend to Labor Day weekend, it consists
100 of two routes:

- 1 ▪ A Marin City to Muir Woods
2 National Monument route operating
3 on 20-minute headways from the
4 Golden Gate Transit hub at Marin
5 City (where connections can be made
6 to buses from San Francisco) to the
7 monument. This route also stops at
8 satellite parking lots near the junction
9 of Highways 101 and State Route 1
10 (approximately 9 miles from the
11 monument).
- 12 ▪ A Sausalito to Muir Woods National
13 Monument route timed to connect
14 with Golden Gate Ferry service from
15 San Francisco at Sausalito (this route
16 also serves Marin City and the
17 Highway 101 / State Route 1 junction)

18
19 During the “shoulder season,” there is no
20 Sausalito service, and the Marin City route
21 operates on 30-minute headways.

22
23 Much of the shuttle’s ridership consists of
24 motorists who, informed by changeable
25 message signs on Highway 101 that the
26 monument parking lots are full, follow
27 instructions to exit at State Route 1, park, and
28 take the shuttle instead. The service has
29 proved to be extremely successful, currently
30 providing 35,000 trips on weekends and
31 holidays during the May to September
32 season. The farebox recovery rate is 22%,
33 comparable to many urban transit services)
34 and ridership has grown from just a little
35 more than 10,000 in its first year, even as the
36 formerly free service has increased fares to
37 \$3. Close to 10% of summer weekend visitors
38 to the park now arrive by shuttle, and in 2008,
39 it averaged 18.9 passengers per hour, higher
40 than many suburban bus routes
41 (Nelson\Nygaard 2008b).

42
43 The Muir Woods Shuttle has eased pressure
44 on the overburdened parking areas at the
45 monument and on the roads leading to the
46 site. In addition, by connecting to regional
47 transit services, it has greatly expanded non-
48 automobile access for visitor to the park.
49 Moreover, surveys of shuttle riders and other
50 park visitors indicate that significant demand

51 may exist for direct service between San
52 Francisco and the monument; while relatively
53 expensive to operate, this would serve to
54 further reduce demand for automobile access
55 to the monument.

56 57 **Tour Bus**

58 While no data is available on private tour bus
59 operators serving Golden Gate National
60 Recreation Area park sites, park staff estimate
61 that up to 20% of visitors to the monument
62 may arrive by tour bus. Twelve to fourteen
63 spaces in the lower parking lot are reserved
64 for tour buses, and multiple operators
65 provide tours, typically departing from San
66 Francisco and including a stop in Sausalito.

67 68 **Bicycle and Pedestrian**

69 Bicycle access to Muir Woods National
70 Monument is poor. State Route 1 and Muir
71 Beach Road are narrow, winding two-lane
72 roads and lack bike lanes and shoulders for
73 much of their length, although bicycle
74 parking is provided. Pedestrian access is also
75 poor, limited to trail connections that
76 converge at the monument (including the
77 popular Dipsea Trail, which connects the
78 monument to the town of Mill Valley 3 miles
79 away, and to Stinson Beach to the west).

80 81 **Summary**

82 Muir Woods National Monument is accessed
83 primarily by automobile or tour bus, although
84 public transit service is available on summer
85 and “shoulder season” weekends. Cyclists
86 and pedestrians must bike or hike long
87 distances to reach the remote site, although
88 trails to and within the monument are very
89 good. Parking at the monument is limited and
90 not well-configured—overflow parking along
91 the shoulders of a narrow road is common—
92 and this results both in congestion and in
93 conflicts between traffic and pedestrians.

94
95

1 **Alcatraz Island**

2 With approximately 1.4 million annual
3 visitors, Alcatraz Island is Golden Gate
4 National Recreation Area's most visited site.
5 Alcatraz is an island in San Francisco Bay;
6 while admission to the park itself is free, the
7 only access to the island is a 15-minute trip by
8 ferry at a cost of \$26 per person (2009).
9 Ferries depart from a landing near
10 Fisherman's Wharf in San Francisco, which is
11 highly accessible by many modes of
12 transportation.

14 **Traffic and Parking**

15 Automobile access to the Alcatraz Island
16 ferry landing at Pier 33, just southeast of
17 Fisherman's Wharf, is generally good. The
18 site is immediately adjacent to the
19 Embarcadero, a six-lane boulevard
20 connecting directly to the San Francisco-
21 Oakland Bay Bridge (Interstate 80) and
22 Interstate 280, and indirectly to Highway 101.
23 Pier 33 is also near Bay Street, a four-lane city
24 street connecting to Highway 101 and the
25 Golden Gate Bridge. However, all of these
26 routes can become congested during peak
27 hours.

29 Parking near the Alcatraz Island ferry landing
30 at Pier 33 is fee parking, and much of it
31 consists of on-street meters with time limits
32 of two hours or less. However, several large
33 parking garages are nearby.

35 **Public Transit**

36 Ferry service to Alcatraz Island currently
37 departs from Pier 33. Service is provided by
38 Alcatraz Cruises, a park concessioner, and
39 operates as often as every 30 minutes. Other
40 ferry operators also offer Bay tours that pass
41 by Alcatraz Island and other Golden Gate
42 National Recreation Area waterfront park
43 sites. A number of public transportation
44 options within San Francisco provide visitors
45 with good access to Pier 33.

47 **Bicycle and Pedestrian**

48 Pier 33 is easily accessible by bicycle, and
49 several bicycle rental companies are nearby.
50 Bicycles are not allowed aboard Alcatraz
51 Island ferries, but limited bicycle parking is
52 available at Pier 33 on a first-come, first-
53 served basis.

55 Likewise, pedestrian access is good. From the
56 south, a broad promenade runs alongside the
57 Embarcadero, and San Francisco city streets
58 to the west generally feature spacious
59 sidewalks.

61 **Summary**

62 Alcatraz Island can be accessed only by ferry
63 from San Francisco, although access to the
64 ferry landing is good for many modes of
65 transportation. While parking is available for
66 a fee, there is on-street metered parking and
67 several large garages nearby. public transit
68 access is excellent, and bicycle and pedestrian
69 access over San Francisco city streets is
70 likewise very good.

73 **Marin County Park Lands**

74 Golden Gate National Recreation Area park
75 sites within Marin County are generally
76 distinct in character from those in San
77 Francisco and San Mateo counties. As Marin
78 County park sites are within western Marin
79 County, many are some distance from the
80 county's developed eastern corridor. Due to
81 this isolation, Golden Gate National
82 Recreation Area park sites in Marin County
83 are accessed primarily by automobile,
84 although limited public transit service is
85 available, and many recreational cyclists ride
86 long distances to access them. In addition,
87 there are directional and park identity signs
88 both within the park lands and on roads
89 leading to them that are generally clear and
90 highly visible; there is also limited water
91 access for private boats to Fort Baker through
92 a marina.

1 The relative remoteness of Golden Gate
 2 National Recreation Area park sites within
 3 Marin County contributes to their popularity
 4 with both residents and tourists. However, it
 5 also results in severe congestion at the most
 6 accessible sites during peak periods, both on
 7 roads leading to the park sites and around
 8 parking areas. Congestion is compounded by
 9 insufficient parking and conflicts between
 10 automobile and pedestrians, who often must
 11 walk in or alongside roadways due to a lack
 12 of infrastructure, including both sidewalks
 13 and trails paralleling roadways at popular
 14 destinations (such as Tennessee Valley).

15
 16 Means of visitor access to the Marin
 17 Headlands were sampled on Fridays,
 18 Saturdays, and Sundays in the summer of
 19 2000 and spring of 2001. The survey showed
 20 that 91% arrived by private automobile, 4.7%
 21 by bicycle, 4% by bus (including public
 22 transit as well as private, chartered, and
 23 school buses), while just 0.2% arrived on foot
 24 (NPS 2009a).

25 26 **Traffic and Parking**

27 Many visitors to Marin County Golden Gate
 28 National Recreation Area park sites arrive in
 29 the county by driving over the Golden Gate
 30 or Richmond-San Rafael bridges, and even
 31 residents of Marin County use Highway 101
 32 for parts of their trips. Once motorists have
 33 exited Highway 101, however, access to many
 34 Golden Gate National Recreation Area park
 35 sites requires steep, winding drives on
 36 narrow rural roads.

37
 38 Average volumes of traffic on these roads do
 39 not necessarily suggest congestion, and
 40 outside of the busiest peak periods, there is
 41 little congestion on roads leading to or within
 42 Golden Gate National Recreation Area park
 43 sites in Marin County. Traffic studies
 44 conducted in October and November of 2009
 45 by the California Department of
 46 Transportation, show LOS A and B on State
 47 Route 1 (Shoreline Highway) between
 48 Highway 101 and Northern Avenue.
 49 However, traffic increases substantially on
 50 summer and holiday weekends. Annual

51 average daily traffic on State Route 1 in the
 52 area of Stinson Beach, for example, is just
 53 4,100 vehicles per day, and peak hour traffic
 54 is 420 cars per hour, or seven vehicles per
 55 minute in both directions combined. Yet, the
 56 number of cars at the entrance to Stinson
 57 Beach reached 39,709 in July 2007, 455%
 58 higher than in January, and in 2004, counts
 59 reached 4,451 in a single summer day
 60 (Nonmotorized Transportation Pilot
 61 Program 2005). Even greater monthly traffic
 62 has been observed along Conzelman Road in
 63 the Marin Headlands, where 80,300 vehicles
 64 were recorded at a point in the Rodeo Valley
 65 in the month of September 2007. In 2000,
 66 traffic counts on roads entering and exiting
 67 the Marin Headlands near the northern end
 68 of the Golden Gate Bridge found combined
 69 traffic on summer weekends of approxi-
 70 mately 10,200 vehicles, with about two-thirds
 71 on Conzelman Road and the remainder on
 72 Bunker Road. Summer 2000 weekend traffic
 73 on Alexander Avenue (which is just outside
 74 the Marin Headlands, and thus not
 75 maintained by the National Park Service),
 76 connecting the Golden Gate Bridge to
 77 Sausalito and providing access to the Marin
 78 Headlands and Fort Baker, was
 79 approximately 11,300 vehicles (NPS 2009a).

80
 81 Roads within the park lands of Marin County
 82 managed by the National Park Service are
 83 often in a poor state of repair. A 1999 survey
 84 of pavement conditions within the Marin
 85 Headlands and Fort Baker found fully two-
 86 thirds of roads to be in poor condition (NPS
 87 2009a). Conditions have not changed
 88 substantially since then, although all 18 miles
 89 of NPS roads in the Marin Headlands and
 90 Fort Baker are programmed for rehabilitation
 91 beginning in 2010.

92
 93 The greatest traffic congestion within Golden
 94 Gate National Recreation Area park sites
 95 appears to occur immediately around parking
 96 areas at popular destinations. Whether they
 97 consist of large lots or informal, roadside
 98 parking along shoulders, cars pulling into or
 99 out of parking areas and pedestrians traveling
 100 to or from their cars can create congestion
 101 and unsafe conditions along narrow roads.

1 This congestion is a result of demand
 2 exceeding supply, with undesirable shoulder
 3 parking as a result. At the Tennessee Valley
 4 trailhead, where there are 86 formal parking
 5 spaces, the *Comprehensive Transportation*
 6 *Management Plan* reported maximum
 7 occupancy, including cars parked alongside
 8 Tennessee Valley Road, of 202 vehicles or
 9 235% of capacity. Parking lots at Stinson
 10 Beach (124%) and Muir Beach (107%) were
 11 also found to be filled beyond capacity
 12 (Robert Peccia & Associates 2004a). The
 13 *Marin Headlands / Fort Baker Transportation*
 14 *Plan*, meanwhile, reported up to 35 cars
 15 parked at Battery Mendell in the Marin
 16 Headlands, in an area with a capacity of 30,
 17 and 24 cars were in 24 spaces at Battery
 18 Spencer, where, as at Muir Woods National
 19 Monument, cars, buses and pedestrians come
 20 into conflict when there is parking along a
 21 narrow road (NPS 2009a). Although all
 22 Golden Gate National Recreation Area
 23 parking within the plan area is currently free,
 24 approved plans will introduce fee parking in
 25 the Marin Headlands and at Fort Baker.

26 **Public Transit**

28 Public transportation access to Marin County
 29 Golden Gate National Recreation Area park
 30 sites is limited. Most destinations within the
 31 park lands are inaccessible via transit without
 32 significant hiking or biking from the closest
 33 transit stops, although a few park sites are
 34 served directly or indirectly by infrequent,
 35 weekend-only, or seasonal bus routes. Most
 36 of those routes serve a limited area, although
 37 connections can be made to regional services
 38 in eastern Marin County and San Francisco.
 39 Three public transit agencies provide some
 40 form of service to Golden Gate National
 41 Recreation Area park sites, while a seasonal
 42 shuttle service to Muir Woods National
 43 Monument is operated jointly by the
 44 National Park Service and a local transit
 45 provider. In general, transit service in Marin
 46 County is either oriented toward commuters
 47 (Golden Gate Transit) or those taking local
 48 trips (Marin Transit), or serves Golden Gate
 49 National Recreation Area park sites but only
 50 on a limited basis (West Marin Stagecoach).

51 More information on public transit services
 52 to Marin County Golden Gate National
 53 Recreation Area park sites can be found in
 54 appendix E.

55
 56 While no data is available on private tour bus
 57 operators serving Golden Gate National
 58 Recreation Area park sites, park staff believes
 59 that up to 20% of visitors to Muir Woods
 60 National Monument may arrive by tour bus.
 61 Twelve to 14 spaces in the lower parking lot
 62 are reserved for tour buses, and multiple
 63 operators provide tours, typically departing
 64 from San Francisco and including a stop in
 65 Sausalito. Tour bus use is also common (if
 66 accounting for a relatively small mode share)
 67 in the Marin Headlands and Fort Baker.

68 **Bicycle**

70 Western Marin County is a popular
 71 destination for recreational cyclists. Despite
 72 blind curves and heavy traffic, road cyclists
 73 seeking a challenge are a common sight on its
 74 steep, narrow roads, while mountain biking
 75 remains popular on fire roads and trails
 76 throughout Marin County, the birthplace of
 77 the sport. Many San Francisco visitors rent
 78 bicycles and ride them over the Golden Gate
 79 Bridge making the return trip via ferry from
 80 Sausalito. Alexander Avenue between
 81 Sausalito and the Bridge, which is a regional
 82 road administered by the Golden Gate Bridge
 83 District, is a popular route for cyclists
 84 (although it lacks a complete bike lane, and is
 85 confusing and potentially unsafe for novice
 86 cyclists).

87
 88 On May 11, 2008, a sunny Sunday, Golden
 89 Gate National Recreation Area counted 1,432
 90 cyclists northbound on Alexander at Bunker
 91 Road above Fort Baker.

92
 93 Although amenities for cyclists are currently
 94 limited, there is bicycle parking at Battery
 95 Spencer. As part of the *Marin Headlands and*
 96 *Fort Baker Transportation Infrastructure and*
 97 *Management Plan* (2009), a number of
 98 improvements for bicyclists are being made.
 99 These include roadway improvements to
 100 enhance bicycle safety, a new bicycle and

1 pedestrian path between the Marin
2 Headlands and Fort Baker, new trail access,
3 and an uphill bicycle lane on Conzelman
4 Road from Alexander Avenue to McCullough
5 Road.

6 7 **Pedestrian**

8 The key issue for pedestrians at Marin
9 County park sites is conflicts with
10 automobiles near congested parking areas;
11 this issue was described at length in the
12 previous sections on Marin County Traffic
13 and Parking. Remaining pedestrian issues are
14 addressed below.

15
16 Golden Gate National Recreation Area park
17 sites in Marin County are generally relatively
18 remote. Muir Beach and Stinson Beach are 6
19 to 12 miles from the Highway 101 corridor,
20 and are adjacent to small communities that
21 are surrounded by park land, while the
22 eastern edge of the park lands in the county's
23 southwestern corner is bordered by the
24 larger communities of Marin City, Tamalpais
25 Junction, and Mill Valley. Despite several
26 trails that extend into these communities,
27 pedestrian access to park sites is fairly
28 limited. Even in those residential areas
29 adjacent to park lands, there are few
30 sidewalks, and residents of southern Marin
31 County often drive to nearby trailheads, such
32 as Tennessee Valley. Tourists sometimes
33 walk over the Golden Gate Bridge from San
34 Francisco into Marin County, but are not
35 likely to ascend into the Marin Headlands
36 farther than Battery Spencer, which is a short
37 distance beyond the northern end of the
38 Bridge.

39
40 However, Golden Gate National Recreation
41 Area park sites in Marin County feature an
42 extensive network of fire roads and trails of
43 all types. Trail connectivity is good, both
44 within Golden Gate National Recreation
45 Area park sites and to trails extending into
46 adjacent park lands such as Mount Tamalpais
47 State Park. Coverage is dense in the southern
48 park lands, extending from Muir Beach into
49 Tennessee Valley and the Marin Headlands.
50 While many trails within Marin County park

51 sites are multiuse, bikes, dogs, or horses are
52 not allowed on some trails.

53

54 **Summary**

55 Marin County park sites are accessed
56 primarily by private automobile. The most
57 popular destinations experience considerable
58 congestion during peak periods on winding,
59 two-lane roads and exceed the capacity of
60 limited parking areas. There is little public
61 transit service to park sites within Marin
62 County. While bicycle access can be
63 challenging due to topography and narrow
64 roadways, these park lands are popular
65 destinations for recreational cyclists. There is
66 little pedestrian access to the park sites, but
67 hiking is a popular activity within them.

68

69

70 **San Francisco Park Lands**

71 Golden Gate National Recreation Area park
72 lands in San Francisco are generally
73 immediately adjacent to urban
74 neighborhoods. As a result, San Francisco
75 park sites are distinct: they are much more
76 multimodal in terms of both access and
77 circulation than are park sites in Marin and
78 San Mateo counties, which are strongly
79 oriented toward the automobile. Pedestrian,
80 bicycle, and public transit access is generally
81 very good. One site (Ocean Beach) is directly
82 served by two rail transit lines. The park sites
83 include large parking lots. Signage is good
84 within park sites, although trails to park sites
85 from the city are not always well marked.

86

87 **Traffic and Parking**

88 Automobile access to Golden Gate National
89 Recreation Area park sites in San Francisco is
90 generally good. While access to most park
91 sites requires travel over San Francisco city
92 streets, some of which can be congested
93 during commuting hours, multiple access
94 routes are available, and there are sizable
95 parking lots available at almost every
96 location. These lots often become full at peak
97 times.

98

1 **Public Transit**

2 In general, park sites in San Francisco enjoy
3 the sort of frequent and extensive transit
4 service that is rare in the national park
5 system. All Golden Gate National Recreation
6 Area park sites in San Francisco and the
7 Alcatraz Island ferry are served at least
8 indirectly by Muni light rail, historic
9 streetcar, cable car, or bus routes operating
10 on headways of 20 minutes or less from early
11 morning until late in the evening.

12
13 Muni stops near Golden Gate National
14 Recreation Area park sites, however,
15 generally lack many amenities (including
16 park-related signs or other wayfinding
17 information). Muni vehicles are often
18 crowded, especially at commute times, with
19 4.3% of morning peak period trips exceeding
20 125% of seating and standing capacity (San
21 Francisco Municipal Transportation Agency
22 2009). Details of Muni routes serving Golden
23 Gate National Recreation Area park sites can
24 be found in appendix E.

25
26 A number of changes have been planned to
27 Muni service that would impact access to
28 Golden Gate National Recreation Area park
29 sites. Some reductions in service have been
30 implemented in response to a budget issues,
31 but improvements in service are also planned,
32 such as the Muni E-line extension. Other
33 changes are detailed in appendix E.

34
35 Transit service to selected Golden Gate
36 National Recreation Area park sites is also
37 provided by the PresidiGO shuttle, operated
38 by the Presidio Trust within the Presidio,
39 with a downtown express shuttle connecting
40 to regional transit, and by Golden Gate
41 Transit from Marin County.

42 **Bicycle**

43
44 Bicycle access both to and within Golden
45 Gate National Recreation Area park sites in
46 San Francisco is good. Unlike in Marin and
47 San Mateo counties, where steep grades and
48 rough trail conditions make many routes
49 accessible to only the most expert cyclist, San

50 Francisco's bicycle system and the park sites
51 offer opportunities for cyclists of all skill
52 levels.

53
54 Designated bicycle routes, including on-
55 street bike lanes and, in Golden Gate Park,
56 off-street paths, connect to all Golden Gate
57 National Recreation Area park sites in San
58 Francisco. An off-street multiuse trail runs
59 along the northern waterfront from Aquatic
60 Park to the Warming Hut at Crissy Field;
61 from there it is a short distance to the Golden
62 Gate Bridge, which features a dedicated bike
63 path on its west side connecting cyclists to
64 Golden Gate National Recreation Area park
65 sites in Marin County. Additional paths and
66 lanes can be found within the Presidio, and
67 there are several multiuse trails at Lands End.
68 A bike path constituting a segment of the
69 Pacific Coast Bicycle Route runs on city land
70 along nearly the entire 3.5-mile length of
71 Ocean Beach, and there are numerous paved
72 multiuse trails within Fort Funston.

73 **Pedestrian**

74
75 The uniquely urban context of park sites
76 within San Francisco results in much greater
77 pedestrian access than can be enjoyed at park
78 sites in Marin and San Mateo counties.
79 Streets leading to park sites typically include
80 sidewalks, and the only obstacles to
81 pedestrian access are distance, busy streets,
82 and hills in some locations. However, all
83 Golden Gate National Recreation Area park
84 sites are along the city's waterfront, and thus
85 most are at a lower elevation than the
86 majority of pedestrian trip origins.

87
88 There are, however, some obstacles to
89 pedestrian access. Fort Funston, in the city's
90 southwestern corner, is relatively isolated,
91 located west of Lake Merced and across the
92 Great Highway and Skyline Boulevard from
93 city streets. Pedestrian access to Ocean Beach
94 requires crossing the Great Highway at
95 signalized pedestrian crosswalks over a four-
96 lane highway. All of the park sites in San
97 Francisco, however, are connected to each
98 other by the Bay Trail and Coastal Trail,

1 including segments that meet accessibility
2 standards for people with disabilities.

3
4 Within park sites, pedestrian routes vary
5 from sidewalks to paved paths, boardwalks,
6 and unpaved trails. Accessibility for people
7 with disabilities is much higher here than at
8 park sites in Marin and San Mateo counties,
9 where few paved, level paths exist.

10
11 Coastal Trail and Bay Trail improvements are
12 planned as part of the Trails Forever initia-
13 tive, a collaborative effort sponsored by the
14 Golden Gate National Parks Conservancy,
15 the National Park Service, and the Presidio
16 Trust.

17 **Summary**

18
19 San Francisco park sites, uniquely situated
20 within an urban environment, are generally
21 connected to their surroundings by public
22 transit and a network of streets, bike routes,
23 and sidewalks. Parking is generally available,
24 and there are extensive trail networks within
25 the larger park area.

26
27

28 **San Mateo County Park Lands**

29 Just as Golden Gate National Recreation
30 Area park sites in Marin County and in San
31 Francisco share many characteristics in
32 common that make them distinct from the
33 park sites in other counties, park lands in San
34 Mateo County are notable in a number of
35 ways. They are generally less developed in
36 terms of amenities, less used (although some
37 park sites are popular with local residents),
38 less connected to one another, and different
39 in terms of their primary means of access. As
40 in Marin County, private automobiles are the
41 primary mode for access to Golden Gate
42 National Recreation Area park sites in San
43 Mateo County.

44
45 Directional and park identification signs, as
46 well as parking at most park sites is limited, if
47 they exist at all. The “typical” Golden Gate
48 National Recreation Area site in San Mateo
49 County consists of open space with trails of

50 various qualities that are accessible from a
51 trailhead, which either provides limited,
52 informal parking, or no parking at all. Some
53 park sites are relatively remote and
54 inaccessible to pedestrians and transit users,
55 while others are immediately adjacent to
56 suburban neighborhoods and feature many
57 “social” or informal entrances. Bicycle access
58 is generally good, although some park sites
59 do not accommodate cyclists and safer routes
60 are needed along much of State Route 1
61 south of Pacifica.

62 **Traffic and Parking**

63
64 Automobile access to San Mateo park sites is
65 generally good, although parking at trailheads
66 can be in short supply or available only on an
67 “informal” basis on nearby streets; also some
68 roadways experience congestion.

69

70 Highways 1 and 280 provide primary access
71 to most park sites, along with Highway 35, or
72 Skyline Boulevard, which is a suburban
73 arterial in its northern segment, near Milagra
74 Ridge, and a two-lane rural road in the south,
75 near Phleger Estate. Highway 92, Sharp Park
76 Road, and other rural and suburban
77 roadways also provide access to Golden Gate
78 National Recreation Area park sites. State
79 Route 1 experiences relatively high volumes
80 of traffic (California Department of
81 Transportation 2009).

82

83 A segment of State Route 1 between Pacifica
84 and Montara, called Devil’s Slide, has long
85 been prone to landslides that have closed the
86 road for periods of several months. This
87 segment is now being replaced by an inland
88 bypass including twin tunnels and bridges.
89 These are due for completion in 2011. At that
90 time, the existing segment of roadway will be
91 converted to a multiuse California Coastal
92 Trail segment extending north and south to
93 connect to Golden Gate National Recreation
94 Area and state park sites along the coastline.

95

96 Finally, data on parking demand is not
97 available. However, at park sites in San Mateo
98 County, parking is generally both limited and
99 informal; in addition to trailhead lots at

1 Milagra Ridge, Sheldance Nursery, and
 2 Sneath Lane, parking is found along
 3 roadsides, in neighborhoods, and in business
 4 parking lots. At Rancho Corral de Tierra,
 5 parking is associated with the equestrian
 6 facilities.

7
 8 There are several parking areas that serve to
 9 access the park at adjacent college or state
 10 park parking lots.

11
 12 Access to Phleger Estate is generally through
 13 Huddart County Park, which provides
 14 adequate parking on most days.

15

16 **Public Transit**

17 The San Mateo County Transit District, or
 18 SamTrans, provides bus service throughout
 19 the county. As San Mateo is a relatively low-
 20 density, suburban county, much of this
 21 service is relatively infrequent, operating on
 22 headways of 30 minutes to as much as 180
 23 minutes, and some routes do not operate on
 24 weekends or mid-days, outside of normal
 25 commuting hours. Stops generally lack
 26 amenities, and pedestrian routes from stops
 27 to Golden Gate National Recreation Area
 28 park sites often lack sidewalks and
 29 directional signs. However, as many park
 30 sites in San Mateo County are immediately
 31 adjacent to neighborhoods, a few stops are
 32 within walking distance of Golden Gate
 33 National Recreation Area park sites. In
 34 general, SamTrans provides a fair level of
 35 service to Pacifica and Montara, including
 36 relatively frequent service to Mori Point and
 37 Milagra Ridge. Service to these two areas also
 38 connects to BART and operates seven days a
 39 week. Service to the Sawyer Camp and San
 40 Andreas trails, however, is limited to
 41 weekdays, and Phleger Estate is currently not
 42 served by transit. More information on
 43 SamTrans service can be found in appendix
 44 E.

45

46 **Bicycle**

47 Bicycle access to Golden Gate National
 48 Recreation Area park sites in San Mateo
 49 County is mixed; however, bicycle amenities

50 within the park are generally good, as cyclists
 51 are allowed on most trails.

52

53 While most bicycle access is over roadways
 54 without separate bicycle facilities, a grade-
 55 separated, off-road bike path parallels State
 56 Route 1 along the Pacifica shoreline,
 57 connecting Pacifica State Beach just north of
 58 Point San Pedro to Rockaway State Beach
 59 and Mori Point. Another unpaved path runs
 60 north from Mori Point to Sharp Park Beach,
 61 and there are bike lanes along Sharp Park
 62 Road connecting to Milagra Ridge. Cañada
 63 Road, running south from the SFPUC
 64 watershed, is closed to motor vehicles for
 65 several hours on county-sponsored “Bicycle
 66 Sundays.”

67

68 Milagra Ridge, meanwhile, features a paved
 69 loop within the site. The popular Sneath Lane
 70 Trail at Sweeney Ridge is paved, and the
 71 popular Sawyer Camp and San Andreas trails
 72 in the SFPUC watershed are primarily high
 73 capacity, paved, multiuse trails with median
 74 striping and mile markers. Bicycles are
 75 prohibited on trails within the Phleger Estate.

76

77 The *San Mateo County Bicycle Plan* proposes
 78 improvements to routes popular with cyclists,
 79 including Cañada Road, and while
 80 improvements are not planned, a route
 81 allowing bike access from the San Mateo
 82 County suburbs east of Interstate 280 to the
 83 road and mountain bike trails west of Skyline
 84 Boulevard has been identified as a priority for
 85 cyclists. This could require bicycle access in
 86 the vicinity of the Phleger Estate.

87

88 At Rancho Corral de Tierra, several miles of
 89 existing trails are primarily multiuse, though
 90 mostly steep and unpaved. The northern area
 91 of Rancho Corral de Tierra is connected to
 92 McNee Ranch State Park, by Old Pedro
 93 Mountain Road, a multiuse county trail that
 94 continues north to Pacifica.

95

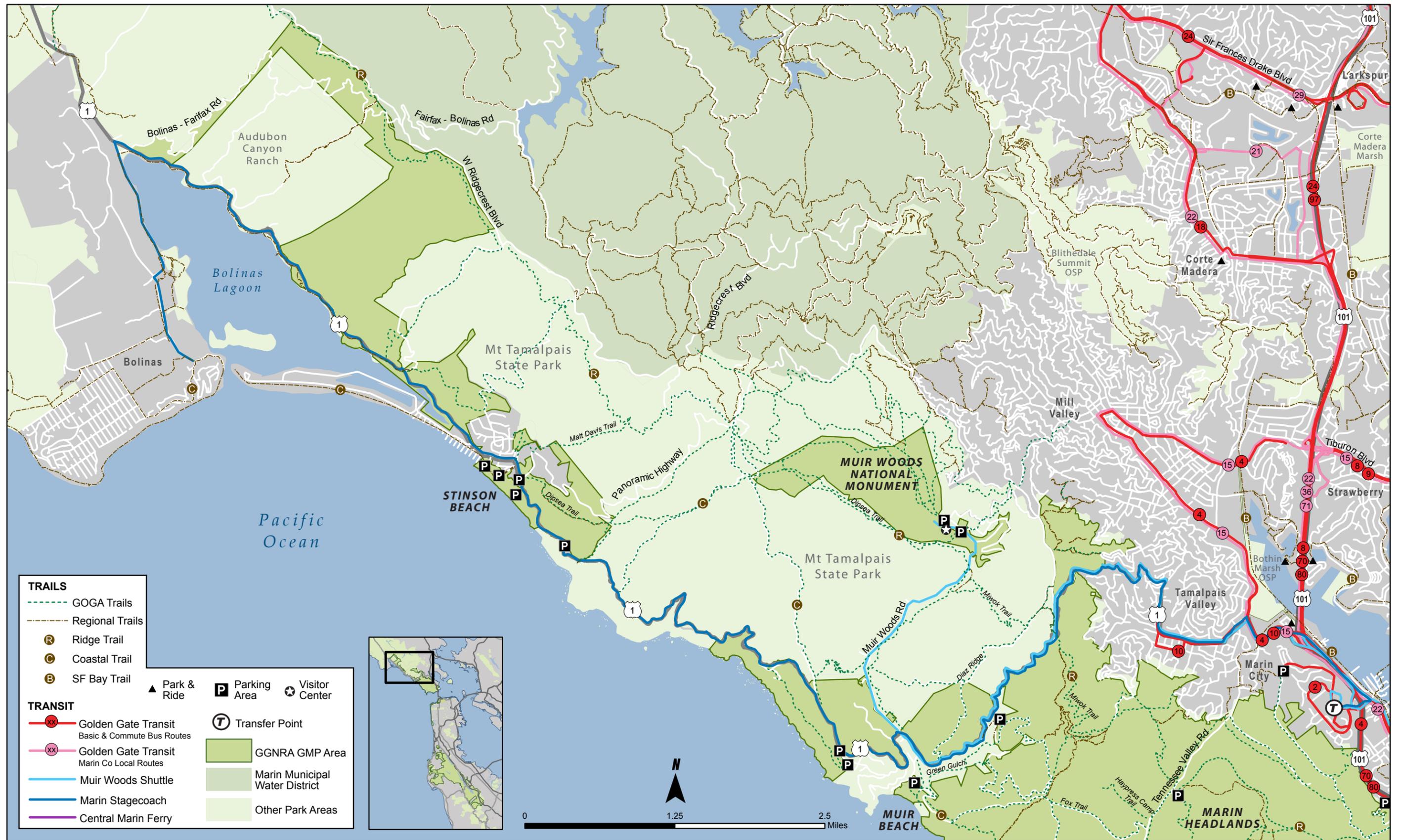
96 **Pedestrian**

97 Pedestrian access to Golden Gate National
 98 Recreation Area park sites in San Mateo
 99 County is limited. Trailheads at a few park

1 sites, such as Milagra Ridge, Sweeney Ridge,
2 Mori Point, Point San Pedro, and Rancho
3 Corral de Tierra, are adjacent to suburban
4 neighborhoods and thus are relatively
5 accessible to pedestrians (although sidewalks
6 leading to the park sites are sometimes
7 lacking). However, pedestrian circulation
8 within San Mateo County park sites is in
9 many cases very good, as most San Mateo
10 County park sites are essentially open space
11 preserves with trail networks. Also, two park
12 sites, Rancho Corral de Tierra and Phleger
13 Estate, offer extensive equestrian access.
14 Trails within San Mateo County Golden Gate
15 National Recreation Area park sites are
16 detailed in appendix F.
17

18 **Summary**

19 San Mateo County park sites are generally
20 adjacent to suburban developments and are
21 easily accessible by automobile. However,
22 they are not well served by public transit,
23 which is oriented toward commuters. Bicycle
24 access is generally good, and hiking is
25 popular within the parks. While more
26 discontinuous than park sites in Marin
27 County or San Francisco, San Mateo County
28 park sites are connected in part by both the
29 California Coastal Trail and the Bay Area
30 Ridge Trail. San Mateo park sites are also
31 popular with equestrians, and there are many
32 multiuse trails, with little conflict among
33 users.





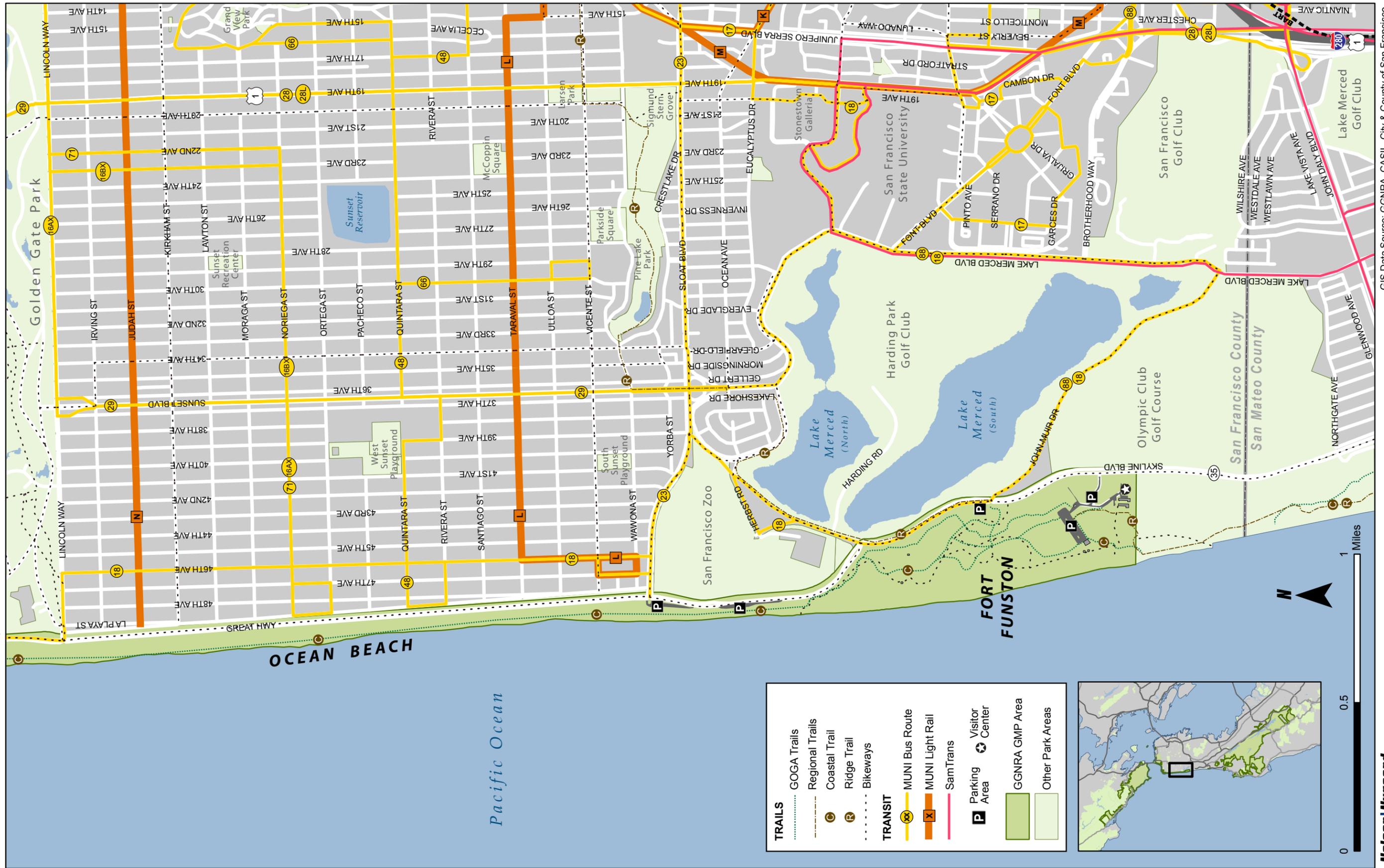
Nelson Nygaard
consulting associates

GIS Data Source: GGNRA, CASIL, Marin County, GreenInfo Network, MTC, MUNI, Golden Gate Transit

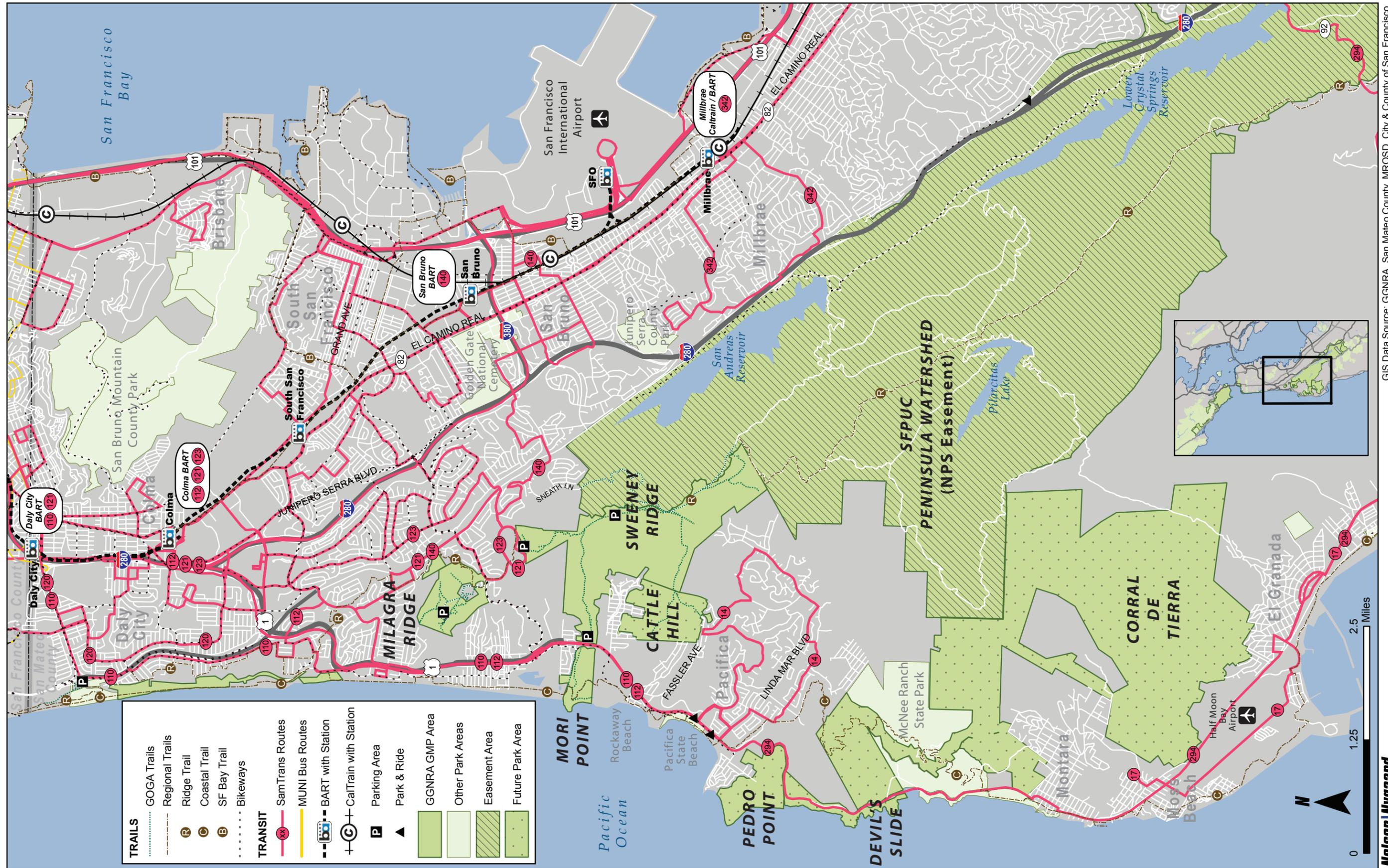


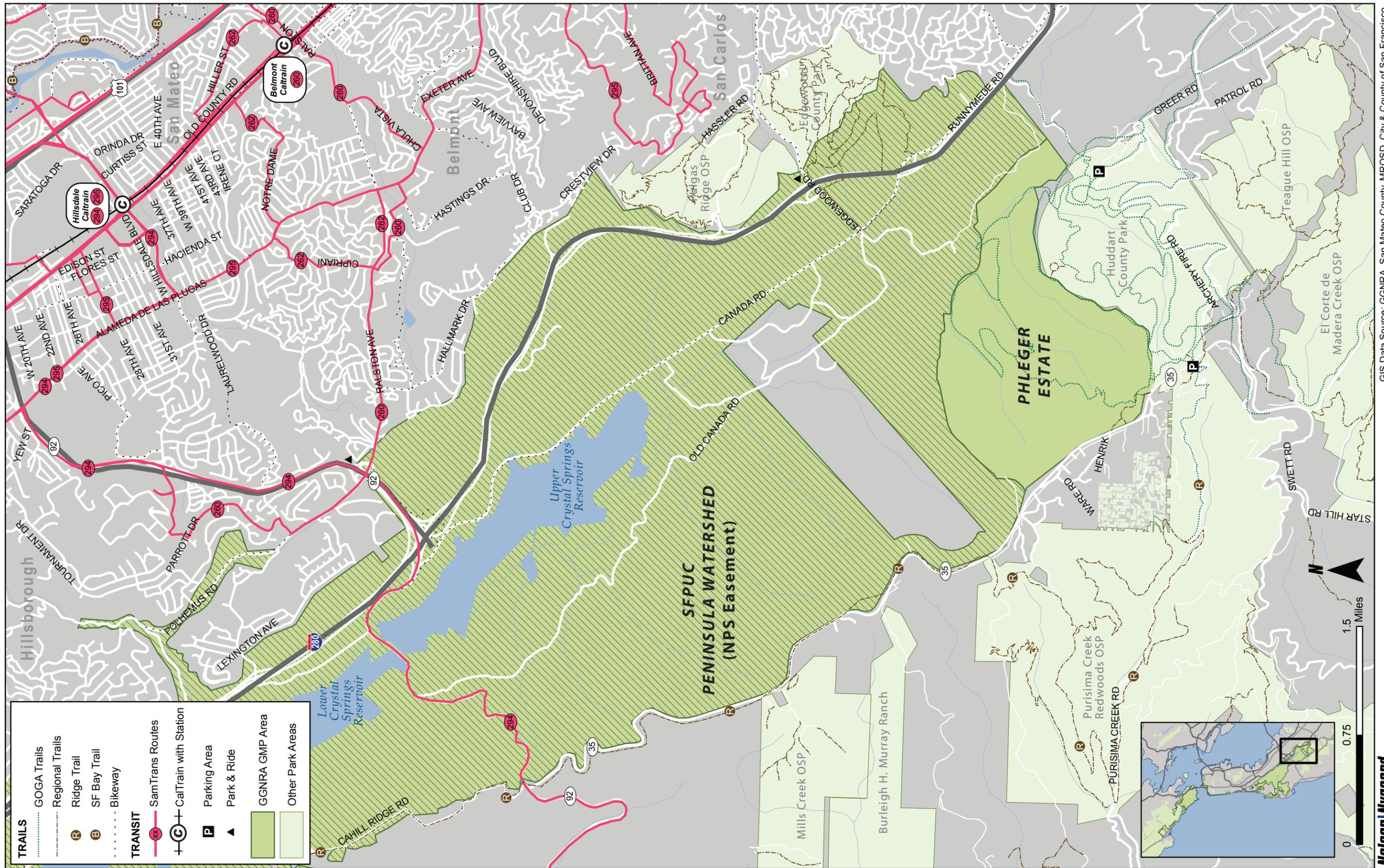


GIS Data Source: GGNRA, City & County of San Francisco, GreenInfo Network, MTC, MUNI, CASIL
 Nelson | Nygaard consulting associates



GIS Data Source: GGNRA, CASIL, City & County of San Francisco, County of San Mateo, GreenInfo Network, MTC, MUNI, BART





TRAILS GOGA Trails
	----- Regional Trails
	Ⓡ Ridge Trail
	Ⓟ SF Bay Trail
	----- Bikeway
TRANSIT	Ⓧ SamTrans Routes
	Ⓢ CalTrain with Station
	Ⓟ Parking Area
	▲ Park & Ride
	■ GGNRA GMP Area
	■ Other Park Areas

GIS Data Source: GGNRA, San Mateo County, MROSD, City & County of San Francisco, GreenInfo Network, MTC, SamTrans, MUNI, BART, CalTrain, CASIL

Nelson Nygaard
consulting associates

PARK MANAGEMENT, OPERATIONS, AND FACILITIES (INCLUDING GOLDEN GATE NATIONAL RECREATION AREA AND MUIR WOODS NATIONAL MONUMENT)

1 STAFFING

2 The park management team and staff are
3 responsible for both Golden Gate National
4 Recreation Area and Muir Woods National
5 Monument. In 2009, the park was staffed by
6 335 full-time-equivalent (FTE) employees,
7 which includes full-time, part-time, term,
8 temporary, and student employment. The
9 NPS staff is supplemented by the staff of the
10 Golden Gate National Parks Conservancy,
11 numerous park partners, and a large number
12 of volunteers who fulfill critical roles within
13 the operations and programming of the park
14 and monument.

15
16

17 Office of the Superintendent

18 The office of the superintendent includes
19 managerial activities of the superintendent,
20 deputy superintendent, Public Affairs, and
21 Strategic Planning and Initiatives, as well as
22 administrative staffs. The deputy
23 superintendent's office is responsible for a
24 considerable portion of the park management
25 including staff in the areas of administration,
26 business management, cultural resources and
27 museum management, interpretation and
28 education, environmental and safety,
29 maintenance, natural resources management
30 and science, planning and compliance, visitor
31 resources and protection and administration.

32
33

34 Planning, Projects, and Compliance

35 The Division of Planning is an assemblage of
36 planning, environmental review,
37 transportation, and design professionals who
38 provide park management with the technical
39 expertise and policy guidance needed to plan
40 for preservation and protection of the park's
41 natural and cultural resources, provide for

42 appropriate public use, and manage public
43 involvement in the planning and decision-
44 making process. Planning staff work as a team
45 with other park divisions, park partners, other
46 agencies, and consultants to make this mission
47 a reality.

48

49 Given the complexity of managing a large park
50 unit adjacent to a high density, urban
51 population, the project workload into the
52 future is substantial. Adequate planning staff is
53 critical for achieving the park's vision;
54 maintaining positive relationships with the
55 public; and meeting the high expectations set
56 internally by the National Park Service and
57 externally by the community. The park's
58 ability to benefit from the philanthropic
59 capacity of the Bay Area will continue to
60 depend heavily on the park's ability to plan for
61 and manage projects and programs funded by
62 outside sources. Current funding provides
63 about two-thirds of the needs for
64 management and administration with the
65 balance derived from external sources.

66

67

68 Cultural Resources and Museum 69 Management Division

70 This division oversees management of more
71 than 263 inventoried archeological sites, some
72 of which predate European contact and
73 constitute the most tangible connection
74 between the Coast Miwok and Ohlone
75 communities and park lands, and more than
76 700 historic structures, most of which related
77 to military and maritime commercial themes
78 stretching over a period of more than 200
79 years. The park includes 5 national historic
80 landmarks, 12 properties listed in the National
81 Register of Historic Places, and 7 properties
82 determined eligible for national register
83 listing; 9 documented cultural landscapes,
84 including rural landscapes and dairy ranches;

1 and 4.2 million items in museum collections.
 2 The staff for this division includes
 3 authorization for 16 FTEs, however, 5 key
 4 positions (3 historical and landscape
 5 architects, 1 archeologist and 1 compliance
 6 assistant) are not permanent-full and
 7 dependent on funding levels. The division is
 8 working toward documenting baseline
 9 conditions of all park cultural resources in an
 10 effort to guide future operations and
 11 programs. Volunteers are necessary to
 12 support the park staff, given the large number,
 13 diversity, and significance of the park's
 14 cultural resources.

17 **Environmental and Safety Division**

18 This group is responsible for environmental
 19 protection and occupational health and safety;
 20 the staff consists of 1% of the total park
 21 workforce. The division manages the park's
 22 sustainability programs and is central to
 23 addressing carbon emissions mitigation.
 24 Minimizing the park's environmental impact
 25 and movement toward being climate neutral
 26 are core responsibilities of the division. The
 27 group also manages comprehensive water and
 28 energy conservation programs, reduced fossil
 29 fuel consumption, sustainable waste
 30 management, hazardous and universal waste
 31 management, air permits, hazardous materials,
 32 and hazardous waste remediation projects.

35 **Facility Operations and 36 Maintenance Division**

37 The Operations and Maintenance Division is
 38 responsible for ensuring the physical integrity
 39 of park assets and infrastructure. Facility
 40 management includes responsibility for
 41 buildings, utilities, roads, trails, grounds,
 42 housing, and project management. The park
 43 staff maintains over \$150 billion worth of
 44 structures and infrastructure. One-third of
 45 park staff work in the division. This workforce
 46 includes electricians, gardeners, engineering
 47 equipment operators, and other specialists
 48 that work to ensure the parks are safe and
 49 prepared for visitors.

50 Responsibilities are divided geographically, as
 51 well as by asset type: trails, roads, housing,
 52 buildings, and utilities. Project management
 53 and special fund source projects also have
 54 separate groups. Nearly half of the park
 55 building square footage is occupied by park
 56 partners in exchange for assuming building
 57 maintenance and other responsibilities.
 58 Further, in 2009, park volunteers provided
 59 24,500 hours of support toward maintenance
 60 projects, mostly trail projects. Despite creative
 61 approaches in supplementing the work of
 62 park staff, the workload needed to maintain
 63 and support the park assets exceeds the
 64 available staff resources, resulting in a
 65 significant maintenance backlog. The
 66 maintenance of aging infrastructure within the
 67 park requires increasing resources and results
 68 in increased operational and environmental
 69 risks. A majority of the maintenance needs
 70 annually go unmet due to insufficient funding,
 71 which results in an increasing backlog of
 72 deferred maintenance.

75 **Visitor and Resource 76 Protection Division**

77 This group includes responsibilities for law
 78 enforcement, structural fire suppression, and
 79 wildland fire control. Safety services are
 80 particularly unique within the park due to its
 81 urban location, its large area, and the variety
 82 of water and land-based recreation that
 83 occurs within the park. The staff in this
 84 division make up 30% of the total staff for the
 85 park. Law enforcement and the U.S. Park
 86 Police are responsible for enforcing law and
 87 protecting the public's safety. Law
 88 enforcement staff is organized into several
 89 geographic areas north and south of the
 90 Golden Gate Bridge. Patrol operations are
 91 conducted in marked and unmarked police
 92 cruisers, motorcycles, bicycles, on foot,
 93 horseback, and with all-terrain vehicles,
 94 although a lack of sufficient patrolling units
 95 has resulted in adverse impacts on the park's
 96 resources.

98 Safety services include search and rescue,
 99 emergency medical services, and structural

1 and wildland firefighting. The structural fire
2 department also includes paramedic support
3 and lifeguards. Wildland fires are managed by
4 a staff of nine. The Office of Fire Management
5 monitors and responds to all wildland fires
6 within the park and maintains an appropriate
7 preparedness level in accordance with the
8 park's 2006 fire management plan. Structural
9 fires within the San Francisco portions of the
10 park and in the Presidio are handled by the
11 San Francisco Fire Department. The Golden
12 Gate National Recreation Area's Fire
13 Management Program is part of the San
14 Francisco Bay Area Network. Fire staff based
15 at Golden Gate National Recreation Area also
16 serve Point Reyes National Seashore, John
17 Muir National Historic Site, Eugene O'Neil
18 National Historic Site, and Pinnacles National
19 Monument. Professional lifeguards are at
20 Stinson Beach and patrol units cover the 6-
21 mile stretch of Ocean Beach. A small park
22 horse patrol, using three or four NPS horses,
23 is managed by division staff, with over 7,200
24 volunteer hours provided in 2009.

25 26 27 **Interpretation and Education Division**

28 The Interpretation and Education Division
29 aims to connect people to their parks. The
30 division includes Community Outreach,
31 Education Programs, and the Volunteers-In-
32 Parks Program, and provides staff for specific
33 interpretation services throughout Golden
34 Gate National Recreation Area, Fort Point
35 National Historic Site, and Muir Woods
36 National Monument. Staff in this division
37 make up 10% of the park's workforce, which
38 includes permanent and term staff as well as
39 students. The interpretation and education
40 division has the responsibility of
41 communicating the value and significance of
42 the park and monument's resources to the
43 public through signs, exhibits, brochures,
44 ranger-led programs, and audio tours. Interpretation
45 programs are offered at Alcatraz Island, Muir Woods National
46 Monument, Fort Point National Historic Site,
47 the Presidio, Fort Funston, the Sutro District,
48 Marin Headlands, San Mateo County, the
49 Crissy Field Center, and other locations

51 throughout the park. Community Outreach
52 staff are responsible for managing
53 communications and outreach to the local
54 community.

55
56 Education Programs staff deliver formal
57 curriculum-based educational programs to
58 approximately 20,000 Bay Area children
59 annually on topics including habitat
60 restoration, invasive species, marine biology,
61 plate tectonics, geology formations, and day-
62 to-day life at Fort Point National Historic Site.
63 The Volunteers-In-Parks program manages
64 thousands of volunteers who contribute over
65 300,000 hours annually to park programs.

66
67 The demand for education and interpretive
68 programs far exceeds what the park is
69 currently able to deliver. Many valuable
70 resources within the park and monument are
71 not interpreted due to limited staff and
72 funding for program development. Park
73 partners such as the Bay Area Discovery
74 Museum, Headlands Institute, Marine
75 Mammal Center, Point Bonita YMCA, and
76 Slide Ranch assist in meeting the public's
77 demand for educational and interpretive
78 programs; however, a considerable gap
79 remains between park offerings and the public
80 demand.

81 82 83 **Natural Resources Management 84 and Sciences Division**

85 The Natural Resources Division includes
86 responsibility for protection of a diverse array
87 of aquatic, vegetation, wildlife, and physical
88 resources. The park's 80,500 acres of land and
89 water extend from Tomales Bay in Marin
90 County south into San Mateo County.
91 Division staff manages the park's ecosystems
92 and numerous plant and animal species,
93 including many sensitive, rare, threatened, or
94 endangered species. With only 4% of the
95 park's total staff working in the division,
96 including base-funded and project-funded
97 staff, the division's work is further supported
98 by specialists from the Golden Gate National
99 Parks Conservancy and by Volunteers-In-
100 Parks natural resource stewards. Current

1 staffing levels prevent the park from
 2 completing the baseline studies and
 3 monitoring necessary to guide the park's
 4 natural resources preservation efforts in the
 5 future. The division is central in addressing
 6 the effects of climate change on park
 7 resources and habitats.

8
 9

10 **Management, Administration, 11 and Business Services**

12 This division makes up 15% of the park's staff
 13 and is responsible for integrating operations
 14 and organizational support across the park.
 15 The staff consists of personnel in
 16 Administration, Budget and Finance,
 17 Contracting and Procurement, Fee Collection,
 18 Human Resources, Information Technology,
 19 Public Affairs and Special Events, the
 20 Superintendent's Office, and the Office of
 21 Strategic Planning. The Business Management
 22 office oversees complex contracts and
 23 partnership agreements that provide key
 24 services within the park. The division also
 25 manages leases, concessions, and the legal
 26 aspects of park and partner projects, including
 27 property easements, encroachments, and
 28 acquisition of new lands.

29
 30

31 **PARTNERS AND OTHER ENTITIES**

32 The Volunteer-In-Parks program is critical to
 33 the ongoing operation of Golden Gate
 34 National Recreation Area and Muir Woods
 35 National Monument. Volunteers provide
 36 between 300,000 and 400,000 volunteer hours
 37 to various programs and efforts within the
 38 park in a typical year. However, due to staff
 39 limitations to manage volunteer efforts, the
 40 volunteer program does not have the capacity
 41 to grow and provide additional benefit to the
 42 parks.

43
 44 As a park partner for more than 24 years, the
 45 nonprofit Golden Gate National Parks
 46 Conservancy has provided more than \$80
 47 million in assistance to the park and
 48 monument. This organization provides
 49 support with education and interpretation

50 programs and with the protection of natural
 51 and cultural resources; the Golden Gate
 52 National Parks Conservancy also collaborates
 53 with the National Park Service with visitor
 54 program partnerships, including the Crissy
 55 Field Center and the Institute of the Golden
 56 Gate. The organization has been instrumental
 57 in facilitating visitor enhancements through-
 58 out the park, including the spectacular
 59 transformation of Crissy Field, improvements
 60 to Alcatraz Island, and the successful Trails
 61 Forever program.

62
 63 In addition to programs offered by the
 64 National Park Service, park visitors can enjoy
 65 programs provided by a number of nonprofit
 66 organizations in facilities owned by the
 67 National Park Service. There are many other
 68 excellent park partners who provide
 69 conservation restoration and protection,
 70 environmental education, outreach programs,
 71 and recreational opportunities that support
 72 the goals of the park while achieving their own
 73 organization's missions.

74

75 Many of the parks' better known partners are
 76 in the Marin Headlands, just north of the
 77 Golden Gate Bridge. These include the
 78 Marine Mammal Center, Headlands Institute
 79 (a part of NatureBridge), Bay Area Discovery
 80 Museum, Headlands Center for the Arts,
 81 Point Bonita YMCA, and Hostelling
 82 International. The Fort Mason Center houses
 83 23 nonprofit organizations and provides
 84 meeting, exhibit, recreation, and performance
 85 space in 11 historic landmark buildings.
 86 Alcatraz Cruises LLC (a part of Hornblower
 87 Cruises and Events) brings visitors to and
 88 from the island. The park staff continues to
 89 explore new partnerships and to improve
 90 ways to nurture and sustain them to extend
 91 ongoing collaborations.

92

93

94 **PARK FACILITIES**

95 The large size of Golden Gate National
 96 Recreation Area and Muir Woods National
 97 Monument, in combination with the diversity
 98 of natural and cultural resources and the
 99 history of land use, makes for numerous

1 facilities to be maintained and managed. The
 2 park lands contain approximately 1,150 total
 3 facilities that include buildings, trails, roads,
 4 and other structures and landscapes.
 5
 6 The park has been at the forefront of asset
 7 management planning, and has creatively
 8 found ways to adaptively reuse historic

9 buildings, to lease space to park partners, and
 10 to prioritize funding toward most needed
 11 maintenance and deferred maintenance.
 12 Sustainability goals are being incorporated
 13 into facility and systems construction. The
 14 park has also proactively worked with
 15 partners to obtain outside funding for
 16 projects.

**TABLE 12. THE GOLDEN GATE NATIONAL RECREATION AREA PORTFOLIO
 SUMMARIZED BY RECORD COUNT FOR VARIOUS ASSET TYPES**

Asset Type	NPS	Partner	Total
Historic Buildings	142	88	230
Nonhistoric Buildings	105	117	222
Maintained Landscapes	35	1	36
Trails	146	1	147
Paved and Unpaved Roads	215	1	216
Parking Lots	113	0	113
Water Systems	16	2	18
Wastewater Systems	13	2	15
Other Assets	187	4	191

Note: Many of the park’s historic assets such as archeological sites and cultural landscapes are described in the Cultural Resources section.

1 Historic and Nonhistoric Buildings

2 Nearly half of the buildings within park lands
 3 are historic, carrying special consideration for
 4 maintenance. A significant number of
 5 buildings are managed and maintained by the
 6 partner organizations occupying them.
 7
 8

9 Maintained Landscapes

10 The park maintains landscapes for public use,
 11 such as the grounds surrounding buildings.
 12 The Upper Fort Mason grounds and the
 13 Alcatraz Island gardens are examples.
 14
 15

16 Trails, Roads, and Parking

17 The staff maintains paved and unpaved roads
 18 throughout the park. Roads need continual
 19 maintenance in which lack of funding reduces
 20 the ability to maintain them at an optimum
 21 level.
 22

23 The park maintains extensive trail networks.
 24 Additional trails will be coming into park
 25 management with the acquisition of new areas
 26 in San Mateo County. The park has an
 27 extensive trails network, which is heavily used
 28 due to the urban park setting. This requires
 29 diligent maintenance; it is a challenge to find
 30 funding sources to support the necessary

1 work. Park partners assist in this area through
2 donations.

3
4 The park maintains 113 parking lots, which
5 range in size, and serve many of the major
6 sites.

7
8
9 **Utilities**

10 Water and wastewater capacity are critical to
11 all sites within the park lands. System needs
12 vary over time and can be stressed by
13 increases in use as well as the age and level of
14 maintenance. Planning for utilities is critical in
15 order to ensure excellence in operational
16 effectiveness, sustainability, and conservation.
17 Current water and wastewater system
18 constraints occur at Alcatraz Island and
19 Stinson Beach. Several systems are antiquated
20 and many are failing and require constant
21 maintenance. Replacement of these systems is
22 a high priority.

23
24
25 **Park Operations, Maintenance,
26 and Public Safety Facilities**

27 Park operations, maintenance, and public
28 safety functions are presently scattered
29 throughout the park at sites and facilities that
30 were not intended for these uses. Staff

31 carrying out these functions have been forced
32 to adapt to conditions that do not adequately
33 meet their space, size, function, mobility, and
34 security requirements. Maintenance and
35 public safety operations have moved
36 numerous times over a short period, requiring
37 staff to reprogram their operations; this has
38 resulted in operational inefficiencies. Ideally,
39 park maintenance and public safety staff
40 would have adequate space for both
41 personnel and facilities with appropriate
42 access to various park units. Additionally,
43 sheltered space for a variety of equipment is
44 needed for equipment protection and efficient
45 operations.

46
47 **Park Maintenance Facilities**

48 For efficient operations, park maintenance
49 staff require secured vehicle parking, ability to
50 receive cell and radio transmissions, access to
51 arterial roads and highways for moving
52 equipment, and ideally access to transit for
53 ease of access for staff. Many of these criteria
54 are not currently met by the existing facilities.
55 Given the coastal climate, with its salt air and
56 blowing sand, equipment life is substantially
57 shortened by storage outdoors or in
58 unenclosed shelters. Currently, there is
59 inadequate enclosed storage for maintenance
60 equipment within the park (table 13).

TABLE 13. MAINTENANCE FACILITIES

Location	Description
Muir Woods National Monument	
	Park maintenance is supported by a small office in the Administration-Concession Building, maintenance operations in the Old Inn, and facilities at Lower Conlon Avenue. These spaces support trail maintenance, building maintenance, and office space. A maintenance yard is adjacent to Muir Woods Road near Conlon Avenue.
Marin County	
Stinson Beach	Four modular buildings for offices, a workshop, and storage
Tennessee Valley	Barn used for the storage of trail maintenance supplies and shared with the park horse patrol

TABLE 13. MAINTENANCE FACILITIES

Location	Description
NIKE Missile Site	Maintenance yard, road maintenance operations, and for storage of fill materials
Fort Baker	Buildings and utilities shop and parking for vehicles and equipment (the building is temporary and scheduled for demolition to provide space for visitor parking)
Fort Cronkhite	Grounds maintenance operations, a sign shop, offices, and storage
San Francisco County	
Alcatraz Island	Park operations and maintenance facilities within former prison buildings
Upper Fort Mason	Grounds maintenance operations and administrative offices
East Fort Miley	A small onsite maintenance facility, heavy vehicle repairs, office space and shops on the east side in a warehouse and battery
Fort Funston	Park maintenance support is in former military structures
The Presidio	Additional maintenance functions and storage
San Mateo County	
Shelldance Nursery	Vehicle storage
Native Plant Nurseries	Small native plant nurseries are at Tennessee Valley, Marin Headlands, and adjacent to Muir Woods Road in Marin County and at Fort Funston in San Francisco County. Another native plant nursery is in the Presidio. The National Park Service, Presidio Trust, and the Golden Gate National Parks Conservancy cooperate in its use and management. All nurseries serve as volunteer stewardship centers and facilitate significant volunteer contributions to the parks natural resource and restoration programs.

1 Public Safety Facilities

2 Currently public safety staff shares space with
 3 other divisions throughout the park. This is
 4 less than ideal because there are certain public
 5 safety functions that need to be exclusive and
 6 secured. Further, efficient operation requires
 7 adequate space for training and meetings,
 8 visibility to the public for reporting incidents,
 9 adequate cell and radio coverage, and access
 10 to public transportation for staff. Current
 11 public safety facilities do not meet these
 12 requirements in each location, and
 13 reassignment of space for public safety is
 14 desirable.
 15
 16 Within Marin County, the park’s public safety
 17 program has an office at Stinson Beach that

18 provides space for law enforcement, water
 19 safety, and seasonal Emergency Medical
 20 Services staff, along with storage. Fort
 21 Cronkhite Building 1056 is the main, parkwide
 22 law enforcement office. The small park horse
 23 patrol is at lower Tennessee Valley.
 24
 25 The park’s public safety office in San
 26 Francisco County includes Presidio Building
 27 223, Fort Miley and Upper Fort Mason, Fort
 28 Funston, and lifeguard operations at China
 29 Beach. The Alcatraz Island public safety office
 30 is housed in Building 64, the historic barracks
 31 on the north end of the island.
 32
 33 The public safety staff at Muir Woods
 34 National Monument is in the Administration-
 35 Concession Building.

1 **Residential Facilities**

2 The park continues to provide some limited
3 housing for employees. The park staff
4 manages park housing units in the Marin
5 Headlands. Housing in the San Francisco Bay
6 Area is among the most expensive in the
7 United States. Recruitment and retention of
8 employees for both the park and park partners
9 are hindered by the expense of housing in the
10 area and low number of available park
11 housing units.

13
14 **ASSET MANAGEMENT**

15 With a large number of facilities and
16 constrained funding, the park staff strives to
17 address the challenge of maintaining assets in
18 acceptable condition and sustaining them
19 over time. Park staff is responsible for
20 maintaining nearly 1,150 assets; base funding
21 of \$5.3 million covers only a portion of the
22 annual operations and maintenance
23 requirements of \$24.6 million.

24
25 For the same NPS-occupied and NPS-
26 maintained assets, annual special project
27 funding of approximately \$6.0 million covers
28 only a small portion of its \$148.8 million in
29 deferred maintenance backlog. Including the
30 park assets managed by park partners, total
31 documented park deferred maintenance
32 exceeds \$198.1 million.

33
34 In 2006, the park staff developed one of the
35 first park asset management plans to describe
36 its asset inventory, summarize its current
37 budget, communicate funding requirements,
38 and provide strategies to better manage assets
39 that are essential to park operations and to
40 high-quality visitor experiences. This
41 document was updated in 2009.

42 **Operations and Maintenance**
43 **Funding Priorities**

44 Assets maintained and managed by the park's
45 maintenance division (e.g., nonpartner assets)
46 were categorized into priority levels based on
47 a variety of factors. Those factors include the
48 importance of the assets to the mission of the
49 park and the recognized level of maintenance
50 needed to keep the assets operational to suit
51 their intended functions. Funding is then
52 directed toward the highest priority assets,
53 while lower priority assets will be maintained
54 to the best level that limited available funding
55 allows. However, even with prioritization,
56 there remains \$2.9 million in priority band 1
57 and 2 assets that would remain unfunded and
58 therefore represent the most pressing
59 unfunded needs for operations and
60 maintenance. See table 14.

61
62
63 **Partner Assets**

64 Roughly one-half of all park buildings are
65 affiliated with partners or concessioners.
66 While the park shares maintenance
67 responsibility for many of these assets, most of
68 the concession and partner facilities are under
69 contractual arrangements. The park asset
70 management plan has identified some specific
71 funding needs and issues for key park
72 partners; with new draft maintenance plans in
73 place, park management can now follow-up
74 with partners to clearly communicate
75 recommendations for best addressing needed
76 maintenance. The goal is for the park staff to
77 help its partners identify and address
78 maintenance needs in a way that sustains the
79 overall asset portfolio in support of the park
80 mission.

**TABLE 14. GOLDEN GATE NATIONAL RECREATION AREAS
OPERATION AND MAINTENANCE PLANNED FUNDING**

O&M* Optimizer Priority Band	Asset Count	Base O&M Allocations	O&M Benchmarks	Percent Coverage	O&M Funding Gap
Highest Priority	81	\$3,561,497	\$5,148,089	69%	\$1,586,592**
High Priority	133	\$1,012,566	\$2,405,661	42%	\$1,393,095**
Medium Priority	132	\$545,513	\$2,298,316	24%	\$ 1,752,803
Lower Priority	290	\$200,043	\$7,987,277	3%	\$ 7,787,234
Lowest Priority	276	\$718	\$6,781,986	0%	\$ 6,781,268
Totals	912	\$5,320,337	\$24,621,329	22%	\$ 19,300,992

*Operation and Maintenance

**Gap for bands 1–2: \$2,979,687

1 Removal of Assets

2 Removing unneeded assets that are not
3 mission related is essential to keeping the
4 portfolio a manageable size and allowing
5 available funding to be spent on a smaller pool
6 of higher priority assets. In developing the
7 GMP alternatives, the park staff identified
8 potential assets that could be disposed of over
9 the life of the plan. The facilities identified
10 through this process generally consist of
11 nonhistoric structures in poor condition with
12 no mission related use existing or planned.

15 Addressing Deferred Maintenance

16 Recognizing that the park cannot reasonably
17 address all of its deferred maintenance in the
18 short run, the park has a schedule of facility
19 projects that extends out 10 years; this plan
20 addresses the highest priority assets and most
21 critical equipment needs. The condition of
22 these more important assets will show the
23 most rapid improvement, measured by the
24 facility condition index. If 100% of project
25 funding were applied to critical needs and

26 projected component renewal, the park would
27 stabilize the condition of the critical
28 components of its portfolio.

29
30 The GMP process has also identified deferred
31 maintenance savings that would be achieved
32 by taking the actions proposed in the
33 alternatives. Deferred maintenance issues can
34 be addressed through several actions
35 recommended in the general management
36 plan, including removal, stabilization,
37 restoration, renovation, and preservation of
38 facilities. The park is pursuing a reduction in
39 deferred maintenance through other funding
40 methods as well, such as the use of historic
41 leasing as a source of funds to reinvest in
42 historic structures, pursuing Federal Land and
43 Highway Program (FLHP) funds, pursuing
44 annual special project funds, using a portion
45 of proceeds from concession franchise fee
46 funds, and dedicating some repair and
47 maintenance funds for component renewal.
48 The park will also continue to look for
49 opportunities to work with partners in
50 addressing deferred maintenance when
51 updating or issuing new partner agreements.

TABLE 15. PROJECT FUNDING AND DEFERRED MAINTENANCE

Type of Funding	Amount
Estimated Annual Special Project Funding	\$6.0 million
NPS Deferred Maintenance	\$148.8 million
Combined NPS and Partner Deferred Maintenance	\$198.1 million

1 Sustainability

2 In a “funding-constrained” world, it is also
3 extremely helpful for the park to identify
4 more efficient ways of operating and
5 managing its assets. The park staff has
6 identified goals for achieving a higher level of
7 sustainability, including managing and
8 tracking energy performance, using renewable
9 fuels, conserving water at high use areas, and
10 continuing to enact best practices in waste
11 management. The park managers also
12 recognize the need to broadly communicate
13 sustainability goals with park staff and to
14 collaborate with park partners. These
15 measures are opportunities for the park to
16 find cost savings and become more fiscally
17 responsible.

18

19 Coordination between the 20 General Management Plan and 21 the Park Asset Management Plan

22 Asset data from the park asset management
23 plan helped to inform the development of the
24 GMP alternatives. The updates of the park
25 asset management plan, in light of the
26 planning process for the general management
27 plan, provide an extraordinary opportunity
28 for park managers to promote sound asset
29 management principles, incorporate the value
30 and objectives of partnership relationships,
31 and advance sustainability goals in a
32 coordinated manner.



INTRODUCTION

1 The National Environmental Policy Act
2 requires that environmental documents
3 discuss the environmental impacts of a
4 proposed federal action, feasible alternatives
5 to that action, and any adverse environmental
6 effects that cannot be avoided. In this case, the
7 proposed federal action would be the
8 adoption of a general management plan for
9 Golden Gate National Recreation Area and
10 Muir Woods National Monument. This
11 section analyzes the potential environmental
12 impacts on natural resources, cultural
13 resources, visitor use and experience, the
14 social and economic environment,
15 transportation, and NPS operations and
16 management that could result from
17 implementing the four alternatives.

18
19 Because of the general, conceptual nature of
20 the actions described in the alternatives, the
21 impacts of these actions are analyzed in
22 general, qualitative terms. Thus, this
23 environmental impact statement should be
24 considered a programmatic analysis. For the
25 purposes of analysis, it is assumed that all of
26 the specific actions proposed in the alter-
27 natives would occur during the life of the plan.

28
29 This environmental impact statement
30 generally analyzes several actions, such as the
31 development of recreational facilities
32 (including trails and trailheads), the
33 construction of facilities for visitor orientation
34 and NPS operations, and the maintenance or
35 restoration of natural and cultural resources.
36 If and when proposed site-specific
37 developments or other actions are ready for
38 implementation following the approval of the
39 general management plan, appropriate
40 detailed environmental and cultural
41 compliance documentation would be
42 prepared. This compliance would be in
43 accordance with the National Environmental
44 Policy Act of 1969 and the National Historic
45 Preservation Act of 1966, both as amended,
46 and would meet requirements to identify and

47 analyze each possible impact for the resources
48 affected.

49
50 This section begins with a description of the
51 methods and assumptions used for each
52 impact topic. Impact analyses are organized by
53 impact topic and then by alternative. The
54 existing conditions for all of the impact topics
55 that are analyzed were identified in part 8 of
56 this document. All of the impact topics
57 retained for detailed analysis are assessed for
58 each alternative.

59
60 The analysis of the no-action alternative
61 (continue current management) identifies the
62 future conditions at Golden Gate National
63 Recreation Area and Muir Woods National
64 Monument if there are no major changes to
65 facilities or NPS management direction other
66 than those included in existing approved
67 plans; the no-action alternative assumes
68 implementation of existing approved plans.
69 The three action alternatives are then
70 compared to the no-action alternative to
71 identify the incremental changes that would
72 occur as a result of changes in park facilities,
73 uses, and management. Impacts of recent
74 decisions and approved plans, such as those
75 identified in part 1 of this document, are not
76 evaluated as part of this environmental
77 analysis, except as part of cumulative impact
78 analysis when appropriate. Although these
79 actions would occur during the life of the
80 general management plan, they have been (or
81 would be) evaluated in other environmental
82 documents.

83
84 The key impacts of each alternative are briefly
85 summarized in volume 1 of this document.
86 When this project is considered in
87 conjunction with other projects and actions
88 occurring in the region, impacts can become
89 cumulative. The discussion of cumulative
90 impacts is presented separately in "Part 11:
91 Other Analyses and Statutory
92 Considerations."

METHODS AND ASSUMPTIONS FOR ANALYZING POTENTIAL IMPACTS

1 The planning team based the impact analysis
2 and the conclusions in this part mostly on the
3 review of existing literature and studies, other
4 environmental documentation completed for
5 the park, information provided by experts in
6 the National Park Service and in other
7 agencies, and staff insights and professional
8 judgment. The team’s method of analyzing
9 impacts is further explained below. It is
10 important to remember that all the impacts
11 have been assessed assuming that mitigative
12 measures will be implemented to minimize or
13 avoid impacts (see volume I, part 7 for
14 mitigative measures). If mitigative measures
15 were not applied, the potential for resource
16 impacts and the magnitude of those impacts
17 would increase.

18
19 The environmental consequences for each
20 impact topic were identified and
21 characterized based on impact type (adverse
22 or beneficial), intensity, context, and duration.
23 Cumulative effects are discussed in part 10.

24
25 **Impact intensity** refers to the degree or
26 magnitude to which a resource would be
27 beneficially or adversely affected. Each impact
28 was identified as negligible, minor, moderate,
29 or major, in conformance with the definitions
30 for these classifications provided for each
31 impact topic. Because this is a programmatic
32 document, the intensities were expressed
33 qualitatively.

34
35 **Context** refers to the setting within which an
36 impact may occur, such as the affected region
37 or locality. In this document most impacts are
38 either localized (site-specific) or parkwide.

39
40 **Impact duration** refers to how long an impact
41 would last. The planning horizon for this plan
42 is approximately 20 years. Unless otherwise
43 specified, in this document the following
44 terms are used to describe the duration of the
45 impacts:

46

47 **Short-term:** The impact would be temporary
48 in nature, lasting one to three years or less,
49 such as the impacts associated with
50 construction and/or disruption of visitor use
51 to an area of the park.

52

53 **Long-term:** The impact would last more than
54 three years and could be permanent in nature,
55 such as the loss of soil due to the construction
56 of a new facility. Although an impact may only
57 occur for a short duration at one time, if it
58 occurs regularly over a longer period of time
59 the impact may be considered to be a long-
60 term impact. For example, the noise from a
61 vehicle driving on a road would be heard for a
62 short time and intermittently, but because
63 vehicles would be driving the same road
64 throughout the 20-year life of the plan, the
65 impact on the natural soundscape would be
66 considered to be long term.

67

68 Effects also can be direct or indirect. Direct
69 effects are caused by an action and occur at
70 the same time and place as the action. Indirect
71 effects are caused by the action and occur
72 later or farther away, but are still reasonably
73 foreseeable. This document discloses and
74 analyzes both direct and indirect effects, but
75 does not differentiate between them in the
76 discussions.

77

78 Discussion of the impacts of the action
79 alternatives describe the difference between
80 implementing the no-action alternative and
81 implementing the action alternatives. To
82 understand a complete “picture” of the
83 impacts of implementing any of the action
84 alternatives, the reader must also take into
85 consideration the impacts that would occur in
86 the no-action alternative.

87

88

89 NATURAL RESOURCES

90 The analysis of natural resources was based on
91 research, knowledge of the area’s resources,

1 and the best professional judgment of
 2 planners and resource specialists, who have
 3 experience with similar types of projects. The
 4 definitions for impact intensity of all impact
 5 topics are included in this section under the
 6 impact topics; additional considerations used
 7 in characterizing the severity or intensity, as
 8 well as the duration, of certain impact topics
 9 are also discussed.

10
 11 Impacts are determined by comparing
 12 projected changes resulting from the action
 13 alternatives (alternatives 1, 2, and 3) to the no-
 14 action alternative (continue current
 15 management). For all impact topics the
 16 analysis and conclusion sections are
 17 conducted at the parkwide level supported by
 18 discussion specific to the counties or to
 19 individual planning areas/sites where the
 20 impacts differ from those identified at the
 21 parkwide level. For example, for vegetation
 22 and wildlife, a parkwide analysis of the
 23 impacts of the alternatives would appear first,
 24 followed by specific discussions for Marin
 25 County and at two sites, Stinson Beach and
 26 Rodeo Valley, where impacts on vegetation
 27 and wildlife differ from those described at the
 28 parkwide level. A description of the impacts at
 29 the county level or at individual planning
 30 areas or sites would occur only when they
 31 differ from the parkwide analysis and
 32 conclusions.

33
 34
 35 **Carbon Footprint and Air Quality**

36 The park’s contribution to global climate
 37 change is evaluated by assessing the relative
 38 production of greenhouse gases (CO₂) for
 39 each of the alternatives. Certain actions
 40 included in the alternatives of the plan would
 41 have an effect on the parks’ total greenhouse
 42 gas emissions, known as the carbon footprint.
 43 Because some of the actions, such as the
 44 construction of new facilities could increase
 45 CO₂ emissions, and other actions, such as
 46 providing alternative transportation and
 47 reducing visitors’ dependency on personal
 48 automobiles, could reduce CO₂ emissions, it is
 49 important to evaluate the impact that these
 50 actions could have on global warming.

51 Although the National Park Service would
 52 pursue sustainable practices whenever
 53 possible in all decisions regarding operations,
 54 facilities management, and development in the
 55 parks, and the parks’ focus on using
 56 renewable energy is a continuation of current
 57 management trends, the changes in energy
 58 consumption, energy availability, or costs
 59 compared to current conditions is of interest
 60 to NPS managers and the public.

61
 62 The analysis of the effects of the actions
 63 contained in this plan on the parks’ carbon
 64 footprint is based on a comparison with
 65 existing conditions. The baseline that is used
 66 for comparison is the carbon footprint of the
 67 no-action alternative, which is included in the
 68 “Natural Resources – Golden Gate National
 69 Recreation Area” section of part 8. The park
 70 staff inventoried its emissions in 2006 as part
 71 of their *Climate Change Action Plan* using the
 72 NPS and EPA CLIP tool. The CLIP tool
 73 converts emissions of various greenhouse
 74 gases into a common “metric tons of carbon
 75 equivalent” unit, which provides a basis for
 76 comparison among gases and simplifies
 77 reduction tracking. The conversion of a
 78 greenhouse gas to metric tons of carbon
 79 equivalent is based upon how strongly that
 80 particular gas contributes to the greenhouse
 81 effect, and how many tons of carbon emission
 82 would have the same effect.

83
 84 The carbon footprint of each action
 85 alternative was calculated using the CLIP tool.
 86 National Park Service staff input energy
 87 consumption information (gallons of diesel
 88 fuel used, kilowatt hours per year, miles
 89 driven) into the CLIP tool based on
 90 assumptions made for facility use (square
 91 footage of building space), NPS operations,
 92 and recreational demand. Actions that had
 93 attributing emissions were assessed in
 94 comparison to existing conditions. The CLIP
 95 tool produces quantitative measures of gross
 96 emissions, measured as MTCO₂e. This data
 97 provides a measurement of the carbon
 98 footprint. While the gross emissions of the
 99 alternatives are expressed numerically, the
 100 impact analysis (especially for effects on park
 101 resources) is general and qualitative. Overall,

1	the goal of the analysis was to assist park	51	soils and geologic resources or
2	managers with evaluating carbon footprint as	52	processes. The effects on soil
3	part of their decision-making process.	53	character and stability, and natural
4		54	shoreline or coastal processes would
5	The thresholds to determine the impact	55	be slight. Disruptions to geologic
6	intensity for carbon footprint are defined as	56	processes would not be perceptible.
7	follows:	57	
8		58	Minor: The impact is slight but
9	Negligible: The action would result in	59	detectable, and/or would result in
10	a change in total greenhouse gas	60	small but measurable changes to soils
11	emissions, but the change would be at	61	and geologic resources; the effect
12	the lowest level of detection, or not	62	would be localized. There could be
13	measurable. Impacts would not result	63	changes in soil character and stability
14	in a change to local air quality.	64	in a relatively small area, but the
15		65	change would not noticeably increase
16	Minor: The action would result in a	66	the potential for erosion. Disruptions
17	slight, but detectable, change in total	67	to natural shoreline or coastal
18	greenhouse gas emissions. Impacts	68	processes would be within the natural
19	could result in a change to local air	69	range of variability.
20	quality, but the change would be so	70	
21	slight that it would not be of any	71	Moderate: The impact is readily
22	measurable or perceptible	72	apparent and/or would result in easily
23	consequence.	73	detectable changes to soils or geologic
24		74	resources; the effects would be
25	Moderate: The action would result in	75	localized. The effect on soil
26	a modest change in total greenhouse	76	productivity and natural shoreline or
27	gas emissions, which could result in a	77	coastal processes would be apparent.
28	change to local air quality.	78	The potential for erosion to remove
29		79	small quantities of additional soil
30	Major: The action would result in a	80	would noticeably increase or decrease.
31	substantial change in total greenhouse	81	Disruptions to geologic processes are
32	gas emissions, which could result in a	82	expected to be within the natural
33	change to local air quality.	83	range of variability, but could be
34		84	perceptible in the short term.
35		85	
36	Soils and Geologic Resources	86	Major: The impact is severely adverse
37	and Processes	87	or exceptionally beneficial and/or
		88	would result in appreciable changes to
38	The effects of the alternatives on soils and	89	soils or geologic resources; the effect
39	geologic resources (including shoreline and	90	would be regional in scale. There
40	coastal processes) are analyzed based on the	91	would be a strong likelihood that
41	possibility of impacts resulting primarily from	92	erosion would remove large quantities
42	facility development and visitor use.	93	of additional soil or erosion would be
43		94	substantially reduced. Disruptions to
44	The thresholds to determine the impact	95	natural shoreline or coastal processes
45	intensity for these resources are defined as	96	are expected to be outside the natural
46	follows:	97	range of variability and may be
47		98	permanent.
48	Negligible: The impact is barely	99	
49	detectable and/or would result in no	100	
50	measurable or perceptible changes to		

1	Water Resources and	51	
2	Hydrologic Processes	52	
3	Terrestrial and freshwater resources	53	water quality, watershed processes,
4	(including stream character, water quantity	54	wetlands, and floodplains would be
5	and quality, watershed processes, wetlands,	55	small, short term, and localized.
6	and floodplains) are analyzed together in this	56	Natural processes, functions, and
7	section because of the similarities of these	57	integrity would be temporarily
8	resources, their interrelationship with each	58	affected, but would be within the
9	other, and their collective effect on the overall	59	natural range of variability. The
10	integrity of hydrologic systems. For example,	60	impacts would only affect a few
11	terrestrial sediment inputs shape the character	61	individuals of plant or wildlife species
12	of streams: sediment-starved streams incise,	62	dependent on one or more of these
13	while sediment-rich streams often result in	63	water-related resources. Any changes
14	aggradation and widening. Healthy riparian	64	would require considerable scientific
15	vegetation can also filter pollutants before	65	effort to measure and have barely
16	reaching a creek; this in turn affects water	66	perceptible consequences.
17	quality. In addition, many riparian areas are	67	
18	often classified as wetlands, depending in part	68	Any impacts on marine/estuarine
19	on their duration of saturation each year.	69	water quality and ocean resources
20	Together, all of these elements affect	70	would be noticeable and would be
21	hydrologic processes that can influence the	71	short term, requiring considerable
22	condition of a watershed. Marine and	72	scientific effort to measure and having
23	estuarine resources/systems are discussed	73	barely perceptible consequences.
24	with a focus on water quality and ocean	74	
25	stewardship. Although impacts on	75	Moderate: Impacts (chemical,
26	terrestrial/freshwater and marine/estuarine	76	physical, or biological) to stream
27	resources and systems are discussed and	77	character, water quality, watershed
28	analyzed separately, one conclusion is	78	processes, wetlands, and floodplains
29	presented for water resources as a whole.	79	would be readily apparent, long term,
30		80	and localized. Natural processes,
31	The following impact thresholds have been	81	functions, and integrity would be
32	developed for analyzing water resources:	82	affected, but would be only
33		83	temporarily outside the natural range
34	Negligible: Stream character, water	84	of variability. The impacts would have
35	quality, watershed processes,	85	a measurable effect on plant or
36	wetlands, and floodplains would not	86	wildlife species dependent on one or
37	be impacted, or the impacts would be	87	more of these water-related resources,
38	undetectable, or if detectable, the	88	but all species would remain
39	effects would be considered slight,	89	indefinitely viable within the park and
40	localized, and short term. Any	90	monument.
41	measureable changes would be within	91	
42	the natural range of variability.	92	Any impacts on marine/estuarine
43		93	water quality ocean resources would
44	Any impacts on marine/estuarine	94	be noticeable and might be long term.
45	water quality and ocean resources	95	
46	would be slight, localized, and mostly	96	Major: Impacts (chemical, physical, or
47	inconsequential.	97	biological) would have drastic and
48		98	permanent consequences for stream
49	Minor: Impacts (chemical, physical,	99	character, water quality, watershed
50	or biological) to stream character,	100	processes, wetlands, and floodplains
		101	that could not be mitigated. Species
			dependent on one or more of these
			water-related resources would be at

1	risk of extirpation from the park.	50	
2	Changes would be readily measurable,	51	Minor: Impacts would be detectable,
3	would be outside the natural range of	52	but they would not be expected to be
4	variability, would have substantial	53	outside the natural range of variability
5	consequences, and would be	54	and would not be expected to have
6	noticeable on a regional scale.	55	any long-term effects on native
7		56	species, their habitats, or the natural
8	Any impacts on marine/estuarine	57	processes sustaining them. Any
9	water quality and ocean resources	58	changes in native habitat integrity and
10	would be readily noticeable and long	59	native and nonnative species richness
11	term, and would cause permanent	60	and abundance would be minimal.
12	damage or benefit.	61	
13		62	Population numbers, population
14		63	structure, genetic variability, and other
15	Habitat (vegetation and wildlife)	64	demographic factors for species might
		65	have small, short-term changes, but
16	Vegetation and wildlife are addressed	66	long-term characteristics would
17	together in this section, because an analysis of	67	remain stable and viable. Disturbance
18	potential impacts on wildlife typically involves	68	of some individuals could be
19	a discussion of wildlife habitat, which consists	69	expected, but without interference to
20	of various vegetation and aquatic communities	70	reproduction or other factors
21	found within the park and monument. Soils	71	affecting population levels.
22	and substrates, topography, microclimates,	72	
23	and landscape configuration also affect	73	Key ecosystem processes might have
24	habitats, but these elements are addressed in	74	short-term disruptions that would be
25	separate sections within the natural resources	75	within natural variation. Habitat
26	section of the environmental consequences	76	integrity would be maintained to
27	part. Threatened and endangered species	77	support species' needs. Impacts would
28	associated with these resources are discussed	78	be outside critical reproduction
29	under a separate impact topic as well. The	79	periods for sensitive native species.
30	effects of the alternatives on marine resources	80	Improvements to habitat quality may
31	and habitat are analyzed based on the	81	be detectable, but would not result in
32	possibility of impacts resulting primarily from	82	measurable improvements in
33	facility development and visitor use.	83	ecosystem resiliency.
34		84	
35	The thresholds to determine impact intensity	85	Alcatraz waterbirds would be affected
36	for these resources are defined as follows:	86	by localized disturbance and/or
37		87	unnaturally elevated predation levels.
38	Negligible: There would be no	88	Few species would be affected, with
39	observable or measurable impacts on	89	potential for localized reduction in
40	the spatial extent of native species or	90	reproductive success and/or localized
41	their habitats, or the natural processes	91	decline in size of subcolonies.
42	sustaining them. There would be no	92	
43	discernable change in native habitat	93	Moderate: Impacts on native species,
44	integrity. Native and nonnative species	94	their habitats, or the natural processes
45	richness and abundance would remain	95	sustaining them would be detectable,
46	the same. Impacts would be of short	96	and they could be outside the natural
47	duration and well within natural	97	range of variability for short periods of
48	fluctuations.	98	time. Population numbers, population
49		99	structure, genetic variability, and other
		100	demographic factors might experience
			short-term changes, but would be

1	expected to rebound to pre-impact	52	population structure, genetic
2	numbers and to remain stable and	53	variability, and other demographic
3	viable in the long term. Frequent	54	factors might have large, short-term
4	responses to disturbance by some	55	declines, with long-term population
5	individuals could be expected, with	56	numbers substantially depressed.
6	some negative impacts on feeding,	57	Frequent responses to disturbance by
7	reproduction, or other factors	58	some individuals would be expected,
8	affecting short-term population levels.	59	with negative impacts on feeding,
9		60	reproduction, or other factors
10	Breeding animals of concern are	61	resulting in a long-term decrease in
11	present; animals are present during	62	population levels.
12	particularly vulnerable life-stages,	63	
13	such as migration or juvenile stages;	64	The impact is severely adverse or
14	mortality or interference with	65	exceptionally beneficial or would
15	activities necessary for survival can be	66	result in appreciable changes to
16	expected on an occasional basis, but is	67	wildlife resources and habitat; the
17	not expected to threaten the	68	effect would be regional in scale.
18	continued existence of the species in	69	Impacts would result in a reduction in
19	the park and monument.	70	species numbers, alteration in
20		71	behavior, reproduction, migration, or
21	Key ecosystem processes might have	72	survival. Severe adverse impacts
22	short-term disruptions that would be	73	would alter or destroy habitat in a way
23	outside natural variation (but would	74	that would prevent biological
24	soon return to natural conditions).	75	communities that inhabited the area
25	Habitat integrity would be maintained	76	prior to the action from reestablishing
26	to support species' needs. Some	77	themselves. These impacts are
27	impacts might occur during critical	78	expected to be outside the natural
28	periods of reproduction or in key	79	range of variability and may be
29	habitat for sensitive native species.	80	permanent.
30	Improvements to habitat quality	81	
31	would be detectable and could result	82	Key ecosystem processes might be
32	in measurable improvements in	83	disrupted in the long term or
33	ecosystem resiliency	84	permanently. Loss of habitat integrity
34		85	might affect the viability of at least
35	Alcatraz waterbirds would be affected	86	some native species. Improvements to
36	by disturbance and/or unnaturally	87	habitat quality would be detectable
37	elevated predation levels over a	88	and permanent and would result in
38	broader area of the island. More	89	substantial improvements in
39	species would be potentially affected,	90	ecosystem resiliency.
40	there would be potential for long-term	91	
41	abandonment of subcolonies, with	92	Many Alcatraz waterbird species
42	moderate reduction in population size	93	would be affected by continuous,
43	(less than 50%).	94	prolonged disturbance and/or
44		95	unnaturally elevated predation levels.
45	Major: Impacts on native species,	96	There would be potential for long-
46	their habitats, or the natural processes	97	term subcolony or Island
47	sustaining them would be detectable,	98	abandonment with substantial
48	and they would be expected to be	99	reduction in Island population size
49	outside the natural range of variability	100	(greater than 50%).
50	for long periods of time or be	101	
51	permanent. Population numbers,	102	

1 **Special Status Species**

2 Federal and state listed threatened and
3 endangered species are addressed together in
4 this section because many of these species (1)
5 have dual federal and state special status, (2)
6 occur together in the same habitats, or (3)
7 would be impacted similarly under each
8 alternative. The environmental consequences
9 for federal threatened and endangered species
10 are described in such a way that meets the
11 requirements of the National Environmental
12 Policy Act and the Endangered Species Act.
13 Definitions for impact conclusions required
14 for section 7 of the Endangered Species Act
15 consultation are presented below:

16
17 **No effect:** When a proposed action would not
18 affect a federal listed species, candidate
19 species, or designated critical habitat.

20
21 **May affect, not likely to adversely affect:**
22 Effects on federal listed or candidate species
23 are discountable (i.e., extremely unlikely to
24 occur and not able to be meaningfully
25 measured, detected, or evaluated) or are
26 completely beneficial.

27
28 **May affect, likely to adversely affect:**
29 Adverse effects to a federal listed or candidate
30 species may occur as a direct or indirect result
31 of proposed actions and the effects are either
32 not discountable or completely beneficial.

33
34 **Likely to jeopardize proposed species or**
35 **adversely modify proposed critical habitat**
36 **(impairment):** The appropriate conclusion
37 when the National Park Service or the U.S.
38 Fish and Wildlife Service identifies situations
39 in which the proposal could jeopardize the
40 continued existence of a federal listed or
41 candidate species or adversely modify critical
42 habitat to a species within or outside park
43 boundaries.

44
45 The following impact threshold definitions
46 are used to describe the severity and
47 magnitude of changes to federal and state
48 listed species under each of the alternatives.
49 Each threshold definition references the

50 Endangered Species Act determinations
51 previously described.

52
53 **Negligible:** Impacts would be
54 imperceptible or not measurable
55 (undetectable). For federal listed species,
56 this impact intensity would equate to a
57 determination of “no effect.”

58
59 **Minor:** Impacts would be slightly
60 perceptible and localized in extent;
61 without further actions, adverse impacts
62 would reverse and the resource would
63 recover. Adverse impacts may include
64 disturbance to individuals or avoidance
65 of certain areas. Beneficial impacts would
66 include slight increases to viability of the
67 species in the park as species-limiting
68 factors (e.g., habitat loss, competition,
69 and mortality) are kept in check. For
70 federal listed species, this impact intensity
71 would equate to a determination of “may
72 affect, not likely to adversely affect.”

73
74 **Moderate:** Impacts would be readily
75 measurable (apparent) and extend farther
76 geographically than a minor impact;
77 localized in extent; adverse impacts
78 would eventually reverse and the
79 resource would recover. Adverse impacts
80 may include disturbance, injury, or
81 mortality of individuals, but the long-
82 term viability of the population would be
83 maintained. For federal listed species, this
84 impact intensity would equate to a
85 determination of “may affect, likely to
86 adversely affect.” Beneficial impacts
87 would include increases to viability of the
88 species in the park as species-limiting
89 factors (e.g., habitat loss, competition,
90 and mortality) are kept in check. For
91 federal listed species, this impact intensity
92 would equate to a determination of “may
93 affect, not likely to adversely affect.”

94
95 **Major:** Impacts would be substantial,
96 highly noticeable, and affecting a large
97 geographic area; changes would be
98 irreversible with or without active
99 management. Adverse impacts may
100 include disturbance, injury, or mortality

1 of individuals to the point that the long-
 2 term viability of the population would be
 3 compromised. In extreme adverse cases,
 4 effects would be irreversible and
 5 populations may be extirpated from the
 6 park. For federal listed species, this
 7 impact intensity would equate to a
 8 determination of “may affect, likely to
 9 adversely affect.” Beneficial impacts
 10 would include increases to viability of the
 11 species in the park as species-limiting
 12 factors (e.g., habitat loss, competition,
 13 and mortality) are substantially reduced
 14 and species resilience is enhanced by
 15 greatly improving habitat integrity. For
 16 federal listed species, this impact intensity
 17 would equate to a determination of “may
 18 affect, not likely to adversely affect.”

21 **CULTURAL RESOURCES**

22 **Methodology**

23 In this assessment, environmental impacts on
 24 cultural resources are described in terms of
 25 type (adverse or beneficial), context, duration
 26 (short-term, long-term, or permanent), and
 27 intensity (negligible, minor, moderate, major),
 28 which is consistent with the regulations of the
 29 Council on Environmental Quality that
 30 implement the National Environmental Policy
 31 Act. These impact analyses are intended,
 32 however, to comply with the requirements of
 33 both the National Environmental Policy Act
 34 and section 106 of the National Historic
 35 Preservation Act. In addition to including
 36 section 106 findings in this document, the
 37 National Park Service intends to submit an
 38 independent Finding of Effect to the
 39 California state historic preservation office on
 40 the final preferred alternative (which will
 41 constitute the “undertaking” for section 106
 42 purposes). See “Part 12: Consultation,
 43 Coordination, and Preparation” for more
 44 information on the section 106 consultation
 45 with the state historic preservation office. In
 46 accordance with the Advisory Council on
 47 Historic Preservation’s regulations
 48 implementing section 106 of the National
 49 Historic Preservation Act (36 CFR 800,

50 *Protection of Historic Properties*), impacts on
 51 cultural resources were also identified and
 52 evaluated by (1) determining the area of
 53 potential effect, (2) identifying cultural
 54 resources present in the area of potential
 55 effects that are either listed in or eligible to be
 56 listed in the National Register of Historic
 57 Places, (3) applying the criteria of adverse
 58 effect to affected, national register-listed or
 59 national register-eligible cultural resources,
 60 and (4) considering ways to avoid, minimize,
 61 or mitigate adverse effects. Cultural resources
 62 that could be affected under this project were
 63 identified by consulting with park cultural
 64 resources staff, reviewing previous studies and
 65 reports, reviewing site inventories and maps,
 66 conducting field visits to sites where actions
 67 may occur, and overlaying proposed actions
 68 on top of maps of known resources to identify
 69 potential direct and indirect impacts.

71 In accordance with 36 CFR 800, for historic
 72 properties in the area of potential effects that
 73 are listed in or eligible for listing in the
 74 National Register of Historic Places, the
 75 results are either *no historic properties affected*
 76 (either there are no historic properties present
 77 or there are historic properties present but the
 78 undertaking will have no effect on them), or
 79 *historic properties affected* (there are historic
 80 properties that may be affected by the
 81 proposed action.) In addition, a determination
 82 of either *adverse effect* or *no adverse effect*
 83 must be made for affected national register-
 84 listed or national register-eligible cultural
 85 resources. A determination of *no adverse effect*
 86 means there is an effect, but the effect would
 87 not diminish the characteristics of the cultural
 88 resource that qualify it for inclusion in the
 89 national register. The ACHP regulations (36
 90 CFR 800.5) define an adverse impact to a
 91 historic property as one that may

92
 93 *alter, directly or indirectly, any of the*
 94 *characteristic of a historic property*
 95 *that qualify it for inclusion in the*
 96 *National Register in a manner that*
 97 *would diminish the integrity of the*
 98 *property’s location, design, setting,*
 99 *materials, workmanship, feeling, or*
 100 *association. Consideration shall be*

1 given to all qualifying characteristics
 2 of a historic property, including those
 3 that may have been identified
 4 subsequent to the original evaluation
 5 of the property's eligibility for the
 6 national register. Adverse effects may
 7 include reasonably foreseeable effects
 8 caused by the undertaking that may
 9 occur later in time, be farther
 10 removed in distance, or be cumulative
 11 (36 CFR 800.5, Assessment of
 12 Adverse Effects).
 13
 14 Council on Environmental Quality regulations
 15 and the National Park Service's *Conservation*
 16 *Planning, Environmental Impact Analysis and*
 17 *Decision-making* (Director's Order 12) also
 18 call for a discussion of mitigation, as well as an
 19 analysis of how effective the mitigation would
 20 be in reducing the intensity of a potential
 21 impact, e.g., reducing the intensity of an
 22 impact from major to moderate or minor. Any
 23 resultant reduction in intensity of impact due
 24 to mitigation, however, is an estimate of the
 25 effectiveness of mitigation under the National
 26 Environmental Policy Act only. It does not
 27 suggest that the level of effect as defined by
 28 section 106 is similarly reduced. Cultural
 29 resources are nonrenewable resources and
 30 adverse effects generally consume, diminish,
 31 or destroy the original historic materials or
 32 form, resulting in a loss in the integrity of the
 33 resource that can never be recovered.
 34 Therefore, although actions determined to
 35 have an adverse effect under section 106 may
 36 be mitigated, the effect remains adverse.
 37
 38 In addition, special consideration must be
 39 given to national historic landmarks during
 40 the planning process. Section 110(f) of the
 41 National Historic Preservation Act requires
 42 that a federal agency, to the maximum extent
 43 possible, minimize harm to a national historic
 44 landmark that may be directly and adversely
 45 affected by an undertaking. When there is an
 46 adverse effect on a national historic landmark,
 47 the agency shall request the Advisory Council
 48 on Historic Preservation to participate in any
 49 consultation to resolve adverse effects. The
 50 agency shall also notify the Secretary of the
 51 Interior of any consultation and invite the

52 Secretary to participate in the consultation
 53 where there may be an adverse effect. When
 54 this happens, the Advisory Council shall
 55 report the outcome of the section 106 process
 56 to the president, Congress, the Secretary of
 57 the Interior, and the head of the lead federal
 58 agency, and provide written comments or any
 59 memoranda of agreement to which it is a
 60 signatory as a result of this consultation.
 61

62 A section 106 summary is included in the
 63 conclusion for each alternative's impact
 64 analysis sections. The section 106 summary is
 65 an assessment of the effect of the undertaking
 66 (implementation of the alternative), based on
 67 the criteria of effect and criteria of adverse
 68 effect found in the ACHP regulations.
 69

71 **Historic Structures, Districts,** 72 **and Cultural Landscapes**

73 The following impact thresholds have been
 74 developed for analyzing impacts on historic
 75 structures and districts and cultural
 76 landscapes:
 77

78 **Negligible:** Impacts would be at the
 79 lowest levels of detection, barely
 80 measurable with neither adverse nor
 81 beneficial consequences. Historic
 82 structures, districts, and cultural
 83 landscapes would incur no change or
 84 barely perceptible changes to the defining
 85 features that contribute to the resource's
 86 national register eligibility. For purposes
 87 of section 106, the determination of effect
 88 would be *no adverse effect*.
 89

90 **Minor:** Adverse Impact: Impacts would
 91 not affect the character-defining features
 92 of a historic structure, district, or cultural
 93 landscape listed or eligible for the
 94 national register. Impacts would be
 95 measurable or detectable but would be
 96 slight and would not diminish the overall
 97 integrity of the resource. For purposes of
 98 section 106, the determination of effect
 99 would be *no adverse effect*.
 100

1 Beneficial Impact: Historic features of the
2 structure, district, or landscape would be
3 stabilized and preserved in accordance
4 with the Secretary of the Interior’s
5 *Standards for the Treatment of Historic*
6 *Properties*, thus maintaining the integrity
7 of the resource. For purposes of section
8 106, the determination of effect would be
9 *no adverse effect*.

10
11 **Moderate:** Adverse Impact: Impacts
12 would alter a character-defining
13 feature(s) of a significant historic
14 structure, district, or cultural landscape
15 and would result in measurable and
16 perceptible effects. These changes to one
17 or more of the characteristics that qualify
18 the resource for inclusion in the national
19 register could diminish the overall
20 integrity of the resource but would not
21 jeopardize its national register eligibility.
22 For purposes of section 106, the
23 determination of effect would be *adverse*
24 *effect*.

25
26 Beneficial Impact: Preservation and
27 rehabilitation of the historic structure,
28 district, or cultural landscape and its
29 contributing features would be in
30 accordance with the *Secretary of the*
31 *Interior’s Standards for the Treatment of*
32 *Historic Properties*. For purposes of
33 section 106, the determination of effect
34 would be *no adverse effect*.

35
36 **Major:** Adverse Impact: Impacts would
37 result from substantial and highly
38 noticeable changes that would alter the
39 character-defining features of a historic
40 structure, district, or cultural landscape.
41 These impacts would be substantial,
42 noticeable, and permanent. The action
43 would severely change one or more
44 characteristics that qualify the resource
45 for the National Register of Historic
46 Places, and would diminish the overall
47 integrity of the resource to the extent that
48 it would no longer be eligible to be listed
49 in the national register. For purposes of
50 section 106, the determination of effect
51 would be *adverse effect*.

52 Beneficial Impact: The character-defining
53 features of a historic structure, district, or
54 landscape would be maintained and
55 restored in accordance with the Secretary
56 of the Interior’s *Standards for the*
57 *Treatment of Historic Properties*. For
58 purposes of section 106, the
59 determination of effect would be *no*
60 *adverse effect*.

63 Archeological Resources

64 The following impact thresholds have been
65 developed for analyzing impacts on
66 archeological resources:

67
68 **Negligible:** Impact is at the lowest level
69 of detection. Impacts would be
70 measurable but with no perceptible
71 consequences. For purposes of section
72 106, the determination of effect would be
73 *no adverse effect*.

74
75 **Minor:** Disturbance of a site results in
76 little loss of integrity. The determination
77 of effect for section 106 would be *no*
78 *adverse effect*.

79
80 **Moderate:** A site is disturbed but not
81 obliterated. The determination of effect
82 for section 106 would be *adverse effect*.

83
84 **Major:** A site is obliterated. The
85 determination of effect for section 106
86 would be *adverse effect*.

89 Ethnographic Resources

90 The following impact thresholds have been
91 developed for analyzing impacts on
92 ethnographic resources:

93
94 **Negligible:** Impacts would be at the
95 lowest levels of detection and barely
96 perceptible. Impacts would neither alter
97 resource conditions, such as traditional
98 access or site preservation, nor alter the
99 relationship between the resource and
100 the affiliated group’s body of practices

1 and beliefs. For purposes of section 106,
2 the determination of effect would be *no*
3 *adverse effect*.

4 **Minor:** Impacts would be slight but
noticeable and would neither appreciably
alter resource conditions, such as
traditional access or site preservation, nor
alter the relationship between the
resource and the group's body of beliefs
and practices. For purposes of section
106, the determination of effect would be
no adverse effect.

5 **Moderate:** Impacts would be apparent
6 and would alter resource conditions or
7 interfere with traditional access, site
8 preservation, or the relationship between
9 the resource and the affiliated group's
10 beliefs and practices, even though the
11 group's practices and beliefs would
12 survive. For purposes of section 106, the
13 determination of effect would be *adverse*
14 *effect*.

15 **Major:** Impacts would alter resource
16 conditions. Proposed actions would
17 block or greatly affect traditional access,
18 site preservation, or the relationship
19 between the resource and the group's
20 body of beliefs and practices to the extent
21 that the survival of a group's beliefs
22 and/or practices would be jeopardized.
23 For purposes of section 106, the
24 determination of effect would be *adverse*
25 *effect*.

30 Park Collections

31 Park collections (precontact and historic
32 objects, artifacts, works of art, archival
33 documents, and natural history specimens)
34 are generally ineligible for listing in the
35 National Register of Historic Places. As such,
36 section 106 determinations of effect are not
37 provided. The following impact thresholds
38 have been developed for analyzing park
39 collections:

41 **Negligible:** Impact(s) would be at the
42 lowest levels of detection – barely
43 measurable with no perceptible
44 consequences, either adverse or
45 beneficial, to park collections.

46 **Minor:** Impact(s) would affect the
47 integrity of a few items in the park
48 collection but would not degrade the
49 usefulness of the collection for future
50 research and interpretation.

51 **Moderate:** Impact(s) would affect the
52 integrity of many items in the park
53 collection and diminish the usefulness of
54 the collection for future research and
55 interpretation.

56 **Major:** Impact(s) would affect the
57 integrity of most items in the park
58 collection and destroy the usefulness of
59 the collection for future research and
60 interpretation.

66 VISITOR USE AND EXPERIENCE

67 This impact analysis considers various aspects
68 of visitor use and experience at Golden Gate
69 National Recreation Area and Muir Woods
70 National Monument, including the effects on
71 diversity of recreation opportunities and
72 national park experiences; visitor
73 understanding, education, and interpretation;
74 safe and enjoyable access and circulation to
75 and within the park; and visitor safety.

76 The analysis is primarily qualitative rather
77 than quantitative due to the conceptual nature
78 of the alternatives. Impacts on visitor use and
79 experience were determined considering the
80 best available information. Information on
81 visitor use and opinions were taken from the
82 public scoping information for this plan and
83 surveys of visitors and nonvisitors conducted
84 by various researchers. Other information that
85 was considered in the analysis includes the
86 parks' annual reporting of visitor use levels,
87 including overnight stays, to the National Park
88 Service's Public Use Statistics Office, and local
89 and regional travel and tourism data.

1 Primarily, visitors expressed interest in
 2 preserving and educating visitors about the
 3 unique natural and cultural resources of the
 4 park and monument, continuing to provide
 5 high-quality trail opportunities, exploring
 6 improved transportation and access to the
 7 park lands and better preserving the scenic
 8 beauty of the park’s setting.

9
 10 Impacts on visitor use and experience are
 11 described in terms of the effect on the
 12 following components:

- 13
- 14 ▪ diversity of recreation opportunities
 15 and national park experiences
- 16 ▪ visitor understanding, education, and
 17 interpretation
- 18 ▪ safe and enjoyable access and
 19 circulation to and within the park (see
 20 also transportation section)
- 21 ▪ visitor safety

22
 23 The duration of a short-term impact would be
 24 less than one year. A long-term impact would
 25 last more than one year and would be more
 26 permanent in nature.

27
 28 Adverse impacts are those that most visitors
 29 would perceive as undesirable. Beneficial
 30 impacts are those that most visitors would
 31 perceive as desirable.

32
 33 The thresholds to determine impact intensity
 34 are defined as follows:

35
 36 **Negligible:** Most visitors would likely be
 37 unaware of any effects associated with
 38 implementation of the alternative.

39
 40 **Minor:** Changes in visitor opportunities
 41 and/or setting conditions would be slight
 42 but detectable, would affect few visitors,
 43 and would not appreciably limit or
 44 enhance experiences identified as
 45 fundamental to the park’s purpose and
 46 significance.

47
 48 **Moderate:** Changes in visitor
 49 opportunities and/or setting conditions

50 would be noticeable, would affect many
 51 visitors, and would result in some
 52 changes to experiences identified as
 53 fundamental to the park’s purpose and
 54 significance.

55
 56 **Major:** Changes in visitor opportunities
 57 and/or setting conditions would be highly
 58 apparent, would affect most visitors, and
 59 would result in several changes to
 60 experiences identified as fundamental to
 61 park purpose and significance.

62 63 64 **SOCIAL AND ECONOMIC** 65 **ENVIRONMENT**

66 When assessing the potential impacts on the
 67 social and economic environment, several
 68 impact parameters must be analyzed for each
 69 action alternative. First, the *type* of impact
 70 must be determined (i.e., whether the impact
 71 is beneficial or adverse). The beneficial and
 72 adverse impacts on the social and economic
 73 environment are determined by comparing
 74 the anticipated changes resulting from
 75 implementing any of the action alternatives to
 76 the results of continuing current management
 77 (i.e., the no-action alternative). Once it is
 78 determined if an impact is beneficial or
 79 adverse, the other impact attributes can be
 80 assessed, such as *context*, *duration*, and
 81 *intensity*.

82
 83 **Context:** The context refers to the setting or
 84 geographic scope of the impact to the social
 85 and economic conditions. In this analysis,
 86 impacts will be measured relative to the
 87 following three context levels (when
 88 applicable):

- 89
- 90 ▪ local gateway communities (immediate
 91 proximity to park sites)
- 92 ▪ three adjacent counties (Marin, San
 93 Francisco, and San Mateo)
- 94 ▪ Bay Area (nine-county region)

95
 96 **Intensity:** The intensity refers to the
 97 significance or degree of the impact to the

1 social and economic conditions. The
2 thresholds are defined as follows:
3
4 **Negligible:** No effects occur or the
5 effects on social and economic
6 conditions would be unnoticeable. The
7 action would not yield any noticeable or
8 measureable changes to quality of life, the
9 population demographic, and local
10 economy.

11
12 **Minor:** The effects on social and
13 economic conditions would be
14 detectable, but only slight and limited to a
15 small portion of the surrounding
16 community and local economy. The
17 action would minimally influence the
18 quality of life, the population
19 demographic, and/or local economy.
20

21 **Moderate:** The effects on social and
22 economic conditions would be readily
23 apparent and would influence multiple
24 segments of the community or local
25 economy. The action would yield
26 changes that are noteworthy or modest to
27 the quality of life, the population
28 demographic, and/or local economy.
29

30 **Major:** The effects on social and
31 economic conditions would be very
32 apparent, significant, and/or widespread
33 throughout the community and local
34 economy. The action would yield
35 considerable changes to the quality of
36 life, the population demographic, and/or
37 local economy.
38

39 In the discussion of impacts on the social and
40 economic environment, an analysis section
41 and conclusion section are included for each
42 alternative for Golden Gate National
43 Recreation Area including Alcatraz Island and
44 Muir Woods National Monument, including
45 the no-action alternative. Also, the analysis
46 begins with a section that addresses the
47 impacts from actions that are common to all
48 action alternatives for both Golden Gate
49 National Recreation Area and Muir Woods
50 National Monument.
51

52 TRANSPORTATION

53 Planning alternatives for Golden Gate
54 National Recreation Area and Muir Woods
55 National Monument were developed for park
56 lands in San Mateo, Marin, and San Francisco
57 counties. For each of the three counties, as
58 well as for Muir Woods National Monument,
59 the proposed alternatives are discussed with
60 respect to their qualitative effect on visitor
61 access and circulation related to roadways,
62 parking, bicycle access, pedestrian access,
63 transit service, and access to transit. Muir
64 Woods National Monument has been the
65 subject of more detailed transportation
66 analysis in recent years, enabling this section
67 to include more quantitative analysis than the
68 other areas.
69

70 Transportation impacts for the no-action
71 alternative and the three action alternatives
72 are discussed for park lands for each county
73 and separately for Muir Woods National
74 Monument.
75

- 76 ■ Marin County – southeast coastal area,
77 southwest coastal area, Marin
78 Headlands, and the Stinson Beach area
- 79 ■ San Francisco – Upper Fort Mason,
80 China Beach, Lands End, East and
81 West Fort Miley, Ocean Beach, and
82 Fort Funston
- 83 ■ San Mateo County – multiple sites
- 84 ■ Muir Woods National Monument
85

86 Other than continuing and expanding shuttle
87 service to Muir Woods National Monument,
88 changes in transit service that would be
89 provided by agencies other than the National
90 Park Service, are not modeled.
91

92 Impacts on visitor access and on the
93 transportation system are described in terms
94 of their effect in the following areas, as
95 applicable:
96

- 97 ■ multimodal visitor connections to park
98 sites and communities

- 1 ▪ access by land, including roads, public
- 2 transit, tour buses, trails, and bicycles
- 3 ▪ access by water, including ferries,
- 4 water taxis, or other water transit
- 5
- 6 Functionality of the transportation system
- 7
- 8 ▪ land transportation, including traffic
- 9 flow, congestion, and circulation;
- 10 parking availability; transit service
- 11 availability; transit facility capacity;
- 12 amenities and condition; and public
- 13 safety
- 14 ▪ water transportation, including facility
- 15 capacity and condition, multimodal
- 16 access, and public health and safety
- 17 ▪ connectivity, including number and
- 18 capacity of connections, and
- 19 availability of modes of travel
- 20 ▪ directional and park site identification
- 21 signs and wayfinding information

22

23 For this analysis, equestrian activity is

24 considered recreational and is not included as

25 part of the transportation system.

26

27 **Definitions.**

28

29 **Type:** The impact is determined to be either

30 beneficial or adverse. The beneficial and

31 adverse impacts on the transportation system

32 are determined by comparing the anticipated

33 changes resulting from implementing any of

34 the action alternatives to the results of

35 continuing current management (i.e., the no-

36 action alternative).

37

38 **Intensity:** The intensity refers to the

39 significance or degree of the impact to the

40 transportation system. The thresholds are

41 defined as follows:

42

43 **Negligible:** Most visitors would likely be

44 unaware of any effects associated with

45 implementation of the alternative.

46

47 **Minor:** Changes in visitor

48 access/circulation would be slight but

49 detectable, would affect few visitors, and

50 would not appreciably limit or enhance

51 visitors' ability to visit park sites or move

52 within park sites.

53

54 **Moderate:** Changes in visitor

55 access/circulation would be noticeable,

56 would affect many visitors, and would

57 result in some changes to visitors' ability

58 to visit park sites or move within park

59 sites.

60

61 **Major:** Changes in visitor

62 access/circulation would be highly

63 apparent, would affect most visitors, and

64 would result in many changes to visitors'

65 ability to visit park sites or move within

66 park sites.

67

68 In addition to the aforementioned terms, four

69 terms are used to describe the seasonality of

70 transportation impacts:

71

72 **Peak season:** The impact would occur

73 primarily from Memorial Day through Labor

74 Day.

75

76 **Shoulder season:** The impact would affect

77 transportation in April and May in the spring,

78 and in September in the fall.

79

80 **Low visitation or offseason:** The impact

81 would occur primarily from October 1

82 through April 30.

83

84 **Year-round:** The impact would affect visitor

85 experiences for much of the year, especially if

86 adverse effects during peak months had the

87 effect of spreading visitation more evenly

88 throughout the year.

89

90

91 **PARK MANAGEMENT, OPERATIONS,**

92 **AND FACILITIES**

93 The impact analysis evaluated the effects of

94 the alternatives on Golden Gate National

95 Recreation Area and Muir Woods National

96 Monument operations, including staffing,

97 infrastructure, maintenance, visitor facilities,

98 and services.

1 The analysis focused on how operations and 20
2 facilities might vary with the different 21
3 management alternatives. The analysis is 22
4 qualitative rather than quantitative because of 23
5 the conceptual nature of the alternatives. 24
6 Consequently, professional judgment was 25
7 used to reach reasonable conclusions as to the 26
8 intensity, duration, and type of potential 27
9 impact. 28
10
11 The following impact thresholds have been 30
12 developed for analyzing park management, 31
13 operations, and facilities: 32
14
15 **Negligible:** The effect would be at or 34
16 below the lower levels of detection, and 35
17 would not have an appreciable effect on 36
18 park operations and management 37
19 38

Minor: The effects would be detectable, but would be of a magnitude that would not have an appreciable effect on park operations and management.

Moderate: The effects would be readily apparent and would result in a change in park operations and management in a manner noticeable to staff and the public.

Major: The effects would be readily apparent and would result in a substantial change in park operations and management in a manner noticeable to staff and the public. The change would produce conditions that would be markedly different from existing operations.

COMMON TO ALL ALTERNATIVES AT GOLDEN GATE NATIONAL RECREATION AREA AND MUIR WOODS NATIONAL MONUMENT

1 NATURAL RESOURCES

2 **Analysis.** The goals and strategies that are
3 common to all action alternatives include
4 policy guidance on a variety of topics that
5 would have an impact on natural resources.
6 These topics include park boundaries, climate
7 change, ocean stewardship, partnerships,
8 Redwood Creek Vision, Sharp Park,
9 transportation, trails, and park collections. In
10 general, all of the guidance that is included
11 would have a beneficial impact on natural
12 resources.

13
14 For example, the park boundaries policy (see
15 volume I, part 3) contains goals for science-
16 based land and water acquisition that would
17 improve the integrity of natural resources. It
18 also includes the proposed acquisition of
19 several parcels of land and water in San Mateo
20 County as well as potential future boundary
21 adjustments across the park.

22
23 The policy on climate change includes goals
24 for greenhouse gas emissions reduction and
25 responding to the effects of climate change on
26 natural resources. The management approach
27 that is included seeks to reduce environmental
28 stressors, maintain biological diversity, and
29 develop adaptation responses to build
30 resiliency in natural systems and species.

31
32 The ocean stewardship policy includes
33 management strategies and objectives that
34 would help to protect ocean resources
35 through improved research and collaborative
36 management with other state and federal
37 agencies.

38
39 The partnerships policy would assist the
40 National Park Service in developing
41 collaborative arrangement with other park
42 partners whose programs have shared goals,
43 including preservation of natural resource
44 management.

45 The American Indian engagement policies
46 could have minor, adverse impacts on
47 vegetation and wildlife impacts due to the
48 collection of natural materials. Coordination
49 between American Indians and park staff
50 would ensure that habitat integrity would be
51 maintained.

52
53 The transportation policy includes goals for
54 multimodal and alternative transportation,
55 which would assist the National Park Service
56 in reducing its carbon footprint and air quality
57 concerns in the Bay Area.

58
59 The trails policy includes goals on sustainable
60 trail design and best management practices,
61 which would assist the National Park Service
62 in improving habitat quality and integrity by
63 reducing impacts from erosion, nonnative and
64 invasive species, and habitat fragmentation.

65
66 The park collections policy would benefit
67 natural resources by ensuring that natural
68 resource specimens (whether geologic,
69 botanical, etc.,) are properly protected and
70 managed.

71
72 **Conclusion.** Overall, impacts on natural
73 resources resulting from these policies would
74 be long term, beneficial, and would range
75 from negligible to moderate, throughout
76 Golden Gate National Recreation Area and
77 Muir Woods National Monument.

78 79 80 CULTURAL RESOURCES

81 **Analysis.** Development of new or improved
82 maintenance hubs, a public safety hub,
83 satellite maintenance offices, and parking
84 areas, as well as expanding the park's trail
85 system and improving connectivity and
86 accessibility, could adversely impact the park's
87 archeological resources, historic structures,
88 and cultural landscapes. Strategic

1 archeological surveys of portions of a trail
 2 system would provide critical information to
 3 avoid impacts on archeological resources
 4 from both direct construction and from
 5 indirect visitor use. Sites within impact areas
 6 would be evaluated for their significance, and
 7 treatment plans would be developed to avoid
 8 adverse effects to them. National register
 9 eligible or national register listed
 10 archeological resources would be avoided to
 11 the greatest extent possible. If such resources
 12 could not be avoided, an appropriate
 13 mitigation strategy would be developed in
 14 consultation with the California state historic
 15 preservation office and, if necessary,
 16 associated American Indian tribes. If during
 17 construction, previously unknown
 18 archeological resources were discovered, all
 19 work in the immediate vicinity of the
 20 discovery would be halted until the resources
 21 could be identified and documented; if the
 22 resources could not be preserved *in situ*, an
 23 appropriate mitigation strategy would be
 24 developed in consultation with the state
 25 historic preservation office and associated
 26 American Indian tribes. Because national
 27 register eligible or national register listed
 28 archeological resources would be avoided to
 29 the greatest extent possible, any adverse
 30 effects would be expected to be minor to
 31 moderate in intensity and permanent. The
 32 National Park Service would continue to
 33 participate in multi-agency planning and
 34 implementation efforts following the San
 35 Francisco Planning and Urban Research
 36 Association (SPUR) 2012 Ocean Beach Mater
 37 Plan, and other more detailed planning and
 38 implementation processes that would follow.
 39
 40 Archeological resources adjacent to or easily
 41 accessible from trails and developed areas
 42 could be vulnerable to surface disturbance,
 43 inadvertent damage, and vandalism. A loss of
 44 surface archeological materials, alteration of
 45 artifact distribution, and a reduction of
 46 contextual evidence could result, creating
 47 moderate, permanent, adverse effects to sites
 48 whose significance was characterized by solely
 49 surficial deposits. However, continued ranger
 50 patrol and emphasis on visitor education
 51 would help to discourage vandalism and

52 inadvertent destruction of cultural remains,
 53 and any adverse impacts would be expected to
 54 be minor to moderate.
 55

56 Every effort would be made to establish new
 57 or improved maintenance hubs, a public
 58 safety hub, satellite maintenance offices, and
 59 parking facilities in existing developed areas
 60 or in rehabilitated historic buildings whose
 61 architectural values are protected and
 62 preserved. Careful design of new facilities
 63 would ensure that new structures would
 64 minimally affect the scale and visual
 65 relationships among existing landscape
 66 features or circulation patterns and features.
 67 In addition, the topography, native vegetation
 68 patterns, and land use patterns would remain
 69 largely unaltered. Any adverse impacts would
 70 be long term and of minor intensity. Improved
 71 maintenance facilities and programs would
 72 enable the park to conduct more
 73 comprehensive cultural resource preservation
 74 and maintenance programs and thus enhance
 75 protection of the park's cultural resource
 76 values—a beneficial impact.
 77

78 Inclusion of the San Mateo County properties
 79 (Gregerson Property adjacent to Rancho
 80 Corral de Tierra, Vallemar Acres, and
 81 Highway Frontage in the West Cattle Hill
 82 vicinity) and potential future boundary
 83 adjustments (the Marin City Ridge, Pacifica
 84 Conservation Area, Montara Mountain
 85 Complex, San Mateo County gateway, and
 86 Bolinas Lagoon) would result in enhanced
 87 identification, protection, and interpretation
 88 of archeological resources, historic structures,
 89 and cultural landscape values in those areas
 90 per NPS cultural resource policies, but only if
 91 appropriate funding and FTEs were to be
 92 expended on them.
 93

94 Implementation of the park's climate change
 95 policy and action plan would result in (1) an
 96 understanding of how to protect and preserve
 97 the park's archeological resources, historic
 98 structures, and cultural landscapes by
 99 reducing current stressors to such resources,
 100 (2) assisting in development of triage criteria
 101 for prioritizing preservation treatments and
 102 other management actions for cultural

1 resources, such as relocation coupled with
2 sustainable mitigation efforts for shoreline
3 resources, and (3) guiding managed retreat
4 programs when the triage process indicated
5 that preservation treatment or relocation was
6 not a feasible option.

7
8 Establishing a curatorial and research facility
9 that meets NPS standards and can
10 accommodate the majority of the park
11 collection will have a long-term beneficial
12 impact to the preservation of the collections.
13 Strengthening the collection policy and
14 implementing actions to connect people with
15 the park's museum will have a beneficial
16 impact by increasing public stewardship
17 opportunities, access to the park's history, and
18 integration of the park collections into the
19 park's visitor experience.

20
21 Implementation of the park's Ocean Park
22 Stewardship Policy would result in improved
23 identification, understanding, protection, and
24 preservation of the park's archeological (i.e.,
25 submerged) resources.

26
27 Ongoing NPS efforts to establish and foster
28 effective partnerships would result in
29 beneficial impacts on the park's archeological
30 resources, historic structures, and cultural
31 landscapes because partnerships (1) create
32 appreciation and support for the park's
33 resources, and (2) increase avenues through
34 which communities and visitors can engage
35 with the park to preserve and enhance those
36 resources.

37
38 Implementation of the Redwood Creek Vision
39 would result in enhanced collaborative efforts
40 to identify, protect/preserve, and interpret
41 archeological resources, historic structures,
42 and cultural landscapes in the Redwood
43 Creek watershed.

44
45 Ongoing and enhanced American Indian
46 engagement programs and protocols by the
47 park with the Federated Indians of Graton
48 Rancheria and Ohlone tribes and individuals
49 would result in improved cultural resource
50 management of archeological and
51 ethnographic sites, collaborative

52 interpretation and education activities, and
53 revitalization of American Indian
54 communities, traditions, and heritage.

55
56 Additionally, improving ferry access to
57 Alcatraz Island and establishing ferry routes to
58 other park sites within San Francisco Bay
59 would result in better preservation of the
60 cultural resources by minimizing
61 transportation impacts on its cultural
62 landscape values.

63
64 Execution of implementation plans for
65 Alcatraz, such as preparation of a cultural
66 landscape report, historic resource study, and
67 baseline inventory and Historic American
68 Buildings Survey recovery plan, would
69 provide the National Park Service with the
70 knowledge to better preserve and more
71 effectively interpret the multiple layers of
72 historic development associated with the
73 island's significant archeological resources,
74 ethnographic sites, historic structures, and
75 cultural landscapes.

76
77 **Conclusion.** Because national register eligible
78 or national register listed archeological
79 resources would be avoided to the greatest
80 extent possible, any adverse effects would be
81 expected to be minor to moderate in intensity
82 and permanent. A loss of surface archeo-
83 logical materials, alteration of artifact
84 distribution, and a reduction of contextual
85 evidence could result. However, continued
86 ranger patrol and emphasis on visitor
87 education would discourage vandalism and
88 inadvertent destruction of cultural remains,
89 and any adverse impacts would be expected to
90 be negligible to minor. Careful design of new
91 facilities would ensure that new structures
92 would minimally affect the scale and visual
93 relationships among existing landscape
94 features or circulation patterns and features.
95 In addition, the topography, native vegetation
96 patterns, and land use patterns would remain
97 largely unaltered. Any adverse impacts would
98 be long term and of minor intensity. Improved
99 maintenance facilities and programs would
100 enable the park to conduct more compre-
101 hensive cultural resource preservation and
102 maintenance programs and thus enhance

1 protection of the park’s cultural resource
 2 values—a beneficial impact.
 3
 4 Actions common to all alternatives would
 5 generally have beneficial impacts on the
 6 protection and preservation of archeological
 7 resources, ethnographic sites, historic
 8 structures, and cultural landscapes in Golden
 9 Gate National Recreation Area including
 10 Alcatraz Island. Any adverse effects to
 11 archeological resources and ethnographic
 12 resources would be expected to be negligible
 13 to moderate in intensity and permanent. Any
 14 adverse impacts on cultural landscape
 15 resources (including historic structures)
 16 would be long term and of minor intensity.
 17
 18 Concerning the actions common to all
 19 alternatives, the section 106 determination of
 20 effect on archeological resources,
 21 ethnographic sites, historic structures, and
 22 cultural landscapes in Golden Gate National
 23 Recreation Area including Alcatraz Island is
 24 *adverse effect*.

27 VISITOR USE AND EXPERIENCE

28 Analysis. In addition to the specific proposals
 29 in the action alternatives, some of the
 30 recommendations and policies that are
 31 common to all action alternatives would have
 32 a beneficial impact on visitor use and
 33 experience at both Golden Gate National
 34 Recreation Area and Muir Woods National
 35 Monument. Several of the proposed boundary
 36 adjustments would provide new lands for
 37 recreation, expanding the diversity of settings,
 38 and new lands for access purposes, facilitating
 39 better access options to various park sites;
 40 both of these would have a beneficial impact
 41 on visitor use and experience. The
 42 recommendations for educating visitors on
 43 climate change and ocean stewardship would
 44 have a beneficial impact on visitor experience
 45 by providing visitors with direct access to the
 46 latest research and knowledge, providing
 47 increased awareness and inspiration regarding
 48 these important subjects. Actions that
 49 improve the preservation and visitor access to
 50 the park collection would strengthen the

51 park’s interpretive and education programs.
 52 The new public safety office proposed at
 53 Shelldance Nursery would have a beneficial
 54 impact on visitor safety by providing shorter
 55 response times and a constant NPS presence
 56 in the southern portion of Golden Gate
 57 National Recreation Area. The partnership
 58 strategy will ensure that NPS partnerships
 59 continue to serve the needs of visitors with
 60 high-quality services, facilities, and
 61 opportunities. If the park ends up owning or
 62 managing portions of Sharp Park that are
 63 contiguous to lands managed by the National
 64 Park Service, visitors would benefit from
 65 additional trail-based recreation and
 66 educational opportunities. These actions
 67 would have a long-term, moderate beneficial
 68 impact on visitor experience in the park.

69
 70 The transportation strategy emphasizes the
 71 goal of providing sustainable, multimodal
 72 access to many park sites, which would
 73 benefit visitors by reducing traffic congestion
 74 and use conflicts, and facilitating more
 75 efficient access to and between park sites.
 76 Finally, the trails strategy emphasizes the goal
 77 of providing an enduring trail system that
 78 serves as a sustainable network of access
 79 within and between park sites. Trails provide
 80 one of the most important ways that visitors
 81 experience and enjoy the park and discover its
 82 diverse settings. Providing a long-term
 83 strategy to perpetuate a coordinated and
 84 sustainable trail and transportation system
 85 would result in a long-term, moderate,
 86 beneficial impact to visitor experience.

87
 88 **Conclusion.** The recommendations and
 89 policies that are described in the actions
 90 common to all alternatives will have a long-
 91 term, moderate, beneficial influence on visitor
 92 experience at the park. Visitors would be
 93 provided enhanced access throughout the
 94 park by improved trails and transportation
 95 systems, increased opportunities for
 96 interpretation and education supported by the
 97 park collections and new programs related to
 98 climate change and ocean stewardship.
 99 Strengthening the park partnership programs
 100 and preservation of park resources by
 101 potential expansion of park boundaries and

1 expanded increased public safety facilities
2 would contribute to improvements to visitor
3 experience.

4
5

6 **SOCIAL AND ECONOMIC** 7 **ENVIRONMENT**

8 **Analysis.** The improvement of community
9 connectivity to Golden Gate National
10 Recreation Area park sites via an expanded
11 transportation system, multimodal
12 opportunities, and enhanced regional trail
13 network could improve the quality of life of
14 residents in the area. More residents of local
15 communities would be able to visit the park to
16 exercise, enjoy the natural coastal settings,
17 participate in outdoor recreational activities,
18 educational and stewardship programs, or
19 simply have a place to escape the urban
20 environment. These improved community
21 connections with the park could result in an
22 impact that is long term, minor to moderate,
23 and beneficial for the local gateway
24 communities and adjacent counties.

25
26 In addition, a comprehensive education and
27 stewardship program would be developed to
28 engage the public in natural and cultural
29 stewardship issues and educate them about
30 park resources and the threats to their
31 preservation. With more and more residents
32 of the community becoming more aware and
33 engaged in these important issues,
34 communities could benefit as residents and
35 organizations take actions that move toward
36 sustainability, decrease waste and pollution,
37 and other measures that could contribute to
38 improvements to the community's quality of
39 life. This education and stewardship effort
40 would be pursued in all alternatives, resulting
41 in an impact that could be long term, minor,
42 and beneficial in the context of the local
43 gateway communities and three adjacent
44 counties.

45
46 All actions that are common to all alternatives
47 would continue to improve NPS efforts at
48 maintaining a healthy and productive
49 relationship with American Indian
50 communities in the area. These efforts would

51 codify and continue the park's policy to work
52 with Coast Miwok and Ohlone communities
53 in activities related to cultural resource
54 management, interpretation and education,
55 and the revitalization of community and
56 tradition. This effort to maintain and improve
57 communication with the American Indians in
58 the region would be pursued in all alterna-
59 tives, resulting in an impact that would be long
60 term, minor, and beneficial for the local
61 gateway communities, adjacent counties, and
62 the Bay Area in its entirety.

63
64 The actions common to all alternatives
65 maintain a strong commitment and strategy
66 for using park partnerships as a tool to
67 provide park programs, preservation
68 activities, and community engagement in park
69 issues while also contributing to the success of
70 the park partner organizations and agencies.
71 For the National Park Service, this commit-
72 ment would provide a cost-effective way to
73 enhance park services, improve visitor
74 opportunities, and engage the community. For
75 the various partners, this commitment and
76 strategy would help build and expand
77 organization success and outreach. This
78 emphasis on partnerships would also increase
79 programs and opportunities for the public to
80 enjoy, which could increase the quality of life
81 for local residents. This effort would be
82 maintained and improved in all alternatives,
83 resulting in an impact that would be long
84 term, moderate, and beneficial for the local
85 gateway communities. The impact would be
86 long term, minor to moderate, and beneficial
87 for the three adjacent counties.

88
89 In addition to the actions described in the
90 section "Actions Common to All
91 Alternatives," each alternative also includes a
92 proposed action that would ultimately close
93 the Shelldance Nursery (a commercial
94 operation in Pacifica). This may be considered
95 an adverse impact to quality of life for some
96 community members who have actively
97 visited the nursery in the past. In addition, this
98 closure could be considered an adverse
99 impact to local economy due to job loss, sales
100 tax revenue loss, and the loss of the multiplier
101 effect of the business monies and its employee

1 salaries. The collective result would be an
2 impact that is long term, minor, and adverse
3 for the local gateway communities. The
4 impact to the three adjacent counties would
5 be negligible. However, it should be noted
6 that the programs and facilities that may
7 eventually replace the nursery would likely
8 offset some of these impacts by creating
9 employment and community involvement
10 opportunities.

11
12 **Conclusion.** The overall impact to the social
13 and economic environment from actions that
14 are common to all alternatives could be long
15 term, minor to moderate, and beneficial with
16 an affected area that ranges from the local
17 gateway communities to the overall Bay Area.
18 The beneficial impacts would result from the
19 policies and guidance for boundary changes,
20 climate change, ocean stewardship, museum
21 collections, and partnership strategy.
22 Improved parkland accessibility via
23 multimodal transportation and regional trail
24 systems would also yield beneficial impacts by
25 enhancing connections between communities
26 and the park. The park staff commitments to
27 the American Indian community and park
28 partners increase the connections and
29 opportunities in preserving park resources
30 and providing visitor opportunities. All these
31 actions contribute to improving the quality of
32 life and local economy.

33
34 The closure of Shelldance Nursery would
35 have a long-term, minor, adverse impact to the
36 local gateway community.

37 38 39 **TRANSPORTATION**

40 **Analysis.** Common to all areas are improved
41 wayfinding systems that include effective
42 directional signs, site identification, and other
43 wayfinding signs that would facilitate safe and
44 efficient access by all modes of transportation.

45 46 47 **Marin County**

48 In terms of transportation improvements,
49 actions that are common to all alternatives

50 would pursue multimodal transportation
51 access opportunities to additional park sites.
52 One example of this pursuit is the National
53 Park Service collaboration with the Water
54 Emergency Transportation Authority in
55 developing multiple park access points to this
56 Bay Area ferry system (e.g., between Fort
57 Baker, Fort Mason, and the Presidio and
58 potentially other park sites).

59
60 In the southwest coast area (Muir Beach to
61 Point Bonita), beach and trail access to Muir
62 Beach would be improved while preserving
63 the area's natural setting. Regional trail
64 connections would be enhanced; where
65 possible, trail improvements would connect to
66 the California Coastal Trail. Cumulatively,
67 these measures would provide a long-term,
68 minor to moderate, beneficial impact on
69 visitor access to the park through improved
70 trails.

71
72 Increased transit, including increased Muir
73 Woods Shuttle service, would reduce
74 congestion, minimize impacts on natural
75 resources, and provide a way to get to the
76 beach without a car. A new and increased
77 transit service could also reduce parking
78 demand within park locations, increasing it at
79 transit access points adjacent to or outside of
80 park lands. Increased transit would yield a
81 long-term, moderate, beneficial impact to
82 transportation by increasing the number and
83 capacity of connections and availability of
84 non-auto modes of travel.

85
86 The park staff would also continue to work
87 with the community and Marin County to
88 manage parking and reduce traffic in Stinson
89 Beach using congestion management tools. In
90 the developed beach area, the parking lot
91 would be replaced by a more sustainable
92 parking facility. This would have a long-term,
93 minor to moderate, beneficial impact on
94 visitor access to the park, depending on the
95 success of the congestion management efforts.
96 Also at Stinson Beach, the park staff would
97 explore ways to improve non-auto access to
98 the beach, such as promoting public
99 transportation on weekends during the peak
100 season.

1 Park managers would work with Marin
2 County and state parks to explore realignment
3 of Muir Woods Road to reduce impacts on
4 Redwood Creek. A realignment of Muir
5 Woods Road would have a short-term,
6 moderate, adverse effect on access to the
7 monument for the duration of construction
8 activities.

9
10

11 **San Francisco County**

12 All action alternatives for San Francisco
13 County include the following transportation
14 measures:

15

16 Trails would be improved to China Beach and
17 Fort Funston. Safer and more direct trail
18 access to East Fort Miley would be created.

19 The trail system in Lands End would be
20 improved to provide access to the shoreline
21 and vistas, as well as connections to the
22 community and adjacent park areas. All of
23 these measures, both individually and
24 cumulatively, would result in a long-term,
25 minor, beneficial impact on circulation both
26 to and within these park areas.

27

28 At Upper Fort Mason the visitor circulation
29 and wayfinding improvements would be
30 implemented in response to new adjacent bus
31 transit and ferry connections. This would
32 have a long-term, minor, beneficial impact on
33 connecting people arriving by transit to this
34 site.

35

36 At Ocean Beach the park would collaborate
37 with the City of San Francisco to enhance the
38 Ocean Beach corridor with improved
39 amenities including improved parking
40 facilities. This may have a long-term, minor,
41 beneficial impact on the transportation system
42 by increasing parking availability.

43

44

45 **San Mateo County**

46 All action alternatives for San Mateo County
47 would include improvements to connect park
48 lands to local communities, improve trails
49 between and within park sites, and add

50 trailheads and parking with improved
51 wayfinding. Specific common improvements
52 include new or improved trails provided along
53 the beach, dunes, and cliffs extending from
54 San Francisco's Fort Funston south to Mussel
55 Rock. Also, modest visitor access facilities
56 (trails, trailheads) to beaches, scenic
57 overlooks, and along the California Coastal
58 Trail between Thornton State Beach to south
59 of Mussel Rock, would be added. Possible
60 trail improvement at Milagra Ridge could
61 include connections to Oceana Boulevard, the
62 Pacific Coast, Skyline Boulevard, and Sweeney
63 Ridge. The Shelldance Nursery site would
64 transition from a commercial nursery to an
65 area providing a variety of visitor services
66 including possible enhanced trailhead parking
67 serving Sweeney Ridge and Mori Point.
68 Access from State Route 1 and the trail
69 connection to Mori Point would be improved.
70 The developed portion of Picardo Ranch
71 would see trailhead and parking improve-
72 ments.

73

74 Trailheads and trails would be developed and
75 enhanced to improve accessibility and
76 connections to the California Coastal Trail
77 and adjacent public lands.

78

79 From Phleger Estate, trail connections to
80 adjacent lands and the regional trail system
81 would be pursued in collaboration with San
82 Mateo County and San Francisco Public
83 Utilities Commission. These connections
84 would include the Bay Area Ridge Trail and a
85 potential multiuse trail connection between
86 Cañada Road and Skyline Boulevard north of
87 the Phleger Estate.

88

89 All of these measures would provide,
90 individually and cumulatively, a long-term,
91 moderate, beneficial impact on accessibility of
92 these remote sites by trails connected to
93 neighborhoods and to larger regional trails.
94 Improved and new trailheads, trailhead
95 parking, and improved directional signs, site
96 identification, and wayfinding signs would
97 also add considerable benefits. Long-term,
98 minor, beneficial effects would be gained
99 through slightly increasing parking at
100 Shelldance Nursery and Sweeney Ridge.

1 **Conclusion.** Throughout Golden Gate
 2 National Recreation Area, there would be
 3 long-term, minor to moderate, beneficial
 4 effects on visitor connections to the park sites
 5 by land through improved and enhanced trail
 6 systems. The potential to increase the transit
 7 frequency to park sites in Marin and San
 8 Mateo counties would have a long-term,
 9 minor to moderate, beneficial impact on
 10 connectivity by transit. In San Francisco and
 11 San Mateo counties, there would be a long-
 12 term, minor to moderate, beneficial
 13 enhancement of transportation functionality
 14 through slightly increased parking for San
 15 Francisco sites and moderately increased
 16 parking for San Mateo sites. In Marin County,
 17 parking management tools, in connection
 18 with increased transit services, could result in
 19 a long-term, moderate, beneficial effect on
 20 improving access to Tennessee Valley and
 21 Stinson Beach, especially for those who do not
 22 have access to a car.

25 **PARK MANAGEMENT, OPERATIONS, 26 AND FACILITIES**

27 **Analysis.** There are many proposed changes
 28 identified in the “actions common to all
 29 actions alternatives” section that would
 30 influence park management, operations, and
 31 facilities. While designed to contribute to the
 32 protection of resources and the enhancement
 33 of visitor opportunities, the proposed changes
 34 will achieve these ends only if staffing and
 35 operating funds are increased in accordance
 36 with the expanded services and management
 37 required to implement the alternatives. If
 38 funding and needed staffing levels are not
 39 made available when these actions are
 40 implemented, the following proposed actions
 41 would have long-term, moderate, adverse
 42 effects on park operations:

- 43
- 44 ■ Proposed boundary changes:
 45 Currently staff is unable to meet all of
 46 the needs of the existing land base.
 47 Additional land will require an
 48 increase in the number of park staff

49 and an increase in facility management
 50 funds.

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Many of the proposed changes identified in
 the “actions common to all actions
 alternatives” would address problems
 associated with operations and maintenance
 and thereby have a positive, long-term, minor
 to moderate, beneficial effect on park
 management, operations, and facilities:

- The removal of facilities not
 contributing to the mission of the park
 would have a long-term, minor to
 moderate, beneficial effect on park
 operations. While removal of
 properties would require additional
 staff time during demolition, the long-
 term effect would be a reduced need
 for maintenance and other staff
 attention.
- Implementation of the park collections
 policy, and particularly the
 introduction of a curatorial and
 research facility for park collections,

- 1 would benefit park operations. 46
 2 Collections would be consolidated 47
 3 from 15 current locations, improving 48
 4 access for both park staff and the 49
 5 public and preservation of the 50
 6 collections. Development of the 51
 7 proposed park collection facility 52
 8 would result in long-term, moderate, 53
 9 beneficial impact to park operations. 54
- 10 ■ The proposed new maintenance hubs 55
 11 in the Capehart residential area and in 56
 12 the Presidio of San Francisco would 57
 13 allow for reuse of existing buildings 58
 14 and would consolidate some 59
 15 maintenance needs. This would 60
 16 achieve noticeable efficiencies. On the 61
 17 other hand, the Capehart location has 62
 18 a potential to conflict with neighboring 63
 19 residents and would also cause the loss 64
 20 of some of the park housing units, 65
 21 unless the units are replaced by other 66
 22 housing in the park. Development of 67
 23 the maintenance hubs would result in 68
 24 long-term, moderate, beneficial 69
 25 impacts on operations. 70
 - 26 ■ The establishment of a public safety 71
 27 hub at Fort Baker would allow for 72
 28 faster multi-agency response to 73
 29 locations north of the Golden Gate 74
 30 Bridge. The hub would preserve an 75
 31 existing historic building and would 76
 32 meet space, size, function, mobility, 77
 33 and security requirements not 78
 34 currently met by available facilities. 79
 35 Development of the public safety hub 80
 36 would result in long-term, moderate, 81
 37 beneficial impacts on park operations. 82
 - 38 ■ The park’s commitment to working 83
 39 with partners would have a continued 84
 40 impact on the park’s ability to 85
 41 complete projects and programs in all 86
 42 areas of park operations. Facility 87
 43 rehabilitation and restoration, and 88
 44 even maintenance, could not be
 45 accomplished at the current level
- 46 without partner funding and volunteer 47
 48 efforts. This continued commitment 49
 50 would result in long-term, moderate, 51
 52 beneficial impacts on the operations of 53
 54 the park. 55
- 56 ■ Collocating offices with San Mateo 57
 58 County would improve efficiencies in 59
 60 interpretation and education as well as 61
 62 facility use. Collocated offices would 63
 64 provide a long-term, moderate, 65
 66 beneficial impact to the operations. 67
 - 68 ■ At Alcatraz Island, the expanded 69
 70 maintenance area within the 71
 72 Quartermaster Warehouse would 73
 74 improve the ability to accomplish 75
 76 maintenance work on the island. The 77
 78 expansion and improvement to the 79
 80 maintenance area would result in a 81
 82 long-term, moderate, beneficial impact 83
 84 to operations. 85
 - 86 ■ At Muir Woods National Monument, 87
 88 moving the maintenance operations 89
 90 from the Old Inn and Lower Conlon 91
 92 Avenue to a new facility in Kent 93
 94 Canyon, pending an interagency 95
 96 agreement, would improve efficiencies 97
 98 with both the monument and state 99
 100 park operations, reduce site impacts at 101
 102 Muir Woods National Monument, and 103
 104 provide for a more modern facility 105
 106 from which to base maintenance 107
 108 activities at the monument. The shared 109
 110 facility would moderately benefit 111
 112 operations over the long term. 113
- 114 **Conclusion.** Many of the actions common to 115
 116 all alternatives would result in moderate, 117
 118 beneficial impacts on park management, 119
 120 operations, and facilities. However, if funding 121
 122 and staffing levels are inadequate, other 123
 124 actions would result in long-term, major, 125
 126 adverse effects to park management, 127
 128 operations, and facilities. 129

GOLDEN GATE NATIONAL RECREATION AREA, INCLUDING ALCATRAZ ISLAND

1 NATURAL RESOURCES – 2 PHYSICAL RESOURCES

3 Carbon Footprint and Air Quality

4 *No-action Alternative*

5 **Analysis.** The continuation of current
6 conditions and management would continue
7 to result in adverse impacts on air
8 quality/carbon footprint. Baseline greenhouse
9 gas (GHG) emissions (2008) for Golden Gate
10 National Recreation Area (park lands in
11 Marin and San Francisco counties only; no
12 data is available for San Mateo County) are
13 estimated at 4,891 MTCO_{2e}. Emissions from
14 mobile combustion represent about 50% of
15 gross emissions.

16
17 At Alcatraz Island, mobile combustion
18 associated with the operation of the ferry
19 concession would continue to be the largest
20 contributor of island GHG emissions.
21 However, ferry service is increasingly efficient
22 with supplemental energy from solar and
23 wind power generation onboard. Stationary
24 combustion associated with power generation
25 using diesel generators would be mitigated by
26 onsite generated renewable energy. With the
27 construction of the solar array, 60% of the
28 island's energy will be generated by the sun,
29 and thereby reduce total emissions. Total
30 GHG emissions for Alcatraz Island under the
31 no-action alternative would be 1,927
32 MTCO_{2e}.

33
34 Total gross emissions of the entire Golden
35 Gate National Recreation Area/Alcatraz
36 Island (excluding San Mateo) would be 6,818
37 MTCO_{2e}.

38
39 Greenhouse Gas emissions from visitors and
40 NPS operations do contribute to elevated
41 ozone and other air quality concerns. The

42 National Park Service would continue to
43 reduce greenhouse gas emissions by reducing
44 energy consumption and replacing high-
45 emitting apparatus with green technology—a
46 beneficial impact.

47
48 Overall, when compared to background levels
49 of air pollution and GHG emissions in the
50 region or the nation (estimated at 6 billion in
51 2007), impacts on air quality from the no-
52 action alternative would be long term,
53 adverse, and negligible.

54
55 **Conclusion.** Total gross emissions of the
56 entire Golden Gate National Recreation Area
57 and Alcatraz Island (excluding San Mateo)
58 would be 6,818 MTCO_{2e}, resulting in long-
59 term, minor to moderate, adverse impacts on
60 the park's carbon footprint. Overall, when
61 compared to background levels of air
62 pollution and GHG emissions in the region or
63 the nation (estimated at 6 billion in 2007),
64 impacts on air quality from the no-action
65 alternative would be long term, adverse, and
66 negligible.

67 68 **Alternative 1: Connecting People with** 69 **the Parks (NPS Preferred Alternative** 70 **for Park Sites in Marin, San Francisco,** 71 **and San Mateo Counties)**

72 **Analysis.** Although visitor opportunities
73 would be expanded and enhanced under
74 alternative 1, the levels and patterns of visitor
75 use and travel within the park under
76 alternative 1 would remain substantially the
77 same as under the no-action alternative;
78 consequently, the impacts on air quality /
79 carbon footprint resulting from visitor use at
80 Golden Gate National Recreation Area would
81 be the same as under the no-action alternative.

82
83 Impacts on air quality/carbon footprint from
84 new recreational development under

1 alternative 1 would result in short-term,
2 minor, adverse impacts due to emissions
3 associated with construction activities. Long-
4 term, adverse impacts on air quality / carbon
5 footprint would also be expected due to
6 increases in energy consumption and related
7 emissions attributed to these new facilities.

8
9 Beneficial impacts would occur from the
10 removal of a modest number of facilities and
11 structures that use energy for their operation
12 and maintenance, resulting in long-term
13 reductions in air quality emissions and the
14 carbon footprint. Short-term adverse impacts
15 on air quality would occur as a result of the
16 construction activities needed to remove the
17 facilities and reclaim the disturbed sites.

18
19 Under alternative 1, gross emissions for the
20 three-county area of Golden Gate National
21 Recreation Area would be increased by 4% to
22 5,104 MTCO_{2e}.

23
24 At Alcatraz Island, visitor opportunities would
25 be expanded and there would be access to
26 more areas on the island, resulting in
27 increased ferry transportation and visitor use.
28 This would result in slightly increased
29 emissions associated with the ferry concession
30 (mobile combustion) and wastewater
31 treatment. Emissions associated with energy
32 use would also increase due to increases in
33 facility usage and energy demand. Gross
34 emissions for Alcatraz Island under alternative
35 1 could increase by about 14% to 2,188
36 MTCO_{2e}.

37
38 The combined effect of the actions included
39 in alternative 1 would increase the gross
40 emissions of the entire park (the three-county
41 area and Alcatraz Island) by 7% to 7,292
42 MTCO_{2e}. This would result in long-term,
43 minor, adverse impacts on the Park Service's
44 carbon footprint. As in the no-action
45 alternative, impacts on air quality (when
46 compared to background levels of air
47 pollution in the region and nation) would be
48 negligible.

49
50 **Conclusion.** The combined effect of the
51 actions included in alternative 1 would

52 increase the gross emissions of the entire park
53 (the three-county area and Alcatraz Island) by
54 7% to 7,292 MTCO_{2e}. This would result in
55 long-term, minor, adverse impacts on the
56 National Park Service's carbon footprint. As
57 in the no-action alternative, impacts on air
58 quality (when compared to background levels
59 of air pollution in the region and nation)
60 would be negligible.

61 62 **Alternative 2: Preserving and** 63 **Enjoying Coastal Ecosystems**

64 **Analysis.** Although visitor opportunities
65 would be expanded and enhanced under
66 alternative 2, the levels and patterns of visitor
67 use and travel within Golden Gate National
68 Recreation Area would remain substantially
69 the same as under the no-action alternative;
70 consequently, the impacts on air quality /
71 carbon footprint resulting from visitor use
72 would be the same as under the no-action
73 alternative.

74
75 Impacts on air quality / carbon footprint from
76 new recreational development under
77 alternative 2 would result in short-term,
78 minor, adverse impacts due to emissions
79 associated with construction activities. Long-
80 term, adverse impacts on air quality / carbon
81 footprint would also be expected due to
82 increases in energy consumption and related
83 emissions attributed to these new facilities.

84
85 Beneficial impacts would occur from the
86 removal of certain facilities and structures that
87 use energy for their operation and
88 maintenance, resulting in long-term
89 reductions in air quality emissions and the
90 carbon footprint. Short-term adverse impacts
91 on air quality would occur as a result of the
92 construction activities needed to remove the
93 facilities and reclaim the disturbed sites.

94
95 Under alternative 2, gross emissions for the
96 three-county area of Golden Gate National
97 Recreation Area would be reduced by 4% to
98 4,708 MTCO_{2e}, the lowest of all of the
99 alternatives for the three-county area.

100

1 At Alcatraz Island, visitor opportunities would
 2 be expanded and would result in increased
 3 ferry transportation and visitor use on the
 4 island. This would result in slightly increased
 5 emissions associated with the ferry concession
 6 (mobile combustion) and wastewater
 7 treatment. Emissions associated with energy
 8 use would also increase due to increases in
 9 facility usage and energy demand. Gross
 10 emissions for Alcatraz Island under alternative
 11 2 would increase by about 6% to 2,050
 12 MTCO_{2e}, the lowest of the three action
 13 alternatives for Alcatraz Island.

14
 15 The combined effect of the actions included
 16 in alternative 2 would reduce the gross
 17 emissions of the entire park (the three-county
 18 area and Alcatraz Island) by 1% to 6,758
 19 MTCO_{2e}, the lowest of all of the alternatives.
 20 This would result in long-term, minor,
 21 beneficial impacts on the park's carbon
 22 footprint. As in the no-action alternative,
 23 impacts on air quality (when compared to
 24 background levels of air pollution in the
 25 region and nation) would be negligible.

26
 27 **Conclusion.** The combined effect of the
 28 actions included in alternative 2 would reduce
 29 the gross emissions of the entire park (the
 30 three-county area and Alcatraz Island) by 1%
 31 to 6,758 MTCO_{2e}, the lowest of all of the
 32 alternatives. This would result in long-term,
 33 minor, beneficial impacts on the park's carbon
 34 footprint. As in the no-action alternative,
 35 impacts on air quality (when compared to
 36 background levels of air pollution in the
 37 region and nation) would be negligible.

38
 39 ***Alternative 3: Focusing on National***
 40 ***Treasures (NPS Preferred Alternative***
 41 ***for Alcatraz Island)***

42 **Analysis.** Although visitor opportunities
 43 would be expanded and enhanced under
 44 alternative 3, the levels and patterns of visitor
 45 use and travel within the park under
 46 alternative 1 would remain substantially the
 47 same as under the no-action alternative;
 48 consequently, the impacts on air quality/
 49 carbon footprint resulting from visitor use

50 would be the same as under the no-action
 51 alternative.

52
 53 Impacts on air quality/carbon footprint from
 54 new recreational development under
 55 alternative 3 would result in short-term,
 56 minor, adverse impacts due to emissions
 57 associated with construction activities. Long-
 58 term, adverse impacts on air quality / carbon
 59 footprint would also be expected due to
 60 increases in energy consumption and related
 61 emissions attributed to these new facilities.

62
 63 Beneficial impacts would occur from the
 64 removal of certain facilities and structures that
 65 use energy for their operation and
 66 maintenance, resulting in long-term
 67 reductions in air quality emissions and the
 68 carbon footprint. Short-term adverse impacts
 69 on air quality would occur as a result of the
 70 construction activities needed to remove the
 71 facilities and reclaim the disturbed sites.

72
 73 Under alternative 3, gross emissions for the
 74 three-county area of the park would be
 75 reduced by 2% to 4,799 MTCO_{2e}.

76
 77 At Alcatraz Island, visitor opportunities would
 78 be expanded and would result in increased
 79 ferry transportation and visitor use on the
 80 Island. This would result in slightly increased
 81 emissions associated with the ferry concession
 82 (mobile combustion) and wastewater treat-
 83 ment. Emissions associated with purchased
 84 electricity would also increase due to
 85 increases in facility usage and energy demand.
 86 Gross emissions for Alcatraz Island under
 87 alternative 3 would increase by about 7% to
 88 2,062 MTCO_{2e}.

89
 90 The combined effect of the actions included
 91 in alternative 3 would increase the gross
 92 emissions of the entire park (the three-county
 93 area and Alcatraz Island) by 1% to 6,861
 94 MTCO_{2e}. This would result in long-term,
 95 minor, adverse impacts on the park's carbon
 96 footprint. As in the no-action alternative,
 97 impacts on air quality (when compared to
 98 background levels of air pollution in the
 99 region and nation) would be negligible.

100

1 **Conclusion.** The combined effect of the
2 actions included in alternative 3 would
3 increase the gross emissions of the entire park
4 (the three-county area and Alcatraz Island) by
5 1%, to 6,861 MTCO₂e. This would result in
6 long-term, minor, adverse impacts on the
7 park's carbon footprint. As in the no-action
8 alternative, impacts on air quality (when
9 compared to background levels of air
10 pollution in the region and nation) would be
11 negligible.

14 **Carbon Footprint for the NPS 15 Preferred Alternative for Golden Gate 16 National Recreation Area (including 17 Alcatraz Island) and Muir Woods 18 National Monument**

19 A description of carbon footprint impacts for
20 the full preferred alternative (alternative 1 for
21 Marin, San Francisco, and San Mateo
22 counties; and alternative 3 for Alcatraz and
23 Muir Woods) is included here and at the end
24 of the related section for Muir Woods
25 National Monument. The impact analysis
26 concludes that the preferred alternative would
27 result in total emissions of 8,979 MTCO₂e, a
28 decrease of 1 % from the no-action
29 alternative's 9,075 MTCO₂e. This would
30 result in long-term, minor, beneficial impacts
31 on the NPS carbon footprint.

34 **Soils and Geologic Resources 35 and Processes**

36 ***No-action Alternative***

37 **Analysis.** Under the no-action alternative, the
38 presence and maintenance of existing facilities
39 (including structures, roads, and trails) would
40 continue to cause parkwide impacts on soils
41 and geologic resources due to the permanent
42 loss and function of these resources and from
43 erosion associated with unsustainable trails
44 and roads (including road cuts and gullies
45 along Conzelman Road, Milagra Ridge, and
46 State Route 1). The impact of these activities
47 would be long term, minor, adverse, and

48 localized, but would occur throughout the
49 park.

50
51 Coastal geologic resources and processes
52 would continue to be affected by the presence
53 of facilities and structures in geologically
54 sensitive areas, such as at Stinson Beach
55 (parking lot and dune interface) and Slide
56 Ranch in Marin County, and Ocean Beach
57 (seawall and infrastructure) and Fort Funston
58 in San Francisco County. The facilities and
59 land uses present at these areas, as well as NPS
60 management activities to protect
61 infrastructure, would continue to inhibit
62 natural shoreline processes. The impact of
63 these activities would be long term, moderate,
64 adverse, and localized.

65
66 Projects to improve natural habitat values and
67 ecosystem function, such as those at Big
68 Lagoon (estuarine restoration), Lower
69 Redwood Creek (wetland restoration), Marin
70 Headlands (gully repair), in offshore marine
71 areas (sand deposits and management), and at
72 Land's End and Mori Point (trail/road
73 removal and repair), would have beneficial
74 effects on soils and geologic resources and
75 processes because they would improve or
76 restore the functionality of natural
77 processes—the impact would be long term,
78 minor to moderate, beneficial, and localized.

79
80 Recreational use would continue to cause
81 compaction and erosion of soils, resulting in
82 long-term, minor, adverse, localized impacts
83 throughout the park.

84
85 Park Service efforts to provide educational
86 and participatory stewardship programs
87 would continue to have a beneficial effect on
88 geologic resources and soils due to increased
89 public understanding and support for
90 resource protection and management—the
91 impact would be long term, minor, beneficial,
92 and parkwide.

93
94 At Alcatraz Island, the presence and
95 maintenance of existing structures on Alcatraz
96 Island would continue to destabilize slopes
97 and affect natural erosion and geologic
98 processes. The National Park Service would

1 continue to implement building stabilization
2 techniques that would result in long-term,
3 minor, adverse, localized impacts on soils and
4 geologic resources and processes.

5
6 **Conclusion.** Overall, the impact to geologic
7 resources and soils from the no-action
8 alternative would be long term, range from
9 minor adverse to moderate beneficial, and be
10 localized and parkwide. Adverse impacts
11 would occur from the presence and
12 maintenance of existing facilities and visitor
13 use. Beneficial impacts would occur from
14 restoration and education and stewardship
15 activities.

16
17
18 ***Alternative 1: Connecting People with***
19 ***the Parks (NPS Preferred Alternative***
20 ***for Park Sites in Marin, San Francisco,***
21 ***and San Mateo Counties)***

22 **Analysis.** Under alternative 1, a variety of
23 management zones would be used that would
24 assist in the protection of soils and geologic
25 resources and processes. Approximately 77%
26 of the park would be zoned using the natural
27 and sensitive resources management zones.

28
29 Alternative 1 would reduce soil erosion by
30 eliminating unsustainable trails and roads,
31 resulting in long-term, minor, beneficial,
32 localized impacts.

33
34 The removal of facilities or structures, and the
35 reclamation of disturbed building sites (such
36 as at the Capehart housing area and Tennessee
37 Valley in Marin County; Fort Miley and Fort
38 Funston in San Francisco County; and
39 Milagra Ridge, Mori Point, and Phleger Estate
40 in San Mateo County); dune restoration at
41 Fort Funston; managed retreat from sea level
42 rise at Ocean Beach; and creek restoration at
43 Eastkoot Creek, Capehart Creek, and Lower
44 Redwood Creek in Marin County where
45 about 8 acres would be improved and restored
46 to natural conditions, and at Rancho Corral
47 de Tierra in San Mateo County would
48 improve soil function and integrity and
49 restore natural geologic processes. The impact

50 of these activities would be long term, minor
51 to moderate, beneficial, and localized. Short-
52 term, minor, adverse impacts (such as
53 increased erosion or compaction in adjacent
54 areas) would occur during construction
55 activities.

56
57 Visitor access and use at specific park sites
58 would be expanded under alternative 1,
59 resulting in increased soil compaction and
60 erosion; however, compared to use patterns
61 under the no-action alternative, only slight
62 adverse impacts would be expected. Most
63 impacts would be contained within defined
64 visitor use areas and on trails. The impact,
65 especially in areas off-trail, would be long
66 term, minor, adverse, and localized. This
67 impact would occur in areas throughout the
68 park.

69
70 New recreational development would have
71 long-term, adverse, localized impacts on soils
72 and geologic resources throughout the park
73 due to the permanent loss of soil function and
74 integrity resulting from new development and
75 increased erosion from facility construction
76 and maintenance. The intensity of the impact
77 would range from negligible to moderate. In
78 some areas (such as at Upper Fort Mason,
79 Fort Miley, China Beach, and Fort Funston in
80 San Francisco County and Sheldance
81 Nursery in San Mateo County) adverse
82 impacts would be negligible to minor because
83 the development would occur in previously
84 developed or disturbed sites. In other areas
85 (such as at Stinson Beach, Kirby Cove, Forts
86 Barry and Cronkhite, Slide Ranch, Golden
87 Gate Dairy, Tennessee Valley, and Marin City
88 Ridge / Gerbode Valley and along State Route
89 1, Conzelman, McCullough, and Bunker
90 Roads in Marin County and at Sweeney Ridge
91 and Rancho Corral de Tierra in San Mateo
92 County) new development would cause minor
93 to moderate adverse impacts on soils and
94 geologic resources because these areas are
95 undeveloped and the impacts would be new.

96
97 Impacts from NPS educational and
98 stewardship programs would generally be the
99 same as those described in the no-action
100 alternative.

1 At Alcatraz Island, the existing structures
2 would be rehabilitated, which would require
3 additional stabilization measures that would
4 impact natural geologic processes. This would
5 result in long-term, minor, adverse, localized
6 impacts.

7
8 **Conclusion.** The elimination of unsustainable
9 roads and trails would reduce soil erosion,
10 resulting in long-term, minor, beneficial,
11 localized impacts on soils. The removal of
12 facilities and structures would result in long-
13 term, minor to moderate, beneficial, localized
14 impacts, although new recreational
15 development would have long-term, adverse,
16 localized impacts on soils and geologic
17 resources. During the removal or construction
18 period, short-term, minor, adverse impacts
19 (such as increased erosion or compaction in
20 adjacent areas) would occur.

21
22 Overall, adverse impacts would occur from
23 new recreational development and expanded
24 visitor use. Beneficial impacts would occur
25 from trail and road maintenance, the
26 restoration of disturbed sites and creeks, and
27 improved resource understanding and public
28 support.

29 30 **Alternative 2: Preserving and** 31 **Enjoying Coastal Ecosystems**

32 **Analysis.** Under alternative 2, a variety of
33 management zones would assist in the
34 protection of soils and geologic resources and
35 processes. Approximately 92% of the park,
36 the largest amount in any of the alternatives,
37 would be zoned using the natural and
38 sensitive resources management zones.

39
40 Alternative 2 would reduce soil erosion by
41 eliminating unsustainable trails and roads and
42 removing and restoring unneeded
43 management roads, resulting in long-term,
44 minor to moderate, beneficial, localized
45 impacts.

46
47 Beneficial impacts on soils and geological
48 resources and processes from the removal of
49 facilities/structures and restoration of natural
50 areas would be greater than under the no-

51 action alternative. In addition to the actions
52 included in alternative 1, the National Park
53 Service in alternative 2 would (1) remove
54 portions of and restore the Capehart housing
55 area to a natural setting, (2) relocate Slide
56 Ranch out of a sensitive geologic hazard area,
57 (3) work with Marin County to realign the
58 highway and minimize impacts on Redwood
59 Creek, and (4) work with Caltrans to further
60 protect geologic processes on the coast of
61 Marin County, including the potential
62 abandonment of a small segment of State
63 Route 1. These activities would restore soil
64 function, integrity, and natural geologic
65 processes; when combined with those actions
66 included in alternative 1, would result in long-
67 term, moderate, beneficial, and localized
68 impacts.

69
70 Impacts from visitor access and use at specific
71 park sites would be the same as those
72 described in alternative 1, resulting in long-
73 term, minor, adverse, and localized impacts.

74
75 The type of adverse impacts associated with
76 new recreational development under
77 alternative 2 would be the same impacts as
78 described in alternative 1 although the
79 amount and distribution of proposed facilities
80 is reduced, resulting in minor, adverse,
81 localized impacts on soils and geologic
82 resources.

83
84 Impacts from NPS educational and
85 stewardship programs would generally be the
86 same as those described in the no-action
87 alternative.

88
89 At Alcatraz Island, the existing structures
90 would be stabilized, but coastal erosion
91 processes would be allowed to evolve
92 naturally. This would result in long-term,
93 minor, beneficial, localized impacts on
94 geologic resources and processes.

95
96 **Conclusion.** The elimination of unsustainable
97 trails and roads and the removal and
98 restoration of unneeded management roads,
99 would reduce soil erosion, resulting in long-
100 term, minor to moderate, beneficial, localized
101 impacts.

1 The removal of facilities/structures and
2 restoration of a large number of natural areas
3 would result in long-term, moderate,
4 beneficial, and localized impacts.

5
6 Overall, adverse impacts would occur from
7 new recreational development and expanded
8 visitor use. Beneficial impacts would occur
9 from trail and road maintenance, and the
10 restoration of disturbed sites and creeks.

11 **Alternative 3: Focusing on National** 12 **Treasures (NPS Preferred Alternative** 13 **for Alcatraz Island)**

14
15 **Analysis.** Under alternative 3, a variety of
16 management zones would be used that would
17 assist in the protection of soils and geologic
18 resources and processes. Approximately 88%
19 of the park would be zoned in the natural and
20 sensitive resources zones.

21
22 Impacts on soils from reducing soil erosion
23 would be the same as described in the
24 alternative 1, resulting in long-term, minor,
25 beneficial, localized impacts.

26
27 Impacts on soils and geologic resources and
28 processes from the removal of facilities and
29 structures and the reclamation of disturbed
30 building sites under alternative 3 would be the
31 same as those described in alternative 1,
32 resulting in long-term, minor to moderate,
33 beneficial, and localized impacts.

34
35 Impacts from visitor access and use at specific
36 park sites would be the same as those
37 described in alternative 1, resulting in long-
38 term, minor, adverse, and localized impacts.

39
40 Impacts from new recreational development
41 under alternative 3 would generally be the
42 same as those described in alternative 1.
43 Although the distribution of new
44 development may be slightly different, the
45 resulting impact to soils and geologic
46 resources and processes would remain long
47 term, minor to moderate, adverse, and
48 localized.

49

50 Impacts from NPS educational and
51 stewardship programs would generally be the
52 same as those described in the no-action
53 alternative.

54

55 At Alcatraz Island, the existing structures
56 would be rehabilitated, which would require
57 additional stabilization measures that would
58 impact natural geologic processes. This would
59 result in long-term, minor, adverse, localized
60 impacts.

61

62 **Conclusion.** The reduction in soil erosion and
63 the reclamation of disturbed building sites
64 would result in long-term, minor to moderate,
65 beneficial, localized impacts. Impacts from
66 new recreational development would be long
67 term, minor to moderate, adverse, and
68 localized.

69

70 Overall, beneficial impacts would occur from
71 trail and road maintenance, the restoration of
72 disturbed sites and creeks, and improved
73 resource understanding and public support.
74 Adverse impacts would occur from new
75 recreational development and expanded
76 visitor use.

77

78

79 **Water Resources and** 80 **Hydrologic Processes**

81 **No-action Alternative**

82 **Analysis.** Under the no-action alternative, the
83 presence and maintenance (or lack of
84 maintenance in some cases) of existing
85 facilities (including structures, roads, and
86 trails) would continue to cause localized
87 impacts on water quality due to pollution
88 from urban runoff and turbidity from soil
89 erosion. The impact of these activities would
90 be long term, minor to moderate, adverse, and
91 localized, but would occur throughout the
92 park.

93

94 Structures would remain in the 100-year
95 floodplains of several creeks resulting in
96 adverse impacts. In Marin County, park
97 facilities at Stinson Beach (parking lots and

1 picnic areas) and Muir Beach (parking lot and
2 Pacific Way) would continue to affect
3 floodplain function along Easkoot Creek and
4 Redwood Creek. In San Mateo County, horse
5 stables in the lower portion of the Rancho
6 Corral de Tierra property are in the San
7 Vicente Creek floodplain and would continue
8 to affect floodplain function. Retention of
9 these facilities would continue to slightly
10 affect the flow of water during floods and the
11 capacity of the floodplain to store
12 floodwaters. The impact would be long term,
13 minor, adverse, and localized.

14
15 Projects to improve natural habitat values and
16 ecosystem function, such as those at Big
17 Lagoon (estuarine restoration), Lower
18 Redwood Creek (wetland restoration), Marin
19 Headlands (gully repair), and Land's End and
20 Mori Point (trail/road removal and repair),
21 would have beneficial effects on water
22 resources and hydrologic processes because
23 they would improve and restore the function
24 and integrity of natural hydrologic systems—
25 the impact would be long term, minor to
26 moderate, beneficial, and localized.

27
28 Recreational use would continue to cause
29 erosion of soils resulting in turbidity. Vehicle
30 use at parking areas and on roadways
31 throughout the park would continue to affect
32 water quality from runoff that contains
33 chemical contaminants. These activities would
34 result in long-term, minor, adverse, localized
35 impacts on water quality throughout the park.

36
37 Park Service efforts to provide educational
38 and participatory stewardship programs
39 would continue to have a beneficial effect on
40 water resources and hydrologic processes due
41 to increased public understanding and
42 support for resource protection and
43 management—the impact would be long term,
44 minor, beneficial, and parkwide.

45
46 At Alcatraz Island, visitor use and NPS
47 operations (including the cleaning of bird
48 guano) would continue to contribute
49 nutrients and sediment to the adjacent marine
50 waters through runoff. Runoff from
51 impervious surfaces on the island, such as

52 existing structures, would also contribute to
53 this issue. Vessels, primarily the passenger
54 ferry, traveling to the island would impact
55 water quality by introducing hydrocarbons
56 and other chemicals into the Bay, as well as
57 increasing turbidity near the docking station
58 on the island. These activities would result in
59 long-term, minor, adverse, localized impacts
60 on water quality.

61
62 **Conclusion.** The continued existence of
63 structures and facilities in some areas of the
64 park would have long-term, minor to
65 moderate, adverse, and localized impacts on
66 water resources and hydrologic processes.

67
68 Projects to improve natural habitat values and
69 ecosystem function would have long-term,
70 minor to moderate, beneficial, and localized
71 impacts on water resources and hydrologic
72 processes.

73
74 Generally, adverse impacts would occur from
75 the continued presence and maintenance of
76 existing facilities, the continued presence of
77 the existing volume of vehicular traffic, and
78 continued patterns of visitor use. Beneficial
79 impacts would occur from restoration of
80 natural areas and from education and
81 stewardship activities.

82
83 ***Alternative 1: Connecting People with***
84 ***the Parks (NPS Preferred Alternative***
85 ***for Park Sites in Marin, San Francisco,***
86 ***and San Mateo Counties)***

87 **Analysis.** Under alternative 1, a variety of
88 management zones would be used that would
89 assist in the protection of water resources and
90 hydrologic processes. Approximately 77% of
91 the park would be zoned using the natural and
92 sensitive resources zones.

93
94 Impacts on water-related resources from the
95 continued presence and maintenance of
96 existing facilities (including structures, roads,
97 and trails) under alternative 1 would be less
98 than the no-action alternative because impacts
99 on water quality caused by erosion from
100 unsustainable trails and roads would be

1 reduced. Alternative 1 would develop a
2 sustainable trail system and remove and
3 restore unneeded and unsustainable roads
4 and trails, as well as maintain all trails and
5 roads. These activities would result in long-
6 term, minor to moderate, beneficial, localized
7 impacts on water quality. Short-term, minor,
8 adverse impacts on water quality could occur
9 from sedimentation and runoff during
10 construction activities.

11
12 The removal of facilities and structures and
13 the reclamation of disturbed building sites
14 (such as at the Capehart housing area and
15 Tennessee Valley in Marin County) and dune
16 restoration at Fort Funston would improve
17 natural hydrologic processes. The impact of
18 these activities would be long term, minor to
19 moderate, beneficial, and localized.

20
21 Beneficial effects on stream character, water
22 quality, wetlands, floodplains, and watershed
23 processes would occur from creek restoration
24 at Stinson Beach (Eastkoot Creek), Rancho
25 Corral de Tierra, and in the Lower Tennessee
26 Valley. At Stinson Beach, restoration projects
27 would include the removal of nonnative
28 invasive vegetation and the restoration and
29 enlargement of riparian habitat. In Lower
30 Tennessee Valley, creek projects would
31 include the restoration of riparian habitat,
32 improvements to hydrologic functions, and
33 the removal of the dam at Tennessee Pond. At
34 Rancho Corral de Tierra, projects would
35 include extensive removal of nonnative
36 invasive vegetation, riparian habitat
37 restoration, and possibly more extensive creek
38 channel restoration that could reconnect
39 steelhead habitat with the ocean and restore
40 many functional components of the natural
41 hydrologic regime. However, these more
42 substantial creek restoration efforts at Ranch
43 Corral de Tierra would likely be dependent on
44 the success of park partnerships, since other
45 entities have proprietary interests in portions
46 of the creek channel and water rights. If these
47 more substantial efforts are accomplished, the
48 overall stream character and function would
49 be improved by creating a more natural
50 watercourse that would reduce the potential
51 for erosion, re-create floodplain connectivity,

52 restore wetland functions, and contribute to
53 improvements in restoring watershed
54 processes and water quality. Overall, the
55 impact of these creek restoration activities
56 would be long term, minor to moderate,
57 beneficial, and localized.

58
59 Impacts on floodplains would be the same as
60 those described in the no-action alternative.

61
62 Visitor access and use would be expanded
63 throughout the park under alternative 1,
64 potentially resulting in some increase in
65 erosion along trails and at primary visitor use
66 areas that could have impacts on water
67 quality—the impact would be long term,
68 negligible to minor, adverse, and localized.

69
70 New and/or improved recreational
71 development—including new visitor facilities
72 and amenities at (1) Stinson Beach, Kirby
73 Cove, Forts Barry and Cronkhite, Slide Ranch,
74 Golden Gate Dairy, Tennessee Valley, and
75 Marin City Ridge / Gerbode Valley along State
76 Route 1 and Conzelman, McCullough, and
77 Bunker Roads in Marin County; at (2) Upper
78 Fort Mason, Fort Miley, China Beach and
79 Fort Funston in San Francisco County; and at
80 (3) Milagra Ridge, Sweeney Ridge, Phleger
81 Estate, and Rancho Corral de Tierra in San
82 Mateo County—would have short-term,
83 negligible to minor, adverse, localized impacts
84 on water quality from increased erosion and
85 sedimentation, and the potential for chemical
86 contamination resulting from inadvertent
87 chemical spills from heavy equipment at
88 construction sites. Similar impacts on water
89 quality could occur over the long term due to
90 the increased potential for urban pollutants to
91 runoff from parking lots and other developed
92 features.

93
94 In some areas (such as at Shelldance Nursery
95 in San Mateo County) adverse impacts would
96 be negligible to minor because the
97 development would occur in previously
98 developed or disturbed sites. In other areas
99 (such as at Rancho Corral de Tierra in San
100 Mateo County), adverse impacts on water
101 resources would be minor to moderate

1 because new development would occur in
2 undisturbed sites.

3
4 Impacts from NPS educational and
5 stewardship programs would generally be the
6 same as those described in the no-action
7 alternative.

8
9 At Alcatraz Island, impacts from visitor use
10 and NPS operations (including the cleaning of
11 bird guano) would be greater than those
12 described in the no-action alternative because
13 greater emphasis would be placed on visitor
14 access and the cleaning of more primary use
15 areas, resulting in increased potential for
16 water quality impacts such as nutrient and
17 sediment inputs into marine waters. Turbidity
18 and chemical contamination may also increase
19 due to increased vessel traffic in the Bay.
20 Impacts from these activities would result in
21 long term, minor to moderate, adverse,
22 localized impacts on water quality.

23
24 **Conclusion.** The removal and reclamation of
25 facilities and structures, the re-creation of
26 natural hydrologic regimes, and restoration of
27 watershed processes would result in long-
28 term minor to moderate, beneficial impacts on
29 water quality, while the construction,
30 maintenance or removal of trails and facilities
31 would have short-term, minor to moderate,
32 adverse impacts on water quality.

33
34 There would be long-term minor to moderate,
35 adverse, localized impacts on water quality on
36 Alcatraz Island resulting from cleaning of
37 primary visitor use areas and increased vessel
38 traffic in San Francisco Bay.

39
40 Generally, adverse impacts would occur from
41 new recreational development and expanded
42 visitor use. Beneficial impacts would occur
43 from trail and road maintenance and the
44 restoration of disturbed sites and creeks.

45

46 **Alternative 2: Preserving and** 47 **Enjoying Coastal Ecosystems**

48 **Analysis.** Under alternative 2, a variety of
49 management zones would be used that would
50 assist in the protection of water resources and
51 hydrologic processes. Approximately 92% of
52 the park would be zoned using the natural and
53 sensitive resources zones.

54
55 Alternative 2 would reduce impacts on water
56 quality by eliminating erosion from
57 unsustainable trails and unneeded
58 management roads, resulting in long-term,
59 minor to moderate, beneficial, localized
60 impacts. Short term, minor, adverse impacts
61 on water quality could occur from
62 sedimentation and runoff during construction
63 activities.

64
65 The magnitude of beneficial impacts
66 associated with the removal of facilities/
67 structures and the reclamation of disturbed
68 building sites would be greater than under the
69 no-action alternative. In alternative 2, in
70 addition to the actions included in alternative
71 1, the National Park Service would completely
72 remove and restore the Capehart housing
73 area; work with Marin County to realign the
74 highway and minimize impacts on Redwood
75 Creek; and could remove or relocate all horse
76 stable stables from the Rancho Corral de
77 Tierra property. These activities would
78 improve natural hydrologic processes; when
79 combined with the actions included in
80 alternative 1, they would result in long-term,
81 moderate, beneficial, and localized impacts on
82 water resources and hydrologic processes.

83
84 Beneficial effects on stream character, water
85 quality, wetlands, floodplains, and watershed
86 processes would occur from creek restoration
87 at Stinson Beach (Eastkoot Creek) and
88 especially at Rancho Corral de Tierra. Incised
89 creek banks that adversely impact floodplain
90 function by restricting creek sinuosity would
91 be restored, thereby expanding and enhancing
92 wetlands and improving water quality. The
93 overall stream character and function would
94 be improved by creating a more natural
95 watercourse that would reduce the potential

1 for erosion, re-create the natural hydrologic
2 regime, and contribute to improvements in
3 restoring watershed processes and regional
4 water quality. Collaborating with
5 municipalities to increase water storage would
6 benefit water resources by increasing water
7 quantity with park streams. The impact of
8 these activities would be long term, moderate,
9 beneficial, and localized.

10
11 Impacts on floodplains would be less than
12 those described in the no-action alternative
13 because the removal of the lower horse stable
14 from the 100-year floodplain of San Vicente
15 Creek at Rancho Corral de Tierra would
16 improve floodplain function and integrity—
17 resulting in a long-term, minor, beneficial,
18 localized impact.

19
20 Impacts from visitor access and use would be
21 the same as those described in alternative 1,
22 resulting in long-term, minor, adverse, and
23 localized impacts.

24
25 The magnitude of adverse impacts associated
26 with new recreational development under
27 alternative 2 would be less than under
28 alternative 1 because the amount and
29 distribution of proposed facilities is reduced.
30 However, the types of impacts would
31 generally be the same and would result in
32 minor, adverse, localized impacts on water
33 quality and water resources.

34
35 Impacts from NPS educational and
36 stewardship programs would generally be the
37 same as those described in the no-action
38 alternative.

39
40 At Alcatraz Island, impacts from visitor use
41 and NPS operations would be less than those
42 described in the no-action alternative because
43 greater portions of the island would be left to
44 natural reclamation and the focus on
45 maintaining visitor use areas (including the
46 cleaning of bird guano) would be reduced.
47 Therefore, nutrient and sediment inputs into
48 marine waters would be reduced. Water
49 quality impacts associated with vessel traffic
50 would be expected to be the same as in the no-
51 action alternative. These actions would result

52 in long-term, minor, beneficial, localized
53 impacts on water quality.

54
55 **Conclusion.** The removal of unsustainable
56 trails and unneeded management roads,
57 removal of facilities and structures, creek
58 restorations, realignment of small sections of
59 roadway, and the relocation of horse stables
60 away from adjacent creeks would result in
61 long-term, minor to moderate, beneficial
62 impacts on water resources, wetlands,
63 floodplains, and overall hydrologic processes.
64 However, the construction, maintenance, or
65 removal activities associated with these
66 changes would have short-term, minor to
67 moderate, adverse impacts on water quality.

68
69 Leaving greater portions of Alcatraz Island to
70 natural reclamation and reducing the visitor
71 use area on the island would result in long-
72 term, minor, beneficial, localized impacts on
73 water quality. The visitor use area would be
74 reduced providing for a larger area of the
75 island to naturally reclaim and thereby reduce
76 water quality impacts caused by human use.

77
78 Generally, adverse impacts would occur from
79 new recreational development and expanded
80 visitor use. Beneficial impacts would occur
81 from trail and road maintenance, and the
82 restoration of disturbed sites, creeks, and
83 floodplains.

84
85 ***Alternative 3: Focusing on National***
86 ***Treasures (NPS Preferred Alternative***
87 ***for Alcatraz Island)***

88 **Analysis.** Under alternative 3, a variety of
89 management zones would be used that would
90 assist in the protection of water resources and
91 hydrologic processes. Approximately 88% of
92 the park would be zoned using the natural and
93 sensitive resources zones.

94
95 As described in alternative 1, impacts on water
96 quality from reducing erosion from
97 unsustainable trails and roads would be
98 reduced when compared to the no-action
99 alternative, resulting in long-term, minor to
100 moderate, beneficial, localized impacts. Short

1 term, minor, adverse impacts on water quality
2 could occur from sedimentation and runoff
3 during construction activities.

4
5 As described in alternative 1, the removal of
6 facilities/structures and the reclamation of
7 disturbed building sites would result in long-
8 term, minor to moderate, beneficial, and
9 localized impacts on water resources and
10 hydrologic processes.

11
12 As described in alternative 1, creek restoration
13 would result in enhanced wetlands, improved
14 water quality, and overall improvements to
15 stream character and function. The impact of
16 these activities would be long term, moderate,
17 beneficial, and localized.

18
19 Impacts on floodplains would be the same as
20 those described in the no-action alternative.

21
22 Visitor access and use would be expanded
23 under alternative 3, potentially resulting in
24 some increase in erosion along trails and at
25 primary visitor use areas that could have
26 impacts on water quality—the impact would
27 be long term, negligible to minor, adverse, and
28 localized.

29
30 Impacts from new recreational development
31 would generally be the same as described in
32 alternative 1, resulting in short-term,
33 negligible to minor, adverse, localized impacts
34 on water quality from increased erosion and
35 sedimentation, and the potential for chemical
36 contamination resulting from inadvertent
37 chemical spills from heavy equipment at
38 construction sites. Similar impacts on water
39 quality could occur over the long term due to
40 the increased potential for urban pollutants to
41 runoff from parking lots and other developed
42 features.

43
44 Impacts from NPS educational and
45 stewardship programs would generally be the
46 same as those described in the no-action
47 alternative.

48
49 At Alcatraz Island, impacts from visitor use
50 and NPS operations (including the cleaning of
51 bird guano) would be greater than those

52 described in the no-action alternative because
53 greater emphasis would be placed on visitor
54 access and the cleaning of more primary use
55 areas, resulting in increased potential for
56 water quality impacts such as nutrient and
57 sediment inputs into marine waters. Water
58 quality impacts, such as turbidity and
59 chemical contamination, from increased
60 vessel traffic in the Bay may also increase.

61 Additional impacts associated with the scale
62 of historic structure rehabilitation and facility
63 improvements under alternative 3 could result
64 in increased impacts on water quality. Impacts
65 from these activities would result in long-
66 term, minor to moderate, adverse, localized
67 impacts on water quality.

68
69 **Conclusion.** The removal and natural
70 restoration of unsustainable trails and
71 unneeded management roads, the removal of
72 facilities and structures, and creek restoration
73 efforts would result in long-term, minor to
74 moderate, beneficial impacts on water
75 resources and hydrologic process. However,
76 the construction, maintenance, or removal of
77 trails and facilities would have short-term,
78 minor to moderate, adverse impacts on water
79 quality.

80
81 The scale of historic structure rehabilitation
82 and facility improvements on Alcatraz Island
83 could result in increased impacts on water
84 quality. The cleaning of the primary visitor use
85 areas and the increased vessel traffic in San
86 Francisco Bay would result in long-term
87 minor to moderate, adverse, localized impacts
88 on water quality on Alcatraz Island.

89
90 Adverse impacts would occur from new
91 recreational development and expanded
92 visitor use. Beneficial impacts would occur
93 from trail and road maintenance and the
94 restoration of disturbed sites and creeks.

95
96

1 NATURAL RESOURCES – BIOLOGICAL 2 RESOURCES

3 Habitat (vegetation and wildlife)

4 *No-action Alternative*

5 **Analysis.** Under the no-action alternative, the
6 presence and maintenance (or lack of
7 maintenance in some cases) of existing
8 facilities (including structures, roads, and
9 trails) would continue to cause localized
10 impacts on vegetation and wildlife habitat by
11 fragmenting natural areas and increasing the
12 potential for nonnative plant species to
13 displace native species and affect native
14 habitat. Maintaining facilities and structures in
15 coastal interface areas would continue to
16 disrupt natural shoreline habitat values
17 resulting in impacts on species that depend on
18 these areas and diminished biodiversity in
19 general. The impact of these activities would
20 be long term, minor to moderate, adverse, and
21 localized, but would occur throughout the
22 park.

23
24 Projects to improve natural habitat values and
25 ecosystem function, such as those at Big
26 Lagoon (estuarine restoration), Lower
27 Redwood Creek (wetland restoration), Marin
28 Headlands (gully repair), Kirby Cove (45 acres
29 of nonnative plant removal), Fort Funston (20
30 acres of nonnative plant removal), in offshore
31 marine areas (sand deposits and
32 management), and at Land's End and Mori
33 Point (trail/road removal and repair), would
34 have beneficial effects on vegetation, wildlife,
35 and wildlife habitat because they would
36 reduce the impacts of nonnative plant species,
37 improve or restore the functionality of natural
38 processes, and improve specific habitat
39 components that are required by the affected
40 species. These kinds of activities would reduce
41 environmental stressors and increase the
42 resiliency of species and systems to the effects
43 of climate change. Rehabilitating disturbed
44 sites would improve the integrity and diversity
45 of habitats available to aquatic and terrestrial
46 organisms. Ongoing vegetation management
47 and monitoring of plants and wildlife allows

48 the National Park Service to improve native
49 habitat conditions. The use of spatial and
50 temporal closures would continue to protect
51 wildlife and wildlife habitat. The impact of
52 these activities would be long term, minor to
53 moderate, beneficial, and localized.

54
55 Recreational use would continue to reduce
56 habitat integrity by trampling plants,
57 introducing and increasing the spread of
58 nonnative species, causing disturbance
59 (flushing and displacement) to animals, and
60 increasing the potential for human-wildlife
61 conflict resulting from habituation due to the
62 presence of humans and the introduction of
63 unnatural food sources. Recreational use also
64 generates noise and unnatural light sources
65 that affect wildlife. These activities would
66 result in long-term, minor to moderate,
67 adverse, localized impacts throughout the
68 park.

69
70 Park Service efforts to provide educational
71 and participatory stewardship programs
72 would continue to have a beneficial effect on
73 vegetation and wildlife habitat due to
74 increased public understanding and support
75 for resource protection and management—the
76 impact would be long term, minor, beneficial,
77 and parkwide.

78
79 Waterbirds would continue to be affected by
80 visitor use at Alcatraz Island (day use, special
81 events, etc.) and NPS operations, including
82 managing gulls and other waterbirds in visitor
83 use areas. Boat traffic in the marine waters
84 adjacent to the island would continue to cause
85 disturbance to nesting birds. These activities
86 would result in long-term, minor, adverse,
87 localized impacts. At the same time, the
88 National Park Service would continue to
89 protect nesting habitat and bird use areas on
90 the Island using seasonal closures, especially
91 the preferred habitats on the western
92 perimeter of the island. This would result in
93 long-term, moderate, beneficial, localized
94 impacts on waterbird populations. Given the
95 combined effects of disturbance and
96 protective actions, the numbers of breeding
97 pairs of waterbirds on the Island have steadily
98 increased over the last decade. This trend is

1 expected to continue. Also, though protected
2 by resource management efforts, waterbird
3 nesting and foraging habitat at Bird Island and
4 Point San Pedro would continue to be
5 adversely affected by intermittent
6 disturbances from various forms of land-
7 based and water-based visitor use activities
8 (e.g., sea kayaking, hiking, etc.). Collectively,
9 impacts on waterbirds as a result of the no-
10 action alternative would be long term, minor
11 to moderate, adverse, and localized.

12
13 **Conclusion.** The conditions related to
14 existing facilities would continue to cause
15 fragmentation of habitat and the potential for
16 nonnative plant species to displace native
17 species. The continuation of current
18 recreational use also would reduce habitat
19 integrity. The impacts would be long term,
20 minor to moderate, adverse, and localized but
21 would occur throughout the park.

22
23 Habitat restoration efforts and educational
24 and participatory stewardship programs
25 would result in long-term, minor to moderate,
26 beneficial impacts that would occur both at
27 the local level (habitat restoration) and
28 parkwide (stewardship programs).

29
30 Impacts on waterbirds would be long term,
31 minor to moderate, adverse, and localized.
32 Generally, adverse impacts would occur from
33 the presence and maintenance of existing
34 facilities and visitor use. Beneficial impacts
35 would occur from restoration and ongoing
36 management and monitoring activities.

37
38 **Alternative 1: Connecting People with**
39 **the Parks (NPS Preferred Alternative**
40 **for Park Sites in Marin, San Francisco,**
41 **and San Mateo Counties)**

42 Analysis. Under alternative 1, a variety of
43 management zones would be used that would
44 assist in the protection of vegetation and
45 wildlife habitat. Approximately 77% of the
46 park would be zoned as a natural and sensitive
47 resources zone.

48

49 Sensitive resource zones at Bird Island and
50 Point Bonita Cove would serve to protect
51 seabirds and pinnipeds, a beneficial impact
52 when compared to the no-action alternative.

53

54 The impacts on vegetation and wildlife from
55 the continued presence and maintenance of
56 existing facilities (including structures, roads,
57 and trails) under alternative 1 would be less
58 than the no-action alternative because impacts
59 on vegetation and wildlife habitat caused by
60 erosion from unsustainable trails and roads
61 would be reduced. Alternative 1 would
62 develop a sustainable trail system and
63 eliminate unneeded and unsustainable roads
64 and trails, as well as maintain all trails and
65 roads. Impacts on native habitat from
66 fragmentation and nonnative species would
67 be reduced. These activities would result in
68 long-term, minor, beneficial, localized impacts
69 on vegetation and wildlife.

70

71 The removal of facilities/structures and the
72 reclamation of disturbed building sites (such
73 as at the Capehart housing area and Tennessee
74 Valley in Marin County); dune restoration at
75 Fort Funston; vegetation restoration on old
76 roads and trails at Phleger Estate; and
77 extensive nonnative plant removal at Ranch
78 Corral de Tierra. Creek restoration at Stinson
79 Beach (Eastkoot Creek), and especially at
80 Rancho Corral de Tierra would improve
81 vegetation and wildlife habitat by improving
82 habitat structure and the diversity of habitats
83 available to support various species' needs.
84 These kinds of activities would reduce
85 environmental stressors and increase the
86 resiliency of species and systems to the effects
87 of climate change. The impact of these
88 activities would be long term, minor,
89 beneficial, and localized.

90

91 Visitor access and use would be expanded
92 under alternative 1, potentially resulting in
93 additional impacts on vegetation (trampling)
94 and wildlife (disturbance) along trails and at
95 primary visitor use areas—the impact would
96 be long term, minor to moderate, adverse, and
97 localized.

98

1 New and/or improved recreational
 2 development including new visitor facilities
 3 and amenities at (1) Stinson Beach, Kirby
 4 Cove, Forts Barry and Cronkhite, Slide Ranch,
 5 Golden Gate Dairy, Tennessee Valley, and
 6 Marin City Ridge / Gerbode Valley along State
 7 Route 1 and Conzelman, McCullough, and
 8 Bunker Roads in Marin County; at (2) Upper
 9 Fort Mason, Fort Miley, China Beach, and
 10 Fort Funston in San Francisco County; and at
 11 (3) Milagra Ridge, Sweeney Ridge, Phleger
 12 Estate, and Rancho Corral de Tierra in San
 13 Mateo County would have long-term, minor
 14 to moderate, adverse, localized impacts on
 15 vegetation and wildlife due to the permanent
 16 loss of plants and wildlife habitat. Short-term,
 17 minor, adverse impacts on vegetation would
 18 also occur from injury or loss of plants during
 19 construction activities; however, the area
 20 would be replanted with native plants and the
 21 natural habitat would be reclaimed. Similarly,
 22 short-term adverse impacts on wildlife, such
 23 as disturbance, would occur during
 24 construction. The stabilization of Pier 4 at
 25 Fort Mason would result in impacts (habitat
 26 disturbance during construction) to marine
 27 resources—the impact would be short term,
 28 minor, adverse, and localized.

29
 30 Impacts from NPS educational and
 31 stewardship programs would generally be the
 32 same as those described in the no-action
 33 alternative. Similarly, impacts from vegetation
 34 and wildlife management and monitoring
 35 activities under alternative 1 would be the
 36 same as those described in the no-action
 37 alternative. However, the establishment of a
 38 native plant nursery would provide additional
 39 capacity to improve native vegetation and
 40 wildlife habitat and expand stewardship
 41 efforts—resulting in a beneficial impact.

42
 43 At Alcatraz Island, adverse impacts on
 44 waterbirds under alternative 1 would be
 45 greater than those described in the no-action
 46 alternative because new visitor amenities
 47 (namely food service, modest overnight
 48 accommodations, and special events) and
 49 potential increased access to the island would
 50 cause increased disturbance to nesting
 51 waterbirds and human-wildlife conflict.

52 However, no known state- or federal-listed
 53 threatened or endangered bird species inhabit
 54 Alcatraz Island.

55
 56 Additionally, historic restoration of the
 57 Parade Grounds on the island and removal of
 58 the ruins would cause habitat loss and
 59 disturbance to waterbird habitat.

60 Management of the Parade Ground ruins
 61 would affect the island's western gull colony
 62 more than other species, and could result in
 63 major adverse effects to the western gull.

64 However, population viability would be
 65 maintained. Expanded visitor use of the Agave
 66 Trail would affect use of the tidepools by
 67 foraging birds. As in the no-action alternative,
 68 the National Park Service would continue to
 69 protect nesting and roosting habitats and
 70 initiate habitat enhancements in other areas of
 71 the island where possible—resulting in
 72 beneficial impacts. The marine waters within
 73 the vicinity of the colonial nesting birds would
 74 be closed to boating during the breeding
 75 season, resulting in beneficial impacts. Given
 76 the combined effects of disturbance and
 77 protective actions, the numbers of breeding
 78 pairs of waterbirds on the island could
 79 decrease over time depending on the
 80 frequency and intensity of expanded visitor
 81 activity. Collectively, these activities would
 82 result in long-term, moderate, adverse,
 83 localized to regional impacts on waterbirds on
 84 Alcatraz Island, and could result in major
 85 adverse impacts on western gulls.

86
 87 However, under alternative 1, the protection
 88 of waterbird nesting and foraging habitat at
 89 Bird Island would be increased relative to the
 90 no-action alternative. The designation of a
 91 sensitive resources zone in these areas would
 92 protect waterbird breeding and foraging and
 93 land- and water-based visitor access would be
 94 highly managed. Also, the natural zone at
 95 Point San Pedro would be managed to help
 96 improve protection of waterbird nesting
 97 colonies from visitor use activities. These
 98 more protective management measures would
 99 result in long-term, minor to moderate,
 100 beneficial, and localized impacts on
 101 waterbirds at Bird Island and Point San Pedro.

1 **Conclusion.** The development of a
2 sustainable trail system and elimination of
3 unneeded and unsustainable roads and trails,
4 the removal of facilities/structures with
5 reclamation of disturbed building sites, and
6 habitat restoration efforts would result in
7 long-term, minor, beneficial, localized impacts
8 on vegetation and wildlife.

9
10 The expansion of visitor access and use and
11 the development of new or improved
12 recreational facilities would result in long-
13 term, minor to moderate, adverse, and
14 localized impacts. The construction activities
15 related to these developments would result in
16 short-term, minor, and adverse impacts.

17
18 Impacts from NPS educational and
19 stewardship programs would generally be the
20 same as those described in the no-action
21 alternative. Similarly, impacts from vegetation
22 and wildlife management and monitoring
23 activities under alternative 1 would be the
24 same as those described in the no-action
25 alternative. However, the establishment of a
26 native plant nursery would provide additional
27 capacity to improve native vegetation and
28 wildlife habitat and expand stewardship
29 efforts—a beneficial impact.

30
31 Habitat restoration efforts and educational
32 and participatory stewardship programs
33 would result in long-term, minor to moderate,
34 beneficial impacts that would occur both at
35 the local level (habitat restoration) and
36 parkwide (stewardship programs). An
37 additional beneficial impact would result from
38 the establishment of a native plant nursery.

39
40 Impacts on waterbirds on Alcatraz Island
41 would be long-term, moderate, adverse, and
42 localized to regional, and could result in major
43 adverse impacts on western gulls on Alcatraz
44 Island. However, gull population viability
45 would be maintained. Impacts on waterbird
46 nesting in other coastal areas of the park (Bird
47 Island and Point San Pedro) would be long-
48 term, minor to moderate, beneficial, and
49 localized. If it becomes evident that
50 implementation of the actions in alternative 1
51 at both the Parade Ground and at the north

52 end of Alcatraz Island (in the vicinity of the
53 New Industries / Model Industries Buildings)
54 have the potential to have major adverse
55 effects and would result in long-term or
56 permanent loss of waterbird nesting colonies
57 (with the exception of western gulls), the park
58 staff would use adaptive management
59 techniques and take the necessary measures to
60 ensure the continued viability of breeding
61 populations of these species on the island.
62 These steps could include allowing only
63 nonbreeding season access to the Parade
64 Ground or limiting the types and scale of uses
65 in the north end of the island during nesting
66 seasons. These actions would ensure that
67 adverse impacts do not exceed the moderate
68 intensity threshold.

69
70 Generally, adverse impacts would occur from
71 the presence and maintenance of existing
72 facilities and visitor use. Beneficial impacts
73 would occur from natural resource
74 restoration, ongoing management and
75 monitoring activities, and the introduction of
76 protective park management zones.

77 78 **Alternative 2: Preserving** 79 **and Coastal Ecosystems**

80 **Analysis.** Under alternative 2, a variety of
81 management zones would be used that would
82 assist in the protection of vegetation and
83 wildlife habitat. Approximately 92% of the
84 park would be zoned using the natural and
85 sensitive resources zones.

86
87 Sensitive resource zones at Bird Island and
88 Point Bonita Cove would serve to protect
89 seabirds and pinnipeds, a beneficial impact
90 when compared to the no-action alternative.

91
92 The impacts on vegetation and wildlife from
93 the continued presence and maintenance of
94 existing facilities (including structures, roads,
95 and trails) under alternative 2 would be less
96 than the no-action alternative because impacts
97 on vegetation and wildlife habitat caused by
98 erosion from unsustainable trails and roads
99 would be reduced. Alternative 2 would
100 develop a sustainable trail system and
101 eliminate and rehabilitate unneeded trails and

1 management roads, as well as maintain all
2 trails and roads. Impacts on native habitat
3 from fragmentation and nonnative species
4 would be reduced. These activities would
5 result in long-term, minor to moderate,
6 beneficial, localized to parkwide impacts on
7 vegetation and wildlife.

8
9 The magnitude of beneficial impacts
10 associated with the removal of facilities/
11 structures and the reclamation of disturbed
12 building sites, as well as from creek
13 restoration, would be greater than under the
14 no-action alternative. In alternative 2, in
15 addition to the actions included in alternative
16 1, the National Park Service would completely
17 remove and restore the Capehart housing
18 area; work with Marin County to realign the
19 highway and minimize impacts on Redwood
20 Creek; remove structures and restore about 10
21 acres at Slide Ranch, as well as convert about
22 3.5 acres of existing farmland to native habitat;
23 restore about 18 acres of uplands at Golden
24 Gate Dairy; remove the nonnative forest and
25 improve natural habitat conditions at Fort
26 Miley; and improve or remove all horse
27 stables from the Rancho Corral de Tierra
28 property. These kinds of activities would
29 reduce environmental stressors and increase
30 the resiliency of species and systems to the
31 effects of climate change. These activities
32 would also improve habitat structure and the
33 diversity of habitats available to support
34 various species' needs, and when combined
35 with those actions included in alternative 1,
36 would result in long-term, moderate,
37 beneficial, and localized to parkwide impacts.

38
39 Visitor access and use would be expanded
40 under alternative 2, potentially resulting in
41 additional impacts on vegetation (trampling)
42 and wildlife (disturbance) along trails and at
43 primary visitor use areas—the impact would
44 be long term, minor, adverse, and localized.

45
46 The type of adverse impacts associated with
47 new recreational development under
48 alternative 2 would be the same impacts as
49 described in alternative 1 although the
50 number and distribution of proposed facilities
51 is reduced resulting in minor, adverse,

52 localized impacts on vegetation and wildlife
53 habitat.

54
55 Impacts from NPS educational and steward-
56 ship programs would generally be the same as
57 those described in the no-action alternative,
58 with one exception. Partnering with other
59 agencies to manage visitor access and promote
60 restoration and habitat management as part of
61 the UNESCO Golden Gate Biosphere Reserve
62 would elevate this issue and could result in
63 benefits to vegetation and wildlife habitat.
64 Impacts from vegetation and wildlife
65 management and monitoring activities under
66 alternative 2 would be the same as those
67 described in the no-action alternative. The
68 establishment of a native plant nursery would
69 provide additional capacity to improve native
70 vegetation and wildlife habitat and expand
71 stewardship efforts—resulting in a beneficial
72 impact.

73
74 At Alcatraz Island, adverse impacts on
75 waterbirds under alternative 2 would be fewer
76 than those described in the no-action
77 alternative because waterbird nesting and use
78 areas would be allowed to expand and
79 conflicts with visitor use and NPS operations
80 would be reduced. Visitor use areas would be
81 expanded and visitor activities would be
82 highly controlled on the Island. The Model
83 Industries Building and New Industries
84 Building would be stabilized and would
85 provide additional habitat to nesting birds.
86 Park operations near the power plant would
87 be modified to reduce conflicts with nesting
88 birds. The marine waters within the vicinity of
89 the colonial nesting birds would be closed to
90 boating during the breeding season, resulting
91 in beneficial impacts. The allowance of
92 modest overnight accommodations on the
93 Island would increase the potential for
94 human-wildlife conflict, an adverse impact. As
95 in the no-action alternative, the National Park
96 Service would continue to protect nesting and
97 roosting habitats and initiate habitat
98 enhancements in other areas of the Island
99 where possible—resulting in beneficial
100 impacts. Given the combined effects of
101 disturbance and protective actions, the
102 numbers of breeding pairs of waterbirds on

1 Alcatraz Island would be expected to be
2 maintained or increase over time. Collectively,
3 these activities would result in long-term,
4 moderate, beneficial, localized impacts on
5 waterbirds on Alcatraz Island.

6
7 Also, under alternative 2, the protection of
8 waterbird nesting and foraging habitat at Bird
9 Island would be increased relative to the no-
10 action alternative. The designation of a
11 sensitive resources zone in these areas would
12 protect waterbird breeding and foraging and
13 land- and water-based visitor access would be
14 highly managed. Also, the natural zone at
15 Point San Pedro would be managed to help
16 improve protection of waterbird nesting
17 colonies from visitor use activities. These
18 more protective management measures would
19 result in long-term, minor to moderate,
20 beneficial, and localized impacts on
21 waterbirds at Bird Island and Point San Pedro.

22
23 The rehabilitation of Pier 4 at Fort Mason
24 would result in impacts (habitat disturbance
25 during construction) to marine resources—
26 the impact would be short-term, minor,
27 adverse, and localized.

28
29 **Conclusion.** The development of a
30 sustainable trail system and the elimination of
31 unneeded roads, and the removal of a large
32 number of structures and the restoration of
33 natural vegetation in these areas would result
34 in long-term, moderate, beneficial, localized
35 to parkwide impacts on vegetation and
36 wildlife.

37
38 The expansion of visitor access and use and
39 the development of new or improved
40 recreational facilities would result in long-
41 term, minor, adverse, and localized impacts.
42 The construction activities related to these
43 developments would result in short-term,
44 minor, and adverse impacts.

45
46 Habitat restoration efforts and educational
47 and participatory stewardship programs
48 would result in long-term, minor to moderate,
49 beneficial impacts that would occur both at
50 the local level (habitat restoration) and
51 parkwide (stewardship programs). Additional

52 beneficial impacts would result from the
53 establishment of a native plant nursery and
54 partnering with other agencies to manage
55 visitor access and promote restoration and
56 habitat management as part of the UNESCO
57 Golden Gate Biosphere Reserve.

58
59 Impacts on waterbirds on Alcatraz Island
60 would be long term, moderate, beneficial, and
61 localized. Impacts on waterbird nesting in
62 other coastal areas of the park (Bird Island
63 and Point San Pedro) would be long-term,
64 minor to moderate, beneficial, and localized.

65
66 Generally, adverse impacts would occur from
67 the presence and maintenance of existing
68 facilities and visitor use. Beneficial impacts
69 would occur from restoration, ongoing
70 management and monitoring activities, and
71 the introduction of protective park
72 management zones.

73
74 **Alternative 3: Focusing on National**
75 **Treasures (NPS Preferred Alternative**
76 **for Alcatraz Island)**

77 **Analysis.** Under alternative 3, a variety of
78 management zones would be used that would
79 assist in the protection of vegetation and
80 wildlife habitat. Approximately 88% of the
81 park would be zoned using the natural and
82 sensitive resources zones.

83
84 The impacts on vegetation and wildlife from
85 the continued presence and maintenance of
86 existing facilities (including structures, roads,
87 and trails) under alternative 3 would be less
88 than the no-action alternative because impacts
89 on vegetation and wildlife habitat caused by
90 erosion from unsustainable trails and roads
91 would be reduced. Alternative 3 would
92 develop a sustainable trail system and
93 eliminate and rehabilitate unneeded and
94 unsustainable roads and trails, as well as
95 maintain all trails and roads. Impacts on native
96 habitat from fragmentation and nonnative
97 species would be reduced. These activities
98 would result in long-term, minor, beneficial,
99 localized impacts on vegetation and wildlife.

100

1 Natural resource restoration includes the
 2 dune restoration that involves the removal of
 3 30 acres of European beach grass at Fort
 4 Funston; restoration of a large tract of second-
 5 generation redwood forest at the Phleger
 6 Estate; and extensive nonnative plant removal
 7 at Ranch Corral de Tierra. The managed
 8 retreat from sea level rise at Ocean Beach
 9 would improve the integrity of natural
 10 habitats and processes. Creek restoration at
 11 Stinson Beach (Eastkoot Creek), and
 12 especially at Rancho Corral de Tierra would
 13 improve vegetation and wildlife habitat by
 14 improving habitat structure and the diversity
 15 of habitats available to support the needs of
 16 various species. These kinds of activities
 17 would reduce environmental stressors and
 18 increase the resiliency of species and systems
 19 to the effects of climate change. The impact of
 20 these activities would be long term, moderate,
 21 beneficial, and localized.

22
 23 Visitor access and use would be expanded
 24 under alternative 3, potentially resulting in
 25 additional impacts on vegetation (trampling)
 26 and wildlife (disturbance) along trails and at
 27 primary visitor use areas—the impact would
 28 be long-term, minor, adverse, and localized.

29
 30 New and/or improved recreational
 31 development including new visitor facilities
 32 and amenities at (1) Stinson Beach, Kirby
 33 Cove, Forts Barry and Cronkhite, Slide Ranch,
 34 Golden Gate Dairy, Tennessee Valley, and
 35 Marin City Ridge / Gerbode Valley and along
 36 State Route 1 and Conzelman, McCullough,
 37 and Bunker Roads in Marin County; at (2)
 38 Upper Fort Mason, Fort Miley, China Beach,
 39 and Fort Funston in San Francisco County;
 40 and at (3) Milagra Ridge, Sweeney Ridge,
 41 Phleger Estate, and Rancho Corral de Tierra
 42 in San Mateo County would have long-term,
 43 minor, adverse, localized impacts on
 44 vegetation and wildlife due to the permanent
 45 loss of plants and wildlife habitat. Short-term,
 46 minor, adverse impacts on vegetation would
 47 occur from injury or loss of plants during
 48 construction activities; however, the area
 49 would be replanted with native plants and the
 50 natural habitat would be reclaimed. Similarly,
 51 short-term adverse impacts on wildlife, such

52 as disturbance, would occur during
 53 construction.

54
 55 Impacts from NPS educational and
 56 stewardship programs would generally be the
 57 same as those described in the no-action
 58 alternative. Similarly, impacts from vegetation
 59 and wildlife management and monitoring
 60 activities under alternative 3 would be the
 61 same as those described in the no-action
 62 alternative. The establishment of a native
 63 plant nursery would provide additional
 64 capacity to improve native vegetation and
 65 wildlife habitat and expand stewardship
 66 efforts—a beneficial impact.

67
 68 At Alcatraz Island, adverse impacts on
 69 waterbirds under alternative 3 would be
 70 greater than those described in the no-action
 71 alternative because new visitor amenities
 72 (namely food service, modest overnight
 73 accommodations, and special events) and
 74 potential increased access to the island would
 75 cause increased disturbance to nesting
 76 waterbirds and human-wildlife conflict.
 77 However, no known state- or federal-listed
 78 threatened or endangered bird species inhabit
 79 Alcatraz Island.

80
 81 The utilization of Pier 4 at Fort Mason as an
 82 additional point of embarkation for ferries to
 83 the island could result in additional impacts
 84 on seabirds caused by the proximity of
 85 potential increases in vessel traffic and
 86 associated garbage and marine debris. Gulls
 87 would be more highly managed in primary
 88 visitor use areas, which would take up more of
 89 the island under alternative 3, resulting in
 90 disturbance and displacement of gulls.
 91 Additionally, the level of historic restoration
 92 to the island (i.e., Parade Ground, building
 93 restoration, and adaptive reuse) would cause
 94 habitat loss and disturbance to waterbird
 95 populations. Management of the Parade
 96 Ground ruins would affect the island's
 97 western gull colony more than other species,
 98 and could result in major adverse effects to
 99 the western gull. However, population
 100 viability would be maintained.
 101 As in the no-action alternative, the National
 102 Park Service would continue to protect

1 nesting and roosting habitats and initiate
2 habitat enhancements in other areas of the
3 island where possible; these actions would
4 result in beneficial impacts. The National Park
5 Service would also continue to manage the
6 common raven population on Alcatraz Island
7 and would continue monitoring to ensure that
8 nonnative pests such as rats do not become
9 established on the island. Human disturbance
10 may also result in increased nest predation by
11 ravens. The park would continue to manage
12 visitation and park operations to minimize
13 disturbance to nesting birds. The Model
14 Industries Building and New Industries
15 Building, both of which are proximate to
16 sensitive waterbird breeding areas, would be
17 managed in a way that minimizes human-
18 induced disturbance and predation by
19 western gulls and protects the waterbird
20 breeding colonies on the north end of the
21 island. The marine waters within the vicinity
22 of the colonial nesting birds would be closed
23 to boating during the breeding season,
24 resulting in beneficial impacts. Given the
25 combined effects of disturbance and
26 protective actions, the numbers of breeding
27 pairs of waterbirds on the island could change
28 over time depending on the frequency and
29 intensity of expanded visitor activity, but
30 minimum numbers of nesting pairs would
31 support the maintenance of viable
32 populations. Collectively, these activities
33 would result in long-term, moderate, adverse,
34 localized to regional impacts on waterbirds on
35 Alcatraz Island, and could result in major
36 adverse impacts on western gulls.

37
38 However, under alternative 3, the protection
39 of waterbird nesting habitat at Point San
40 Pedro would be enhanced somewhat relative
41 to the no-action alternative. The designation
42 of a natural zone in these areas would help
43 protect waterbird breeding and foraging, and
44 land- and water-based visitor access would be
45 highly managed. The proposed scenic
46 corridor zone around Bird Island would not
47 notably alter the protection of waterbird
48 habitat relative to the no-action alternative.
49 These resource management measures would
50 result in long-term, minor, beneficial, and

51 localized impacts on waterbirds at Bird Island
52 and Point San Pedro.

53
54 **Conclusion.** The development of a
55 sustainable trail system and the elimination of
56 unneeded roads and the restoration of natural
57 vegetation in these areas would result in long-
58 term, minor, beneficial, localized impacts on
59 vegetation and wildlife.

60
61 The expansion of visitor access and use and
62 the development of new or improved
63 recreational facilities would result in long-
64 term, minor, adverse, and localized impacts.
65 The construction activities related to these
66 developments would result in short-term,
67 minor, and adverse impacts.

68
69 Natural resource restoration would result in
70 long-term, moderate, beneficial, and localized
71 impacts.

72
73 Habitat restoration efforts and educational
74 and participatory stewardship programs
75 would result in long-term, minor to moderate,
76 beneficial impacts that would occur both at
77 the local level (habitat restoration) and
78 parkwide (stewardship programs).

79
80 Impacts on waterbirds on Alcatraz Island
81 would be long-term, moderate, adverse, and
82 localized to regional, and could result in major
83 adverse impacts on western gulls. However,
84 gull population viability would be maintained.
85 Impacts on waterbird nesting in other coastal
86 areas of the park (Bird Island and Point San
87 Pedro) would be long-term, minor, beneficial,
88 and localized. If it becomes evident that
89 implementation of the actions in alternative 3
90 at both the Parade Ground and at the north
91 end of Alcatraz Island (in the vicinity of the
92 New Industries / Model Industries buildings)
93 have the potential to have major adverse
94 effects and would result in long-term or
95 permanent loss of waterbird nesting colonies
96 (with the exception of western gulls), the park
97 staff would use adaptive management
98 techniques and take the necessary measures to
99 ensure the continued viability of breeding
100 populations of these species on the island.
101 These steps could include allowing only

1 nonbreeding season access to the Parade
 2 Ground or limiting the types and scale of uses
 3 in the north end of the island during nesting
 4 seasons. These actions would ensure that
 5 adverse impacts do not exceed the moderate
 6 intensity threshold.

7
 8 Generally, adverse impacts would occur from
 9 the presence and maintenance of existing
 10 facilities and visitor use. Beneficial impacts
 11 would occur from restoration, ongoing
 12 management and monitoring activities, and
 13 the introduction of protective park
 14 management zones.

15
 16
 17 **Special Status Species (federal and**
 18 **state threatened and endangered**
 19 **species)**

20 ***No-action Alternative***

21 In general, many of the impacts on vegetation
 22 and wildlife previously described in the
 23 habitat section would apply to special status
 24 species. For example, visitor use and new
 25 development would result in changes that
 26 would have adverse impacts on listed species
 27 and their habitats. Likewise, vegetation
 28 management and creek restoration would
 29 result in beneficial impacts on listed species
 30 and their habitats. Keeping this in mind, the
 31 analysis provided below generalizes about the
 32 effects of land management priorities and,
 33 where possible, focuses on the impacts that
 34 specific actions included in the alternatives
 35 may have on listed species and their habitats.

36
 37 **Federal Threatened and Endangered**
 38 **Species.**

39 *California red-legged frog (Rana*
 40 *aurora draytonii)*—

41
 42 Wetland restoration and management, such as
 43 the project completed at Mori Point, would
 44 continue to improve habitat for the California
 45 red-legged frog—resulting in a beneficial
 46 impact. Creek restoration in Marin County
 47 would improve wetlands and riparian habitat
 48 that could serve as potential future habitat for

49 the frog. Nonnative plant removal, especially
 50 in riparian and wetland areas, could also
 51 improve the structure and condition of
 52 vegetation that supports frogs. All of these
 53 activities should improve and protect
 54 breeding and foraging habitat by improving
 55 conditions for emergent riparian vegetation
 56 and other vegetation conditions preferred by
 57 the California red-legged frog, such as dense,
 58 shrubby riparian areas. Controlling and
 59 managing visitor use would reduce impacts on
 60 frogs, such as habitat alteration and direct
 61 impacts from recreational use and develop-
 62 ment; however, some adverse impacts would
 63 continue. Long-term park operations and
 64 short-term project specific construction
 65 impacts on the species may occur. These may
 66 involve “take” associated with removal and
 67 translocation of individuals outside
 68 construction areas or impacts of existing
 69 roadways/trails and their maintenance. The
 70 National Park Service would continue to
 71 monitor frog populations and survey potential
 72 habitat. The primary threat to the frog would
 73 continue to be habitat loss—an adverse impact
 74 associated with increased urbanization of the
 75 region. There has not been any designated
 76 critical habitat in Marin or San Mateo
 77 counties managed by Golden Gate National
 78 Recreation Area (*Federal Register* 71: 19244–
 79 19346). Collectively, impacts on the California
 80 red-legged frog resulting from NPS actions
 81 that are part of the no-action alternative (the
 82 continuation of current management and
 83 trends) would be long term, beneficial, minor,
 84 and localized. The determination of effect
 85 under section 7 of the Endangered Species Act
 86 would be “*may affect, likely to adversely affect*”
 87 for project specific actions in the short term,
 88 and “*may affect, not likely to adversely affect*”
 89 for land use and park management over the
 90 long term. Consultation for specific projects
 91 would occur as necessary.

92
 93 *Mission blue butterfly (Icaricia*
 94 *icaroides missionensis)*—

95
 96 Coastal scrub habitat and grassland
 97 restoration, including nonnative plant
 98 removal and vegetation management, in the
 99 Marin Headlands and at Milagra Ridge and

1 Sweeney Ridge in San Mateo County, would
 2 continue to improve conditions for lupine
 3 plants that support mission blue butterflies.
 4 The *Marin Headlands-Fort Baker Plan* being
 5 implemented in cooperation with the Federal
 6 Highway Administration would cause some
 7 adverse impacts and loss of habitat (which is
 8 being mitigated) in the vicinity of Conzelman
 9 and Bunker roads due to construction;
 10 however, it would result in long-term benefits
 11 to butterfly habitat. The use of prescribed fire,
 12 an action analyzed under the park’s fire
 13 management plan / environmental impact
 14 statement, would also continue to have short-
 15 term adverse effects on butterflies and
 16 butterfly habitat with long-term beneficial
 17 effects. Conditions at park lands in San Mateo
 18 County, such as the widespread presence of
 19 nonnative plants, would continue to cause
 20 adverse impacts on potential butterfly habitat.
 21 Controlling and managing visitor use in
 22 known habitat areas throughout the park
 23 would reduce impacts on butterflies, such as
 24 the trampling of host and nectar plants and
 25 direct impacts on larvae and pupae from
 26 recreational use and development; however,
 27 some adverse impacts would continue. The
 28 National Park Service would continue to
 29 monitor butterfly populations and survey
 30 potential habitat. The primary threat to the
 31 butterfly would continue to be habitat loss,
 32 resulting in an adverse impact associated with
 33 increased urbanization of the region.
 34 Collectively, impacts on the mission blue
 35 butterfly resulting from NPS actions that are
 36 part of the no-action alternative (the
 37 continuation of current management and
 38 trends) would be long term, beneficial, minor,
 39 and localized. The determination of effect
 40 under section 7 of the Endangered Species Act
 41 would be “*may affect, likely to adversely affect*”
 42 for project specific actions in the short term,
 43 and “*may affect, not likely to adversely affect*”
 44 for land use and park management over the
 45 long term. Consultation for specific projects
 46 would occur as necessary.
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Tidewater goby (Eucyclogobius newberryi)—

Because tidewater gobies are currently only
 found in Rodeo Lagoon within the planning
 area, impacts would be restricted to this
 location. NPS management of Rodeo Lagoon
 is compatible with tidewater goby activities
 and requirements. Throughout its range, the
 primary threats to gobies include loss and
 modification of habitat, water diversions,
 predatory and competitive introduced fish
 species, habitat channelization, and degraded
 water quality. NPS activities, such as
 vegetation management, wetland enhance-
 ment, and efforts to improve water quantity
 and quality within the watershed near Rodeo
 Creek would have beneficial impacts on
 maintaining appropriate habitat
 characteristics that support gobies in Rodeo
 Lagoon. The National Park Service would
 continue to monitor goby populations and
 habitat and inventory potential habitat.
 Collectively, impacts on the tidewater goby
 resulting from NPS actions that are part of the
 no-action alternative (the continuation of
 current management and trends) would be
 long term, beneficial, minor, and localized.
 The determination of effect under section 7 of
 the Endangered Species Act would be “*may
 affect, likely to adversely affect*” for project
 specific actions in the short term, and “*may
 affect, not likely to adversely affect*” for land
 use and park management over the long term.
 Consultation for specific projects would occur
 as necessary.

San Francisco garter snake (Thamnophis sirtalis tetrataenia)—

Because San Francisco garter snakes are
 currently restricted to localities in San Mateo
 County (the only documented occurrence is
 at Mori Point / Sharp Park). According to
 research conducted by Swaim Biological, Inc.,
 in 2006, two other locations within the
 planning area (Milagra Ridge and Rancho
 Corral de Tierra) appear to have suitable
 habitat to support breeding populations of
 San Francisco garter snakes. In addition, two
 other sites (Sweeny Ridge and Cattle Hill) can

1 provide connectivity between known snake
2 populations or between high-quality aquatic
3 habitats that potentially support San Francisco
4 garter snakes. Therefore, impacts would be
5 restricted to these locations. Because
6 California red-legged frogs are an important
7 prey item for this species, effects on red-
8 legged frogs are expected to have cascading
9 effects on the snake.

10
11 Wetland restoration and management at Mori
12 Point could have short-term adverse impacts
13 on California red-legged frogs and the San
14 Francisco garter snake, but would result in
15 long-term habitat improvements—a beneficial
16 impact. Some types of nonnative tree removal
17 would also improve the structure and
18 condition of habitat that supports snakes.
19 Controlling and managing visitor use would
20 reduce impacts on snakes, such as habitat
21 alteration and direct impacts from
22 recreational use and development; however,
23 some adverse impacts would continue. The
24 National Park Service would continue to
25 monitor snake populations and survey
26 potential habitat resulting in a beneficial
27 impact. The primary threat to the snake would
28 continue to be habitat loss and alteration—an
29 adverse impact associated with increased
30 urbanization of the region. Collectively,
31 impacts on the San Francisco garter snake
32 resulting from NPS actions that are part of the
33 no-action alternative (the continuation of
34 current management and trends) would be
35 long term, beneficial, minor to moderate, and
36 localized. The determination of effect under
37 section 7 of the Endangered Species Act
38 would be “*may affect, likely to adversely affect*”
39 for project specific actions in the short term,
40 and “*may affect, not likely to adversely affect*”
41 for land use and park management over the
42 long term. Consultation for specific projects
43 would occur as necessary.

44
45 ***San Bruno elfin butterfly***
46 ***(Callophrys mossii bayensis)***—

47
48 Because the San Bruno elfin butterfly is
49 currently only known to occur at Milagra
50 Ridge within the planning area, impacts would
51 be restricted to this site. Other suitable habitat

52 may be present at other sites in San Mateo
53 County.

54
55 Nonnative plant removal and vegetation
56 management would continue to improve
57 conditions for *Sedum spathulifolium*, the
58 succulent plant that hosts butterfly larvae.
59 Controlling and managing visitor use in
60 known habitat areas would reduce impacts on
61 butterflies, such as the trampling of host
62 plants and direct impacts on larvae and pupae
63 from recreational use and development;
64 however, some adverse impacts would
65 continue. The National Park Service would
66 continue to monitor butterfly populations and
67 survey potential habitat, resulting in a
68 beneficial impact. The primary threat to the
69 butterfly would continue to be habitat loss—
70 an adverse impact associated with increased
71 urbanization of the region. Collectively,
72 impacts on the San Bruno elfin butterfly
73 resulting from NPS actions that are part of the
74 no-action alternative (the continuation of
75 current management and trends) would be
76 long term, beneficial, minor, and localized.
77 The determination of effect under section 7 of
78 the Endangered Species Act would be “*may*
79 *affect, not likely to adversely affect.*”

80
81 ***Coho Salmon, Central California***
82 ***Coast (Oncorhynchus kisutch) and***
83 ***steelhead trout, Central California***
84 ***Coast (O. mykiss)***—

85
86 These two listed salmonid species are
87 analyzed together because of the similarities in
88 their life characteristics, habitat requirements,
89 and the effects of impacts on the two species.

90
91 Coho salmon are restricted to Redwood
92 Creek and Eastkoot Creek in Marin County,
93 estuarine sites such as Bolinas Lagoon, as well
94 as the nearshore waters of the Pacific Ocean.
95 Steelhead trout are restricted to Redwood
96 Creek and the drainages to Bolinas Lagoon
97 and Rodeo Lagoon in Marin County and West
98 Union Creek, a tributary to San Francisquito
99 Creek, in San Mateo County. Therefore,
100 impacts would be restricted to these locations.

1 National Park Service activities, such as
 2 vegetation management, creek restoration,
 3 and efforts to improve water quantity and
 4 quality within the Redwood Creek watershed
 5 would have beneficial impacts on maintaining
 6 habitat characteristics that support
 7 anadromous fish. Projects in Marin County at
 8 the Lower Redwood Creek property
 9 (floodplain restoration), Big Lagoon
 10 (estuarine and wetland restoration), Stinson
 11 Beach (stream and wetland restoration) and
 12 Muir Woods National Monument (vegetation
 13 management) would have beneficial impacts
 14 on habitat parameters required by the two
 15 species. These projects would improve
 16 riparian vegetation and in-stream habitat
 17 complexity, resulting in improvements to
 18 spawning, rearing, and migratory habitats.
 19 Critical habitat would be affected by
 20 restoration activities. Within the immediate
 21 project area, short-term, minor, adverse,
 22 localized impacts on nearly all essential
 23 features of critical habitat (substrate, water
 24 quality, water quantity, water temperature,
 25 water velocity, cover/shelter, food, riparian
 26 vegetation, space, and safe passage conditions)
 27 would be expected. However, these short-
 28 term impacts would be outweighed by the
 29 beneficial impacts expected to occur over the
 30 long term. The National Park Service would
 31 continue to monitor coho and steelhead
 32 populations and inventory potential habitat.
 33
 34 Controlling and managing visitor use would
 35 reduce impacts on coho and steelhead, such as
 36 habitat alteration and direct impacts from
 37 recreational use and development; however,
 38 some adverse impacts would continue. The
 39 primary threats to coho and steelhead would
 40 continue to be loss and modification of
 41 habitat, water diversions, habitat
 42 channelization, sedimentation, and degraded
 43 water quality—adverse impacts associated
 44 with increased urbanization of the region.
 45 Collectively, impacts on coho salmon and
 46 steelhead trout resulting from NPS actions
 47 that are part of the no-action alternative (the
 48 continuation of current management and
 49 trends) would be long term, beneficial, minor,
 50 and localized. The determination of effect
 51 under section 7 of the Endangered Species Act

52 would be “*may affect, likely to adversely affect*”
 53 for project specific actions in the short term,
 54 and “*may affect, not likely to adversely affect*”
 55 for land use and park management over the
 56 long term. Consultation for specific projects
 57 would occur as necessary.

58
 59 *Western snowy plover (Charadrius*
 60 *alexandrinus nivosus)*—
 61

62 The western snowy plover nests in coastal
 63 Marin County at Point Reyes National
 64 Seashore and Dillon Beach. Nonbreeding
 65 snowy plovers regularly use habitat within the
 66 planning area at Ocean Beach. Snowy plovers
 67 are occasionally observed at Rodeo Beach,
 68 though these birds tend to remain only for
 69 short periods. Therefore, impacts would be
 70 restricted to these locations.

71
 72 Seasonal visitor use restrictions requiring dogs
 73 to be on leash on a portion of Ocean Beach
 74 would continue to assist in the protection of
 75 plovers, resulting in a beneficial impact.
 76 However, visitor use (especially dogs off-
 77 leash) would continue to disturb foraging or
 78 roosting birds resulting in long-term, minor,
 79 adverse, localized impacts. The National Park
 80 Service would continue to restrict park
 81 management activities in plover habitat and
 82 provide guidance for beach patrol activities
 83 and is currently developing a shorebird plover
 84 docent program—all of which assist with
 85 plover protection and provide beneficial
 86 impacts. The National Park Service would
 87 continue to monitor plover populations and
 88 survey potential habitat. The primary threat to
 89 the plover within the region would continue
 90 to be habitat loss—an adverse impact
 91 associated with increased urbanization of the
 92 region and the loss or alteration of beach
 93 habitat. Collectively, impacts on the western
 94 snowy plover resulting from NPS actions that
 95 are part of the no-action alternative (the
 96 continuation of current management and
 97 trends) would be long term, minor, adverse,
 98 and localized. The determination of effect
 99 under section 7 of the Endangered Species Act
 100 would be “*may affect, likely to adversely*
 101 *affect.*”
 102

1 ***Northern spotted owl (*Strix****
 2 ***occidentalis caurina*)—**

3
 4 Suitable habitat for northern spotted owls
 5 includes all evergreen forested habitat north
 6 of State Route 1 in Marin County. Within the
 7 planning area, known spotted owl populations
 8 are currently limited to Muir Woods National
 9 Monument, Homestead Valley, and the
 10 Bolinas Lagoon watershed. Therefore,
 11 impacts would be restricted to these locations.

12
 13 Vegetation management actions designed to
 14 protect and enhance coniferous forest,
 15 including old-growth, second growth and
 16 remnant stands, would provide potential
 17 roosting, feeding, and nesting habitat for the
 18 owl, resulting in a beneficial impact. The
 19 National Park Service would continue to
 20 monitor owl populations and survey potential
 21 habitat. Visitor use in the area would continue
 22 to disturb owls. Barred owls would also likely
 23 continue to invade preferred northern spotted
 24 owl habitats—an adverse impact. Ongoing
 25 actions to reduce human-created noise and
 26 light at Muir Woods National Monument
 27 would result in improvements to habitat
 28 conditions. The primary threat to the
 29 northern spotted owl in the region would
 30 continue to be the loss of habitat—an adverse
 31 impact associated with increased urbanization
 32 of the region. Other threats include expansion
 33 in the range of the barred owl, West Nile
 34 virus, changes in habitat due to sudden oak
 35 death, and recreational pressure. Locally, in
 36 Muir Woods National Monument, the
 37 primary threat is from barred owls.

38 Collectively, impacts on the northern spotted
 39 owl resulting from NPS actions that are part of
 40 the no-action alternative (the continuation of
 41 current management and trends) would be
 42 long term, minor, beneficial and localized.
 43 The determination of effect under section 7 of
 44 the Endangered Species Act would be “*may*
 45 *affect, not likely to adversely affect.*”

46
 47 ***San Francisco lessingia (*Lessingia****
 48 ***germanorum*)—**

49
 50 Vegetation management, including nonnative
 51 plant removal, would continue to improve

52 conditions for the San Francisco lessingia.
 53 Restoration projects at Fort Funston (about
 54 20 acres of ice plant removal) in areas that
 55 should contain open sandy soils and dunes
 56 would reduce competition with nonnative
 57 vegetation. Since the lessingia does not
 58 currently occur there, these actions at Fort
 59 Funston would result in a beneficial impact if
 60 a new population of lessingia is reintroduced
 61 there, as proposed in the USFWS *Recovery*
 62 *Plan for Coastal Plants of the Northern San*
 63 *Francisco Peninsula*. Controlling and
 64 managing visitor use in known habitat areas
 65 would reduce impacts on the lessingia, such as
 66 the trampling of plants; however, some
 67 adverse impacts would continue. The
 68 National Park Service would continue to
 69 monitor lessingia populations and survey
 70 potential habitat, resulting in a beneficial
 71 impact. The primary threat to the lessingia
 72 would continue to be habitat loss—an adverse
 73 impact associated with increased urbanization
 74 of the region—and habitat alteration resulting
 75 in increases in invasive, nonnative plants.
 76 Collectively, impacts on the San Francisco
 77 lessingia resulting from NPS actions that are
 78 part of the no-action alternative (the
 79 continuation of current management and
 80 trends) would be long term, beneficial, minor,
 81 and localized. The determination of effect
 82 under section 7 of the Endangered Species Act
 83 would be “*may affect, not likely to adversely*
 84 *affect.*”

85
 86 **State Threatened and Endangered**
 87 **Species.**

88 ***Bank swallow (*Riparia riparia*)—***

89
 90 The only known nesting site for bank
 91 swallows within the park is in the coastal
 92 bluffs at Fort Funston. The National Park
 93 Service would continue to maintain natural
 94 geologic processes that erode the cliffs and
 95 provide suitable nesting habitat, resulting in a
 96 beneficial impact. Visitor use in the vicinity of
 97 the nest sites, as well as the defacing of the
 98 sandy cliffs themselves, would continue to
 99 disturb individual birds and affect nesting
 100 activity and success—an adverse impact. The
 101 National Park Service would continue to

1 monitor bank swallow populations and survey
 2 potential habitat, resulting in a beneficial
 3 impact. The primary threat to the bank
 4 swallow would continue to be habitat loss,
 5 resulting in an adverse impact associated with
 6 increased urbanization, conversion of natural
 7 habitats, and channelization of waterways in
 8 the region. Collectively, impacts on the bank
 9 swallow resulting from NPS actions that are
 10 part of the no-action alternative (the
 11 continuation of current management and
 12

12 trends) would be long term, beneficial, minor,
 13 and localized. However, it should be noted
 14 that bank stabilization work conducted by the
 15 City of San Francisco in the vicinity of the
 16 bank swallow colony (both on and off-park
 17 lands) could continue under the no-action
 18 alternative. If so, it could continue to have
 19 notable adverse effects on bank swallow
 20 habitat.
 21

TABLE 16. POTENTIAL IMPACTS ON SPECIAL STATUS SPECIES OF GOLDEN GATE NATIONAL RECREATION AREA, NO-ACTION ALTERNATIVE

Species	Status	ESA Determination
California red-legged frog (<i>Rana aurora draytonii</i>)	Federal threatened	"may affect, likely to adversely affect" for project specific actions in the short term, and "may affect, not likely to adversely affect" for land use and park management over the long term
Mission blue butterfly (<i>Icaricia icaroides missionensis</i>)	Federal endangered	"may affect, likely to adversely affect" for project specific actions in the short term, and "may affect, not likely to adversely affect" for land use and park management over the long term
Tidewater goby (<i>Eucyclogobius newberryi</i>)	Federal endangered	"may affect, likely to adversely affect" for project specific actions in the short term, and "may affect, not likely to adversely affect" for land use and park management over the long term
San Francisco garter snake (<i>Thamnophis sirtalis tetrataenia</i>)	Federal endangered; state endangered	"may affect, likely to adversely affect" for project specific actions in the short term, and "may affect, not likely to adversely affect" for land use and park management over the long term
San Bruno elfin butterfly (<i>Callophrys mossii bayensis</i>)	Federal endangered	"may affect, not likely to adversely affect"
Coho salmon, Central California Coast (<i>Oncorhynchus kisutch</i>)	Federal endangered; state endangered	"may affect, likely to adversely affect" for project specific actions in the short term, and "may affect, not likely to adversely affect" for land use and park management over the long term

TABLE 16. POTENTIAL IMPACTS ON SPECIAL STATUS SPECIES OF GOLDEN GATE NATIONAL RECREATION AREA, NO-ACTION ALTERNATIVE

Species	Status	ESA Determination
Steelhead trout, Central California Coast (<i>Oncorhynchus mykiss</i>)	Federal threatened	"may affect, likely to adversely affect" for project specific actions in the short term, and "may affect, not likely to adversely affect" for land use and park management over the long term
Western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	Federal threatened	"may affect, likely to adversely affect"
Northern spotted owl (<i>Strix occidentalis caurina</i>)	Federal threatened	"may affect, not likely to adversely affect"
San Francisco lessingia (<i>Lessingia germanorum</i>)	Federal endangered; state endangered	"may affect, not likely to adversely affect"
Bank swallow (<i>Riparia riparia</i>)	State threatened	long-term, beneficial, minor, and localized

**1 Alternative 1: Connecting People with
2 the Parks (NPS Preferred Alternative
3 for Park Sites in Marin, San Francisco,
4 and San Mateo Counties)**

5 Under alternative 1, a variety of management
6 zones would be used that would assist in the
7 protection of special status species.
8 Approximately 77% of the park would be
9 zoned as natural and sensitive resources
10 zones.

**11
12 Federal Threatened and Endangered
13 Species.**

**14 California red-legged frog (*Rana
15 aurora draytonii*)—**

16
17 Impacts on California red-legged frogs and
18 their habitat from alternative 1 would be the
19 same as under the no-action alternative with
20 the exception of impacts on habitat from
21 expanded restoration of natural areas. The
22 removal of the dam at Tennessee Pond and
23 other infrastructure, and the restoration of
24 riparian habitat in Lower Tennessee Valley
25 would result in beneficial effects. Also,
26 vegetation management, including nonnative

27 plant removal, especially in riparian and
28 wetland areas in San Mateo County, would be
29 greater than under the no-action alternative,
30 creating improvements to vegetation structure
31 and condition that could improve breeding
32 and foraging habitat, resulting in a beneficial
33 impact. Impacts on the frog from new
34 recreational development under alternative 1
35 would not occur because any new facilities
36 would be sited to avoid existing or potential
37 frog habitat or conservation measures would
38 be taken in consultation with the appropriate
39 resource agencies. Impacts on the California
40 red-legged frog resulting from NPS actions
41 that are part of alternative 1 would be long
42 term, beneficial, minor, and localized. The
43 determination of effect under section 7 of the
44 Endangered Species Act would be "may affect,
45 not likely to adversely affect."

**46
47 Mission blue butterfly (*Icaricia
48 icaroides missionensis*)—**

49
50 Impacts on mission blue butterflies and their
51 habitat from alternative 1 would be the same
52 as the no-action alternative with the exception
53 of vegetation management actions in San
54 Mateo County and new recreational

1 development in San Mateo and Marin
2 counties. Vegetation management, including
3 nonnative plant removal, in San Mateo
4 County park lands would improve conditions
5 that support the host lupine, resulting in a
6 beneficial impact. However, increased visitor
7 use in this area could also cause adverse
8 impacts on host plants and butterfly larvae
9 and pupae. New recreational development in
10 known habitat in Marin and San Mateo
11 counties would slightly increase the adverse
12 impacts that are described under the no-
13 action alternative. Impacts on the mission blue
14 butterfly resulting from NPS actions that are
15 part of alternative 1 would be long term,
16 beneficial, minor, and localized. The
17 determination of effect under section 7 of the
18 Endangered Species Act would be “*may affect,*
19 *not likely to adversely affect.*”

20
21 ***Tidewater goby (*Eucyclogobius****
22 ***newberri*)—**

23
24 Impacts on tidewater gobies and their habitat
25 from alternative 1 would be the same as the
26 no-action alternative. Impacts on the
27 tidewater goby resulting from NPS actions
28 that are part of alternative 1 would be long
29 term, beneficial, minor, and localized. The
30 determination of effect under section 7 of the
31 Endangered Species Act would be “*may affect,*
32 *not likely to adversely affect.*”

33
34 ***San Francisco garter snake***
35 ***(*Thamnophis sirtalis tetrataenia*)—***

36
37 Impacts on the San Francisco garter snake and
38 their habitat under alternative 1 would be the
39 same as under the no-action alternative with
40 the exception of habitat improvements in San
41 Mateo County. Vegetation management,
42 including nonnative plant removal in riparian
43 and wetland areas, would improve the
44 structure and condition of vegetation that
45 supports snakes, resulting in a beneficial
46 impact. Impacts on the San Francisco garter
47 snake resulting from NPS actions that are part
48 of alternative 1 would be long term, beneficial,
49 minor to moderate, and localized. The
50 determination of effect under section 7 of the

51 Endangered Species Act would be “*may affect,*
52 *not likely to adversely affect.*”

53
54 ***San Bruno elfin butterfly***
55 ***(*Callophrys mossii bayensis*)—***

56
57 Impacts on the San Bruno elfin butterfly and
58 their habitat under alternative 1 would be the
59 same as under the no-action alternative, with
60 the exception of habitat improvements at
61 Milagra Ridge and other park lands in San
62 Mateo County. Habitat restoration activities
63 at Milagra Ridge (including earthwork and
64 native plantings covering about 20 acres)
65 could improve conditions for host plant
66 recruitment and butterfly use. Vegetation
67 management, including nonnative plant
68 removal, elsewhere in San Mateo County
69 would improve the structure and condition of
70 vegetation and could increase the potential for
71 local range expansion into additional suitable
72 habitat, resulting in a beneficial impact.
73 Impacts on the San Bruno elfin butterfly
74 resulting from NPS actions that are part of
75 alternative 1 would be long term, beneficial,
76 minor to moderate, and localized. The
77 determination of effect under section 7 of the
78 Endangered Species Act would be “*may affect,*
79 *not likely to adversely affect.*”

80
81 ***Coho salmon, Central California***
82 ***Coast (*Oncorhynchus kisutch*) and***
83 ***steelhead trout, Central California***
84 ***Coast (*O. mykiss*)—***

85
86 Adverse impacts on coho salmon and
87 steelhead trout and their habitat would be the
88 same as those described under the no-action
89 alternative. The types of beneficial impacts
90 described under the no-action alternative
91 would be the same under alternative 1 but the
92 scale would be greater, resulting in increased
93 beneficial impacts. Restoration activities in the
94 Redwood Creek watershed in Marin County
95 and at various creeks within San Mateo
96 County would improve habitat characteristics
97 that support anadromous fish. The goal of
98 reconnecting creeks to the ocean on San
99 Mateo County park lands, and partnering
100 with Caltrans to improve fish passage, would
101 provide the habitat required to support the life

1 cycle of these anadromous fish, resulting in a
 2 beneficial impact. Impacts on coho salmon
 3 and steelhead trout resulting from NPS
 4 actions that are part of alternative 1 would be
 5 long term, beneficial, moderate, and localized.
 6 The determination of effect under section 7 of
 7 the Endangered Species Act would be “*may*
 8 *affect, not likely to adversely affect.*”

9
 10 ***Western snowy plover (Charadrius***
 11 ***alexandrinus nivosus)***—

12
 13 Impacts on Western snowy plover and their
 14 habitat from alternative 1 would be the same
 15 as the no-action alternative. The determin-
 16 ation of effect under section 7 of the
 17 Endangered Species Act would be “*may affect,*
 18 *not likely to adversely affect.*”

19
 20 ***Northern spotted owl (Strix***
 21 ***occidentalis caurina)***—

22
 23 Impacts on northern spotted owls and their
 24 habitat from alternative 1 would be the same
 25 as the no-action alternative. The
 26 determination of effect under section 7 of the
 27 Endangered Species Act would be “*may affect,*
 28 *not likely to adversely affect.*”

30 ***San Francisco lessingia (Lessingia***
 31 ***germanorum)***—

32
 33 Adverse impacts on the San Francisco
 34 lessingia and its habitat would be the same as
 35 those described under the no-action
 36 alternative. The types of beneficial impacts
 37 described under the no-action alternative
 38 would be the same under alternative 1, but the
 39 scale would be greater, resulting in increased
 40 beneficial impacts due to expanded vegetation
 41 management and native plant habitat
 42 restoration. Impacts on the San Francisco
 43 lessingia resulting from NPS actions that are
 44 part of alternative 1 would be long term,
 45 beneficial, minor, and localized. The
 46 determination of effect under section 7 of the
 47 Endangered Species Act would be “*may affect,*
 48 *not likely to adversely affect.*”

49
 50 **State Threatened and Endangered**
 51 **Species.**

52 ***Bank swallow (Riparia riparia)***—

53
 54 Impacts on bank swallows and their habitat
 55 from alternative 1 would be the same as the
 56 no-action alternative. Impacts from NPS
 57 actions would be long term, beneficial, minor,
 58 and localized. However, as noted under the
 59 no-action alternative, adverse impacts on
 60 bank swallow from City of San Francisco bank
 61 stabilization work on and off park lands could
 62 continue.

TABLE 17. POTENTIAL IMPACTS ON SPECIAL STATUS SPECIES OF GOLDEN GATE NATIONAL RECREATION AREA, ALTERNATIVE 1

Species	Status	ESA Determination
California red-legged frog (<i>Rana aurora draytonii</i>)	Federal threatened	“ <i>may affect, not likely to adversely affect</i> ”
Mission blue butterfly (<i>Icaricia icaroides missionensis</i>)	Federal endangered	“ <i>may affect, not likely to adversely affect</i> ”
Tidewater goby (<i>Eucyclogobius newberryi</i>)	Federal endangered	“ <i>may affect, not likely to adversely affect</i> ”
San Francisco garter snake	Federal endangered;	“ <i>may affect, not likely to adversely</i>

TABLE 17. POTENTIAL IMPACTS ON SPECIAL STATUS SPECIES OF GOLDEN GATE NATIONAL RECREATION AREA, ALTERNATIVE 1

Species	Status	ESA Determination
<i>(Thamnophis sirtalis tetrataenia)</i>	state endangered	<i>affect</i>
San Bruno elfin butterfly <i>(Callophrys mossii bayensis)</i>	Federal endangered	<i>"may affect, not likely to adversely affect"</i>
Coho salmon, Central California Coast <i>(Oncorhynchus kisutch)</i>	Federal endangered; state endangered	<i>"may affect, not likely to adversely affect"</i>
Steelhead trout, Central California Coast <i>(Oncorhynchus mykiss)</i>	Federal threatened	<i>"may affect, not likely to adversely affect"</i>
Western snowy plover <i>(Charadrius alexandrinus nivosus)</i>	Federal threatened	<i>"may affect, not likely to adversely affect."</i>
Northern spotted owl <i>(Strix occidentalis caurina)</i>	Federal threatened	<i>"may affect, not likely to adversely affect"</i>
San Francisco lessingia <i>(Lessingia germanorum)</i>	Federal endangered; state endangered	<i>"may affect, not likely to adversely affect"</i>
Bank swallow <i>(Riparia riparia)</i>	State threatened	long-term, beneficial, minor, and localized

**1 Alternative 2: Preserving and
2 Enjoying Coastal Ecosystems**

3 Under alternative 2, a variety of management
4 zones would be used that would assist in the
5 protection of special status species.
6 Approximately 92% of the park would be
7 zoned using the natural and sensitive
8 resources zones.

**10 Federal Threatened and Endangered
11 Species.**

**12 California red-legged frog (*Rana*
13 *aurora draytonii*)—**

14
15 Impacts on California red-legged frogs and
16 their habitat from alternative 2 would be the
17 same as the no-action alternative with the
18 exception of impacts on habitat from
19 expanded restoration of natural areas.
20 Vegetation management, including nonnative
21 plant removal, especially in riparian and
22 wetland areas in Marin and San Mateo
23 counties, would be greater than under the no-

24 action alternative, resulting in improvements
25 to vegetation structure and condition that
26 could improve breeding and foraging
27 habitat—a beneficial impact. Impacts on the
28 frog from new recreational development
29 under alternative 2 would not occur because
30 any new facilities would be sited to avoid
31 existing or potential frog habitat. Impacts on
32 the California red-legged frog resulting from
33 NPS actions that are part of the alternative 2
34 would be long term, beneficial, minor, and
35 localized. The determination of effect under
36 section 7 of the Endangered Species Act
37 would be *"may affect, not likely to adversely*
38 *affect."*

**40 Mission blue butterfly (*Icaricia*
41 *icaroides missionensis*)—**

42
43 Impacts on mission blue butterflies and their
44 habitat from alternative 2 would be the same
45 as those of the no-action alternative, with the
46 exception of impacts resulting from
47 vegetation management actions and new
48 recreation development in San Mateo County

1 and from park land use in Marin County.
 2 Vegetation management, including nonnative
 3 plant removal, in San Mateo County park
 4 lands would improve conditions that support
 5 the host lupine, resulting in a beneficial
 6 impact. However, increased visitor use in this
 7 area could also cause adverse impacts on host
 8 plants and butterfly larvae and pupae. New
 9 recreational development in known habitat in
 10 San Mateo County would slightly increase the
 11 adverse impacts that are described under the
 12 no-action alternative. Management zoning of
 13 known habitat in Marin County would
 14 provide greater protection of butterfly habitat
 15 than under the no-action alternative, creating
 16 a beneficial impact. Impacts on the mission
 17 blue butterfly resulting from NPS actions that
 18 are part of alternative 2 would be long term,
 19 beneficial, minor, and localized. The
 20 determination of effect under section 7 of the
 21 Endangered Species Act would be “*may affect,*
 22 *not likely to adversely affect.*”

23
 24 ***Tidewater goby (*Eucyclogobius****
 25 ***newberryi*)—**

26
 27 Impacts on tidewater gobies and their habitat
 28 from alternative 2 would be the same as the
 29 no-action alternative, with the exception of
 30 greater beneficial impacts resulting from
 31 expanded restoration efforts and watershed
 32 protection. Impacts on the tidewater goby
 33 resulting from NPS actions that are part of
 34 alternative 2 would be long term, beneficial,
 35 minor, and localized. The determination of
 36 effect under section 7 of the Endangered
 37 Species Act would be “*may affect, not likely to*
 38 *adversely affect.*”

39
 40 ***San Francisco garter snake***
 41 ***(*Thamnophis sirtalis tetrataenia*)—***

42
 43 Impacts on the San Francisco garter snake and
 44 their habitat under alternative 2 would be the
 45 same as under the no-action alternative, with
 46 the exception of impacts created by habitat
 47 improvements in San Mateo County.
 48 Vegetation management, including nonnative
 49 plant removal in riparian and wetland areas,
 50 would improve the structure and condition of
 51 vegetation that supports snakes, resulting in a

52 beneficial impact. Impacts on the San
 53 Francisco garter snake resulting from NPS
 54 actions that are part of alternative 2 would be
 55 long term, beneficial, minor to moderate, and
 56 localized. The determination of effect under
 57 section 7 of the Endangered Species Act
 58 would be “*may affect, not likely to adversely*
 59 *affect.*”

60
 61 ***San Bruno elfin butterfly***
 62 ***(*Callophrys mossii bayensis*)—***

63
 64 Impacts on the San Bruno elfin butterfly and
 65 their habitat under alternative 2 would be the
 66 same as under the no-action alternative, with
 67 the exception of habitat improvements at
 68 Milagra Ridge and other park lands in San
 69 Mateo County. Habitat restoration activities
 70 at Milagra Ridge (including earthwork and
 71 native plantings covering about 20 acres)
 72 could improve conditions for host plant
 73 recruitment and butterfly use. Vegetation
 74 management, including nonnative plant
 75 removal, elsewhere in San Mateo County
 76 would improve the structure and condition of
 77 vegetation and could increase the potential for
 78 local range expansion into additional suitable
 79 habitat, resulting in a beneficial impact.
 80 Impacts on the San Bruno elfin butterfly
 81 resulting from NPS actions that are part of
 82 alternative 2 would be long term, beneficial,
 83 minor to moderate, and localized. The
 84 determination of effect under section 7 of the
 85 Endangered Species Act would be “*may affect,*
 86 *not likely to adversely affect.*”

87
 88 ***Coho salmon, Central California***
 89 ***Coast (*Oncorhynchus kisutch*) and***
 90 ***steelhead trout, Central California***
 91 ***Coast (*O. mykiss*)—***

92
 93 Adverse impacts on coho salmon and
 94 steelhead trout and their habitat would be the
 95 same as those described under the no-action
 96 alternative. The types of beneficial impacts
 97 described under the no-action alternative
 98 would be the same under alternative 2 but the
 99 scale would be greater, resulting in increased
 100 beneficial impacts. Restoration activities in the
 101 Redwood Creek watershed in Marin County
 102 and at various creeks within San Mateo

1 County would improve habitat characteristics
 2 that support anadromous fish. The goal of
 3 reconnecting creeks to the ocean on San
 4 Mateo County park lands, and partnering
 5 with Caltrans to improve fish passage, would
 6 provide the habitat required to support the life
 7 cycle of these anadromous fish, resulting in a
 8 beneficial impact. Impacts on coho salmon
 9 and steelhead trout resulting from NPS
 10 actions that are part of alternative 2 would be
 11 long term, beneficial, moderate, and localized.
 12 The determination of effect under section 7 of
 13 the Endangered Species Act would be “*may*
 14 *affect, not likely to adversely affect.*”

15
 16 ***Western snowy plover (Charadrius***
 17 ***alexandrinus nivosus)***—

18
 19 Impacts on western snowy plover and their
 20 habitat from alternative 2 would be the same
 21 as the no-action alternative. The
 22 determination of effect under section 7 of the
 23 Endangered Species Act would be “*may affect,*
 24 *not likely to adversely affect.*”

25
 26 ***Northern spotted owl (Strix***
 27 ***occidentalis caurina)***—

28
 29 Impacts on northern spotted owls and their
 30 habitat from alternative 2 would be the same
 31 as the no-action alternative. The
 32 determination of effect under section 7 of the
 33 Endangered Species Act would be “*may affect,*
 34 *not likely to adversely affect.*”

74

36 ***San Francisco lessingia (Lessingia***
 37 ***germanorum)***—

38
 39 Adverse impacts on the San Francisco
 40 lessingia and its habitat would be the same as
 41 those described under the no-action
 42 alternative. The types of beneficial impacts
 43 described under the no-action alternative
 44 would be the same under alternative 2 but the
 45 scale would be greater, resulting in increased
 46 beneficial impacts due to expanded vegetation
 47 management and native plant habitat
 48 restoration. The removal of nonhistoric
 49 buildings at Fort Funston would provide an
 50 opportunity to restore dune habitat and create
 51 an area of expansion for the lessingia. Impacts
 52 on the San Francisco lessingia resulting from
 53 NPS actions that are part of alternative 2
 54 would be long term, beneficial, minor, and
 55 localized. The determination of effect under
 56 section 7 of the Endangered Species Act
 57 would be “*may affect, not likely to adversely*
 58 *affect.*”

59
 60 **State Threatened and Endangered**
 61 **Species.**

62 ***Bank swallow (Riparia riparia)***—

63
 64 Impacts on bank swallows and their habitat
 65 from alternative 1 would be the same as the
 66 no-action alternative. Impacts from NPS
 67 actions would be long term, beneficial, minor,
 68 and localized. However, as noted under the
 69 no-action alternative, adverse impacts on
 70 bank swallow from City of San Francisco bank
 71 stabilization work on and off park lands could
 72 continue.

73

TABLE 18. POTENTIAL IMPACTS ON SPECIAL STATUS SPECIES OF GOLDEN GATE NATIONAL RECREATION AREA, ALTERNATIVE 2

Species	Status	ESA Determination
California red-legged frog (<i>Rana aurora draytonii</i>)	Federal threatened	"may affect, not likely to adversely affect"
Mission blue butterfly (<i>Icaricia icaroides missionensis</i>)	Federal endangered	"may affect, not likely to adversely affect"
Tidewater goby (<i>Eucyclogobius newberryi</i>)	Federal endangered	"may affect, not likely to adversely affect"
San Francisco garter snake (<i>Thamnophis sirtalis tetrataenia</i>)	Federal endangered; State endangered	"may affect, not likely to adversely affect"
San Bruno elfin butterfly (<i>Callophrys mossii bayensis</i>)	Federal endangered	"may affect, not likely to adversely affect"
Coho salmon, Central California Coast (<i>Oncorhynchus kisutch</i>)	Federal endangered; State endangered	"may affect, not likely to adversely affect"
Steelhead trout, Central California Coast (<i>Oncorhynchus mykiss</i>)	Federal threatened	"may affect, not likely to adversely affect"
Western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	Federal threatened	"may affect, not likely to adversely affect."
Northern spotted owl (<i>Strix occidentalis caurina</i>)	Federal threatened	"may affect, not likely to adversely affect"
San Francisco lessingia (<i>Lessingia germanorum</i>)	Federal endangered; State endangered	"may affect, not likely to adversely affect"
Bank swallow (<i>Riparia riparia</i>)	State threatened	long-term, beneficial, minor, and localized

1 **Alternative 3: Focusing on National**
 2 **Treasures (NPS Preferred Alternative**
 3 **for Alcatraz Island)**

4 Under alternative 3, a variety of management
 5 zones would be used that would assist in the
 6 protection of special status species.
 7 Approximately 88% of the park would be
 8 zoned using the natural and sensitive
 9 resources zones.

10
 11

12 **Federal Threatened and Endangered.**

13 *California red-legged frog (Rana*
 14 *aurora draytonii)*—

15
 16 Impacts on California red-legged frogs and
 17 their habitat from alternative 3 would be the
 18 same as the no-action alternative with the
 19 exception of impacts on habitat from
 20 expanded restoration of natural areas.
 21 Vegetation management, including nonnative
 22 plant removal, especially in riparian and
 23 wetland areas in San Mateo County, would be
 24 greater than under the no-action alternative,
 25 creating improvements to vegetation structure

1 and condition that could improve breeding
 2 and foraging habitat, resulting in a beneficial
 3 impact. Impacts on the frog from new
 4 recreational development under alternative 3
 5 would not occur because any new facilities
 6 would be sited to avoid existing or potential
 7 frog habitat. Impacts on the California red-
 8 legged frog resulting from NPS actions that
 9 are part of the alternative 3 would be long
 10 term, beneficial, minor, and localized. The
 11 determination of effect under section 7 of the
 12 Endangered Species Act would be “*may affect,*
 13 *not likely to adversely affect.*”

14
 15 ***Mission blue butterfly (Icaricia***
 16 ***icaroides missionensis)***—

17
 18 Impacts on mission blue butterflies and their
 19 habitat from alternative 3 would be the same
 20 as the no-action alternative with the exception
 21 of vegetation management actions and new
 22 recreational development in San Mateo
 23 County, and park land uses in Marin County.
 24 Vegetation management, including nonnative
 25 plant removal, in San Mateo County park
 26 lands would improve conditions that support
 27 the host lupine—a beneficial impact.
 28 However, increased visitor use in this area
 29 could also cause adverse impacts on host
 30 plants and butterfly larvae and pupae. New
 31 recreational development in known habitat in
 32 Marin and San Mateo counties would slightly
 33 increase the adverse impacts that are
 34 described under the no-action alternative.
 35 Treatments to restore cultural landscapes in
 36 known habitat in Marin County could have
 37 adverse impacts (i.e., loss or conversion of
 38 habitat) on native coastal shrub habitats and
 39 grasslands that support lupine and butterflies;
 40 however, butterfly habitat protection
 41 objectives would be included in any plans to
 42 change existing conditions in this area.
 43 Impacts on the mission blue butterfly resulting
 44 from NPS actions that are part of alternative 3
 45 would be long term, adverse, minor, and
 46 localized. The determination of effect under
 47 section 7 of the Endangered Species Act
 48 would be “*may affect, not likely to adversely*
 49 *affect.*”

50

51 ***Tidewater goby (Eucyclogobius***
 52 ***newberryi)***—

53
 54 Impacts on tidewater gobies and their habitat
 55 from alternative 3 would be the same as the
 56 no-action alternative. Impacts on the
 57 tidewater goby resulting from NPS actions
 58 that are part of alternative 3 would be long
 59 term, beneficial, minor, and localized. The
 60 determination of effect under section 7 of the
 61 Endangered Species Act would be “*may affect,*
 62 *not likely to adversely affect.*”

63
 64 ***San Francisco garter snake***
 65 ***(Thamnophis sirtalis tetrataenia)***—

66
 67 Impacts on the San Francisco garter snake and
 68 their habitat under alternative 3 would be the
 69 same as under the no-action alternative with
 70 the exception of habitat improvements in San
 71 Mateo County. Vegetation management,
 72 including nonnative plant removal in riparian
 73 and wetland areas, would improve the
 74 structure and condition of vegetation that
 75 supports snakes—a beneficial impact. Impacts
 76 on the San Francisco garter snake resulting
 77 from NPS actions that are part of alternative 3
 78 would be long term, beneficial, minor to
 79 moderate, and localized. The determination of
 80 effect under section 7 of the Endangered
 81 Species Act would be “*may affect, not likely to*
 82 *adversely affect.*”

83
 84 ***San Bruno elfin butterfly***
 85 ***(Callophrys mossii bayensis)***—

86
 87 Impacts on the San Bruno elfin butterfly and
 88 their habitat under alternative 3 would be the
 89 same as under the no-action alternative, with
 90 the exception of habitat improvements at
 91 Milagra Ridge and other park lands in San
 92 Mateo County. Habitat restoration activities
 93 at Milagra Ridge (including earthwork and
 94 native plantings covering about 20 acres)
 95 could improve conditions for host plant
 96 recruitment and butterfly use. Vegetation
 97 management, including nonnative plant
 98 removal, elsewhere in San Mateo County
 99 would improve the structure and condition of
 100 vegetation and could increase the potential for
 101 local range expansion into additional suitable

1 habitat, resulting in a beneficial impact.
 2 Impacts on the San Bruno elfin butterfly
 3 resulting from NPS actions that are part of
 4 alternative 3 would be long term, beneficial,
 5 minor to moderate, and localized. The
 6 determination of effect under section 7 of the
 7 Endangered Species Act would be “*may affect,*
 8 *not likely to adversely affect.*”

9
 10 *Coho salmon, Central California*
 11 *Coast (Oncorhynchus kisutch) and*
 12 *steelhead trout, Central California*
 13 *Coast (O. mykiss)—*

14
 15 Adverse impacts on coho salmon and
 16 steelhead trout and their habitat would be the
 17 same as those described under the no-action
 18 alternative. The types of beneficial impacts
 19 described under the no-action alternative
 20 would be the same under alternative 3 but the
 21 scale would be greater, resulting in increased
 22 beneficial impacts. Restoration activities in the
 23 Redwood Creek watershed in Marin County
 24 and at various creeks within San Mateo
 25 County would improve habitat characteristics
 26 that support anadromous fish. The goal of
 27 reconnecting creeks to the ocean on San
 28 Mateo County park lands, and partnering
 29 with Caltrans to improve fish passage, would
 30 provide the habitat required to support the life
 31 cycle of these anadromous fish, resulting in a
 32 beneficial impact. Impacts on coho salmon
 33 and steelhead trout resulting from NPS
 34 actions that are part of alternative 3 would be
 35 long term, beneficial, moderate, and localized.
 36 The determination of effect under section 7 of
 37 the Endangered Species Act would be “*may*
 38 *affect, not likely to adversely affect.*”

39
 40 *Western snowy plover (Charadrius*
 41 *alexandrinus nivosus)—*

42
 43 Impacts on western snowy plover and their
 44 habitat from alternative 3 would be the same
 45 as the no-action alternative. The
 46 determination of effect under section 7 of the

47 Endangered Species Act would be “*may affect,*
 48 *not likely to adversely affect.*”

49

50 *Northern spotted owl (Strix*
 51 *occidentalis caurina)—*

52

53 Impacts on northern spotted owls and their
 54 habitat from alternative 3 would be the same
 55 as the no-action alternative. The determin-
 56 ation of effect under section 7 of the
 57 Endangered Species Act would be “*may affect,*
 58 *not likely to adversely affect.*”

59

60 *San Francisco lessingia (Lessingia*
 61 *germanorum)—*

62

63 Adverse impacts on the San Francisco
 64 lessingia and its habitat would be the same as
 65 those described under the no-action
 66 alternative. The types of beneficial impacts
 67 described under the no-action alternative
 68 would be the same under alternative 3 but the
 69 scale would be greater, resulting in increased
 70 beneficial impacts due to expanded vegetation
 71 management and native plant habitat
 72 restoration. Impacts on the San Francisco
 73 lessingia resulting from NPS actions that are
 74 part of alternative 3 would be long term,
 75 beneficial, minor, and localized. The
 76 determination of effect under section 7 of the
 77 Endangered Species Act would be “*may affect,*
 78 *not likely to adversely affect.*”

79

80 **State Threatened and Endangered.**

81 *Bank swallow (Riparia riparia)—*

82

83 Impacts on bank swallows and their habitat
 84 from alternative 3 would be the same as the
 85 no-action alternative. Impacts from NPS
 86 actions would be long term, beneficial, minor,
 87 and localized. However, as noted under the
 88 no-action alternative, adverse impacts on
 89 bank swallow from City of San Francisco bank
 90 stabilization work on and off park lands could
 91 continue.

92

TABLE 19. POTENTIAL IMPACTS ON SPECIAL STATUS SPECIES OF GOLDEN GATE NATIONAL RECREATION AREA, ALTERNATIVE 3

Species	Status	ESA Determination
California red-legged frog (<i>Rana aurora draytonii</i>)	Federal threatened	"may affect, not likely to adversely affect"
Mission blue butterfly (<i>Icaricia icaroides missionensis</i>)	Federal endangered	"may affect, not likely to adversely affect"
Tidewater goby (<i>Eucyclogobius newberryi</i>)	Federal endangered	"may affect, not likely to adversely affect"
San Francisco garter snake (<i>Thamnophis sirtalis tetrataenia</i>)	Federal endangered; state endangered	"may affect, not likely to adversely affect"
San Bruno elfin butterfly (<i>Callophrys mossii bayensis</i>)	Federal endangered	"may affect, not likely to adversely affect"
Coho salmon, Central California Coast (<i>Oncorhynchus kisutch</i>)	Federal endangered; state endangered	"may affect, not likely to adversely affect"
Steelhead trout, Central California Coast (<i>Oncorhynchus mykiss</i>)	Federal threatened	"may affect, not likely to adversely affect"
Western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	Federal threatened	"may affect, not likely to adversely affect."
Northern spotted owl (<i>Strix occidentalis caurina</i>)	Federal threatened	"may affect, not likely to adversely affect"
San Francisco lessingia (<i>Lessingia germanorum</i>)	Federal endangered; state endangered	"may affect, not likely to adversely affect"
Bank swallow (<i>Riparia riparia</i>)	State threatened	long-term, beneficial, minor, and localized

1 **CULTURAL RESOURCES**

2 **Historic Structures, Historic Districts,**
3 **and Cultural Landscapes**

4 **No-action Alternative**

5 **Analysis.** Under this alternative, the park
6 would continue to manage park lands as
7 outlined in the 1980 General Management
8 Plan. The no-action alternative would result
9 in few changes to contributing features of
10 historic structures, districts, and cultural
11 landscapes within the project area. The park
12 would continue to stabilize, preserve, and
13 rehabilitate historic structures, districts, and

14 cultural landscapes in accordance with the
15 *Secretary of the Interior's Standards for the*
16 *Treatment of Historic Properties*, although
17 much of this work would be subject to
18 funding availability.

19
20 The park would continue to seek partner
21 opportunities for assisting in this work when
22 possible. Historic buildings would continue
23 to be rehabilitated and reused by the park
24 and park partners for various public and
25 private purposes including administration
26 and operations; staff housing; offices;
27 commercial ventures; historic residence
28 leasing programs; recreation, educational,
29 and interpretive programs. For structures and

1 buildings where neither funding nor a park
2 partner were available for rehabilitating these
3 resources, the park would stabilize and
4 potentially mothball those buildings until
5 such funds became available. This could
6 result in a local, long-term, minor adverse
7 impact on historic structures, which would
8 be vacant and subject to further deterioration
9 and wear over time.

10
11 Projects and plans currently underway,
12 which include some preservation treatments
13 for historic structures, districts, and cultural
14 landscapes within the park, such as
15 improvements to the Marin Headlands'
16 transportation infrastructure and the *Marin*
17 *Equestrian Plan Environmental Assessment*,
18 would be implemented. In addition, the park
19 would continue to inventory and assess
20 properties identified as potentially eligible for
21 listing in the National Register of Historic
22 Places and develop subsequent treatment
23 strategies as needed for historic structures,
24 districts, and cultural landscapes. Overall, the
25 impact under the no-action alternative would
26 be long term, negligible to minor, adverse and
27 beneficial to historic structures, districts, and
28 cultural landscapes.

29
30 Specific properties within the area of
31 potential effect with the potential to be
32 impacted by implementation of the no-action
33 alternative are discussed below:

34 35 **Parkwide.**

36
37 *Seacoast Fortifications of San Francisco Bay*
38 *(Draft)*— The park would continue to conduct
39 stabilization and preservation maintenance of
40 the contributing coastal fortifications and
41 their historic settings. Some of these
42 structures would continue to be accessible to
43 visitors, while others would remain secured
44 with minimal stabilization work performed to
45 address deterioration and safety needs. This
46 would result in a long-term, negligible to
47 minor, adverse effect.

50 **Marin County.**

51
52 *Forts Baker, Barry, and Cronkhite*— Historic
53 structures and their settings would be
54 preserved or rehabilitated for recreation,
55 education, and other uses, including park
56 operations. Compatible adaptive reuse of
57 historic structures would continue to be
58 implemented by the park and park partners
59 to preserve buildings and their settings while
60 offering programs that further the park's
61 mission. Planned road, trail, and transit
62 projects would be implemented to improve
63 visitor access and facilitate building reuse.
64 This would result in a long-term, negligible to
65 minor, beneficial and adverse impact on
66 contributing structures and landscapes of this
67 historic district.

68
69 *Point Bonita Historic District*— The lighthouse
70 and its contributing structures and landscape
71 setting would continue to be preserved and
72 open to visitors. Ongoing stabilization and
73 preservation work would continue and have
74 a long-term, negligible, beneficial and a long-
75 term minor, adverse impact on the district.

76
77 *Sara Seaver Randall House*— Would continue
78 to be managed by Point Reyes National
79 Seashore. No actions would be taken that
80 would have an impact on the site.

81
82 *Hill 640 Military Reservation*— The World War
83 II fire control stations and associated historic
84 landscape would be monitored and active
85 preservation steps would be taken if there are
86 signs of deterioration. This would result in a
87 negligible impact.

88
89 *Ranch M (Golden Gate Dairy)*— The historic
90 ranch buildings and landscape would
91 continue to support an equestrian operation;
92 facilities would be preserved and
93 rehabilitated. This would result in a long-
94 term, minor to moderate, beneficial impact
95 and a long-term minor, adverse impact to the
96 historic structures and landscape features of
97 the former ranch.

98
99 *Ranch A/B (Miwok)*— The historic ranch
100 would continue to house an equestrian

1 operation. Historic structures and landscape
2 features that contribute to the property's
3 integrity would be preserved and
4 rehabilitated in accordance with the
5 recommendations in the *Marin Equestrian*
6 *Plan*. This would result in a long-term, minor
7 to moderate, beneficial impact and a long-
8 term, minor, adverse impact.

9
10 *Bolinas Copper Mine*— Would continue to be
11 managed by Point Reyes National Seashore.
12 No actions would be taken under the no-
13 action alternative that would have an impact
14 on the site.

15
16 *Miwok Trail*— Cultural landscape resources
17 associated with the Miwok Trail would be
18 preserved and protected; this would have a
19 long-term, negligible, beneficial impact and a
20 long-term, minor, adverse impact.

21

22 **San Francisco County.**

23 *Alcatraz Island National Historic Landmark*—
24 The marine environ-ment, weather, and lack
25 of significant capital investment dollars has
26 resulted in some deterioration and loss of
27 historic fabric of the island's historic
28 buildings and landscape features over time.
29 Under this alternative, historic resources that
30 contribute to the national historic landmark
31 status would continue to be stabilized and
32 preserved and improvements incrementally
33 implemented as opportunities and funding
34 arise. The potential lack of investment in
35 some of the historic structures in a timely
36 manner to arrest further deterioration could
37 result in an adverse impact on these
38 resources. In addition, deterioration of
39 buildings and landscapes would continue to
40 limit visitor access.

41

42 The arrival area would remain much the same
43 as it is today. Portions of Building 64 would
44 be used for administrative functions. The
45 lighthouse would continue to be preserved
46 for its historic function. The Main Prison
47 Building and adjacent areas would continue
48 to be managed as part of visitor experience
49 while several areas, such as the Citadel,
50 would remain closed to the public. Adjacent

51 landscapes to the Main Prison area would
52 continue to be minimally preserved while
53 providing habitat for seabirds. The National
54 Park Service would continue to employ
55 sustainable infrastructure technologies,
56 whenever possible, to reduce the island's
57 energy and operating needs, which could
58 result in some minor, adverse effects on
59 historic buildings and the landscape. Past
60 studies of the island's historic buildings and
61 features, including the recently completed
62 cultural landscape report (CLR) for Alcatraz
63 Island, would guide stabilization and
64 preservation activities. Implementation of the
65 CLR preservation treatments would have
66 widespread minor to moderate beneficial
67 impacts.

68

69 Overall, these changes could diminish the
70 overall integrity of some of the contributing
71 resources to the national historic landmark,
72 but would not result in a loss of national
73 historic landmark eligibility for the island.
74 Taken together, beneficial effects such as
75 ongoing preservation and implementation of
76 the CLR treatment recommendations with
77 other work would render long-term, minor
78 to moderate, beneficial and adverse impacts
79 on Alcatraz Island.

80

81 *San Francisco Port of Embarkation National*
82 *Historic Landmark*— The National Park
83 Service would continue to use Building 201 as
84 park headquarters. Lower Fort Mason would
85 continue to be managed by the Fort Mason
86 Foundation, which would perform ongoing
87 preservation and rehabilitation work on the
88 contributing resources, informed by the
89 cultural landscape report for Fort Mason
90 Center. The impact would be long term,
91 minor, beneficial and adverse. Potential
92 future water shuttle access may be provided
93 at one of the piers, but the effects of that
94 proposal as well as the proposed F-Line rail
95 extension, would be addressed in a separate
96 environmental analysis. The anticipated
97 impacts from these respective actions are
98 long term, minor to moderate, and adverse
99 (water shuttle) and long term, moderate, and
100 adverse (F-line).

101

1 *Fort Mason Historic District*— Many of the
2 historic structures would continue to be
3 preserved and rehabilitated for use by park
4 operations as well as a variety of park
5 partners. Uses would include office,
6 maintenance functions, community garden, a
7 hostel, and residences. The cultural
8 landscape would be preserved and
9 rehabilitated over time. This would result in a
10 long-term, minor, beneficial and adverse
11 impact.

12
13 *Fort Miley Military Reservation*— Historic
14 structures and landscape features would
15 continue to be maintained and preserved.
16 Park maintenance would continue to use
17 some of the historic structures. No major
18 improvements would be made to either the
19 facilities or landscape. This would result in a
20 long-term, minor, adverse impact.

21
22 *Camera Obscura*— Operations and
23 maintenance under this alternative would
24 result in minor, beneficial, and minor,
25 adverse impacts.

26
27 *Six-inch Gun No. 9*— Operations and
28 maintenance under this alternative would
29 result in minor, beneficial, and minor,
30 adverse impacts.

31
32 *San Francisco Veterans Affairs Medical
33 Center*— Continued operation of the park
34 maintenance facility, picnic areas, and other
35 visitor areas at adjacent Fort Miley would
36 have negligible impacts on the Veterans
37 Medical Center Historic District, which is
38 owned and managed by the Department of
39 Veterans Affairs.

40
41 *China Beach*— This area would be preserved
42 for ongoing recreational use and enjoyment.
43 Historic features would be preserved
44 resulting in a long-term, negligible, beneficial,
45 and minor, adverse impact.

46
47 *Marine Exchange Lookout Station (Octagon
48 House)*— This structure would remain
49 unoccupied and would be stabilized rather
50 than rehabilitated; no landscape

51 rehabilitation would be undertaken, resulting
52 in a local, long-term, minor, adverse impact.

53
54 *O'Shaughnessy Seawall*— The historic seawall
55 and promenade on Ocean Beach would be
56 preserved and the area would continue to
57 provide a long trail connection between Fort
58 Funston and the Cliff House. The seawall's
59 preservation and maintenance would result
60 in a long-term, negligible, beneficial, and
61 long-term minor, adverse impact.

62 63 **San Mateo County.**

64 *Point Montara Light Station*— The site would
65 continue to be managed for use by a hostel
66 and would include ongoing preservation and
67 maintenance work to the contributing
68 buildings and landscape features to support
69 this use. This would have a long term, minor,
70 beneficial and adverse impact to the district.

71
72 *Rancho Corral de Tierra*— Limited public
73 access for recreational uses would continue
74 in this area. Any trail or site improvements
75 for these uses would be designed in a manner
76 so as to be compatible with, and protect and
77 preserve any contributing historic resources.
78 This would have a long term, minor, adverse
79 impact.

80
81 *San Francisco Bay Discovery Site National
82 Historic Landmark*— The site would continue
83 to be protected and preserved by the
84 National Park Service, resulting in a long-
85 term, negligible, beneficial impact.

86
87 *Shelldance Nursery*— This area would be
88 managed for park trail access and would
89 accommodate some park operations
90 functions as well as a commercial nursery.
91 Reuse plans for this area would continue to
92 preserve and protect potential contributing
93 historic structures and landscape features
94 and would result in long-term, minor,
95 beneficial and adverse impacts.

96
97 **Conclusion.** When combined with the
98 effects of the actions that are common to all
99 alternatives, the impact to historic structures,
100 districts and cultural landscapes under the

1 no-action alternative would be long-term,
2 negligible to minor, adverse and beneficial.
3 Overall, the impacts on historic buildings,
4 structures, and landscape features on
5 Alcatraz Island under this alternative would
6 be long term, minor to moderate, beneficial
7 and adverse.

8
9 Under the no-action alternative, the section
10 106 determination of effect on historic
11 buildings, structures, districts, and cultural
12 landscapes in Golden Gate National
13 Recreation Area, excluding Alcatraz Island
14 National Historic Landmark, would be
15 *adverse effect*. On Alcatraz Island, the section
16 106 determination of effect on historic
17 buildings, structures and cultural landscapes
18 would be *adverse effect*.

20 **Alternative 1: Connecting People** 21 **with the Parks**

22 **Analysis.** Actions under alternative 1 would
23 focus on maximizing opportunities for
24 adaptive reuse and rehabilitation of historic
25 structures, districts and cultural landscapes in
26 a manner that would support overall park
27 visitor enjoyment, understanding and
28 community connections. One of the goals of
29 this alternative would be to preserve and
30 protect cultural resources while allowing
31 visitors to connect with and better
32 understand and appreciate these resources
33 and their histories.

34
35 Under alternative 1, the park would
36 rehabilitate existing facilities to improve their
37 condition to better welcome and support
38 park visitors than exist today. Park partners
39 would continue to play an important role in
40 preserving historic resources through
41 adaptive reuse of buildings and structures
42 throughout the park to provide programs and
43 services to visitors in support of the park's
44 mission. Any historic building and landscape
45 rehabilitation would be in accordance with
46 the *Secretary's Standards for Historic*
47 *Rehabilitation*. In some cases, building
48 rehabilitation may also include construction
49 of a compatible addition to accommodate a
50 new use. Historic structures reports and

51 cultural landscape reports would be
52 prepared, as needed, in advance of
53 preservation and rehabilitation project
54 implementation.

55
56 Improved orientation and information
57 services would be a key component of this
58 alternative, which could require the
59 introduction of new site furnishings and
60 features in the park's landscape. In addition,
61 some new visitor amenities (restrooms,
62 parking lots, trailheads, etc.) and facilities
63 would be constructed to enhance the overall
64 visitor experience as well as day to day park
65 operations (particularly in Marin and San
66 Mateo counties). For any new development
67 within a historic district or cultural landscape
68 setting, an appropriate level of historic
69 research, resource inventory and assessment
70 would be conducted in advance of design. In
71 addition, design guidelines for a specific area
72 would be prepared in advance when
73 necessary to assure compatibility of any new
74 planning, design and construction within the
75 historic setting. The park's cultural resources
76 staff would continue to conduct historic
77 resource surveys, research, and
78 determinations of eligibility for historic
79 structures, districts and landscapes that may
80 be eligible for listing in the National Register
81 of Historic Places. This information would
82 help to guide informed decision making in
83 the future regarding how historic structures,
84 districts, and landscapes and their
85 contributing features should be managed.
86 Careful design would ensure that the
87 rehabilitation of historic buildings, structures
88 and landscapes, the development of new
89 facilities such as parking areas, and the
90 expansion or development of trails would
91 minimally affect the scale and visual
92 relationships among significant landscape
93 features. In addition, the topography,
94 vegetation, circulation features, and land use
95 patterns of any significant cultural landscape
96 would remain largely unaltered.

97
98 Specific properties within the area of
99 potential effect with the potential to be
100 impacted by implementation of the
101 Alternative 1 are discussed below:

1 **Parkwide.**

2 *Seacoast Fortifications of San Francisco Bay*
 3 *(Draft)*— Under this alternative, the park
 4 would pursue an ongoing program of
 5 stabilization, preservation and interpretation
 6 of the seacoast fortifications that contribute
 7 to the NHL-eligible district. A preservation
 8 strategy for the park’s seacoast fortifications
 9 would be prepared to guide the long term
 10 treatment and management of these
 11 resources, given that each fortification is in a
 12 varying state of repair and provides different
 13 interpretive opportunities. As an example,
 14 restoration may be the preferred preservation
 15 treatment in some instances such as at Battery
 16 Townsley. Battery Mendell and the Bird
 17 Rock Overlook area in the Marin Headlands
 18 would be rehabilitated and interpreted for
 19 visitor use. In addition to the stabilization and
 20 preservation of fortifications in Marin, those
 21 contributing historic seacoast fortifications
 22 on Milagra Ridge, Sweeney Ridge, and other
 23 locations in San Mateo County would also be
 24 preserved and interpreted. Overall, these
 25 preservation treatments for the historic
 26 fortifications and their landscaped settings
 27 would have long-term, minor to moderate,
 28 beneficial and minor adverse impacts.

30 **Marin County.**

31 *Forts Baker, Barry, and Cronkhite*— Under this
 32 alternative, no actions are proposed for Fort
 33 Baker. However, actions are contemplated
 34 for Forts Barry and Cronkhite. Within the
 35 historic district, alternative 1 includes the
 36 following actions that could affect the
 37 cultural landscape of the district:
 38 comprehensive sets of improvements to
 39 trails, overlooks, visitor amenities; the
 40 rehabilitation and introduction of transit and
 41 orientation facilities; broad programs of
 42 natural resource enhancements; the
 43 introduction of new and expanded programs;
 44 associated facilities for activities such as
 45 camping and picnicking. Some of these
 46 actions would enhance the historic setting
 47 while introducing compatible new elements
 48 into the landscape, while others would be
 49 noticeable changes that could potentially

50 alter a character-defining feature of the
 51 landscape. Therefore, these actions would
 52 result in both long-term, minor to moderate,
 53 adverse impacts and minor to moderate
 54 beneficial impacts.

55
 56 Actions that could affect historic structures,
 57 as well as the surrounding historic landscape,
 58 include the removal of some of the Capehart
 59 housing units, whose historic significance
 60 and integrity needs to be assessed; some new
 61 construction at different locations for
 62 residential use, visitor facilities, overnight
 63 accommodations, and operational needs;
 64 adaptive reuse of historic structures; and
 65 preservation of coastal fortifications. These
 66 would result in both long term, minor to
 67 moderate, adverse and beneficial impacts.
 68 Modifications to historic structures and
 69 landscape features would follow the
 70 *Secretary of the Interior’s Standards for the*
 71 *Treatment of Historic Properties* so as to
 72 minimize adverse impacts on the historic
 73 resources.

74
 75 Overall these modifications would be
 76 noticeable and would result in a visual change
 77 to the district and to the individual landscape
 78 areas within the district. Although they would
 79 result in an adverse effect on individual
 80 contributing resources, taken together they
 81 would not result in an adverse effect on the
 82 integrity of the national register district.
 83 Under this alternative, with the incorporation
 84 of mitigation measures including the
 85 preparation of cultural landscape reports,
 86 historic structures reports, and design
 87 guidelines to ensure compatible new
 88 construction as described in part 8 of this
 89 document, the long-term impact would be
 90 minor to moderate, adverse and beneficial.

91
 92 *Point Bonita Historic District*— Historic
 93 buildings and landscape features in the Point
 94 Bonita Historic District would continue to be
 95 preserved and interpreted, resulting in long-
 96 term, minor, beneficial and adverse impacts.

97
 98 *Sara Seaver Randall House*— Would continue
 99 to be managed by Point Reyes National

1 Seashore. No actions would be taken that
2 would have an impact on the site.

3
4 *Hill 640 Military Reservation*— Under this
5 alternative, the historic structures and
6 cultural landscape features associated with
7 the historic coastal defense fortifications at
8 the Hill 640 Military Reservation would
9 continue to be stabilized and preserved. This
10 would result in a long-term, negligible,
11 beneficial, and long-term, minor, adverse
12 impact.

13
14 *Ranch M (Golden Gate Dairy)*— Similar to the
15 no-action alternative, in alternative 1 the area
16 would be managed to retain the pastoral
17 character of the area while historic buildings
18 and landscape features that contribute to the
19 ranch's national register eligibility at the
20 Golden Gate Dairy would be rehabilitated
21 and adaptively used for equestrian use. Other
22 site improvements would include a small
23 trailhead and public transit stop. Taken
24 together, these improvements would result in
25 a long term, minor to moderate, beneficial
26 impact, and a long-term, minor, adverse
27 impact due to the addition of new features
28 and other modifications.

29
30 *Ranch A/B (Miwok)*— Similar to the no-action
31 alternative, in this alternative historic
32 buildings and landscape features that
33 contribute to the former ranch's national
34 register eligibility would be rehabilitated and
35 adaptively used for equestrian use. This
36 would result in a long-term, minor to
37 moderate, beneficial, and long-term, minor,
38 adverse impact. Site improvements (such as
39 restrooms, improved parking, and visitor
40 orientation/information) at the nearby
41 Tennessee Valley trailhead parking area
42 would have an indirect, local, long-term,
43 negligible, adverse impact on the district.

44
45 *Bolinas Copper Mine*— Would continue to be
46 managed by Point Reyes National Seashore.
47 No actions would be taken under alternative
48 1 that would have an impact on the site.

49
50 *Miwok Trail*— Cultural landscape resources
51 associated with the Miwok Trail would be

52 preserved and protected, which would have a
53 long-term, negligible, beneficial, and long-
54 term, minor, adverse impact.

55

56 **San Francisco County.**

57 *Alcatraz Island National Historic Landmark*—
58 Under this alternative, the park's manage-
59 ment emphasis would improve the overall
60 condition of historic buildings, structures,
61 and landscapes across the island through
62 preservation and rehabilitation and thus
63 provide a greater variety of settings for visitor
64 experiences. As a result, visitors would have
65 access to the majority of the islands historic
66 resources and landscapes, and many of the
67 currently closed indoor and outdoor spaces
68 would be reopened to the public. All of the
69 primary buildings that contribute to the
70 island's landmark status would be
71 rehabilitated in accordance with the
72 *Secretary of the Interior's Standards for*
73 *Rehabilitation*, and other contributing
74 structures would be stabilized and preserved.
75 This would result in a long term, moderate,
76 beneficial, and long-term, minor, adverse
77 impact to historic structures.

78

79 Specific actions would include rehabilitation
80 of Building 64 as a multipurpose facility for
81 visitor services which could include
82 overnight accommodations, and interpretive
83 and administrative space. The Main Prison
84 Area would be preserved to interpret the
85 federal penitentiary period. The New
86 Industries Building would be rehabilitated
87 and adaptively used as multipurpose facility
88 to host a variety of visitor services. The
89 Guard House would be restored to the Civil
90 War-era through removal of the boathouse
91 from a later time period (resulting in a
92 localized, long-term, moderate adverse
93 effect) and the remaining walls and
94 foundations of the Post Exchange and
95 Warden's House would be stabilized. The
96 Power Plant and Quartermaster Warehouse,
97 as well as a portion of the Model Industries
98 Building, would be rehabilitated and
99 adaptively used for maintenance, storage,
100 public safety functions, and potentially to
101 showcase alternative energy technologies.

1 The lighthouse and surrounding area would
 2 be preserved, providing for improved visitor
 3 access and interpretation. Other historic
 4 buildings on would be stabilized or
 5 rehabilitated all resulting in long term, minor
 6 to moderate, beneficial, and long-term,
 7 minor, adverse impacts.

8
 9 Important landscaped areas that contribute
 10 to the national historic landmark's integrity,
 11 such as around the Main Prison Building and
 12 the Parade Ground, would be rehabilitated
 13 and characteristic prison-era security features
 14 restored. Improvements would be in
 15 accordance with the treatment
 16 recommendations of the *Cultural Landscape*
 17 *Report for Alcatraz Island* and would comply
 18 with the *Secretary of the Interior's Standards*
 19 *for the Treatment of Historic Properties, with*
 20 *Guidelines for the Treatment of Cultural*
 21 *Landscapes*. This would have a beneficial
 22 impact on the landscape. There could also be
 23 local, minor, adverse impacts on individual
 24 cultural landscape features through either
 25 their deterioration or loss during the course
 26 of rehabilitation to accommodate visitor uses
 27 or through the decision to allow some areas
 28 to revert to a more natural state. Overall,
 29 these landscape changes would result in long-
 30 term, minor to moderate, beneficial, and
 31 long-term, minor, adverse impacts.

32
 33 Historic buildings and landscapes on Alcatraz
 34 Island could be adversely impacted over time
 35 from the effects of increased visitation to the
 36 island, especially with the provision of
 37 overnight visitor stays. Unstaffed or
 38 minimally staffed structures could be more
 39 susceptible to vandalism. This would result in
 40 a long-term, negligible to minor, adverse
 41 impact on historic structures and landscapes.
 42 However, the park would monitor the effects
 43 of increased visitation on historic resources
 44 and could modify visitor access and uses, or
 45 would use other techniques to further protect
 46 these resources from human impacts without
 47 hindering interpretation opportunities and
 48 overall visitor experience. In addition, the
 49 park's provision of regular patrols and visitor
 50 education programs about resource
 51 significance and protection (such as

52 discouraging vandalism) would help to
 53 reduce these potential visitor impacts on no
 54 more than minor.

55
 56 In conclusion, modifications to the
 57 contributing resources on Alcatraz Island
 58 would be noticeable. Although some actions
 59 could result in an adverse effect on some
 60 individual features, taken together they
 61 would not result in an adverse effect on the
 62 overall integrity of the national historic
 63 landmark. The impact to these historic
 64 resources under this alternative would be
 65 long term, minor to moderate, beneficial and
 66 long term, minor to moderate (for removal of
 67 the Boathouse) adverse.

68
 69 *San Francisco Port of Embarkation National*
 70 *Historic Landmark*— Similar to the no-action
 71 alternative, actions under alternative 1 would
 72 include the park's continued use of Building
 73 201 as the park headquarters. Lower Fort
 74 Mason would continue to be managed by the
 75 Fort Mason Foundation who would perform
 76 ongoing preservation and rehabilitation work
 77 on the contributing resources as
 78 recommended in the "Cultural Landscape
 79 Report for Lower Fort Mason." These
 80 treatments, including energy-saving
 81 infrastructure additions, would be designed
 82 to avoid adverse effect. The impact would be
 83 long term, negligible, beneficial, and long
 84 term, minor, adverse. Potential future water
 85 shuttle access may be provided at one of the
 86 piers, but the effects of that proposal as well
 87 as the proposed F-Line rail extension, would
 88 be addressed in a separate environmental
 89 planning process. The anticipated impacts
 90 from these respective actions are long term,
 91 minor to moderate, adverse (water shuttle),
 92 and long term, moderate, adverse (F-line).

93
 94 *Aquatic Park Historic District National Historic*
 95 *Landmark*— Under alternative 1, site and
 96 circulation modifications to accommodate
 97 transit improvements on the Van Ness
 98 Avenue corridor, and overall wayfinding and
 99 park orientation signage, could have direct
 100 and indirect effects on the historic landscape
 101 of the district. Efforts would be made to
 102 minimize the effects on this historic

1 landscape. Recommendations of a cultural
2 landscape report would guide these changes.
3 The potential impact would be long term,
4 minor, and adverse. This property is within
5 and managed by San Francisco Maritime
6 National Historical Park.

7
8 *Fort Mason Historic District*— The Fort Mason
9 District would serve as a “portal to the park”
10 using historic structures to welcome visitors
11 in a setting that would remain a peaceful
12 contrast to the adjacent city. This would be
13 accomplished through the continued
14 rehabilitation of historic buildings and the
15 district’s historic designed landscape. The
16 actions to stabilize Pier 4 would provide a
17 long term, beneficial impact to that resource.
18 Building uses would include visitor services
19 (park orientation, information), food service,
20 special event venues, residences, overnight
21 accommodations, and park/partner offices
22 and programs. Landscape improvements
23 would be consistent with the treatment
24 recommendations based on the “Cultural
25 Landscape report for Fort Mason” (2011)
26 and would include rehabilitation of the
27 overgrown gardens on the east and northeast
28 slopes; the installation of identification,
29 orientation, and wayfinding signs; opening up
30 of important viewsheds; and considerable
31 treatment of over-mature and (sometimes)
32 hazardous trees. This action, along with other
33 contemplated transit access improvements,
34 would trigger the need for visitor circulation
35 and associated site improvements within the
36 district. Some actions may adversely impact
37 individual features: the removal of trees and
38 the time it takes for replacement trees to
39 grow would result in short-term, minor,
40 adverse impacts. However, taken as a whole,
41 with the incorporation of mitigation
42 measures such as the provision for the
43 preparation of historic structure reports and
44 design guidelines, these actions would have a
45 long-term, negligible to moderate, beneficial,
46 and long-term, minor, adverse impacts on the
47 historic district.

48
49 *Fort Miley Military Reservation*— The historic
50 structures of West Fort Miley would
51 continue to be preserved and the landscape

52 enhanced to provide better connections for
53 visitors to adjacent resources and sites.
54 Landscape changes would include the
55 provision of picnicking and group camping
56 facilities, which would be new features in the
57 landscape. These changes would be designed
58 to be compatible with the historic setting.
59 Park maintenance functions would continue
60 to occur in the East Fort Miley historic
61 warehouse and batteries. These actions
62 would result in a long term, minor, adverse
63 impact.

64
65 *Pumping Station 2, SF Fire Department*
66 *Auxiliary Water Supply System*— No impacts
67 on this property are anticipated from
68 alternative 1. This property is within Fort
69 Mason but is owned and operated by the City
70 of San Francisco.

71
72 *Camera Obscura*— Operations and
73 maintenance under this alternative would
74 result in minor, beneficial, and minor,
75 adverse impacts.

76
77 *Six-inch Gun No. 9*— Operations and
78 maintenance under this alternative would
79 result in minor, beneficial, and minor,
80 adverse impacts.

81
82 *San Francisco Veterans Affairs Medical*
83 *Center*— Continued operation of Fort Miley
84 as a historic site (West) and park
85 maintenance facility (East) would have
86 negligible impacts on the adjacent Veterans
87 Medical Center Historic District, which is
88 owned and managed by the Department of
89 Veterans Affairs.

90
91 *China Beach*— Some improvements to the
92 existing array of visitor facilities and access
93 would be made to support continued use of
94 this popular site. Impacts would be long term,
95 negligible, beneficial, and long term, minor,
96 adverse.

97
98 *Marine Exchange Lookout Station (Octagon*
99 *House)*— The building and adjacent
100 landscape would be rehabilitated for park or
101 park partner uses and interpreted, which
102 would have a long-term, moderate,

1 beneficial, and long-term, minor, adverse
2 impact.

3
4 *O'Shaughnessy Seawall*— The historic seawall
5 on Ocean Beach would be preserved and
6 protected. Adjacent amenities, such as the
7 promenade, parking area, and restroom
8 facilities that support visitor beach use of the
9 area, would be improved. This would have
10 long-term, negligible to minor, beneficial, and
11 long-term, minor, adverse impacts.

12
13 *Sutro District*— Managed under an existing
14 plan, no impacts on this property are
15 anticipated from alternative 1. This district is
16 managed by the park as a cultural resource
17 but has been determined to not be eligible for
18 the National Register of Historic Places in
19 consultation with the California state historic
20 preservation officer.

21

22 **San Mateo County.**

23 *San Francisco Bay Discovery Site National*
24 *Historic Landmark*— The site and its
25 associated features would be preserved,
26 enhanced, and interpreted. A hikers hut
27 could be constructed in the vicinity as part of
28 a system of trail amenities for the Bay Area
29 Ridge Trail. Any new construction and
30 development would be sited and designed
31 away from the actual site so as not to directly
32 affect the historic integrity of this site.
33 Limited vehicular access to the discovery site
34 would be permitted as well. This could result
35 in increased visitation to the site, which
36 would be monitored over time for any
37 changes to the historic setting, landscape, and
38 monuments to ensure long term preservation.
39 Overall, these changes would result in a long-
40 term, minor, adverse impact.

41

42 *Point Montara Light Station*— The Montara
43 Lighthouse and associated historic buildings
44 and landscape, would continue to function as
45 a hostel and support day-use programs. The
46 facilities would be preserved or rehabilitated
47 as needed and the site interpreted. This
48 would result in long term, minor, beneficial
49 and adverse impacts.

50

51 *Rancho Corral de Tierra*— If determined
52 eligible for listing in the National Register of
53 Historic Places, contributing historic
54 structures and cultural landscape resources
55 associated with the rural agricultural
56 landscape at Rancho Corral de Tierra in San
57 Mateo County would be preserved in balance
58 with natural resource restoration goals. New
59 visitor amenities, including trailheads and
60 trails, would be compatibly designed to blend
61 in with the historic landscape. The
62 preservation of these resources would have a
63 long term, minor beneficial impact; however,
64 the introduction of new elements and natural
65 resource restoration activities could result in
66 long term, minor, adverse impacts.

67

68 *Shelldance Nursery*— If determined eligible
69 for listing in the National Register of Historic
70 Places, transition from a commercial nursery
71 to an area that provides a variety of visitor
72 services and park operational needs would
73 have a moderate, beneficial, and minor,
74 adverse impact, if carried out according to
75 the *Secretary of the Interior's Standards for*
76 *Historic Preservation* and if removal of any
77 structures that may be deemed historic is
78 avoided.

79

80 **Conclusion.** In conjunction with the effects
81 from the actions common to all alternatives,
82 alternative 1 would result in local, long-term,
83 negligible to moderate, adverse and beneficial
84 impacts on historic structures, districts and
85 landscapes. Impacts would be minimized by
86 implementing mitigation measures. The
87 park's management strategy for historic
88 buildings, districts, and cultural landscapes
89 would generally be one of preservation and
90 rehabilitation for new and continued uses.
91 This would have a long term, beneficial,
92 effect on these resources. In some instances,
93 individual projects could result in adverse
94 effects due to the level or amount of
95 intervention and proposed modifications to a
96 structure or site.

97

98 With regards to Alcatraz Island National
99 Historic Landmark, although some actions
100 could result in an adverse effect on some
101 individual features, taken together the actions

1 would not result in an adverse effect on the
2 overall integrity of the national historic
3 landmark. The impacts on historic structures
4 and the cultural landscape would be long
5 term, minor to moderate, beneficial, and long
6 term, minor, adverse.

7
8 Under alternative 1, the section 106
9 determination of effect on historic buildings,
10 structures, districts and cultural landscapes in
11 Golden Gate National Recreation Area,
12 excluding Alcatraz Island National Historic
13 Landmark, would be *adverse effect*. On
14 Alcatraz Island, the section 106
15 determination of effect on historic buildings,
16 structures and cultural landscapes would be
17 *adverse effect*.

18 19 **Alternative 2: Preserving and** 20 **Enjoying Coastal Ecosystems**

21 **Analysis.** Actions under alternative 2 would
22 be similar to those under alternative 1 and
23 would maximize opportunities for adaptive
24 reuse and rehabilitation of historic structures,
25 districts and cultural landscapes in a manner
26 that would support the overall park mission.
27 One of the goals of this alternative would be
28 to preserve and protect cultural resources
29 with support for their stewardship and
30 interpretation.

31
32 Under alternative 2, the park would
33 rehabilitate existing facilities to improve their
34 condition to welcome and support park
35 visitors. A focus of programs would be the
36 preservation and enhancement of the park's
37 interconnected coastal ecosystems in which
38 marine resources are valued and featured in
39 interpretation. Cultural resource sites and
40 stories would emphasize human occupation
41 of the coastal environment as reflected in
42 lighthouses, coastal defense structures and
43 other developed sites, and reflected in the
44 area's European exploration, maritime
45 history, as well as historic agricultural land
46 uses.

47
48 Park partners would continue to play an
49 important role in preserving historic
50 resources through adaptive reuse of buildings

51 and structures throughout the park to
52 provide programs and services to visitors in
53 support of the park's mission. Consistent
54 with alternative 1, any historic building and
55 landscape rehabilitation would be in
56 accordance with the *Secretary's Standards for*
57 *Historic Rehabilitation*. In some cases,
58 building rehabilitation may also include
59 construction of a compatible addition to
60 accommodate a new use. Historic structures
61 reports and cultural landscape reports would
62 be prepared, as needed, in advance of
63 preservation and rehabilitation project
64 implementation.

65
66 Improved orientation and information
67 services would be a key component of this
68 alternative, which could require the
69 introduction of new site furnishings and
70 features in the park's landscape. In addition,
71 some new visitor amenities (restrooms,
72 parking lots, trailheads, etc.) and facilities
73 would be constructed to enhance the overall
74 visitor experience as well as day to day park
75 operations (particularly in Marin and San
76 Mateo counties). For any new development
77 within a historic district or cultural landscape
78 setting, an appropriate level of historic
79 research, resource inventory and assessment
80 would be conducted in advance of design. In
81 addition, design guidelines for a specific area
82 would be prepared when necessary in
83 advance to assure compatibility of any new
84 planning, design and construction within the
85 historic setting. The park's cultural resources
86 staff would continue to conduct historic
87 resource surveys, research, and
88 determinations of eligibility for historic
89 structures, districts and landscapes that may
90 be eligible for listing in the National Register
91 of Historic Places. This information would
92 help to guide informed decision making in
93 the future regarding how historic structures,
94 districts, and landscapes, and their
95 contributing features should be managed.
96 Careful design would ensure that the
97 rehabilitation of historic buildings, structures
98 and landscapes, the development of new
99 facilities such as parking areas, and the
100 expansion or development of trails would
101 minimally affect the scale and visual

1 relationships among significant landscape
2 features. In addition, the topography,
3 vegetation, circulation features, and land use
4 patterns of any significant cultural landscape
5 would remain largely unaltered.

6
7 Specific properties that could be affected by
8 actions proposed under alternative 2 are
9 further described below.

10

11 **Parkwide.**

12 *Seacoast Fortifications of SF Bay (Draft)*—
13 Similar to alternative 1, under this alternative
14 the park would pursue an ongoing program
15 of stabilization, preservation and
16 interpretation of the seacoast fortifications
17 that contribute to the NHL-eligible district. A
18 preservation strategy for the park's seacoast
19 fortifications would be prepared to guide the
20 long-term treatment and management of
21 these resources, given that each fortification
22 is in a varying state of repair and provides
23 different interpretive opportunities. Based on
24 their condition, significance, and suitability
25 for visitor access, interpretive and
26 educational opportunities, or park
27 operational use, historic seacoast
28 fortifications in the Marin Headlands would
29 be stabilized and in some cases rehabilitated.
30 In addition to the stabilization and
31 preservation of fortifications in Marin, those
32 contributing historic seacoast fortifications
33 on Milagra Ridge, Sweeney Ridge, and other
34 locations in San Mateo County would be also
35 be preserved and interpreted. Cultural
36 landscape resources associated with historic
37 coastal fortifications would be preserved and
38 managed in balance with natural resource
39 restoration goals to perpetuate their historic
40 values. Overall, these preservation treatments
41 for the historic fortifications and their
42 landscaped settings would have long-term,
43 minor to moderate, beneficial, and long-term,
44 minor, adverse impacts.

45

46 **Marin County.**

47 *Forts Baker, Barry, and Cronkhite*— Within
48 this historic district, alternative 2 includes
49 actions similar to those proposed under

50 alternative 1. Historic buildings and
51 landscapes at Forts Barry and Cronkhite in
52 the Marin Headlands would be rehabilitated
53 and continue to be adaptively used by the
54 park and park partners for recreational,
55 educational, and stewardship activities,
56 resulting in long-term beneficial impacts.
57 Specific actions that could affect the cultural
58 landscape of the district include:
59 comprehensive sets of improvements to
60 trails, overlooks, visitor amenities; the
61 rehabilitation and introduction of transit and
62 orientation facilities; broad programs of
63 natural resource enhancements including
64 habitat restoration that would be consistent
65 with the preservation of the historic
66 landscape; the introduction of new and
67 expanded programs; associated facilities for
68 activities such as camping and picnicking.
69 Some of these actions would enhance the
70 historic setting while introducing compatible
71 new elements into the landscape, while
72 others would be noticeable changes that
73 could potentially alter a character-defining
74 feature of the landscape. Therefore, these
75 actions would result in both long-term, minor
76 to moderate, adverse impacts and long-term,
77 minor to moderate, beneficial impacts.

78

79 Actions that could affect historic structures,
80 as well as the surrounding historic landscape,
81 include the removal of the Capehart
82 housing—which needs an assessment of
83 historic significance and integrity—and some
84 potential new construction for a park
85 operations facility in the area; adaptive reuse
86 of historic structures and the ongoing
87 preservation of coastal fortifications. These
88 actions would result in both long-term, minor
89 to moderate, adverse, and long-term, minor
90 to moderate, beneficial impacts.
91 Modifications to historic structures and
92 landscape features would follow the
93 *Secretary of the Interior's Standards for the*
94 *Treatment of Historic Properties* so as to
95 minimize adverse impacts on the historic
96 resources.

97

98 Overall, these modifications would be
99 noticeable and would result in a visual change
100 to the district and to the individual landscape

1 areas within the district. Although they would
2 result in an adverse effect on individual
3 contributing resources, taken together they
4 would not result in an adverse effect on the
5 integrity of the national register district.

6 Under alternative 2, with the incorporation
7 of mitigation measures including the
8 preparation of cultural landscape reports,
9 historic structures reports, and design
10 guidelines to ensure compatible new
11 construction as described in part 8 of this
12 document, the long-term impact would be
13 minor to moderate, adverse, and beneficial.

14
15 *Point Bonita Historic District*— Management of
16 this area would be the same as alternative 1 in
17 which historic buildings and landscape
18 features in the district would continue to be
19 preserved and interpreted, resulting in long-
20 term, minor, beneficial, and long-term,
21 minor, adverse impacts.

22
23 *Sara Seaver Randall House*— Management
24 would continue to be by Point Reyes
25 National Seashore. No actions would be
26 taken under alternative 2 that would have an
27 impact on the site.

28
29 *Hill 640 Military Reservation*— Treatment of
30 this area would be the same as in alternative
31 1. Historic structures and cultural landscape
32 features associated with the historic coastal
33 defense fortifications would continue to be
34 stabilized, preserved, and interpreted,
35 resulting in a long term, negligible, beneficial,
36 and long-term, minor, adverse impact.

37
38 *Ranch M (Golden Gate Dairy)*— Similar to the
39 no-action alternative, this area would be
40 managed to retain the pastoral character of
41 the area while historic buildings and
42 landscape features that contribute to the
43 ranch's national register eligibility would be
44 rehabilitated and adaptively used for
45 equestrian use. Under alternative 2,
46 nonhistoric residences near the Golden Gate
47 Dairy could be removed if they are not
48 needed to support community services or
49 park operations. Taken together, these
50 improvements would result in a long term,

51 minor to moderate, beneficial and long-term,
52 minor, adverse impact.

53
54 *Ranch A/B (Miwok)*— Similar to the no-action
55 alternative, historic buildings and landscape
56 features that contribute to the former ranch's
57 national register eligibility would be
58 rehabilitated and adaptively used for
59 equestrian use. This would result in a long
60 term, minor to moderate, beneficial, and
61 long-term, minor, adverse impact. A minimal
62 level of visitor facilities and an improved
63 trailhead to support visitor access to the
64 area's extensive network of trails would be
65 provided at the nearby Tennessee Valley
66 trailhead parking. This would have an
67 indirect, local, long-term, negligible, adverse
68 impact on the district.

69
70 *Bolinas Copper Mine*— Would continue to be
71 managed by Point Reyes National Seashore.
72 No actions would be taken under alternative
73 2 that would have an impact on the site.

74
75 *Miwok Trail*— Cultural landscape resources
76 associated with the Miwok Trail would be
77 preserved and protected, which would have a
78 long-term, negligible, beneficial, and long-
79 term, minor, adverse impact.

80 **San Francisco County.**

81
82 *Alcatraz Island National Historic Landmark*—
83 Under alternative 2, many of the island's
84 historic buildings and landscape features
85 would only be stabilized while others would
86 be rehabilitated and maintained (resulting in
87 long-term, beneficial impacts because their
88 deterioration would be halted). The island's
89 changing natural and built landscape would
90 continue to evolve, further enhancing habitat
91 for nesting birds. Only those buildings and
92 features necessary to maintain the islands
93 landmark status would be preserved, while
94 natural elements would reclaim other
95 features.

96
97 Building 64 would be rehabilitated and
98 adaptively used to support science,
99 education, and stewardship programs,
100 administrative functions, and potential

1 overnight accommodations for program
 2 participants. The Main Prison Building,
 3 including the hospital wing, adjacent
 4 landscape, and the Recreation Yard, would
 5 be rehabilitated or potentially restored to
 6 reflect historically accurate conditions. The
 7 lighthouse and surrounding landscape area
 8 would be preserved and interpreted. These
 9 rehabilitation efforts would result in a long
 10 term, moderate, beneficial, and long-term,
 11 minor, adverse impact.

12
 13 The Parade Ground would be allowed to be
 14 become a “wild” landscape, and its ruins
 15 retained to serve as bird habitat. The New
 16 Industries Building and the Model Industries
 17 Building would be stabilized and no efforts
 18 would be made to avoid their loss to coastal
 19 erosion. In order to restore natural habitats
 20 on the island, some cultural landscape
 21 resources would be allowed to deteriorate or
 22 be removed, depending on their condition.
 23 This would only occur after the features had
 24 been documented and recorded in
 25 accordance with the HABS/HAER/HALS
 26 standards. This would result in a long-term,
 27 moderate to major, adverse effect on these
 28 structures and landscape resources. With the
 29 incorporation of mitigation measures, the
 30 effect could be reduced to moderate adverse.
 31 The interior spaces of the Quartermaster
 32 Warehouse and Power Plant would be used
 33 for park operations. The Post Exchange
 34 would be stabilized to preserve the exterior
 35 of the structure; an interior shell could be
 36 constructed within the structure for park
 37 operations. These building treatments would
 38 result in long-term, minor to moderate,
 39 beneficial, and long-term, minor, adverse
 40 impacts on these resources.

41
 42 The long-term impacts on particular historic
 43 structures, buildings, and landscapes on
 44 Alcatraz Island would include minor,
 45 moderate, and major, adverse impacts, as well
 46 as minor to moderate, beneficial impacts.
 47 Overall these modifications would be
 48 noticeable and would result in a visual change
 49 to the district and to the individual landscape
 50 areas within the district. Although they would
 51 result in adverse impacts on individual

52 contributing resources, taken together they
 53 would not result in a major adverse impact on
 54 the landmark district, as it would continue to
 55 maintain its status as a national register
 56 landmark district.

57
 58 *Fort Point*— Operations and maintenance
 59 under this alternative would result in minor
 60 to moderate, beneficial, and minor, adverse
 61 impacts.

62
 63 *Presidio*— Operations and maintenance under
 64 this alternative would result in minor to
 65 moderate, beneficial, and minor, adverse
 66 impacts.

67
 68 *San Francisco Port of Embarkation National
 69 Historic Landmark*— Actions would be the
 70 same as alternative 1, with long-term
 71 preservation of the contributing structures
 72 and landscapes of the district. Building 201
 73 would continue to be used as the park
 74 headquarters and Lower Fort Mason would
 75 continue to be managed by the Fort Mason
 76 Foundation. The impact would be long term,
 77 negligible and beneficial. Potential future
 78 water shuttle access may be provided at one
 79 of the piers, but the effects of that proposal as
 80 well as the proposed F Line rail extension,
 81 would be addressed in a separate
 82 environmental planning process. The
 83 anticipated impacts from these respective
 84 actions are long term, minor to moderate,
 85 adverse (water shuttle), and long term,
 86 moderate, adverse (F-line).

87
 88 *Aquatic Park Historic District National Historic
 89 Landmark*— Actions would be similar to those
 90 in alternative 1. Potential site and circulation
 91 modifications to accommodate transit
 92 improvements on the Van Ness Avenue
 93 corridor and overall wayfinding and park
 94 orientation signs, could have direct and
 95 indirect effects on the historic landscape of
 96 the district. Efforts would be made to
 97 minimize the effects on this historic
 98 landscape. A cultural landscape report would
 99 guide these changes. The potential impact
 100 would be long term, minor, adverse. This
 101 property is within and managed by San
 102 Francisco Maritime National Historical Park.

1 *Fort Mason Historic District*— With respect to
 2 the effects on the historic structures and
 3 landscape of this district, alternative 2 would
 4 be similar to alternative 1. Historic buildings
 5 would be rehabilitated and adaptively used to
 6 serve as a portal to the park and provide for
 7 uses such as a hostel and other overnight
 8 accommodations, park headquarters, and
 9 park and park partner offices and programs.
 10 Rehabilitation of Pier 4 to accommodate
 11 visitors would have result in loss of historic
 12 fabric and the addition of nonhistoric
 13 features. Cultural landscape resources in
 14 Upper Fort Mason would be preserved
 15 through rehabilitation. As a whole, with the
 16 incorporation of mitigation measures such as
 17 the provision for the preparation of historic
 18 structure reports and design guidelines, the
 19 actions proposed under this alternative
 20 would have a long-term, negligible to
 21 moderate, beneficial, and long-term, minor,
 22 adverse impact on the historic district.

23
 24 *Fort Miley Military Reservation*— Same as
 25 alternative 1. The historic structures of West
 26 Fort Miley would continue to be preserved
 27 and the landscape enhanced to provide better
 28 connections for visitors to adjacent resources
 29 and sites. Landscape changes would include
 30 the provision of picnicking and group
 31 camping facilities and would be designed to
 32 be compatible with the historic setting. Park
 33 maintenance functions would continue to
 34 occur in the East Fort Miley historic
 35 warehouse and batteries. These actions
 36 would result in a long-term, minor, adverse
 37 impact.

38
 39 *Pumping Station 2, SF Fire Department
 40 Auxiliary Water Supply System*— Same as
 41 alternative 1. No impacts on this property are
 42 anticipated. This property is within Fort
 43 Mason but is owned and operated by the City
 44 of San Francisco.

45
 46 *Camera Obscura*— Operations and
 47 maintenance under this alternative would
 48 result in minor beneficial and minor adverse
 49 impacts.

50

51 *Six-inch Gun No. 9*— Operations and
 52 maintenance under this alternative would
 53 result in minor beneficial and minor adverse
 54 impacts.

55

56 *San Francisco Veterans Affairs Medical
 57 Center*— Continued operation of Fort Miley
 58 as a park maintenance facility would have
 59 negligible impacts on the adjacent Veterans
 60 Medical Center Historic District, which is
 61 owned and managed by the Department of
 62 Veterans Affairs.

63

64 *China Beach*— Same as alternative 1: some
 65 improvements to the existing array of visitor
 66 facilities and access would be made to
 67 support continued use of this popular site.
 68 Impacts would be long term, negligible,
 69 beneficial, and long term, minor, adverse.
 70 This property needs to be assessed to
 71 determine national register eligibility.

72

73 *Marine Exchange Lookout Station (Octagon
 74 House)*— The Marine Exchange Lookout
 75 Station (Octagon House) would be
 76 rehabilitated and adaptively used to engage
 77 the public in the natural and human history
 78 of the coastal marine environment. which
 79 would have a long-term, moderate,
 80 beneficial. and long-term, minor, adverse
 81 impact. This property needs to be assessed to
 82 determine national register eligibility.

83

84 *O'Shaughnessy Seawall*— The historic seawall
 85 would be preserved and protected. Adjacent
 86 amenities such as the promenade, parking
 87 area, and restroom facilities that support
 88 visitor beach use of the area would be
 89 improved. This would have long-term,
 90 negligible to minor, beneficial, and long-term,
 91 minor, adverse impacts. This property needs
 92 to be assessed to determine national register
 93 eligibility.

94

95 *Sutro District*— Managed under an existing
 96 plan, no impacts on this property are
 97 anticipated under alternative 2. This district
 98 is managed by the park as a cultural resource
 99 but has been determined to not be eligible for
 100 the National Register of Historic Places in

1 consultation with the California state historic
2 preservation officer.

3

4 **San Mateo County.**

5 *San Francisco Bay Discovery Site National*
6 *Historic Landmark*— Cultural landscape
7 resources associated with San Francisco Bay
8 Discovery Site National Historic Landmark
9 on Sweeney Ridge would be preserved,
10 enhanced, and interpreted. This would result
11 in a long-term, negligible, beneficial impact.

12

13 *Point Montara Light Station*— Similar to
14 alternative 1, the Montara Lighthouse and
15 associated historic buildings and landscape
16 would continue to function as a hostel and
17 would support day-use programs for park
18 stewardship and environmental education.
19 The facilities would be preserved or
20 rehabilitated as needed and the site
21 interpreted. This would result in a long-term,
22 minor, beneficial, and long-term, minor,
23 adverse impact.

24

25 *Rancho Corral de Tierra*— If determined
26 eligible for listing in the National Register of
27 Historic Places, contributing historic
28 structures and cultural landscape resources
29 associated with the rural agricultural
30 landscape at Rancho Corral de Tierra in San
31 Mateo County would be preserved in balance
32 with natural resource restoration goals.
33 Compared to alternative 1, fewer and more
34 primitive visitor amenities would be
35 constructed. Unnecessary fire roads could be
36 converted to trails or removed, if not
37 identified as contributing landscape features.
38 The preservation of these resources would
39 have a long-term, minor, beneficial impact;
40 however, the introduction of new elements
41 and natural resource restoration activities
42 could result in long-term, negligible to minor,
43 adverse impacts. This property needs to be
44 assessed to determine national register
45 eligibility.

46

47 *Shelldance Nursery*— If determined eligible
48 for listing in the National Register of Historic
49 Places, transition from a commercial nursery
50 to an area that provides a variety of visitor

51 services and park operational needs would
52 have a moderate beneficial and minor
53 adverse impact, if carried out according to
54 the Secretary of the Interior's Standards for
55 Historic Preservation and if removal of any
56 structures that may be deemed historic is
57 avoided.

58

59 **Conclusion.** In conjunction with the effects
60 from the actions common to all alternatives,
61 alternative 2 would result in local, long-term,
62 negligible to moderate, adverse, and local,
63 long-term, negligible to moderate, beneficial
64 impacts on historic structures, districts and
65 landscapes. Impacts would be reduced by
66 implementing mitigation measures. The
67 park's management strategy for historic
68 buildings, districts, and cultural landscapes
69 encompass stabilization, preservation, and
70 rehabilitation for new and continued uses. In
71 general, this would have a long-term,
72 beneficial effect on these resources. In some
73 instances, individual projects could result in
74 long-term, moderate to major, adverse
75 impacts, due to the level or amount of
76 proposed change.

77

78 Impacts on Alcatraz Island National Historic
79 Landmark would include minor, moderate,
80 and major, adverse impacts with the potential
81 loss of some contributing resources
82 (structures and landscapes); however, actions
83 would also result in minor to moderate,
84 beneficial impacts on other contributing
85 resources. Although some actions could
86 result in an adverse effect on some individual
87 features, taken together the actions would
88 not result in an adverse effect on the overall
89 integrity of the national historic landmark.
90 Overall, those key features that define the
91 essence of the landmark's integrity would be
92 preserved.

93

94 Under alternative 2, the section 106
95 determination of effect on historic buildings,
96 structures, districts and cultural landscapes in
97 Golden Gate National Recreation Area,
98 excluding Alcatraz Island National Historic
99 Landmark, would be *adverse effect*. On
100 Alcatraz Island, the section 106
101 determination of effect on historic buildings,

1 structures and cultural landscapes would be
2 *adverse effect.*

3
4 **Alternative 3: Focusing on National**
5 **Treasures (NPS Preferred Alternative**
6 **for Alcatraz Island)**

7 **Analysis.** Actions under alternative 3 would
8 place an emphasis on the park's nationally
9 important natural and cultural resources. The
10 fundamental resources of each site would be
11 showcased with the highest level of
12 preservation, maximizing opportunities for
13 adaptive reuse and rehabilitation of historic
14 structures, districts, and cultural landscapes
15 for park visitor enjoyment and
16 understanding.

17
18 Similar to the other action alternative, under
19 alternative 3, the park and park partners
20 would rehabilitate existing facilities to
21 improve their condition to better welcome
22 and support park visitors. Historic building
23 and landscape rehabilitation would be in
24 accordance with the *Secretary's Standards for*
25 *Historic Rehabilitation* and, in some cases,
26 may include construction of compatible
27 additions or new features to accommodate a
28 new use. Historic structures reports and
29 cultural landscape reports would be
30 prepared, as needed, in advance of
31 preservation and rehabilitation project
32 implementation.

33
34 Compared to existing conditions and the
35 other action alternatives, alternative 3 would
36 result in providing the greatest amount of
37 public access to the park's numerous historic
38 buildings and landscapes, allowing park
39 visitors direct contact with these resources
40 when possible. In San Mateo County, park
41 managers would work with other land
42 management agencies and communities to
43 promote heritage tourism and explore
44 opportunities for regional landscape
45 management; these actions would have a
46 beneficial impact on the long-term
47 preservation and protection of historic
48 structures, districts, and cultural landscapes.
49 In order to successfully immerse visitors in

50 the park's compelling sites and history,
51 improved orientation and information
52 services would be a key component of this
53 alternative, which could require the
54 introduction of new site furnishings and
55 features in the park's landscape. Park staff
56 would continue to conduct historic resource
57 surveys, research, and determinations of
58 eligibility for historic structures, districts, and
59 landscapes that may be eligible for listing in
60 the National Register of Historic Places. This
61 information would be used to guide decisions
62 regarding how historic structures, districts,
63 and landscapes and their contributing
64 features should be managed. Some new
65 visitor amenities and facilities (restrooms,
66 parking lots, trailheads, etc.) would be
67 constructed to enhance the overall visitor
68 experience as well as day-to-day park
69 operations (particularly in Marin and San
70 Mateo counties). For any new development
71 within a historic district or cultural landscape
72 setting, an appropriate level of historic
73 research, resource inventory, and assessment
74 would be conducted in advance of design. In
75 addition, design guidelines for a specific area
76 would be prepared, when necessary, in
77 advance to assure compatibility of any new
78 planning, design, and construction within the
79 historic setting. Careful design would ensure
80 that the rehabilitation of historic buildings,
81 structures, and landscapes would minimally
82 affect the scale and visual relationships
83 among significant landscape features.

84
85 Specific properties within the area of
86 potential effect with the potential to be
87 impacted by implementation of alternative 3
88 are discussed below.

89
90 **Parkwide.**

91 *Seacoast Fortifications of San Francisco Bay*
92 *(draft)*— Under alternative 3, the park would
93 pursue an ongoing program of stabilization,
94 preservation, and interpretation of the
95 seacoast fortifications that contribute to the
96 NHL-eligible district. In cases where
97 conditions warrant, restoration would be
98 pursued as well, to provide for an immersive
99 visitor experience that will help visitors

1 understand the fortification’s history. A
 2 preservation strategy for the park’s seacoast
 3 fortifications would be prepared to guide the
 4 long-term treatment and management of
 5 these resources, given that each fortification
 6 is in a varying state of repair and provides
 7 different interpretive opportunities. As an
 8 example, restoration may be the preferred
 9 preservation treatment in some instances
 10 such as at Battery Townsley, Battery Mendell,
 11 and the Bird Rock Overlook area in the
 12 Marin Headlands would be rehabilitated and
 13 interpreted for visitor use. In addition to the
 14 stabilization and preservation of fortifications
 15 in Marin, those contributing historic seacoast
 16 fortifications on Milagra Ridge, Sweeney
 17 Ridge, and other locations in San Mateo
 18 County would be also be preserved and
 19 interpreted. Overall, these preservation
 20 treatments for the historic fortifications and
 21 their landscaped settings would have long-
 22 term, minor to moderate, beneficial, and
 23 long-term, minor, adverse impacts.

24
 25 *Golden Gate Bridge (Draft)*— Continued
 26 operation and maintenance of the Presidio by
 27 the park would have negligible impacts on the
 28 adjacent Golden Gate Bridge National
 29 Historic Landmark, which is owned and
 30 operated by the Golden Gate Bridge District.

31 **Marin County.**

33 *Forts Baker, Barry, and Cronkhite*— Historic
 34 buildings at Forts Barry and Cronkhite would
 35 be rehabilitated, interpreted, and adaptively
 36 used and the coastal fortifications would be
 37 preserved to showcase the history of the
 38 military’s presence here and the area’s
 39 conversion from military post to national
 40 park. Similar to the other action alternatives,
 41 historic buildings and landscapes would be
 42 rehabilitated and used for a variety of park
 43 programs and functions. Some structures
 44 may be restored to evoke a better
 45 understanding of specific periods of the
 46 military’s era. Similar to alternative 1, the
 47 following actions could affect the cultural
 48 landscape of the district: comprehensive sets
 49 of improvements to trails, overlooks, visitor
 50 amenities; the rehabilitation and introduction

51 of transit and orientation facilities; and
 52 natural resource enhancements. Some of
 53 these actions would enhance the historic
 54 setting while introducing compatible new
 55 elements into the landscape, while others
 56 would be noticeable changes that could
 57 potentially alter a character-defining feature
 58 of the landscape. Modifications to historic
 59 structures and landscape features would
 60 follow the *Secretary of the Interior’s*
 61 *Standards for the Treatment of Historic*
 62 *Properties* so as to minimize adverse impacts
 63 on the historic resources. With an emphasis
 64 on historic resource preservation, all of these
 65 actions would result in both long-term,
 66 negligible to minor, adverse impacts and
 67 long-term, minor to major, beneficial
 68 impacts.

69
 70 More noticeable actions that could affect
 71 historic structures, as well as the surrounding
 72 historic landscape, include the removal of
 73 some of the Capehart housing, which needs
 74 to be assessed for historic significance and
 75 integrity, accompanied by new replacement
 76 construction of park facilities on the south
 77 side of Bunker Road. This would result in a
 78 long-term, minor to moderate, adverse
 79 impact.

80
 81 Overall these modifications would be
 82 noticeable and would result in a visual change
 83 to the district and to the individual landscape
 84 areas within the district. Under alternative 3,
 85 with the incorporation of mitigation
 86 measures, including the preparation of
 87 cultural landscape reports, historic structures
 88 reports, and design guidelines to ensure
 89 compatible new construction as described in
 90 part 8 of this document. The long-term
 91 impact would be minor to moderate and both
 92 adverse and beneficial.

93
 94 *Point Bonita Historic District*— The treatment
 95 of this historic district would be the same as
 96 in alternative 1. Historic buildings and
 97 landscape features in the Point Bonita
 98 Historic District would continue to be
 99 preserved and interpreted, resulting in long-
 100 term, minor, beneficial, and long-term,
 101 minor, adverse impacts.

1 *Sara Seaver Randall House*— Would continue
2 to be managed by Point Reyes National
3 Seashore. No actions would be taken under
4 alternative 3 that would have an impact on
5 the site.

6
7 *Hill 640 Military Reservation*— Under this
8 alternative, the historic structures and
9 cultural landscape features associated with
10 the historic coastal defense fortifications at
11 the Hill 640 Military Reservation would be
12 preserved and interpreted. Compared to the
13 other action alternatives, the park would
14 perform more extensive preservation work to
15 allow for increased visitor access and
16 interpretation to this significant resource.
17 This would result in a long-term, negligible to
18 minor, beneficial, and long-term, negligible to
19 minor, adverse impact.

20
21 *Ranch M (Golden Gate Dairy)*— Under
22 alternative 3, this historic district would be
23 managed to retain its pastoral landscape and
24 historic structures. Buildings and landscape
25 features that contribute to the ranch's
26 national register eligibility would be
27 rehabilitated and adaptively used for
28 equestrian use and other recreational uses,
29 park operations, and local community
30 services. These improvements would result in
31 a long-term, minor to moderate, beneficial,
32 and long-term, minor, adverse impact.

33
34 *Ranch A/B (Miwok)*— Equestrian,
35 environmental education and stewardship
36 activities would continue in this area.
37 Historic buildings and landscape features
38 that contribute to the former ranch's national
39 register eligibility would be rehabilitated and
40 adaptively used for equestrian use. This
41 would result in a long-term, minor to
42 moderate, beneficial, and long-term, minor,
43 adverse impact. The park would establish a
44 visitor facility in the vicinity of the ranch to
45 provide visitor orientation and basic
46 amenities to support the recreational and
47 educational uses nearby. These types of site
48 changes (such as restrooms, improved
49 parking, and visitor orientation/information)
50 would have an indirect, local, long-term,

51 negligible to minor, adverse impact on the
52 district.

53
54 *Bolinas Copper Mine*— Would continue to be
55 managed by Point Reyes National Seashore.
56 No actions would be taken under alternative
57 3 that would have an impact on the site.

58
59 *Miwok Trail*— Cultural landscape resources
60 associated with the Miwok Trail would be
61 preserved and protected, which would have a
62 long-term, negligible, beneficial, and long-
63 term, minor, adverse impact.

64 **San Francisco County.**

65
66 *Alcatraz Island National Historic Landmark*—
67 Alternative 3 would immerse visitors
68 extensively in all of the island's historic
69 periods, utilizing as much as possible the
70 historic resources as tangible evidence of the
71 past. To accomplish this would require
72 extensive stabilization, rehabilitation, and
73 selective restoration work on the historic
74 structures, buildings, and landscape features.
75 This alternative would provide for most
76 historic buildings to be preserved in "good"
77 condition, and for the key landscape features,
78 including small-scale elements such as fences,
79 paths, and railings, to be preserved.

80
81 Specific actions would include the
82 restoration of portions of Building 64 to
83 interpret the post office, canteen, and a
84 prison-era guard apartment; and restoration
85 of the Guardhouse to better reveal the early
86 military prison period (including removal of
87 the boathouse addition). Other areas at
88 Building 64 and around the arrival area would
89 be rehabilitated for visitor services and
90 administrative uses, and could include dorm-
91 like overnight accommodations for program
92 participants. The Main Prison Building
93 (which includes the main cellblock, hospital
94 wing, administration wing, and basement
95 citadel) and adjacent areas would be
96 rehabilitated and portions restored to
97 provide visitors with greater opportunities to
98 explore the federal penitentiary's history.
99 The Post Exchange would be stabilized to
100 allow visitors opportunities to explore its

1 historic components. The lighthouse and
 2 surrounding area would be preserved with
 3 enhanced visitor access and interpretation.
 4 The Parade Ground would be rehabilitated to
 5 portray its historic periods and support year-
 6 round visitor exploration. Design for the
 7 Parade Ground's rehabilitation would
 8 incorporate measures to protect wildlife
 9 habitat. These actions would result in a long-
 10 term, moderate to major, beneficial, and
 11 long-term, minor, adverse impact.

12
 13 The New Industries Building would be
 14 rehabilitated as a multipurpose facility for
 15 uses such as interpretive programs, special
 16 events, classrooms, and meetings. The Model
 17 Industries Building and adjacent courtyard
 18 would be stabilized and closed to visitors and
 19 park uses to protect nearby sensitive habitat.
 20 The Quartermaster Warehouse would be
 21 rehabilitated for park operational functions,
 22 including a preservation stewardship
 23 workshop. The Power Plant would be
 24 stabilized and the adjacent yard preserved for
 25 park operational needs. Significant historic
 26 resources along the perimeter of the island
 27 would be stabilized and preserved. These
 28 actions would result in long-term, minor to
 29 moderate, beneficial, and long-term, minor,
 30 adverse impacts.

31
 32 Historic buildings and landscapes on Alcatraz
 33 Island could be adversely impacted over time
 34 from the effects of increased visitation to the
 35 island, especially with the provision of
 36 overnight visitor stays. This would result in a
 37 long-term, negligible to minor, adverse
 38 impact on historic structures and landscapes.
 39 However, the park would monitor the effects
 40 of increased visitation on historic resources
 41 and could modify visitor access and uses to
 42 further protect these resources and reduce
 43 this impact to negligible. In addition, the
 44 park's provision of regular patrols and visitor
 45 education programs about resource
 46 significance and protection (such as
 47 discouraging vandalism) would help to
 48 reduce these potential visitor impacts to no
 49 more than minor.

50

51 In conclusion, modifications to the
 52 contributing resources on Alcatraz Island
 53 would be noticeable and would result in
 54 long-term, minor to major, beneficial, and
 55 long-term, minor, adverse impacts. There
 56 could also be a long-term, negligible, adverse
 57 impact as a result of increased visitor access
 58 to sensitive resources.

59

60 *San Francisco Port of Embarkation National*
 61 *Historic Landmark*— Building 201 at Upper
 62 Fort Mason would be rehabilitated for
 63 ongoing use the park's headquarters and to
 64 incorporate a new museum to showcase the
 65 military history of Fort Mason and the 20th
 66 century San Francisco Port of Embarkation.
 67 Other actions would be similar to those of the
 68 no-action alternative in that the Fort Mason
 69 Foundation would continue to manage
 70 Lower Fort Mason and perform ongoing
 71 preservation and rehabilitation work on the
 72 contributing resources. The impacts on this
 73 landmark would be long-term, minor,
 74 beneficial, and long-term, minor, adverse.

75

76 *Aquatic Park Historic District National Historic*
 77 *Landmark*— Actions would be the same as in
 78 alternative 1 and could result in greater
 79 visitation along the waterfront access from
 80 Van Ness corridor and Fisherman's Wharf
 81 area to Pier 4 area, along with other potential
 82 site and circulation modifications to
 83 accommodate transit improvements in the
 84 area. New wayfinding and park orientation
 85 signs could have direct and indirect effects on
 86 the historic landscape of the district. Efforts
 87 would be made to minimize the effects on
 88 this historic landscape. A cultural landscape
 89 report would guide these changes. The
 90 potential impact would be long term, minor,
 91 adverse. This property is within and managed
 92 by San Francisco Maritime National
 93 Historical Park.

94

95 *Fort Mason Historic District*— Historic
 96 structures, buildings, and cultural landscape
 97 resources would be rehabilitated for
 98 interpretation of the installation's military
 99 and civilian history and for adaptive use.
 100 Compared with the no-action alternative,
 101 alternative 3 would result in a broader range

1 of visitor uses within the buildings, including
 2 expanded overnight accommodations and an
 3 orientation/visitor center. Fort Mason would
 4 serve as the primary visitor entrance to
 5 Golden Gate National Recreation Area in San
 6 Francisco. Actions that could affect the
 7 historic landscape include circulation and
 8 wayfinding changes to improve adjacent
 9 transit and ferry connections. Pier 4 would be
 10 rehabilitated for use by visitors and would
 11 include the installation of interpretive
 12 exhibits. Developing the pier for use as an
 13 embarkation point to Alcatraz Island would
 14 result in minor to moderate adverse impacts
 15 on the pier's historic fabric. Landscape
 16 improvements would be consistent with the
 17 "Cultural Landscape Report For Fort
 18 Mason." While some actions may adversely
 19 impact individual features, taken as a whole—
 20 with the incorporation of mitigation
 21 measures such as the provision for the
 22 preparation of historic structure reports and
 23 design guidelines—these actions would have
 24 a long-term, minor to moderate, beneficial,
 25 and long-term, minor, adverse impact on the
 26 historic district.

27
 28 *Fort Miley Military Reservation*— Historic
 29 buildings and landscape features associated
 30 with West Fort Miley would be preserved to
 31 showcase the area's military and maritime
 32 history. Similar to the no-action and other
 33 action alternatives, historic buildings at East
 34 Fort Miley would continue to be preserved
 35 for use by park maintenance and public safety
 36 operations. Significant character-defining
 37 features of the cultural landscape would be
 38 preserved while accommodating improved
 39 vehicle and trail access to East Fort Miley.
 40 These changes would be designed to be
 41 compatible with the historic setting. Overall,
 42 these actions would result in long-term,
 43 negligible to minor, beneficial, and long-term,
 44 minor, adverse impacts.

45
 46 *Pumping Station 2, San Francisco Fire
 47 Department Auxiliary Water Supply System*—
 48 The historic Alcatraz pier (Pier 4), may be
 49 rehabilitated for use by visitors, which could
 50 result in modifications to the adjacent
 51 circulation system and landscape setting, as

52 well as increased visitation along the
 53 immediate waterfront area. The historic
 54 building would not be directly impacted
 55 through these modifications, but these
 56 changes could result in a long-term,
 57 negligible to minor, adverse impact. This
 58 property is within Fort Mason, but is owned
 59 and operated by the City of San Francisco.

60
 61 *Camera Obscura*— Operations and
 62 maintenance under this alternative would
 63 result in minor beneficial and minor adverse
 64 impacts.

65
 66 *Six-inch Gun No. 9*— Operations and
 67 maintenance under this alternative would
 68 result in minor beneficial and minor adverse
 69 impacts.

70
 71 *San Francisco Veterans Affairs Medical
 72 Center*— Continued operation of Fort Miley
 73 as a park maintenance facility would have
 74 negligible impacts on the adjacent Veterans
 75 Medical Center Historic District, which is
 76 owned and managed by the Department of
 77 Veterans Affairs.

78
 79 *China Beach*— Same as alternative 1: some
 80 improvements to the existing array of visitor
 81 facilities and access would be made to
 82 support continued use of this popular site.
 83 Impacts would be long term, negligible,
 84 beneficial, and long term, minor, adverse.

85
 86 *Marine Exchange Lookout Station (Octagon
 87 House)*— The building and adjacent
 88 landscape would be rehabilitated and
 89 adaptively used to engage the public in the
 90 natural and human history of the coastal
 91 marine environment, which would have a
 92 long-term, moderate, beneficial, and long-
 93 term, minor, adverse impact.

94
 95 *O'Shaughnessy Seawall*— the historic seawall
 96 would be preserved and protected. Adjacent
 97 amenities such as the promenade, parking
 98 area, and restroom facilities that support
 99 visitor beach use of the area would be
 100 improved. This would have a long-term,
 101 negligible to minor, beneficial, and long-term,
 102 minor, adverse impacts.

1 *Sutro District*— Managed under an existing
 2 plan, no impacts on this property are
 3 anticipated from alternative 3. This district is
 4 managed by the park as a cultural resource
 5 but has been determined to not be eligible for
 6 the National Register of Historic Places in
 7 consultation with the California state historic
 8 preservation officer.

10 **San Mateo County.**

11 *San Francisco Bay Discovery Site National*
 12 *Historic Landmark*— Similar to alternative 1,
 13 under alternative 3 the site and its associated
 14 features would be preserved, enhanced, and
 15 interpreted. A hikers hut could be
 16 constructed in the vicinity, as part of a system
 17 of trail amenities for the Bay Area Ridge Trail.
 18 Any new construction and development
 19 would be sited and designed away from the
 20 actual site so as not to directly affect the
 21 historic integrity of this site. Limited
 22 vehicular access to the discovery site would
 23 be permitted as well. This could result in
 24 increased visitation to the site, which would
 25 be monitored over time for any changes to
 26 the historic setting, landscape, and
 27 monuments to ensure long-term
 28 preservation. Overall, these changes would
 29 result in a long-term, minor, adverse impact.

30
 31 *Point Montara Light Station*— Under
 32 alternative 3, the park would restore the
 33 historic structures and landscape features,
 34 remove nonhistoric structures, and develop
 35 new visitor programs. Overnight
 36 accommodations would continue and
 37 provide an immersive visitor experience into
 38 the historic life of lighthouse keepers. These
 39 changes would result in a long-term,
 40 moderate, beneficial, and long-term, minor,
 41 adverse impact.

42
 43 *Rancho Corral de Tierra*— Actions proposed
 44 under alternative 3 would be similar to those
 45 under alternative 1. If determined eligible for
 46 listing in the National Register of Historic
 47 Places, contributing historic structures and
 48 cultural landscape resources associated with
 49 the rural agricultural landscape at Rancho
 50 Corral de Tierra in San Mateo County would

51 be preserved in balance with natural resource
 52 restoration goals. New visitor amenities,
 53 including trailheads and trails, would be
 54 compatibly designed to blend in with the
 55 historic landscape. The preservation of these
 56 resources would have a long-term, minor,
 57 beneficial impact; however, the introduction
 58 of new elements and natural resource
 59 restoration activities could result in long-
 60 term, minor, adverse impacts.

61
 62 *Shelldance Nursery*— If determined eligible
 63 for listing in the National Register of Historic
 64 Places, transition from a commercial nursery
 65 to an area that provides a variety of visitor
 66 services and park operational needs would
 67 have a moderate, beneficial, and minor,
 68 adverse impact, if carried out according to
 69 the *Secretary of the Interior's Standards for*
 70 *Historic Preservation* and if removal of any
 71 structures that may be deemed historic is
 72 avoided.

73
 74 **Conclusion.** Under alternative 3, the park's
 75 management strategy for historic buildings,
 76 districts, and cultural landscapes would
 77 generally be one of preservation,
 78 rehabilitation for new and continued uses,
 79 and some restoration to enhance the overall
 80 historic immersion visitor experience goals of
 81 this alternative. In conjunction with the
 82 effects from the actions common to all
 83 alternatives, alternative 3 would result
 84 predominantly in long-term, negligible to
 85 moderate, beneficial impacts on historic
 86 structures, districts, and landscapes. In some
 87 instances, individual projects could result in
 88 local, long-term, negligible to minor, adverse
 89 effects due to the level or amount of
 90 intervention and proposed modifications to a
 91 structure or site. Adverse impacts would be
 92 minimized by implementing mitigation
 93 measures.

94
 95 With regard to Alcatraz Island National
 96 Historic Landmark, although some actions in
 97 alternative 3 could result in an adverse effect
 98 on some individual features, taken together
 99 the actions would not result in an adverse
 100 effect on the overall integrity of the national
 101 historic landmark. The impacts on historic

1 structures and the cultural landscape would
 2 be noticeable and would result in long-term,
 3 minor to major, beneficial impacts. There
 4 could be a long-term, negligible impact as a
 5 result of increased visitor access to sensitive
 6 resources. Taken together, all of these actions
 7 would not result in an adverse effect on the
 8 overall integrity of the national historic
 9 landmark.

10
 11 Under alternative 3, the section 106
 12 determination of effect on historic buildings,
 13 structures, districts and cultural landscapes in
 14 Golden Gate National Recreation Area,
 15 excluding Alcatraz Island National Historic
 16 Landmark, would be *adverse effect*. On
 17 Alcatraz Island, the section 106
 18 determination of effect on historic buildings,
 19 structures and cultural landscapes would be
 20 *adverse effect*.

23 Archeological Resources

24 *No-action Alternative*

25 **Analysis.** Currently, 7% of Golden Gate
 26 National Recreation Area has been surveyed
 27 for precontact and historic archeological
 28 resources. To date, approximately 263
 29 archeological sites have been inventoried, but
 30 the significance of those sites requires further
 31 study and evaluation. Furthermore,
 32 comprehensive consultations with American
 33 Indian tribes regarding archeological sites
 34 with ethnographic significance in the park
 35 will continue into the future. As a result of
 36 this need for additional survey work and
 37 consultation, archeological resources are
 38 subject to potential deterioration, lack of
 39 adequate protection in some cases, and
 40 possible loss of integrity from natural
 41 processes, ongoing agricultural and ranching
 42 operations, inadvertent visitor activity, and
 43 vandalism.

44
 45 The Muir Beach Archeological District and
 46 the Point Lobos Archeological Sites are
 47 currently subject to erosion and possible loss
 48 of integrity from natural processes and
 49 human activities such as inadvertent damage

50 and vandalism. Thus, this alternative could
 51 have a permanent, minor to moderate,
 52 adverse impact on these archeological
 53 resources. The *King Philip* and *Tennessee*
 54 shipwrecks and associated remains are
 55 currently subject to deterioration and loss of
 56 integrity from natural processes such as
 57 ocean surf and human activities such as
 58 vandalism; thus this alternative could have a
 59 permanent moderate adverse impact on these
 60 archeological resources.

61
 62 On Alcatraz Island, not much is known about
 63 any precontact and historic archeological
 64 resources. A comprehensive professional
 65 baseline archeological survey of the island
 66 and consultations with American Indian
 67 tribes regarding archeological sites with
 68 ethnographic significance will continue to be
 69 needed. Park staff suspect that Alcatraz
 70 Island has potential for buried precontact
 71 and historic deposits associated with military,
 72 prison, and maritime commercial themes. On
 73 Alcatraz Island, just as with the rest of
 74 Golden Gate National Recreation Area, there
 75 is need for additional survey work and
 76 consultation; without this, archeological
 77 resources are subject to potential
 78 deterioration, lack of adequate protection in
 79 some cases, and possible loss of integrity
 80 from natural processes and human activities.
 81 The lack of survey and knowledge and
 82 possible loss of integrity from natural
 83 processes and human activities, as previously
 84 described, could have a permanent, minor to
 85 moderate, adverse impact on archeological
 86 resources.

87
 88 Known precontact and historic archeological
 89 sites and districts would be treated as eligible
 90 for listing in the national register and would
 91 be protected, as would archeological
 92 components associated with already listed
 93 national register historic structures, districts,
 94 cultural landscapes, and national historic
 95 landmarks (see table 5). Additional site
 96 identification or evaluations would accrue
 97 slowly through project reviews, and by
 98 occasional strategic surveys and studies as
 99 funding allows. This alternative could have a

1 minor to moderate adverse impact on
2 cultural resources.
3
4 **Conclusion.** Little information is available
5 concerning precontact and historic
6 archeological resources in Golden Gate
7 National Recreation Area and on Alcatraz
8 Island. A comprehensive professional
9 archeological survey has been conducted for
10 only approximately 7% of the park's acreage.
11
12 Actions under this alternative could have a
13 permanent, minor to moderate, adverse
14 impact on archeological resources listed on
15 table 5, or associated with the Muir Beach
16 Archeological District and the Point Lobos
17 Archeological Sites, and could have
18 permanent, moderate, adverse impacts on the
19 *King Philip* and *Tennessee* shipwrecks and
20 associated remains.
21
22 Alcatraz Island has the potential for a wide
23 range of buried precontact and historic
24 deposits associated with its military, prison,
25 and maritime commercial themes. The park
26 staff continues to work in protecting and
27 preserving known archeological resources.
28 The lack of survey and knowledge and
29 possible loss of integrity from natural
30 processes and human activities, as previously
31 described, could result in a permanent, minor
32 to moderate, adverse impact on archeological
33 resources.
34
35 Based on the above analysis, under this
36 alternative the section 106 determination of
37 effect on archeological resources in Golden
38 Gate National Recreation Area and on
39 Alcatraz Island would be *adverse effect*.
40
41 **Alternative 1: Connecting People**
42 **with the Parks**

43 **Analysis.** Archeological sites continually
44 deteriorate, due primarily to the effects of
45 weather and gravity. Left alone, sites will
46 inevitably degrade over time. However,
47 impacts from human visitation and use
48 contribute to the effects of natural agents of
49 deterioration, and can substantially increase
50 the rate of site deterioration. Archeological

51 resources adjacent to or easily accessible
52 from visitor use areas or trails would
53 continue to be vulnerable to inadvertent
54 damage and vandalism. Inadvertent impacts
55 would include picking up or otherwise
56 displacing artifacts, compaction of cultural
57 deposits, and the creation of social trails
58 (which can lead to erosion and
59 destabilization of the original site
60 composition). Intentional vandalism includes
61 removing artifacts and probing or digging in
62 sites. Inadvertent damage or vandalism
63 would result in a loss of surface archeological
64 materials, alteration of artifact distribution,
65 and a reduction of contextual evidence.
66 Many such adverse impacts could be
67 mitigated through additional stabilization of
68 the site, the elimination of social trails to
69 disturbed or vulnerable sites, and/or
70 systematically collecting surface artifacts for
71 long-term curation. Continued ranger patrol
72 and emphasis on visitor education regarding
73 the significance and fragility of such
74 resources and how visitors can reduce their
75 impacts on archeological resources, would
76 discourage vandalism and inadvertent
77 impacts and minimize adverse impacts. The
78 actions under this alternative could result in
79 permanent adverse impacts of minor to
80 moderate intensity to archeological
81 resources.
82
83 Strategic archeological surveys would be
84 conducted of unsurveyed park areas based on
85 their intended visitor use, expected
86 construction, demolition, or ground
87 disturbance, and/or the sensitivity of the area
88 to the discovery of archeological sites based
89 on a predictive site model and land use
90 history. Identified sites would be evaluated
91 for their significance, and those determined
92 to be eligible for listing in the national register
93 would be avoided, protected, preserved,
94 and/or interpreted depending on expected
95 effects on them. Unavoidable impacts would
96 be mitigated in consultation, as appropriate,
97 with associated native tribes or descendants,
98 and/or the California state historic
99 preservation office. Impacts expected would
100 be permanent and of minor to moderate
101 intensity.

1 Park staff would continue to work to protect
2 archeological resources from unauthorized
3 removal or other destructive actions.
4 Modification or relocation of existing trails,
5 and construction, development, or
6 improvement of trails, roadways, turn-offs,
7 picnic and camping areas, overlooks,
8 buildings, parking areas, visitor amenities,
9 and interpretive facilities could affect the
10 integrity of some archeological resources, but
11 every effort would be undertaken to avoid
12 known or discovered archeological sites. If
13 such sites could not be avoided, mitigative
14 procedures would be undertaken in
15 consultation with the California state historic
16 preservation office. Any adverse impacts
17 would be permanent and of minor to
18 moderate intensity.

19
20 Additionally, it is estimated that a substantial
21 number of the park's archeological sites
22 could be lost as a result of rising sea levels
23 during the coming years. The National Park
24 Service recognizes that archeological
25 resources help connect visitors with the park
26 and its values. Precontact archeological sites
27 on park lands, which provide the last vestiges
28 of sites associated with indigenous peoples in
29 the region, were among the first sites in the
30 park listed in the National Register of
31 Historic Places. Mitigation is currently taking
32 place for historic archeological sites, but to a
33 lesser degree for precontact sites. Historic
34 archeological resources may be impacted
35 under this alternative, pursuant to
36 consultation and in compliance with
37 mitigation measures approved by the
38 California state historic preservation office,
39 whereas indigenous precontact sites under
40 this alternative would be preserved intact in
41 consultation with American Indian tribes and
42 organizations. Any adverse impacts would be
43 permanent and of minor to moderate
44 intensity.

45
46 Under this alternative, some sites and
47 districts like the Muir Beach Archeological
48 District would be in the natural management
49 or sensitive resource zones. Archeological
50 resources would be strategically surveyed,
51 evaluated, and would be provided

52 stabilization, security, or other protection
53 commensurate with their significance and
54 sensitivity, including data recovery in the face
55 of unimpeded natural processes; however,
56 they would generally not be incorporated as
57 visitor education opportunities in the park's
58 interpretive programs. Although a few
59 archeological resources in these zones could
60 be lost to data recovery (resulting in
61 permanent adverse impacts of moderate to
62 major intensity), these actions would
63 generally result in overall beneficial impacts
64 on archeological resources.

65
66 Under this alternative, the Point Lobos
67 Archeological Sites would be in the evolved
68 cultural landscape zone. Archeological
69 resources would be identified and stabilized
70 as part of cultural landscape enhancement,
71 and they would be used as visitor education
72 opportunities to interpret human occupation
73 of and interaction with the coastal
74 environment. Although some archeological
75 resources could be lost (resulting in
76 permanent adverse impacts of minor
77 intensity), these actions would generally
78 result in beneficial impacts on archeological
79 resources.

80
81 There are no proposed actions under this
82 alternative that would affect the *King Philip*
83 and *Tennessee* shipwreck sites and their
84 associated remains. Thus, the impacts of this
85 alternative on these sites would be the same
86 as those listed in the no-action alternative—
87 permanent, moderate, and adverse.

88
89 On Alcatraz Island, within the diverse
90 opportunities, evolved cultural landscape,
91 and historic immersion zones, the
92 archeological resources would be identified
93 and may be stabilized for incorporation into
94 visitor interpretive opportunities, thus
95 enhancing their protection through increased
96 awareness and understanding. In the natural
97 and sensitive management zones, which
98 generally cover the island's perimeter areas,
99 archeological resources would be identified,
100 evaluated, and provided stabilization,
101 security, or other protection commensurate
102 with their significance and sensitivity.

1 Implementing management actions that
 2 survey and treat archeological resources
 3 would have a beneficial impact. In areas that
 4 are managed for natural resources, there
 5 could be minor impacts due to erosion and
 6 other natural processes. Assessment would
 7 be conducted to determine to what extent
 8 historic archeological resources in offshore
 9 sensitive resource zones would need to be
 10 recovered to enhance specially managed
 11 natural resources. Any adverse impacts
 12 would be permanent and of minor to
 13 moderate intensity.

14
 15 **Conclusion.** Actions under this alternative
 16 could result in long-term, beneficial impacts
 17 on the archeological resources in the Muir
 18 Beach Archeological District and the Point
 19 Lobos Archeological Sites and on Alcatraz
 20 Island. Permanent moderate, adverse impacts
 21 would continue to the *King Philip* and
 22 *Tennessee* shipwrecks and associated remains.

23
 24 Under this alternative, the section 106
 25 determination of effect on archeological
 26 resources in Golden Gate National
 27 Recreation Area and on Alcatraz Island
 28 would be *no adverse effect*. Impacts on the
 29 *King Philip* and *Tennessee* shipwrecks and
 30 associated remains are the same as those
 31 under the no-action alternative. Therefore,
 32 the section 106 determination of effects on
 33 these two archeological sites would be
 34 *adverse effect*.

35 36 **Alternative 2: Preserving and** 37 **Enjoying Coastal Ecosystems**

38 **Analysis.** Actions under this alternative
 39 would result in impacts on archeological
 40 resources similar to those listed under
 41 alternative 1. Park staff would continue to
 42 work to protect archeological resources from
 43 unauthorized removal or other destructive
 44 actions. Coastal ecosystem restoration and
 45 rehabilitation of pastoral and rural
 46 landscapes could impact the integrity of some
 47 archeological resources. Accordingly, this
 48 alternative would require a detailed
 49 archeological resource stabilization and
 50 recovery plan to preserve the integrity of the

51 park's archeological resources. As part of all
 52 earth-disturbing activities, every effort would
 53 be undertaken to avoid known or discovered
 54 archeological sites. If such sites could not be
 55 avoided, mitigative procedures would be
 56 undertaken in consultation with the
 57 California state historic preservation office.
 58 Additionally, precontact archeological sites,
 59 which represent the last vestiges of remnant
 60 sites associated with indigenous peoples in
 61 the region, would be preserved intact in
 62 consultation with American Indian tribes and
 63 organizations. Any adverse impacts would be
 64 permanent and of minor to moderate
 65 intensity.

66
 67 Archeological resources, including the Muir
 68 Beach Archeological District and the Point
 69 Lobos Archeological Sites in the natural and
 70 sensitive resources management zones, which
 71 cover much of the park land in this
 72 alternative, would be identified, evaluated,
 73 and provided stabilization, security, or other
 74 protection commensurate with their
 75 significance and sensitivity. However, they
 76 would generally not be incorporated as
 77 visitor education opportunities in the park's
 78 interpretive programs. Archeological
 79 resources in the evolved cultural landscape
 80 and historic immersion zones would be
 81 identified and stabilized, as part of cultural
 82 landscape enhancement and used as visitor
 83 education opportunities to interpret human
 84 occupation of and interaction with the
 85 coastal environment. Although some
 86 archeological resources could be lost
 87 (resulting in permanent adverse impacts of
 88 minor intensity), these actions would
 89 generally result in beneficial impacts on
 90 archeological resources.

91
 92 There are no proposed actions under this
 93 alternative that would affect the *King Philip*
 94 and *Tennessee* shipwreck sites and their
 95 associated remains. Thus, the impacts of this
 96 alternative on these sites would be the same
 97 as those listed in the no-action alternative—
 98 permanent, moderate, and adverse.
 99 In addition to the actions identified in the
 100 above analysis, managing archeological
 101 resources on Alcatraz would require a

1 detailed archeological resource stabilization
 2 and recovery plan. As part of all earth-
 3 disturbing activities, every effort would be
 4 undertaken to avoid known or discovered
 5 archeological sites. In the evolved cultural
 6 landscape and historic immersion
 7 management zones, which form the central
 8 historical core of the island in this alternative,
 9 archeological resources would be identified
 10 and stabilized as part of cultural landscape
 11 enhancement and visitor interpretive
 12 opportunities. In the natural and sensitive
 13 resources management zones, which cover
 14 much of the rest of the island in this
 15 alternative, archeological resources would be
 16 identified, stabilized, or provided protection
 17 commensurate with their significance and
 18 sensitivity. Although some archeological
 19 resources could be lost (resulting in
 20 permanent adverse impacts of minor
 21 intensity), these actions would generally
 22 result in beneficial impacts on archeological
 23 resources on Alcatraz Island.

24
 25 **Conclusion.** Although actions under this
 26 alternative could result in permanent adverse
 27 impacts of indeterminate intensity to some
 28 archeological resources, including the *King*
 29 *Philip* and *Tennessee* shipwreck sites and their
 30 associated remains, this alternative would
 31 generally have beneficial impacts on
 32 archeological resources in the park, including
 33 the Muir Beach Archeological District, the
 34 Point Lobos Archeological Sites, and on
 35 Alcatraz Island.

36
 37 Under this alternative, the section 106
 38 determination of effect on archeological
 39 resources in Golden Gate National
 40 Recreation Area and on Alcatraz Island
 41 would be *no adverse effect*. Impacts on the
 42 *King Philip* and *Tennessee* shipwrecks and
 43 associated remains are the same as those
 44 under the no-action alternative. Therefore,
 45 the section 106 determination of effects on
 46 these two archeological sites would be
 47 *adverse effect*.

48

49 **Alternative 3: Focusing on National**
 50 **Treasures (NPS Preferred Alternative**
 51 **for Alcatraz Island)**

52 **Analysis.** Park staff would continue to work
 53 to protect archeological resources from
 54 unauthorized removal or other destructive
 55 actions. Generally, archeological resources
 56 under this alternative would be (1) identified,
 57 evaluated and then stabilized for
 58 interpretation purposes or as part of cultural
 59 landscape enhancement, or (2) incorporated
 60 into historic immersion opportunities and
 61 stabilized and protected to allow public
 62 understanding without the threat of damage,
 63 removal, or vandalism. Although
 64 modification or development of facilities, and
 65 the rehabilitation or restoration of resources
 66 to immerse visitors in the compelling history
 67 and stories of the park's cultural sites could
 68 affect the integrity of some archeological
 69 resources, every effort would be undertaken
 70 to avoid disturbance of known or discovered
 71 archeological sites. If such sites could not be
 72 avoided, mitigative procedures would be
 73 undertaken in consultation with the
 74 California state historic preservation office.
 75 Although some archeological sites could be
 76 lost (resulting in permanent adverse impacts
 77 of minor intensity), actions under this
 78 alternative would generally have beneficial
 79 impacts on archeological resources.

80
 81 Archeological resources in the natural zone,
 82 including the Muir Beach Archeological
 83 District, would be identified, evaluated, and
 84 provided stabilization, security, or other
 85 protection commensurate with their
 86 significance and sensitivity, but would
 87 generally not be incorporated as visitor
 88 education opportunities in the park's
 89 interpretive programs. Archeological
 90 resources in the evolved cultural landscape
 91 zone, such as the Point Lobos Archeological
 92 Sites, would be identified and stabilized, as
 93 part of cultural landscape enhancement and
 94 used as visitor education opportunities to
 95 interpret human occupation of and
 96 interaction with the coastal environment.
 97 Although some archeological resources could

1 be lost (resulting in permanent adverse
2 impacts of minor intensity), these actions
3 would generally result in beneficial impacts
4 on archeological resources.

5
6 There are no proposed actions under this
7 alternative that would affect the *King Philip*
8 and *Tennessee* shipwreck sites and their
9 associated remains. Thus, the impacts of this
10 alternative on these sites would be the same
11 as those listed in the no-action alternative—
12 permanent, moderate, and adverse.

13
14 On Alcatraz Island, alternative 3 is designed
15 to enhance the contributing features of
16 Alcatraz Island National Historic Landmark.
17 The analysis, cataloging, and proactive
18 recovery of archeological resources on
19 Alcatraz Island would be given a high
20 priority. These activities would result in
21 enhancement of the island’s cultural resource
22 research and interpretive programs and
23 would contribute to its emerging/growing
24 park collections. Archeological resources in
25 the evolved cultural landscape and historic
26 immersion zones, which cover the majority of
27 the island in this alternative, would be
28 identified, protected, or stabilized. They then
29 would be incorporated into historic
30 immersion and visitor education interpretive
31 opportunities or become a part of cultural
32 landscape enhancement. Under this
33 alternative, the preservation and
34 interpretation of key archeological resources,
35 and access to such resources illustrating the
36 island’s precontact and historic periods and
37 themes, would be given high priority. As part
38 of all earth-disturbing activities, except for
39 the formal evaluation of archeological sites,
40 every effort would be undertaken to avoid
41 known or discovered archeological sites. If
42 such sites could not be avoided, mitigative
43 procedures would be undertaken in
44 consultation with the California state historic
45 preservation office. Although some
46 archeological sites could be lost (resulting in
47 permanent adverse impacts of minor
48 intensity), actions under this alternative
49 would generally have beneficial impacts on
50 archeological resources on Alcatraz Island.

51

52 **Conclusion.** Although actions under this
53 alternative could result in permanent adverse
54 impacts of moderate intensity to some
55 archeological resources, including the *King*
56 *Philip* and *Tennessee* shipwreck sites and their
57 associated remains, this alternative would
58 generally have beneficial impacts on
59 archeological resources in the park, including
60 the Muir Beach Archeological District, the
61 Point Lobos Archeological Sites, and on
62 Alcatraz Island.

63
64 Under this alternative, the section 106
65 determination of effect on archeological
66 resources in Golden Gate National
67 Recreation Area and on Alcatraz Island
68 would be *no adverse effect*. Impacts on the
69 *King Philip* and *Tennessee* shipwrecks and
70 associated remains are the same as those
71 under the no-action alternative. Therefore,
72 the section 106 determination of effects on
73 these two archeological sites would be
74 *adverse effect*.

75

76

77 **Ethnographic Resources / Traditional** 78 **Cultural Properties**

79 ***No-action Alternative***

80 **Analysis.** Currently, there are no identified
81 ethnographic resources or traditional cultural
82 properties within Golden Gate National
83 Recreation Area or on Alcatraz Island.
84 However, Alcatraz Island was occupied by
85 “Indians of All Tribes” from November 1969
86 to June 1971 as an internationally publicized
87 protest to focus attention on the plight of
88 American Indians and to assert the need for
89 Indian unity and solidarity for achieving self-
90 determination and securing political rights.
91 Thus, the occupation increased awareness of
92 the American Indian’s political, economic,
93 and social concerns and provided the
94 foundation for what would become a political
95 movement—the American Indian
96 Movement—to promote cultural pride and to
97 secure and protect Indian rights. The
98 occupation resulted in the nation’s increased
99 awareness of American Indian concerns and

1 issues and the establishment of D-Q
 2 University (a tribal community college that
 3 focuses on indigenous peoples) at Davis,
 4 California, and other institutions throughout
 5 the nation. Tangible evidence of the
 6 occupation on Alcatraz Island includes
 7 graffiti and physical alterations attributed to
 8 the American Indians' activities. Since the
 9 occupation, the island has become a symbolic
 10 focal point of American Indian pride and
 11 solidarity among relocated American Indians
 12 in the San Francisco Bay Area, as well as in
 13 the nation at large. Thus, the National Park
 14 Service, in recognition of the ethnographic
 15 significance of Alcatraz Island for American
 16 Indians and the island's potential for listing in
 17 the National Register of Historic Places as a
 18 traditional cultural property, is in
 19 consultation with American Indians
 20 regarding the identification, preservation,
 21 and interpretation of the island's
 22 ethnographic resources. This action would
 23 have a long-term, negligible to minor,
 24 beneficial impact to the resource.

25
 26 **Conclusion.** Currently, there are no
 27 identified ethnographic resources or
 28 traditional cultural properties in Golden Gate
 29 National Recreation Area and on Alcatraz
 30 Island. However, the National Park Service
 31 recognizes the ethnographic significance of
 32 Alcatraz Island for American Indians as a
 33 result of the island's occupation from 1969 to
 34 1971 and thus its potential for listing in the
 35 National Register of Historic Places as a
 36 traditional cultural property. This action
 37 would have a long-term, negligible to minor,
 38 beneficial impact to the resource.

39
 40 Under this alternative, the section 106
 41 determination of effect on ethnographic
 42 resources / traditional cultural properties for
 43 Golden Gate National Recreation Area and
 44 Alcatraz Island would be *no adverse effect*.

45

46 **Alternative 1: Connecting People**
 47 **with the Parks (NPS Preferred**
 48 **Alternative for Park Sites in Marin,**
 49 **San Francisco, and San Mateo**
 50 **Counties)**

51 **Analysis.** Although Alcatraz Island has
 52 ethnographic significance for American
 53 Indians, there are no identified or recognized
 54 potential ethnographic resources or
 55 traditional cultural properties in Golden Gate
 56 National Recreation Area. On Alcatraz
 57 Island, some archeological sites and features
 58 with ethnographic significance and some
 59 resources having associations with the
 60 occupation of 1969 to 1971 could be lost due
 61 to erosion or other natural processes such as
 62 weathering, under this alternative. This
 63 alternative's emphasis on connecting people
 64 with the park's resources and stories would
 65 build and expand upon the National Park
 66 Service's ongoing consultation efforts with
 67 American Indians for the identification,
 68 preservation, and interpretation of
 69 ethnographic resources on Alcatraz Island.
 70 This action would have a long-term,
 71 beneficial impact to the resource.

72
 73 **Conclusion.** Although Alcatraz Island has
 74 ethnographic significance for American
 75 Indians, there are no identified or recognized
 76 potential ethnographic resources or
 77 traditional cultural properties in Golden Gate
 78 National Recreation Area. Identification,
 79 preservation, and interpretation of
 80 ethnographic resources on Alcatraz Island
 81 would be enhanced as a result of expanding
 82 NPS consultations with American Indians.
 83 This action would have a long-term,
 84 beneficial impact to the resource.

85
 86 Under this alternative, the section 106
 87 determination of effect on ethnographic
 88 resources and traditional cultural properties
 89 in Golden Gate National Recreation Area
 90 and Alcatraz Island would be *no adverse*
 91 *effect*.

92

1 **Alternative 2: Preserving and**
2 **Enjoying Coastal Ecosystems**

3 **Analysis.** Although Alcatraz Island has
4 ethnographic significance for American
5 Indians, there are no identified or recognized
6 potential ethnographic resources or
7 traditional cultural properties in Golden Gate
8 National Recreation Area.

9
10 On Alcatraz Island, some archeological sites
11 and features with ethnographic significance
12 and some resources having associations with
13 the occupation of 1969–1971 could be lost
14 due to erosion or other natural processes. A
15 minimum amount of stabilization would be
16 afforded ethnographic resources so that the
17 island’s integrity as a potential traditional
18 cultural property would not be
19 compromised. Additionally, this alternative’s
20 emphasis on providing visitors with
21 opportunities to engage in Alcatraz Island’s
22 isolation, natural resources, and layers of
23 history via ecotourism, outdoor learning, and
24 natural and cultural resource stewardship
25 programming would build and expand upon
26 the National Park Service’s ongoing
27 consultation efforts with American Indians
28 for the identification, preservation, and
29 interpretation of ethnographic resources on
30 Alcatraz Island. This action would have a
31 long-term, beneficial impact to the resource.

32
33 **Conclusion.** Although Alcatraz Island has
34 ethnographic significance for American
35 Indians, there are no identified or recognized
36 potential ethnographic resources or
37 traditional cultural properties in Golden Gate
38 National Recreation Area. Ethnographic
39 significance and some resources having
40 associations with the occupation of 1969–
41 1971 could be lost due to erosion or other
42 natural processes such as weathering under
43 this alternative; a minimum amount of
44 stabilization would be afforded ethnographic
45 resources so that the island’s integrity as a
46 potential traditional cultural property would
47 not be compromised. This action would have
48 a long-term, beneficial impact to the
49 resource.

50

51 Under this alternative, the section 106
52 determination of effect on ethnographic
53 resources / traditional cultural properties in
54 Golden Gate National Recreation Area and
55 Alcatraz Island would be *no adverse effect*.

56
57 **Alternative 3: Focusing on National**
58 **Treasures (NPS Preferred Alternative**
59 **for Alcatraz Island)**

60 **Analysis.** Although Alcatraz Island has
61 ethnographic significance for American
62 Indians, there are no identified or recognized
63 potential ethnographic resources or
64 traditional cultural properties in Golden Gate
65 National Recreation Area.

66
67 Under this alternative, which is designed to
68 enhance the contributing features of Alcatraz
69 Island National Historic Landmark, analysis
70 and cataloging of ethnographic resources on
71 Alcatraz Island in consultation with
72 American Indian tribes and groups would be
73 given a high priority, thereby enhancing the
74 island’s cultural resource research and
75 interpretive programs and contributing to its
76 emerging and growing park collections. The
77 island’s potential for listing as a traditional
78 cultural property in the National Register of
79 Historic Places would also be evaluated and
80 studied in consultation with American Indian
81 tribes and groups. This action would have a
82 long-term, beneficial impact to the resource.

83
84 Ethnographic resources in the evolved
85 cultural landscape and historic immersion
86 zones, which cover the majority of the island
87 in this alternative, would be identified,
88 protected, and stabilized. Ethnographic
89 resources that are not archeological sites
90 could be rehabilitated or restored. They
91 would be incorporated into historic
92 immersion / visitor education interpretive
93 opportunities or become part of cultural
94 landscape enhancement. Under this
95 alternative, preservation and interpretation
96 of, as well as public access to, key
97 ethnographic resources illustrating the
98 island’s precontact and historic periods and
99 themes would be given high priority. This

1 action would have a long-term, beneficial
2 impact to the resource.

3
4 **Conclusion.** Although Alcatraz Island has
5 ethnographic significance for American
6 Indians, there are no identified or recognized
7 potential ethnographic resources or
8 traditional cultural properties in Golden Gate
9 National Recreation Area. On Alcatraz
10 Island, analysis and cataloging of
11 ethnographic resources and the evaluation of
12 the island's potential for listing in the
13 National Register of Historic Places as a
14 traditional cultural property in consultation
15 with American Indian tribes and groups
16 would be given higher priority than other
17 areas of Golden Gate National Recreation
18 Area. These actions would enhance the
19 island's cultural resource research and
20 interpretive programs and contribute to its
21 emerging and growing park collections. This
22 action would have a long-term, beneficial
23 impact to the resource.

24
25 Under this alternative, the section 106
26 determination of effect on ethnographic
27 resources / traditional cultural properties in
28 Golden Gate National Recreation Area and
29 Alcatraz Island would be *no adverse effect*.

32 **Park Collections**

33 ***No-action Alternative***

34 **Analysis.** According to NPS *Management*
35 *Policies 2006*, the National Park Service will
36 collect, protect, preserve, provide access to,
37 and use objects, specimens, and archival
38 collections to aid understanding among park
39 visitors, and to advance knowledge in the
40 humanities and sciences. Further, collections
41 management facilities need to accommodate
42 the special needs of park collections for long-
43 term preservation and protection by ensuring
44 that they are stored in energy efficient
45 buildings. Director's Order 24: *Park*
46 *Collections Management Guideline*
47 (September 2008) provides further guidance,
48 standards, and requirements for preserving,

49 protecting, documenting, and providing
50 access to and use of NPS collections.

51
52 Golden Gate National Recreation Area's
53 *2009 Collection Management Report*
54 documented 4,210,233 items in the park
55 collections; these include items from the
56 park's coastal defense fortifications and
57 military installations. Additionally, the park
58 collections include items from Alcatraz
59 Island, such as original FBI evidence from the
60 1962 Alcatraz escape, as well as original
61 uniforms, other accoutrements, and everyday
62 objects from the island.

63
64 The park collections are currently stored in
65 15 different facilities throughout the park
66 that function as visitor centers, interpretive
67 exhibits, or dedicated storage areas. Of the
68 four largest storage repositories, two are in
69 buildings owned by the Presidio Trust with
70 no lease agreements in place. This places the
71 park collections in a vulnerable position
72 because of potential eviction and
73 deteriorating structural conditions.

74
75 The no-action alternative would continue to
76 make incremental improvements on existing
77 facilities. Improvements would include
78 consolidating storage from other deficient
79 structures and installing more compact
80 shelving to increase the usable storage
81 footprint threefold. The National Park
82 Service would also formalize the use of
83 Building 667 through an agreement with the
84 Presidio Trust. Another option to be
85 explored under the no-action alternative is
86 storing oversized collections in a larger joint
87 storage facility that consolidates collections
88 from all national park sites in the San
89 Francisco Bay area. This proposal is outlined
90 in the *Bay Area Museum Resource Center Plan*
91 (2010).

92
93 These measures are intended to improve the
94 long-term preservation of park museum
95 collections; however, there are no formal
96 agreements for long-term use of facilities in
97 the Presidio (Buildings 002 and 667). An
98 unmet need under this alternative is public
99 space for exhibits and programs that engage

1 visitors in park collection stewardship and
2 preservation activities.

3

4 **Conclusion.** The conditions for park
5 collections would be improved to meet NPS
6 standards for long-term preservation,
7 protection, and use. Thus, continuation of
8 current management of park collections
9 would be expected to have short-term,
10 minor, beneficial impacts on the park
11 collection.

12

13 ***Alternative 1: Connecting People***
14 ***with the Parks (NPS Preferred***
15 ***Alternative for Park Sites in Marin,***
16 ***San Francisco, and San Mateo***
17 ***Counties)***

18 **Analysis.** In addition to the actions proposed
19 for the park collection described under the
20 “Actions Common to All Alternatives”
21 section, in which the collections are
22 consolidated into one or more facilities,
23 alternative 1 would allow for the
24 incorporation of artifacts into visitor
25 experience on a case-by-case basis at sites
26 that are managed for historic immersion. This
27 action would help visitors to better
28 understand the historic context of a
29 particular site and how park collections are
30 inextricably linked to the park’s historic
31 resources. Use of these artifacts would still
32 require respect for NPS standards for the
33 preservation and protection of park
34 collections. The public’s awareness of the
35 park collections would be increased and
36 could result in increasing donations and
37 support for “growing” and conserving the
38 collections, thus resulting in overall long-
39 term, beneficial impacts.

40

41 **Conclusion.** Incorporating the park
42 collections in ways that enhance visitor
43 experience and help expose the values of the
44 collection while still meeting NPS
45 preservation standards would have a long-
46 term, beneficial impact on the value of the
47 collections.

48

49 ***Alternative 2: Preserving and***
50 ***Enjoying Coastal Ecosystems***

51 **Analysis.** In addition to the actions proposed
52 for the park collections described under the
53 “Actions Common to All Alternatives”
54 section, in which the collections are
55 consolidated into one or more facilities, the
56 actions under alternative 2 would increase
57 the ecosystem management approach of the
58 alternative by generating more specimens for
59 the natural research collection. This action
60 would contribute to the monitoring and
61 studies associated with influence that climate
62 change could have on the park’s natural
63 resources. The result of improving the
64 natural resource portion of the park
65 collections could result in improved
66 understanding of park resources and to
67 increased access for researchers and
68 managers to a body of knowledge that is
69 necessary for future management decisions.
70 The actions under alternative 2 would have a
71 long-term, beneficial impact to the park
72 collections.

73

74 **Conclusion.** The increased emphasis of
75 collecting and preserving natural resource
76 specimens would have a long-term,
77 negligible, and beneficial impact to the park
78 collections.

79

80 ***Alternative 3: Focusing on National***
81 ***Treasures (NPS Preferred Alternative***
82 ***for Alcatraz Island)***

83 **Analysis.** In addition to the actions proposed
84 for the park collection described under the
85 “Actions Common to All Alternatives”
86 section in which the collections are
87 consolidated into one or more facilities, the
88 actions under alternative 3 would include
89 treatments of historic buildings and cultural
90 landscape resources that range from
91 upgrades to exhibits and furnishings to more
92 complete restoration. The goal of these
93 actions would be increasing access to and
94 interpretation of some of the park’s most
95 significant resources. A larger number of
96 artifacts and archival items would be

1 prominently displayed for visitor education
2 and interpretation under this alternative, thus
3 enhancing visitor experience, resulting in a
4 beneficial impact. The public's awareness of
5 the park collections would be increased and
6 could result in increasing donations and
7 support for "growing" and conserving the
8 collections, thus resulting in overall long-
9 term, beneficial effects.

10
11 **Conclusion.** Incorporating the park
12 collections in ways that enhance visitor
13 experience and help expose the values of the
14 collection while still meeting NPS
15 preservation standards would have a long-
16 term, beneficial impact on the value of the
17 collections.

18 19 20 **Visitor Use and Experience**

21 ***No-action Alternative***

22 **Analysis.** In the no-action alternative,
23 visitors would continue to access a diversity
24 of recreational opportunities in a wide range
25 of settings throughout Golden Gate National
26 Recreation Area. The park's extensive system
27 of hiking, bicycling, and equestrian trails
28 would be available for visitors and residents.
29 Overnight camping and lodging
30 opportunities would continue. Beach
31 recreation, along with wildlife viewing and
32 scenic touring, would also be important
33 components of the visitor experience.
34 Continuing these visitor opportunities
35 provide for a long-term, moderate, beneficial
36 impact to visitor experience.

37
38 During scoping and in recent visitor surveys,
39 most respondents acknowledged their
40 enjoyment of the park's visitor opportunities
41 and suggested that the variety of activities
42 should be maintained. Some people noted
43 concerns about any further regulation or
44 reduction of recreation opportunities,
45 particularly for mountain bikers, equestrians,
46 and dog owners. There was also interest in
47 additional recreation opportunities,
48 particularly more and different trail
49 connections. There were some concerns

50 expressed about conflicts between recreation
51 activities that share facilities and areas. The
52 park staff would continue to work to improve
53 on user conflict situations and conditions
54 that currently contribute to long-term, minor,
55 adverse impacts within the park. The park
56 staff would also continue to complete trail
57 improvements identified in the Trails Forever
58 program, focusing on the California Coastal
59 Trail and its connectors between Muir Beach
60 and Mori Point.

61
62 A variety of educational and interpretive
63 programs would continue to be offered by
64 the National Park Service and its partners
65 throughout the park. Continuing the current
66 opportunities would have a long-term, minor,
67 beneficial impact. Some of the public has
68 expressed interest in having more
69 interpretive and educational opportunities,
70 including more onsite interpretive materials
71 and programs. In addition, a need has been
72 expressed for increasing outreach to diverse
73 audiences. Access to the park collections and
74 the integration of the collection into
75 interpretive and educational programming
76 and facilities have been identified as needs.
77 This alternative would not provide these
78 opportunities, resulting in a long-term,
79 minor, adverse impact.

80
81 Visitor access to the various park sites would
82 continue via multiple modes of auto, transit,
83 bicycle, and pedestrian access. Some park
84 sites are challenging to reach, given limited
85 transit options and parking infrastructure,
86 congested roadways, and conflicts between
87 autos and bicyclists or pedestrians. There has
88 been a substantial amount of feedback from
89 the public regarding a desire to explore the
90 expansion and enhancements of alternative
91 modes of access to and between park sites to
92 provide easier access, reduced traffic
93 congestion, and orientation opportunities. In
94 addition, the need for more signs, maps, and
95 orientation information to help visitors
96 explore the park has been mentioned.
97 Visitors have access to most of the sites
98 within Golden Gate National Recreation
99 Area. There are some areas that have
100 restricted access to protect sensitive

1 resources or visitor safety. In addition, some
2 areas are restricted for certain types of
3 activities. The San Mateo County park lands
4 have minimal facilities and services to
5 support visitation, but access is permitted.
6 Overall, continuing the current conditions
7 regarding access would result in long-term,
8 minor to moderate, adverse impacts on
9 visitor experience.

10
11 Finally, there are locations within the park
12 where visitor safety is an issue. Use conflicts
13 between multiple modes of transportation
14 are a concern in certain areas. Use conflicts
15 between types of recreation activities can also
16 occur and cause both real and perceived
17 safety problems such as conflicts between
18 bicyclists and equestrians. In addition, the
19 park faces safety concerns that are typical of
20 being in close proximity to a large urban area.
21 The actions previously described would have
22 a long-term, minor to moderate adverse
23 impacts on visitor experience.

24
25 On Alcatraz Island, the primary visitor
26 activities of visiting the cell house and
27 enjoying the sights and sounds of the island
28 in the middle of the bay would continue in
29 this alternative; a long-term, moderate,
30 beneficial impact. The existing interpretive
31 programs would also continue to focus
32 primarily on the military history and federal
33 prison-era stories. In addition, visitors would
34 have opportunities for self-guided
35 exploration on only a small portion of the
36 island.

37
38 During scoping for the plan, there were some
39 mentions of additional recreation
40 opportunities that were desired including
41 more trail access around the island, more
42 access to a larger number of structures, and
43 overnight opportunities. Further, some
44 visitors have expressed interest in more
45 diverse interpretive programs. Visitors are
46 provided limited opportunities to explore the
47 historic military fortification and citadel that
48 are under the federal prison. The lack of
49 some of these desired improvements would
50 be a long-term, minor to moderate, adverse

51 impact on those visitors seeking these
52 opportunities.

53
54 Alcatraz continues to provide outstanding
55 opportunities for understanding the stories
56 and structures associated with the federal
57 penitentiary period of the island. The audio
58 tour is popular with visitors and gives them
59 an excellent understanding of life on “the
60 Rock.” The audio tour has also provided a
61 means to better distribute the flow of visitors
62 and reduce noise associated with large groups
63 visiting the cell house. The National Park
64 Service and its partners have also managed
65 the levels of use visiting the island to help
66 control issues associated with crowding and
67 conflicts resulting in a long-term, moderate,
68 beneficial impact. There are isolated
69 occasions and certain locations where
70 crowding and use conflicts do occur resulting
71 in long-term, minor, adverse impacts. In
72 particular, certain locations along the walk to
73 the cell house can sometimes become
74 crowded, and there are occasional conflicts
75 between the visitor tram and pedestrians
76 during high-use days.

77
78 Alcatraz Island also supports one of the
79 largest concentrations of nesting waterbirds
80 in San Francisco Bay. Visitors have some
81 opportunities to learn about and observe the
82 colonies as part of their visit to the island; a
83 long-term, minor, beneficial impact for
84 visitors interested in understanding the
85 important role the island plays in the
86 ecological system of the bay. However, many
87 areas of the island are currently closed during
88 breeding season to protect the colonies from
89 human disturbance. This results in long-term,
90 minor, adverse impacts on visitors who may
91 want to explore these areas. In addition, the
92 sights and smells associated with large
93 numbers of birds during the nesting season
94 has resulted in some minor, adverse impacts
95 on visitor experience.

96
97 Visitors have access to the island via the NPS
98 concession-run ferry. The ferry ride to the
99 island is one of the highlights of the visitor
100 experience given the views of the island and
101 the city, along with the orientation and

1 interpretive information provided; a long-
 2 term, minor, beneficial impact. There are
 3 times when tickets are sold out to the island
 4 and some visitors are unable to take a trip to
 5 the island at their desired date and time
 6 resulting in a long-term, moderate, adverse
 7 impact on visitor experience. During scoping
 8 for this plan, some members of the public
 9 expressed interest in having alternative access
 10 opportunities to the island by motorized and
 11 nonmotorized boats. This alternative would
 12 not explore additional access opportunities
 13 causing a long-term, minor, adverse, impact.

14
 15 Visitor safety at Alcatraz Island is generally
 16 good in the no-action alternative, although
 17 there are some safety issues associated with
 18 the deteriorating condition of historic
 19 structures—a long-term, minor, adverse
 20 impact.

21
 22 **Conclusion.** The no-action alternative for
 23 Golden Gate National Recreation Area
 24 would result in long-term, minor to
 25 moderate, beneficial impacts from continued
 26 opportunities to access high-quality
 27 resource-dependent visitor opportunities
 28 and experience the natural, historic, and
 29 scenic qualities of the park. Visitors would
 30 have extensive trail, beach, and educational
 31 opportunities, which are some of the most
 32 valued activities in the park. However, minor
 33 to moderate adverse impacts on visitor
 34 experience from traffic congestion, use
 35 conflicts, limited facilities in San Mateo
 36 County, and restricted access to a few desired
 37 locations would continue.

38
 39 The no-action alternative for Alcatraz Island
 40 would result in long-term, minor to
 41 moderate, beneficial impacts from continued
 42 opportunities to access the cell house and the
 43 immediate surrounding landscape. In
 44 addition, high-quality interpretive and
 45 educational programs and materials would
 46 continue to be provided. However, minor to
 47 moderate adverse impacts on visitor
 48 experience from conflicts with birds, limited
 49 access to areas and structures on the island,
 50 and some visitor crowding would continue.

51 **Alternative 1: Connecting People**
 52 **with the Parks (NPS Preferred**
 53 **Alternative for Park Sites in Marin,**
 54 **San Francisco, and San Mateo**
 55 **Counties)**

56 **Analysis.** The emphasis of alternative 1 for
 57 Golden Gate National Recreation Area is
 58 connecting people with the parks. This
 59 alternative would increase the diversity of
 60 recreational opportunities offered
 61 throughout the park and encourage wider
 62 participation by the local and regional
 63 population, including those that are not
 64 traditional park visitors. The establishment of
 65 recreation “portals,” or locations from which
 66 multiple activities may be staged and
 67 initiated, is a primary component of this
 68 alternative. These portals would be in
 69 Tennessee Valley, Marin Headlands, Upper
 70 Fort Mason, and Rancho Corral de Tierra.
 71 The portals would include trailheads and
 72 other visitor facilities to better support access
 73 to a diversity of recreation opportunities, and
 74 help connect visitors with the information
 75 and support services they need to plan and
 76 enjoy their visit to the park. These efforts to
 77 welcome and orient the park visitor would
 78 have a long-term, moderate, beneficial impact
 79 on the visitor use and experience at the park.

80
 81 Rehabilitation, expansion, and upgrades to
 82 existing facilities, including trails, trailheads,
 83 campsites, picnic areas, and parking would
 84 better support visitor activities throughout
 85 the park, including community based park
 86 stewardship programs. In particular,
 87 enhancements to park trails would be
 88 beneficial because the trails are one of the
 89 most important aspects of visitor
 90 opportunities, and these improvements were
 91 highly sought after by the public. New
 92 facilities are also proposed in key park
 93 locations in this alternative including
 94 warming huts; a variety of overnight
 95 accommodations, from camping to rustic
 96 cabins; stewardship centers; picnic facilities;
 97 and trails. Establishing these facilities would
 98 result in a long-term, moderate, beneficial
 99 effect on visitor opportunities and the

1 facilitation of visitor activities throughout the
2 park lands.

3
4 Under alternative 1, existing recreation
5 activities would continue and be better
6 supported through the facilities and access
7 improvements already mentioned. Some
8 activities would be expanded in this
9 alternative, including educational and
10 stewardship opportunities, and public
11 equestrian programs and trailhead facilities.
12 Equestrian facilities would be retained and
13 improved at Rancho Corral de Tierra to
14 expand public access and related benefits.
15 These activities would allow the park staff to
16 engage a wider audience and better
17 demonstrate the unique and interesting
18 resources found throughout the park.
19 Further, scenic viewing throughout the park
20 would be enhanced at key points through the
21 addition of overlooks, landscape and facility
22 restoration, and improvements for non-
23 automobile access to park sites. These actions
24 would result in long-term, moderate,
25 beneficial, impacts.

26
27 Stewardship and volunteer activities would
28 be enhanced in this alternative, resulting in a
29 long-term, moderate, beneficial impact. New
30 stewardship and educational facilities are
31 proposed at several park locations. Efforts for
32 programming and educational materials by
33 park staff and partners would be purposively
34 aimed at engaging a wider audience, as well as
35 enhancing individual understanding of park
36 resources and values.

37
38 Public access to park sites, including parking
39 improvements, public transportation
40 connections, and multimodal access would
41 be enhanced as a result of the alternative,
42 resulting in long-term, moderate, beneficial
43 impacts. Improved public transportation
44 opportunities would help connect a larger
45 audience to park sites, offer better
46 connections between sites, and reduce use
47 conflicts. Further, some of the improvements
48 would allow for easier access to busy sites,
49 reducing visitor frustration and improving
50 the quality of park visits.

51

52 Visitor safety would benefit by several actions
53 in this alternative resulting in long-term,
54 moderate, beneficial impacts. Implementing
55 roadside improvements to State Route 1 and
56 Panoramic Highway would benefit visitors
57 with better wayfinding, overlooks for safe
58 scenic viewing, and more separation between
59 auto and bicycle use. Other safety
60 improvements could include enhancements
61 to multimodal transportation options to ease
62 use conflicts and road congestion during
63 peak times. Finally, increased ranger
64 presence throughout the park lands,
65 particularly in San Mateo County, would
66 improve response capabilities for park staff.
67 However, the addition of new multiuse trails
68 may cause a small amount of increased
69 conflicts among visitors.

70

71 Restrictions on public access in sensitive
72 resource zones would result in some long-
73 term, minor, adverse impacts on visitor
74 access and opportunities for recreation, but
75 effective educational programming and
76 information associated with these areas could
77 also improve visitor understanding of these
78 highly sensitive and exceptional resources.

79

80 On Alcatraz Island, alternative 1 would offer
81 a wider variety of settings, experiences, and
82 activities for visitors to enjoy. Stewardship
83 activities would be a focus of this alternative
84 to increase visitor understanding and
85 appreciation of the unique and diverse
86 natural and cultural resources on the island.
87 In addition to telling the stories of the
88 infamous prison history, the National Park
89 Service would offer visitors opportunities to
90 understand other historic periods and the
91 island's natural history, as well as to enjoy a
92 diversity of scenic and recreational
93 experiences on the island, including special
94 events. Increased preservation,
95 interpretation, and reuse of historic buildings
96 would expand the range of activities for
97 visitors and allow them to better understand
98 the lives of people who lived and worked in
99 those buildings, resulting in long-term,
100 moderate, beneficial impacts.

101

1 Further, this alternative could increase visitor
2 amenities at key locations including food
3 service at Building 64. This alternative also
4 includes additional strategies in core visitor
5 use areas, such as removal of the ruins on the
6 parade grounds to minimize the conflict
7 between visitors and birds, thereby increasing
8 access and improving the experience in these
9 areas. This wider range of activities, settings,
10 and services would likely appeal to a wider
11 audience of participants and would also likely
12 encourage an increase in repeat visitation.
13 Further, this alternative would allow for a
14 greater dispersion of visitors throughout the
15 island, helping to minimize crowding at key
16 sites like the cell house. These actions would
17 have a long-term, moderate, beneficial impact
18 on visitor experience.

19
20 Visitor safety would benefit through the
21 preservation of the buildings as well as
22 through increased bird management,
23 resulting in long-term, minor, beneficial
24 impacts. While reduced crowding could
25 increase safety in some areas, allowing
26 visitors to explore more of the island's rugged
27 and natural settings could bring about more
28 incidents.

29
30 **Conclusion.** The actions proposed in
31 alternative 1 for Golden Gate National
32 Recreation Area would result in long-term,
33 moderate, beneficial impacts on visitor
34 experience. The diversity of recreational
35 opportunities provided, the new and
36 enhanced visitor support facilities, and the
37 purposeful effort to engage a more diverse
38 audience would have a positive and
39 important impact on visitor experience in the
40 park. Further, the emphasis on improved
41 access, particularly transportation
42 connections, would be a beneficial impact on
43 visitor experience by reducing traffic
44 congestion and use conflicts.

45
46 Alternative 1 would result in long-term,
47 moderate, beneficial impacts on visitor
48 experience on Alcatraz Island. The
49 enhancements to the park setting through
50 increased preservation of the structures; the
51 increased access to the island's various layers

52 of historic resources and natural settings; and
53 the purposeful effort to increase
54 programming options and connect with a
55 more diverse audience would help create this
56 long-term, moderate, beneficial impact. The
57 number of visitors who could be
58 accommodated on the island may also be
59 slightly increased upon implementation of
60 this alternative given the increased number of
61 opportunities and the ability to better
62 disperse visitors, resulting in a long-term,
63 minor, beneficial impact.

64 65 **Alternative 2: Preserving and** 66 **Enjoying Coastal Ecosystems**

67 **Analysis.** Alternative 2 proposes a visitor
68 experience that is focused on forging
69 individual connections with the park's
70 natural and cultural resources through more
71 natural and challenging visitor opportunities
72 and enhanced stewardship activities. Visitors
73 would still have a diversity of recreation
74 activities available to them, but there would
75 be an emphasis on encouraging more self-
76 reliant and more natural and wild
77 experiences throughout much of the park
78 lands. For those visitors who enjoy solitude,
79 natural quiet, and some challenge during
80 their visit to the park, this alternative would
81 generally result in long-term, minor, and
82 beneficial impacts. In addition, those visitors
83 who enjoy connecting to park lands via
84 stewardship and educational programs would
85 also benefit from this alternative. However,
86 for those visitors who prefer a wider range of
87 activities and more support services to
88 facilitate their visit, this alternative would
89 have some long-term, minor, adverse
90 impacts.

91
92 Some visitor facility improvements are
93 proposed in this alternative for key locations
94 throughout all three counties. These facilities
95 would improve access to select sites, better
96 connect sites within the park, and facilitate
97 stewardship and education opportunities,
98 resulting in long-term, moderate, beneficial
99 impacts. For example, upper Fort Mason
100 would serve as the primary portal for
101 stewardship and participatory science

1 activities with access to programs throughout
2 the park, allowing these opportunities to be
3 better marketed, coordinated, and facilitated.
4 Alternative 2 also proposes the removal of
5 some facilities. Equestrian facilities at Rancho
6 Corral de Tierra would be removed or
7 relocated farther from coastal streams to
8 allow enhancement or restoration of the
9 stream areas. While removal of facilities
10 could have an adverse impact on the
11 experience for some visitors who have relied
12 on those facilities, it could also be beneficial
13 to others who want to immerse themselves in
14 a more natural environment and participate
15 in opportunities that are more challenging.

16
17 Most of the park's current visitor activities
18 would be maintained; however, there may be
19 more regulations and restrictions on access to
20 better protect resources in this alternative.
21 Further, visitor opportunities may be
22 relocated or concentrated to reduce the
23 "footprint" on park lands and create a more
24 sustainable system of recreation facilities.
25 Alternative 2 also recognizes several sensitive
26 resource areas, and accordingly requires
27 limitations on visitor access to those areas.
28 These restrictions and regulations could have
29 a long-term, minor to moderate, adverse
30 impact on some visitors in terms of visitor
31 opportunities, with the greatest effect on
32 local visitors who frequent these areas on a
33 regular basis. Some of the areas with more
34 substantial changes in visitor access and
35 regulations include Slide Ranch, Fort
36 Funston, Rancho Corral de Tierra, and the
37 southern portion of Ocean Beach.

38
39 Visitor activities associated with immersion
40 in and exploration of natural and cultural
41 landscapes would be enhanced in this
42 alternative, with plentiful opportunities for
43 those who seek solitude, quiet, and
44 contemplation. Trail connectivity and related
45 improvements would allow a more diverse
46 visitor population to enjoy trail experiences
47 with less conflict and more focus on enjoying
48 the setting. Scenic viewing would be
49 enhanced in this alternative through the
50 removal of some facilities and the addition of
51 new overlooks. Maintaining low levels of

52 development, removing some facilities, and
53 restoring landscapes would provide what
54 many members of the public identified as one
55 of the most highly desired functions of the
56 park: to act as a green retreat from the urban
57 environment of San Francisco. These actions
58 would have a long-term, minor to moderate,
59 beneficial impact for visitors seeking these
60 types of settings and opportunities.

61
62 Park staff and park partners would work
63 toward more diverse, frequent, and better
64 coordinated natural and cultural resource
65 stewardship and restoration activities in this
66 alternative. Stewardship programs would
67 allow local residents to better understand and
68 appreciate the natural settings within the
69 park and deepen participants' commitment
70 to long-term protection of its resources.
71 Further, this alternative would include
72 additional programming and interpretation
73 regarding the park's natural and cultural
74 resources and related stories. These learning
75 opportunities would be enhanced through
76 the extensive trail system that would further
77 highlight the park's diverse ecosystems and
78 rich cultural history, resulting in long-term,
79 moderate, beneficial impacts.

80
81 Access to some areas would become more
82 difficult by personal vehicle and may
83 generally be more regulated; however,
84 associated public transportation services and
85 nonvehicular access options would be
86 improved. Improved public transportation
87 opportunities would help connect a larger
88 audience to park sites, better connect visits
89 between sites, and reduce use conflicts.
90 Further, some of the improvements would
91 allow for easier access to busy sites, reducing
92 visitor frustration and improving the quality
93 of park visits. These actions contribute to a
94 long-term, moderate, beneficial impact. In
95 alternative 2, if a slide impacts State Route 1
96 near Slide Ranch in Marin County, the
97 National Park Service could encourage
98 Caltrans to stabilize and abandon this section
99 of road. This action could inconvenience
100 local residents and park visitors traveling
101 along this route and would result in a long-
102 term, moderate, adverse impact.

1 Visitor safety would increase due to several
2 actions in this alternative, resulting in long-
3 term, moderate beneficial impacts. If
4 successful in promoting access improvements
5 to park lands in the State Route 1 and
6 Panoramic Highway area, visitors would
7 benefit from better wayfinding, safer
8 overlooks for scenic viewing, and better
9 separation between auto and bicycle use.
10 Other safety improvements include
11 enhancements to multimodal transportation
12 options to ease use conflicts and road
13 congestion during peak times. Finally,
14 increased ranger presence throughout the
15 park lands, particularly in San Mateo County,
16 would improve response capabilities for park
17 staff.

18
19 On Alcatraz Island, alternative 2 would
20 highlight the concept of isolation on the
21 island, which is a recurrent theme in the
22 island's cultural and natural history. Visitors
23 would have opportunities to experience first-
24 hand the island's isolation, natural systems,
25 and layers of history. Ecotourism, outdoor
26 learning, and natural and cultural resource
27 stewardship programs would be the focus of
28 this alternative, deepening visitor
29 understanding of these topics as they relate to
30 the island. This would benefit those visitors
31 with interest in these topics and would
32 encourage all visitors to take away more than
33 just the federal penitentiary story. The
34 diversity of activities available on the island
35 would be increased given the additional
36 emphasis on increasing visitor understanding
37 of the natural resources on the island. This
38 would include programming, stewardship,
39 and related overnight opportunities that
40 would be new options for visitors to the
41 island. There would also be increased
42 opportunities for wildlife and scenic viewing,
43 and hiking around the perimeter of the
44 island. Expanding visitor opportunities could
45 have a long-term, moderate, beneficial impact
46 to visitor experience.

47
48 It is likely these actions would appeal to a
49 different audience than those who primarily
50 visit the island for its historic resources.
51 However, the emphasis on promoting the

52 natural values of the island would also
53 potentially increase the conflict between
54 visitors and birds in core visitor use areas,
55 resulting in a long-term, moderate, adverse
56 impact on visitor experience during the
57 nesting season. Further, there has been public
58 interest in accessing many of the closed
59 buildings on the island; this alternative would
60 increase visitor access to some while
61 continuing to limit access to others. This
62 would result in a long-term, minor, adverse
63 impact.

64
65 This alternative proposes additional visitor
66 access restrictions in the waters surrounding
67 the island to protect coastal resources and
68 seabird colonies. These regulations would
69 have an adverse impact on some visitors who
70 enjoy navigating the waters in this area (via
71 private boats and harbor tours), and enjoy the
72 views of the island from close-up, resulting in
73 a long-term, minor, adverse impact to water-
74 based recreation.

75
76 Preservation of the buildings and spaces
77 where visitors would be allowed would result
78 in greater levels of visitor safety. There may
79 be additional conflicts associated with
80 visitors and birds, but it is unlikely that these
81 conflicts would result in any significant
82 concerns related to visitors' health and safety.

83
84 **Conclusion.** The actions proposed in
85 alternative 2 for Golden Gate National
86 Recreation Area would result in long-term,
87 minor to moderate, beneficial impacts on
88 visitor experience. The visitor experience
89 would be improved regarding the depth and
90 content of educational programming,
91 interpretation, and resource stewardship;
92 along with the preservation and promotion of
93 visitor activities focused on immersion in the
94 natural and cultural settings unique to the
95 park. Visitors would gain a better
96 understanding of park resources and values.
97 However, the regulation and restrictions on
98 some visitor activities and access to some
99 areas might not encourage as much
100 connection to the diverse local and regional
101 population, and may have a long-term,
102 moderate, adverse impact on repeat visitors

1 who have a long-standing attachment to
2 certain locations or activities that may be
3 regulated or restricted.

4
5 On Alcatraz Island, alternative 2 would result
6 in long-term, minor to moderate, beneficial
7 impacts on visitor experience given the
8 actions that would increase understanding
9 and appreciation of the island's important
10 role in the marine ecosystem and related
11 activities and programming. However, there
12 would be long-term, moderate, adverse
13 impacts on visitor experience in this
14 alternative due to the increased interaction
15 and related conflicts between visitors and
16 birds during the nesting season, and the
17 restricted access to desired locations and
18 structures on the island.

19
20 **Alternative 3: Focusing on National**
21 **Treasures (NPS Preferred Alternative**
22 **for Alcatraz Island)**

23 Alternative 3 proposes a visitor experience
24 that is focused on the nationally significant
25 sites and resources found throughout the
26 park. Visitors would have a diversity of
27 recreational and educational opportunities
28 centered on the park's iconic sights,
29 structures, and stories. There would be many
30 opportunities for first-hand learning. Visitors
31 would have the opportunity to immerse
32 themselves in a historic setting, and
33 participate in stewardship activities at key
34 sites. The natural and cultural resources
35 would be preserved to their highest level of
36 quality, providing the best opportunity for
37 visitors to understand and forge a connection
38 with the resources and values of the park, as
39 well as the larger national park system.
40 Because the large expanse of undeveloped
41 open space is one of the park's fundamental
42 resources and values, the park would still
43 provide many opportunities for those visitors
44 who enjoy solitude, natural quiet, and some
45 challenge during their visit.

46
47 Much of the visitor facility improvements in
48 this alternative focus on rehabilitation of and
49 upgrades to existing facilities that would
50 support visitor understanding and access to

51 key sites throughout the park. In Marin
52 County, one of the most substantial
53 differences in this alternative occurs in the
54 area within and around Forts Barry and
55 Cronkhite where the structures and
56 landscapes would be restored to showcase
57 the stories of military history and the
58 transition from U.S. Army post to national
59 park. To facilitate visitors' visits and
60 understanding of this part of the park, a new
61 visitor center would replace the housing
62 infrastructure at the Capehart housing area.
63 In addition, trails and roads in the area would
64 be managed to connect visitors to the
65 important historic and natural resource
66 stories.

67
68 In San Francisco County, facility
69 improvements include dedication of more
70 structures at Fort Mason to visitor services;
71 the area would serve as the primary visitor
72 entrance to the park with improved
73 orientation and educational services. In San
74 Mateo County, the National Park Service
75 would work in cooperation with surrounding
76 cities, the county, and Caltrans to encourage
77 a more unifying character to the State Route 1
78 road corridor, along with a coordinated
79 approach to visitor access and services. This
80 would include transitioning the Shelldance
81 Nursery facilities to visitor support facilities,
82 with improved access to State Route 1,
83 providing a convenient and accessible
84 location for coordinated information services
85 at the entrance to San Mateo County.
86 Further, facility improvements would include
87 the identification and development of
88 recreation portals with trailheads and other
89 visitor support services in Rancho Corral de
90 Tierra, which would better support access to
91 a diversity of recreation opportunities, and
92 help connect visitors with the information
93 and services they need for a visit to this area
94 of the park. These actions would expand
95 visitor opportunities and access to park
96 resources and therefore contribute to a long-
97 term, minor to moderate, beneficial impact to
98 the park visitor.

99
100 Most of the existing recreation activities
101 within the park would continue and be better

1 supported through the facilities and access
2 improvements already mentioned. Activities
3 that would be expanded in this alternative
4 include educational and stewardship
5 opportunities at key park sites. These
6 activities would allow the park staff to engage
7 a wider audience and better demonstrate the
8 park's fundamental resources and values,
9 particularly its coastal military defense
10 structures and stories. Connected and
11 improved trails are also proposed in this
12 alternative, along with more multiuse trails.

13 The expansion and enhancement of the
14 park's already extensive trail system would
15 allow for greater opportunities to explore the
16 park. Given the importance of trail
17 opportunities to the public, these
18 improvements would result in a long-term,
19 moderate, beneficial impact. In addition, this
20 alternative provides for an increase in the
21 diversity of overnight opportunities,
22 including primitive camping. These actions
23 would increase the diversity of recreational
24 opportunities and were supported by the
25 public during scoping for this plan.

26 Additional public equestrian programs and
27 expanded equestrian trailhead facilities are
28 proposed in San Mateo County, allowing
29 equestrian uses to expand in the park, which
30 was encouraged by some members of the
31 public. These actions would result in long-
32 term, moderate, beneficial impacts.

33
34 Alternative 3 designates a few sensitive
35 resource areas, and accordingly requires
36 limitations on visitor access to those areas. In
37 addition, this alternative proposes changes in
38 the access and regulations for some key
39 visitor use sites including Slide Ranch, Fort
40 Funston, and the southern portion of Ocean
41 Beach. These restrictions and regulations
42 could have long-term, moderate, adverse,
43 impacts on some visitors in terms of visitor
44 opportunities, with the greatest effect on
45 visitors who frequent these areas on a regular
46 basis.

47
48 As already noted, this alternative includes
49 proposals for enhanced understanding and
50 exposure to the park's most important
51 resources. In particular, the military history

52 and coastal fortifications at several sites along
53 the coast and bay would be highlighted using
54 the latest technological and multimedia
55 advances and associated programming, giving
56 visitors a deeper understanding of these
57 nationally significant structures. Stewardship
58 centers in the park would enhance
59 community pride and commitment in the
60 park and serve as places to teach the next
61 generation of park stewards, resulting in
62 long-term, moderate, beneficial impacts.

63
64 Access and orientation to the park would
65 generally be improved, resulting in a long-
66 term, moderate, beneficial impact. In
67 particular, there would be an increased focus
68 on linking key park sites via multiple modes
69 of transportation, which would help connect
70 a larger audience to park sites, better connect
71 visits between sites, and reduce use conflicts.
72 Trail improvements and connections would
73 be a primary element of this alternative. Trail
74 access improvements allow visitors more
75 convenient and safe access to and between
76 areas within the park as well as surrounding
77 communities and other public lands. Further,
78 this alternative proposes visitor hubs or
79 portals, which would provide centralized
80 orientation and services, improving visitors'
81 ability to access sites throughout the park.

82
83 Visitor safety would be better due to several
84 actions in this alternative. If successful in
85 promoting access improvements to park
86 lands in the State Route 1 and Panoramic
87 Highway area, visitors would benefit from
88 better wayfinding, safer overlooks for scenic
89 viewing, and more separation between auto
90 and bicycle use. Other safety improvements
91 include enhancements to multimodal
92 transportation options to ease use conflicts
93 and road congestion during peak times.
94 Finally, increased ranger presence
95 throughout the park, particularly in San
96 Mateo County, would improve response
97 capabilities for park staff. However, the
98 addition of new multiuse trails may cause a
99 small amount of increased conflicts for some
100 visitors. Overall, these safety changes,
101 including access improvements, would

1 provide a long-term, minor, beneficial
 2 impact.
 3
 4 Alternative 3 is the NPS preferred alternative
 5 for managing the resources and visitors on
 6 Alcatraz Island. This alternative would
 7 immerse visitors extensively in all of the
 8 island's historic periods, providing the best
 9 opportunity for visitors to understand and
 10 forge a connection with the resources and
 11 values of the island. Visitors would have
 12 access to restored portions of historic
 13 structures that would better tell the story of
 14 the various aspects of life on "the Rock."
 15 Other special events, classes, and stewardship
 16 opportunities focused around the resources
 17 and stories of the island's period of
 18 significance would also increase the diversity
 19 of opportunities available to visitors. Visitors
 20 to Alcatraz Island already highly value the
 21 interpretive and educational programming of
 22 the island's historic resources, and this
 23 alternative would expand those opportunities
 24 to include more immersive experiences, a
 25 setting that is more reflective of the period of
 26 significance, and more direct access to the
 27 island's historic structures; this would result
 28 in a long-term, moderate, beneficial impact.
 29 This increase in options would likely appeal
 30 to a wider audience of participants and would
 31 also likely encourage an increase in repeat
 32 visitation.
 33
 34 This alternative proposes additional visitor
 35 access restrictions in the waters surrounding
 36 the island to replicate the historic no-trespass
 37 zone as well as to protect coastal resources
 38 and seabird colonies. These regulations
 39 would have an adverse impact on some
 40 visitors who enjoy navigating the waters in
 41 this area (via private boats and harbor tours),
 42 and enjoying the close-up views of the island
 43 from the water, resulting in long-term, minor,
 44 adverse impacts on water-based recreation.
 45
 46 Visitor understanding, education, and
 47 interpretation would be greatly enhanced in
 48 this alternative, given the higher level of
 49 preservation of the buildings, increased
 50 access to the structures and surrounding
 51 landscapes, and more diverse programming

52 options. In addition, stewardship activities
 53 would provide increased visitors
 54 understanding and appreciation of the
 55 island's natural and cultural resources.
 56 Visitor safety would benefit through the
 57 preservation of the buildings as well as
 58 through increased bird management.
 59

60 **Conclusion.** The actions proposed in
 61 alternative 3 for Golden Gate National
 62 Recreation Area would result in long-term,
 63 moderate, beneficial impacts on visitor
 64 experience. The most notable beneficial
 65 effect of this alternative would be the
 66 increased opportunities for visitors to
 67 understand, appreciate, and take part in the
 68 preservation of the park's most fundamental
 69 resources and values. In addition, this
 70 alternative would improve access and
 71 connectivity to and between key sites in the
 72 park, facilitate the visitor experience, and
 73 reduce use conflicts and visitor frustration.
 74 However, this alternative would change
 75 visitor opportunities at a few existing use
 76 areas, leading to long-term, minor to
 77 moderate, adverse impacts on visitors who
 78 currently frequent these locations for various
 79 recreation activities.
 80

81 Alternative 3 is the NPS preferred alternative
 82 for managing Alcatraz Island and would
 83 result in long-term, moderate to major,
 84 beneficial impacts on visitor experience. This
 85 is primarily due to the opportunities to
 86 immerse oneself in the historic periods of
 87 Alcatraz Island, have access to more of the
 88 island's settings and buildings in improved
 89 condition, and to participate in stewardship
 90 and education activities supported by
 91 expanded overnight programs and facilities.
 92 The island's history, particularly as related to
 93 the military and the federal penitentiary, is of
 94 primary interest to most visitors to the island.
 95 This alternative would bring the experience
 96 alive, illustrating more aspects of life on "the
 97 Rock" for a greater diversity of visitors. The
 98 number of visitors who could be
 99 accommodated on the island may also be
 100 slightly increased upon implementation of
 101 this alternative given the increased number of
 102 opportunities and the ability to better

1 disperse visitors; this would result in long-
2 term, minor to moderate, beneficial impacts
3 on visitor use and experience.

6 **Social and Economic Environment**

7 **Introduction**

8 The analysis of impacts on the social and
9 economic environment of the gateway
10 communities and overall Bay Area that
11 surrounds Golden Gate National Recreation
12 Area and Muir Woods National Monument
13 is based on topic research and professional
14 judgment of planners who have experience
15 with similar plans. To help identify the
16 impacts of the various alternatives, the social
17 and economic environment is described by
18 three primary contributing factors: quality of
19 life, population demographics, and local
20 economy. These three factors reflect the
21 three main areas of discussion in the “Social
22 and Economic Affected Environment”
23 section. The impact analyses in this section
24 primarily focus on the quality of life and local
25 economy topics because the park
26 management actions in the various
27 alternatives may affect these attributes of the
28 social and economic environment. Also, in
29 terms of geographic scope, the impact
30 analyses in this section primarily focus on the
31 social and economic conditions of the local
32 gateway communities around the park and
33 monument and the three adjacent counties of
34 Marin, San Francisco, and San Mateo
35 because this is where the majority of impacts
36 would be noticeable.

37
38 In the discussion of impacts on the social and
39 economic environment, an analysis section
40 and conclusion section are included for each
41 alternative for Golden Gate National
42 Recreation Area, including Alcatraz Island.
43 The impacts from actions associated with the
44 Muir Woods National Monument are
45 discussed later in this section.

46

47 **No-action Alternative**

48 **Analysis.** By continuing to provide and
49 potentially expanding open space
50 preservation, outdoor recreation
51 opportunities, natural and cultural resource
52 preservation, interpretation, education, and
53 stewardship opportunities the park would
54 continue to strengthen its contribution to the
55 Bay Area’s high quality of life. As detailed in
56 the “Social and Economic Affected
57 Environment” section, public access to
58 parklands is integral in sustaining a high
59 quality of life in a highly urbanized region
60 such as the Bay Area. The Golden Gate
61 National Recreation Area’s location at an
62 urban-wildland interface make it particularly
63 important for physiological health (i.e., from
64 exercise), psychological health, community-
65 building, community identity, and landscape
66 aesthetics (e.g., open space backdrop to a
67 densely populated urban area). Under the
68 no-action alternative, the National Park
69 Service would continue working
70 cooperatively with other neighboring local
71 governments and land managers to further
72 enhance the area’s quality of life by
73 preserving a vast network of open lands in
74 the Bay Area. In addition, with a few
75 exceptions, existing education and
76 stewardship opportunities for the residents
77 would be maintained at the park, and
78 possibly improved as financial and staffing
79 resources become available. As other private
80 land continues to be developed and
81 urbanized into the future, Golden Gate
82 National Recreation Area will become
83 exponentially more valuable to the
84 community and the quality of life of the
85 residents. Its preservation would result in an
86 impact that is long-term, moderate, and
87 beneficial in the context of the local gateway
88 communities and three adjacent counties.

89
90 In a general sense, the park’s overall intrinsic
91 contribution to the local economy of the
92 gateway counties and the Bay Area would be
93 maintained and/or enhanced by the no-
94 action alternative. By continuing to provide
95 open space preservation, numerous
96 recreation opportunities, facilities, and park

1 settings for organized group activities, the
 2 park would continue to help make the Bay
 3 Area a place for companies and talented
 4 professionals to call home. In other words,
 5 the Bay Area's quality of life becomes a draw
 6 for business and economic growth with help
 7 from places like Golden Gate National
 8 Recreation Area. The no-action alternative
 9 will sustain and enhance this economic value
 10 to the Bay Area. The economic growth and
 11 success of Silicon Valley is a prime example
 12 of how economic growth relates to a quality
 13 business location and natural landscape
 14 backdrop. This results in an impact that
 15 would be long term, moderate, and beneficial
 16 in the context of the local gateway
 17 communities and three adjacent counties.

18
 19 In terms of direct effects on the local
 20 economy, the no-action alternative would
 21 generally maintain the current levels of NPS
 22 jobs; concession operations; NPS operations
 23 spending and contract work; and park
 24 partner activities. There would be occasional
 25 site-specific or program-specific
 26 improvements. The value of these attributes
 27 to the local economy is discussed in the
 28 "Social and Economic Environment" section
 29 of part 8. The overall value of the park's
 30 contribution to the local economy would
 31 continue to have substantial positive effects
 32 on the local economy in the gateway
 33 communities and three adjacent counties. In
 34 addition, Alcatraz Island remains a major
 35 attraction that directly contributes to the
 36 tourism industry through increased length of
 37 stay in local accommodations, business
 38 opportunities related to the Alcatraz Island
 39 theme, bay tours, and other guided
 40 commercial opportunities. These commercial
 41 activities contribute to sustaining
 42 employment within the tourism industry. The
 43 continuation of the current management
 44 direction would have a long-term, minor to
 45 moderate beneficial impact on the gateway
 46 communities and adjacent three counties.

47
 48 **Conclusion.** The overall impact to the social
 49 and economic environment from the no-
 50 action alternative could be long term, minor
 51 to moderate, and beneficial for the local

52 gateway communities and the three adjacent
 53 counties. The beneficial impacts would result
 54 from maintaining the park's contribution to
 55 the local economy and quality of life, existing
 56 education and stewardship programs, as well
 57 as maintaining existing relationships with
 58 other local governments and land managers.

59
 60 ***Alternative 1: Connecting People***
 61 ***with the Parks (NPS Preferred***
 62 ***Alternative for Park Sites in Marin,***
 63 ***San Francisco, and San Mateo***
 64 ***Counties)***

65 **Analysis.** Alternative 1 would maintain the
 66 inherent quality of life and economic values
 67 of Golden Gate National Recreation Area, as
 68 noted in the analysis for the no-action
 69 alternative. It would continue to provide
 70 open space preservation, outdoor recreation
 71 opportunities, natural and cultural resource
 72 preservation, as well as education and
 73 stewardship opportunities. The park's
 74 location at an urban-wildland interface make
 75 it particularly important for physiological
 76 health, psychological health, community-
 77 building, community identity, and landscape
 78 aesthetics, which all contribute to quality of
 79 life in a highly urbanized region. This value
 80 will only increase as more private land in the
 81 region develops in the future. As in the no-
 82 action alternative, its continued preservation
 83 would result in an impact to quality of life
 84 that is long term, moderate, and beneficial in
 85 the context of the local gateway communities
 86 and three adjacent counties. Also, alternative
 87 1 would maintain the park's overall intrinsic
 88 contribution to the local economy, as
 89 mentioned in the no-action alternative
 90 analysis. Given its significant contribution to
 91 quality of life at the urban-wildland interface
 92 of a large urban area, the park would
 93 continue to help attract businesses and
 94 talented professionals to the Bay Area. This
 95 results in an impact that would be long term,
 96 moderate, and beneficial in the context of the
 97 local gateway communities and three
 98 adjacent counties.

99

1 In addition to continuing these attributes of
2 the no-action alternative, alternative 1 would
3 guide park staff to make stronger efforts at
4 reaching out to the diverse populations of the
5 Bay Area and welcoming them to Golden
6 Gate National Recreation Area. Actions
7 would include community outreach
8 programs, adding group facilities, new park
9 programs, and establishing new
10 welcome/orientation facilities in key
11 locations in the park. These outreach and
12 welcoming efforts would include
13 collaborative community building and would
14 help foster a new relationship with Bay Area
15 residents. A community that develops a
16 strong relationship with its parks can
17 contribute to quality of life of its residents.
18 Under alternative 1, new and/or improved
19 welcoming and orientation centers, some in
20 collaboration with local communities, would
21 be provided at multiple locations. New and
22 varied interpretive, educational, and
23 stewardship programs would evolve to better
24 connect diverse communities with the park's
25 resources. These facility and program
26 enhancements under alternative 1 would
27 provide new opportunities for many school
28 groups and residents throughout the Bay
29 Area. Under alternative 1, the National Park
30 Service would also work closely with local
31 communities to improve accessibility to the
32 park sites by improving the public transit
33 network and connecting the park and
34 communities with numerous trails.
35 Collectively, these actions would contribute
36 to the quality of life for Bay Area residents.
37 This could result in an impact that is long
38 term, minor to moderate, and beneficial to
39 the local gateway communities and three
40 adjacent counties.

41
42 Alternative 1 would support the continuation
43 of existing equestrian facilities in the park.
44 Some minor expansions may also take place
45 at the facility in Tennessee Valley, while the
46 existing equestrian facilities at Picardo Ranch
47 and Rancho Corral de Tierra in San Mateo
48 County will be maintained and enhanced
49 with more programming under alternative 1.
50 These facilities are important recreational
51 assets to many members of the surrounding

52 communities and contribute to the quality of
53 life of these residents. Sustaining and/or
54 expanding these equestrian facilities could
55 yield impacts that are long term, minor to
56 moderate and beneficial for the local gateway
57 communities and the three adjacent counties.

58
59 Alternative 1 includes a variety of actions that
60 would help foster or improve relationships
61 between the National Park Service and local
62 communities, park partners, and other
63 adjacent land management agencies. These
64 actions would include community outreach
65 and education programs that help introduce
66 the community to the national park system.
67 Alternative 1 places an emphasis on
68 preserving and enhancing opportunities for
69 local community residents to experience
70 nature, learn local history, and enjoy open
71 lands with other community residents. By
72 providing opportunities and a venue for
73 community interaction, this would enhance
74 the quality of life for residents of the gateway
75 counties. This alternative would also
76 emphasize building community connections
77 by collaborating with local governments,
78 park partners, and other local land managers
79 via multiagency projects. Community-
80 building efforts such as these could result in
81 impacts that are long term, moderate, and
82 beneficial for local gateway communities.
83 Impacts on the three adjacent counties could
84 be long term, minor to moderate, and
85 beneficial.

86
87 A key component of alternative 1 is providing
88 new and upgraded visitor facilities that would
89 complement the park staff's efforts at
90 welcoming and orienting people to the park.
91 Given this priority, alternative 1 would
92 include many new and expanded facilities
93 throughout the park in all three gateway
94 counties. The projects would include the
95 construction, relocation, redevelopment,
96 and/or restoration of visitor centers, historic
97 structures, restrooms, showers, picnic areas,
98 parking lots, warming huts, interpretive
99 exhibits, roadway viewpoints, campsites,
100 trailheads, and other modest overnight
101 accommodations. Alcatraz Island would also
102 have numerous historic structure restoration

1 projects. Many of these projects would
 2 generate new work for local and regional
 3 companies in the Bay Area, including
 4 engineering consultants, construction
 5 contractors, and environmental consultants.
 6 These projects would not only support these
 7 businesses and their employees directly, but
 8 the economic multiplier effect would
 9 circulate this contract money through the
 10 local economy. The collective result of these
 11 actions would be an economic contribution
 12 that is short term, minor to moderate, and
 13 beneficial for local gateway communities and
 14 three adjacent counties.

15
 16 In addition to the economic contributions as
 17 described in the no-action alternative,
 18 alternative 1 would also create new and
 19 expanded economic opportunities for some
 20 park partners and local organizations by
 21 providing expanded visitor programs,
 22 amenities, and facilities that could help grow
 23 these organizations and partners. This could
 24 empower or leverage partners to provide
 25 more educational, stewardship programming,
 26 and visitor service opportunities. These types
 27 of collaborations with park partners and
 28 other local agencies would result in an
 29 economic impact that is long term, minor to
 30 moderate, and beneficial for local gateway
 31 communities and the three adjacent counties.

32
 33 Lastly, to meet the “Connecting People with
 34 the Parks” objective of alternative 1, several
 35 park facilities and amenities would be
 36 upgraded to provide more guest services to
 37 better-accommodate the visitors (e.g., visitor
 38 orientation, food services, meeting/program
 39 space, rustic cabins, hostels, camping, and
 40 special event or conference hosting). These
 41 new or expanded services could generate
 42 additional employment for park partners,
 43 concessions, and local businesses. In
 44 addition, the local economy would benefit
 45 from the various equestrian facilities being
 46 retained under alternative 1, as the equestrian
 47 facilities generate jobs and other local
 48 business. The visitor service improvements,
 49 and associated jobs, under alternative 1
 50 would occur at several sites throughout all
 51 three gateway counties. The creation of jobs

52 is important for economic growth, as it
 53 provides sustained direct and secondary
 54 spending (i.e., economic multiplier effect) in
 55 local spending in the community. Thus, these
 56 proposed visitor services in alternative 1
 57 would have an impact that is long term,
 58 minor, and beneficial in the context of the
 59 local gateway communities and three
 60 adjacent counties.

61
 62 **Conclusion.** The short-term and long-term
 63 beneficial impacts of alternative 1 on the
 64 social and economic environment of the local
 65 gateway communities and the three adjacent
 66 counties could range from minor to
 67 moderate. These beneficial impacts on
 68 quality of life and local economy could result
 69 from

- 70
- 71 ▪ a considerable increase in public
 72 outreach programs, visitor
 73 orientation, and educational or
 74 stewardship opportunities;
- 75 ▪ substantial improvements in public
 76 accessibility, transportation options,
 77 and community trail connections;
- 78 ▪ sustaining and/or enhancing the
 79 existing equestrian facilities;
- 80 ▪ incorporating several community-
 81 building components;
- 82 ▪ economic growth via many new
 83 engineering and construction
 84 contract work for numerous facility
 85 improvement projects throughout the
 86 three gateway counties;
- 87 ▪ several new opportunities for park
 88 partners to use park facilities and
 89 expand their operations; or
- 90 ▪ a substantial amount of job creation
 91 from the proposed increase in visitor
 92 services throughout the park.

93 94 ***Alternative 2: Preserving and*** 95 ***Enjoying Coastal Ecosystems***

96 **Analysis.** Alternative 2 would maintain the
 97 inherent quality of life and economic values
 98 of Golden Gate National Recreation Area, as

1 noted in the analysis for the no-action
2 alternative. It would continue to provide
3 open space preservation, outdoor recreation
4 opportunities, natural and cultural resource
5 preservation, as well as education and
6 stewardship opportunities. The park's
7 location at an urban-wildland interface make
8 it particularly important for physiological
9 health, psychological health, community-
10 building, community identity, and landscape
11 aesthetics, which all contribute to quality of
12 life in a highly urbanized region. This value
13 will only increase as more private land in the
14 region develops in the future. As in the no-
15 action alternative, its continued preservation
16 would result in an impact to quality of life
17 that is long term, moderate, and beneficial in
18 the context of the local gateway communities
19 and three adjacent counties. Also, alternative
20 2 would maintain the park's overall intrinsic
21 contribution to the local economy, as
22 mentioned in the no-action alternative
23 analysis. Given its substantial contribution to
24 quality of life at the urban-wildland interface
25 of a large urban area, the park would
26 continue to help attract businesses and
27 talented professionals to the Bay Area. This
28 results in an impact that would be long term,
29 moderate, and beneficial in the context of the
30 local gateway communities and three
31 adjacent counties.

32
33 In addition to continuing these attributes of
34 the no-action alternative, alternative 2 would
35 emphasize a new priority of "preserving and
36 enjoying coastal ecosystems." The park's
37 goals would focus on educating the public on
38 the importance of the natural resources
39 throughout the Bay Area coastal environment
40 and the importance of being good stewards
41 to these unique resources. Under alternative
42 2, the National Park Service would increase
43 educational and stewardship opportunities
44 for local residents and school groups in the
45 three gateway counties by improving facilities
46 and enhancing education and stewardship
47 programs at several park sites throughout the
48 region. Raising the level of community
49 awareness of ecological issues and active
50 stewardship can improve the quality of life
51 for local residents by getting them more

52 concerned and "invested" in the park and its
53 unique resources, which could yield a
54 stronger sense of community value and
55 healthy living. In turn, the open lands and
56 unique resources would stand a better chance
57 at being preserved into the future if the
58 community residents become more aware
59 and active in stewardship. In other words, by
60 helping to preserve the resources, the
61 residents are, in effect, also helping to
62 preserve the qualities that make living in the
63 Bay Area wonderful (because much of the
64 quality of life relies on open, preserved lands
65 and resources). Alternative 2 would also
66 enhance community connectivity by guiding
67 the National Park Service to work with local
68 communities and land managers to pursue
69 improved trail accessibility and public transit
70 to some park sites. Providing more access
71 opportunities would allow local residents to
72 access more park programs and amenities, as
73 well as open areas for exercise and
74 community gathering. Collectively, these
75 actions would contribute to the quality of life
76 for area residents, resulting in long-term,
77 minor to moderate, and beneficial impacts
78 for the local gateway communities and the
79 three adjacent counties.

80
81 However, under alternative 2, converting
82 Montara Lighthouse from a hostel to a
83 facility dedicated to education and
84 stewardship would have a long-term, minor,
85 adverse impact to the hostel facility operation
86 and its users. While the equestrian facilities in
87 Marin County would be more or less
88 maintained in their current state, the four
89 equestrian facilities at Rancho Corral de
90 Tierra in San Mateo County could be
91 removed and/or relocated in an effort to
92 protect resources near the streams. Similarly,
93 the environmental and farm education
94 centers at Slide Ranch would be relocated to
95 a more sustainable and geologically stable
96 area. Although the education programs
97 would be continued in the new location, the
98 value of the facility to local residents and
99 school children may be negatively affected
100 due to the location change, especially if
101 relocated away from the Pacific Ocean. These
102 facilities are important assets to many

1 members of the surrounding communities
 2 and contribute to their quality of life.
 3 Therefore, if these opportunities are
 4 removed, a long-term, minor to moderate,
 5 and adverse impact could result in the
 6 context of the local gateway communities and
 7 three adjacent counties.

8
 9 Alternative 2 includes several actions that
 10 would help the National Park Service develop
 11 relationships with local communities and
 12 local land management agencies of the Bay
 13 Area. Many of these actions are focused on
 14 cooperating with other land managers to
 15 jointly solve and address long-term natural
 16 resource issues. Other actions are aimed at
 17 creating relationships with gateway county
 18 communities to establish a network of natural
 19 resource stewardship programs in the park.
 20 Thus, these actions are in line with dual
 21 emphasis in alternative 2 of protecting
 22 ecological resources and educating the
 23 community on these resources (and how to
 24 be good stewards). In addition, when a
 25 diverse population of residents and agencies
 26 work together toward a common goal, such
 27 as climate change awareness, coastal
 28 preservation, or land stewardship, an
 29 evolving sense of environmental ethic and
 30 community livability develops. This further
 31 contributes to the community's quality of life.
 32 Actions like these can result in impacts that
 33 are long term, moderate, and beneficial for
 34 local gateway communities. Impacts on the
 35 three adjacent counties could be long term,
 36 minor to moderate, and beneficial.

37
 38 Under alternative 2, several natural resources
 39 restoration projects would contribute to the
 40 local economy in the three gateway counties,
 41 and possibly beyond. The projects would
 42 include restoration of habitats, stream
 43 corridors, marine ecosystems, and removal of
 44 invasive species over large areas of the park.
 45 In addition, alternative 2 would improve
 46 some park facilities and infrastructure in
 47 order to continue these visitor services while
 48 working to minimize impacts on the natural
 49 resources of the park. Many of these projects
 50 would generate new work for local and
 51 regional companies in the Bay Area, including

52 engineering consultants, construction
 53 contractors, and environmental consultants.
 54 These projects would not only support these
 55 businesses and their employees directly, but
 56 the economic multiplier effect would
 57 circulate this contract money through the
 58 local economy. These actions could result in
 59 impacts that are short term, minor, and
 60 beneficial for local gateway communities and
 61 three adjacent counties.

62
 63 Alternative 2 would have some beneficial
 64 impacts on the park partners and other
 65 community organizations in the area. The
 66 most notable new impacts on park partners
 67 under alternative 2 would be at Alcatraz
 68 Island and in the City and County of San
 69 Francisco. Such collaborations between the
 70 park and partners would increase
 71 opportunities for the partners to grow their
 72 programs and organizations. This would also
 73 strengthen working relationships with the
 74 communities and raise community awareness
 75 of climate change and coastal preservation.
 76 These actions could result in impacts that are
 77 long term, minor, and beneficial for local
 78 gateway communities and three adjacent
 79 counties.

80
 81 However, the removal of the facilities at Slide
 82 Ranch would have negative economic effects
 83 on the park partner that currently manages
 84 Slide Ranch. Also, alternative 2 would include
 85 the removal of work force housing units at
 86 Capehart housing area in Marin County to
 87 allow for ecological restoration. This would
 88 affect park partners who use these facilities.
 89 These two impacts on the local economy
 90 would be long term, minor and adverse in the
 91 context of the local gateway communities.
 92 Impacts on the three adjacent counties would
 93 be negligible.

94
 95 Alternative 2 includes a proposal that, in
 96 event of catastrophic coastal landslide on
 97 U.S. State Route 1 (south of Stinson Beach) in
 98 Marin County, the National Park Service
 99 would recommend to Caltrans that it
 100 abandon this segment of road. However,
 101 because the highway is not under the
 102 jurisdiction of the National Park Service, the

1 decision and environmental analysis
 2 regarding any State Route 1 reroute or
 3 segment closure would be administered by
 4 Caltrans. If this would occur, the closure of
 5 this segment of State Route 1 would alter the
 6 transportation system for local communities
 7 (and regionally for Caltrans), which would be
 8 inconvenient to local residents. This closure
 9 could have an impact that is long term,
 10 moderate, and adverse to the local gateway
 11 communities. Impacts on the three adjacent
 12 counties could be long term, minor, and
 13 adverse.

14
 15 On Alcatraz Island, alternative 2 would
 16 include visitor orientation, some food
 17 services, office/classroom space, day use
 18 programming facilities, and hostel
 19 accommodations for visitors and volunteer
 20 stewards. These new and expanded services
 21 could generate additional jobs for NPS
 22 employees and/or private concessioners and
 23 result in long-term, minor, beneficial impacts
 24 on the local gateway communities and
 25 negligible impacts on the three adjacent
 26 counties.

27
 28 Overall, this alternative does not appreciably
 29 add new levels of visitor services and
 30 facilities, and emphasizes a more primitive
 31 visitor experience. These actions would
 32 result in negligible increase in park-related
 33 employment opportunities. Therefore,
 34 alternative 2 could have a minimal added
 35 contribution to the local economy resulting
 36 in long-term, minor, beneficial impact to the
 37 gateway communities and negligible impacts
 38 on the three counties adjacent counties.

39
 40 **Conclusion.** In summary, the short-term and
 41 long-term beneficial impacts of alternative 2
 42 on the local gateway communities and the
 43 three adjacent counties would range from
 44 minor to moderate. Collectively, the
 45 beneficial impacts on quality of life and local
 46 economy could result from

- 47
- 48 ■ some site-specific increase in public
- 49 outreach programs and visitor
- 50 orientation,

- 51 ■ a considerable increase in educational
- 52 and stewardship opportunities,
- 53 ■ some additional community trail
- 54 connections,
- 55 ■ National Park Service collaborations
- 56 with several other community
- 57 governments and land management
- 58 agencies,
- 59 ■ some new engineering and
- 60 construction contract work for
- 61 several restoration projects
- 62 throughout the three gateway
- 63 counties,
- 64 ■ a limited number of new park partner
- 65 opportunities, or
- 66 ■ a limited amount of job creation from
- 67 the proposed increase in visitor
- 68 services throughout the park.

69
 70 The long-term adverse impacts on the social
 71 and economic conditions of the local gateway
 72 communities and three adjacent counties
 73 could range from minor to moderate. The
 74 adverse impacts from alternative 2 could
 75 result from (1) a possible reduction in NPS
 76 and concession jobs at certain park sites due
 77 to area closures and some facility removal, (2)
 78 a possible reduction in opportunities for a
 79 limited number of park partners, (3) the
 80 recommended closure of a segment of State
 81 Route 1 (though Caltrans has jurisdiction and
 82 decision authority), and (4) removing or
 83 relocating equestrian facilities (at Rancho
 84 Corral de Tierra) and an environmental and
 85 farm education facility (at Slide Ranch).

86
 87 **Alternative 3: Focusing on National**
 88 **Treasures (NPS Preferred Alternative**
 89 **for Alcatraz Island)**

90 **Analysis.** Alternative 3 would maintain the
 91 inherent quality of life and economic values
 92 of Golden Gate National Recreation Area, as
 93 noted in the analysis for the no-action
 94 alternative. It would continue to provide
 95 open space preservation, outdoor recreation
 96 opportunities, natural and cultural resource
 97 preservation, as well as education and

1 stewardship opportunities. The park's
 2 location at an urban-wildland interface make
 3 it particularly important for physiological
 4 health, psychological health, community-
 5 building, community identity, and landscape
 6 aesthetics, which all contribute to quality of
 7 life in a highly urbanized region. This value
 8 will only increase as more private land in the
 9 region develops in the future. As in the no-
 10 action alternative, its continued preservation
 11 would result in an impact to quality of life
 12 that is long term, moderate, and beneficial in
 13 the context of the local gateway communities
 14 and three adjacent counties. Also, alternative
 15 3 would maintain the park's overall intrinsic
 16 contribution to the local economy, as
 17 mentioned in the no-action alternative
 18 analysis. Given its substantial contribution to
 19 quality of life at the urban-wildland interface
 20 of a large urban area, the park would
 21 continue to help attract businesses and
 22 talented professionals to the Bay Area. This
 23 results in an impact that would be long term,
 24 moderate, and beneficial in the context of the
 25 local gateway communities and three
 26 adjacent counties.

27
 28 In addition to continuing these attributes of
 29 the no-action alternative, alternative 3 would
 30 guide the expansion and/or enhancement of
 31 several park site facilities and services in a
 32 way that offers improved information and
 33 orientation to the National Park Service and
 34 to Golden Gate National Recreation Area. By
 35 providing improved orientation services, new
 36 visitor welcoming centers, and an
 37 understanding of park-related opportunities
 38 to the diverse populations via new facilities
 39 and programs, the National Park Service
 40 could improve the quality of life for many
 41 residents of the area. In addition, compared
 42 to the no-action alternative, alternative 3
 43 includes a substantial increase in educational
 44 and stewardship opportunities for local
 45 residents and school groups at several park
 46 sites. This alternative focuses on education
 47 and stewardship of both ecological education
 48 and historic and cultural sites. By offering
 49 local residents education about the ecological
 50 and historic significance and national
 51 uniqueness of the many sites around them,

52 the National Park Service could generate
 53 community interest in resource stewardship
 54 of these sites, as well as provide the residents
 55 with a comprehensive understanding of Bay
 56 Area history. Also, under alternative 3, the
 57 National Park Service would improve a
 58 parkwide expansion of trail connections to
 59 adjacent community parks and trail networks
 60 by collaborating with many local
 61 governments. These trail connections should
 62 provide community residents with several
 63 additional ways to access Golden Gate
 64 National Recreation Area park sites to benefit
 65 from park programs and amenities.
 66 Collectively, these facility enhancements and
 67 program improvements could improve the
 68 quality of life for local residents. This would
 69 result in an impact that is long term, minor to
 70 moderate, and beneficial in the context of the
 71 local gateway communities and three
 72 adjacent counties.

73
 74 Also, all existing equestrian facilities in the
 75 park would be maintained and enhanced
 76 with additional programming. These
 77 equestrian facilities San Mateo and Marin
 78 counties would continue to be important
 79 assets to many residents of the surrounding
 80 communities by contributing to their quality
 81 of life. The maintenance or enhancement of
 82 the existing equestrian facilities could yield
 83 impacts that are long term, minor, and
 84 beneficial for the local gateway communities
 85 and the three adjacent counties.

86
 87 Alternative 3 includes several actions that
 88 would help the National Park Service develop
 89 relationships with local communities and
 90 local land management agencies of the Bay
 91 Area. The aim of these cooperative efforts
 92 would be to educate the Bay Area community
 93 on the national significance and uniqueness
 94 of the significant park sites (both in the park
 95 and on other public lands in the area). This
 96 heightened public awareness of the history
 97 and national significance of the many park
 98 sites in all three gateway counties would
 99 likely generate a sense of community pride
 100 throughout the area. The cooperative efforts
 101 would also attempt to inform the local
 102 residents on how the "quilt" of undeveloped

1 land has been preserved by the National Park
2 Service, various land trusts, several local
3 governments, and individuals. Understanding
4 and awareness of a resource can lead to
5 community appreciation, awareness, and
6 pride. These community values can
7 contribute to the quality of life in the area.
8 These community-building actions could
9 result in impacts that are long term,
10 moderate, and beneficial for local gateway
11 communities. Impacts on the three adjacent
12 counties could be long term, minor to
13 moderate, and beneficial.

14
15 In terms of impacts on the local economy,
16 alternative 3 would include major
17 construction and restoration projects at park
18 sites in all three gateway counties. The
19 projects under alternative 3 would include
20 the construction, relocation, redevelopment,
21 and/or restoration of visitor centers, a
22 stewardship/education center, several
23 historic structures, restrooms, showers,
24 picnic areas, parking lots, warming huts,
25 interpretive exhibits, roadway turn-offs,
26 rustic overnight accommodations, and
27 natural landscapes. Many of these projects
28 would generate new contract work for
29 private firms in the Bay Area, including
30 engineering consultants, construction
31 contractors, and environmental consultants.
32 These projects would not only support these
33 contracting businesses and their employees
34 directly, but the economic multiplier effect
35 would circulate this contract money through
36 the local economy. This phenomenon is
37 explained in the “Social and Economic
38 Affected Environment” section. The
39 collective result of these contracted projects
40 would be impacts that are short term, minor
41 to moderate, and beneficial for local gateway
42 communities and three adjacent counties.

43
44 The proposed expansion of facilities and
45 services at Alcatraz Island and other historic
46 park sites provide examples of park partners
47 benefitting from NPS programming.
48 Alternative 3 would provide expanded visitor
49 programs, amenities, and facilities that could
50 help grow these organizations and partners.
51 This could empower or leverage partners to

52 provide more educational, stewardship
53 programming, and visitor service
54 opportunities. This collaboration with park
55 partners and other local organizations and
56 agencies would result in impacts that are long
57 term, minor to moderate, and beneficial for
58 local gateway communities and the three
59 adjacent counties.

60
61 Alternative 3 would include the removal of
62 some work force housing units at Capehart
63 housing area in Marin County. These units
64 would be replaced with a new visitor center.
65 This could affect park partners who benefit
66 from this housing unless it is provided
67 elsewhere. This could result in an impact that
68 is long term, minor, and adverse in the
69 context of local gateway communities.
70 Impacts on the three adjacent counties would
71 be negligible.

72
73 To fulfill the “Focusing on National
74 Treasures” objective of alternative 3, park
75 facilities and amenities would be restored and
76 new park programs developed. These new or
77 expanded services could generate additional
78 jobs for NPS employees and/or private
79 concessioners. These improved services
80 would include: a new ferry service (Fort
81 Mason to Alcatraz Island), improved visitor
82 orientation and additional park programs,
83 facilities and services and special event
84 hosting. The creation of jobs is important for
85 economic growth, as it provides sustained
86 direct and secondary spending (i.e.,
87 multiplier effect) in local spending in the
88 community. Thus, these proposed service
89 expansion actions in alternative 3 would have
90 an impact that is long term, minor, and
91 beneficial in the context of the local gateway
92 communities. The impact in the context of
93 the three adjacent counties would be
94 negligible.

95
96 However, a possible negative impact to tour
97 boat operators may occur with alternative 3.
98 Although the visitor ferry access will be
99 accommodated along the eastern shoreline,
100 the historic no trespass zone around the
101 island will place limitations on tour boat
102 operators that currently use the area, thus

1 negatively affecting jobs and reducing
2 economic multiplier effect of this tourism
3 industry. This impact would be long term,
4 minor, and adverse to the local gateway
5 communities.

6
7 **Conclusion.** The short-term and long-term
8 beneficial impacts of alternative 3 on the
9 social and economic environment of the local
10 gateway communities and three adjacent
11 counties could range from minor to
12 moderate. The beneficial impacts on quality
13 of life and economy could result from

- 14
- 15 ▪ an increase in public outreach
- 16 programs, visitor orientation,
- 17 educational/stewardship
- 18 opportunities and additional park
- 19 programs,
- 20 ▪ improvements in public accessibility
- 21 and community trail connections,
- 22 ▪ sustaining and/or enhancing existing
- 23 equestrian facilities,
- 24 ▪ incorporating several community-
- 25 building components,
- 26 ▪ a moderate amount of new
- 27 engineering and construction
- 28 contract work for numerous facility
- 29 improvement and restoration
- 30 projects,
- 31 ▪ limited new opportunities for park
- 32 partners to use park facilities and
- 33 expand their operation, or
- 34 ▪ a small amount of job creation from
- 35 the proposed increase in visitor
- 36 services at various park sites.

37
38 The adverse impacts could result from
39 removal of work force housing units at
40 Capehart housing area and possible
41 restrictions on tour boat operators with
42 implementing the historic no trespass zone
43 around the Alcatraz Island. These impacts
44 would be long term, minor, and adverse to
45 the local gateway communities.

46 **Transportation**

47 This section describes the potential impacts
48 on transportation at Golden Gate National
49 Recreation Area park sites, including Alcatraz
50 Island. The impacts are described for the
51 counties of Marin, San Francisco, and San
52 Mateo counties, and for Alcatraz Island.

53 **No-action Alternative**

54 **Analysis.**

55 **Marin County—**

56
57
58 In general, park areas in Marin have good
59 pedestrian access, with some transit access to
60 the Marin Headlands from San Francisco,
61 and transit to other park sites via the West
62 Marin Stagecoach and the Muir Woods
63 Shuttle. Traffic congestion is a current and
64 worsening problem in specific areas as noted
65 below. In many cases traffic congestion is
66 related to the rural roadway system with
67 limited options and limited capacity. In rural
68 Marin County, roadway capacity is unlikely
69 to increase substantially.

70
71 In the southeast coastal area (Rodeo Valley/
72 McCullough and Conzelman Road), existing
73 planned road, trail, and transit projects are
74 likely to improve access for visitors from all
75 parts of the Bay Area as well as for park
76 partners and reduce congestion at scenic
77 overlooks. This area is served by transit on
78 Sundays by Muni bus service from San
79 Francisco, with plans to expand service to
80 Saturdays when funding is available. Traffic
81 congestion would continue to be problematic
82 during peak periods on roads connecting the
83 Golden Gate Bridge with the Marin
84 Headlands.

85
86 Along the southwest coast, (Muir Beach to
87 Point Bonita), small roads serving Tennessee
88 Valley, Muir Beach, and Muir Woods
89 National Monument experience traffic
90 congestion ranging from moderate on warm
91 weekends to severe during peak periods.
92 Neither Tennessee Valley nor Muir Beach is
93 served by transit.

1 For a recent report, *Transportation Planning*
 2 *to Address Access and Congestion Issues – Muir*
 3 *Woods National Monument*, HDR, Inc.
 4 collected detailed data on seven weekday and
 5 weekend days from August 7 through
 6 August 16, 2009, along State Route 1 between
 7 Highway 101 and Muir Woods. Intersections
 8 experiencing Levels of Service (LOS) E or F
 9 on weekends were Muir Woods Road at
 10 Panoramic Highway, State Route 1 at
 11 Panoramic Highway, State Route 1 at
 12 Tennessee Valley Road, State Route 1 at
 13 Pohono Street, and State Route 1 at Flamingo
 14 Road (unsignalized). The last three of these
 15 intersections saw LOS of E or F on weekdays
 16 as well.

17
 18 In the Stinson area, access to Stinson Beach
 19 along State Route 1 and the Panoramic
 20 Highway is congested on good weather
 21 weekends, approaching gridlock at times on
 22 summer weekends. Stinson Beach is served
 23 by the West Marin Stagecoach.

24
 25 The absence of measures improve
 26 transportation access to park sites in Marin
 27 (beyond those already planned) would have a
 28 long-term, minor to moderate adverse
 29 impact. While projects described in the
 30 cumulative impacts section would help
 31 mitigate transportation shortcomings in the
 32 Marin Headlands, other areas such as Muir
 33 Beach, Muir Woods National Monument,
 34 and Stinson Beach would all continue to
 35 experience long-term, moderate, adverse
 36 impacts on accessibility to visitors during
 37 peak periods.

38 **San Francisco—**

39
 40
 41 San Francisco park areas are well served by
 42 transit and well-connected with bicycle and
 43 pedestrian paths. Exceptions to this are
 44 Lands End, Sutro Heights, and Fort Miley,
 45 which are not well served by transit. Aside
 46 from any actions taken by the park, transit to
 47 the Fort Mason area is likely to be improved
 48 with the development of the Van Ness Bus
 49 Rapid Transit system, and further enhanced
 50 with the proposed extension of the streetcar
 51 along the northern waterfront. Either of

52 these measures would provide a long-term,
 53 moderate to major, beneficial impact in
 54 connectivity and availability of public transit
 55 to Fort Mason, Crissy Field, and the Presidio.
 56 In addition, implementation of the *Northern*
 57 *Embarcadero Waterfront Plan*, which calls for
 58 bicycle lanes along Jefferson Street, will
 59 enhance transportation to Fort Mason.
 60 Independent of these external projects, the
 61 absence of further transportation measures
 62 would have a negligible impact on access to
 63 park lands in San Francisco.

64 **San Mateo County—**

65
 66
 67 Under the no-action alternative, access to
 68 park lands in San Mateo County would
 69 continue to be less accessible by all modes of
 70 transportation because of unimproved
 71 trailheads, limited parking, minimal signage,
 72 and very limited transit access. Visitation
 73 would continue to increase without
 74 additional transportation improvements to
 75 direct and accommodate new visitors, or to
 76 promote or provide no auto access options.
 77 Informal or “social” trails would continue to
 78 be a significant way to enter parklands from
 79 adjacent neighborhoods; such trails, created
 80 by visitors, can lead to deterioration of
 81 natural resources. Accessibility for people
 82 with disabilities would continue to be limited.
 83 Auto access would improve in 2011 when the
 84 Devil’s Slide tunnels are opened. The County
 85 of San Mateo is required to install bus stops
 86 at the north and south turnouts near the
 87 tunnels; thus transit options in this particular
 88 area will improve as well. Taking no further
 89 transportation improvement actions in San
 90 Mateo County would have a long-term,
 91 minor to moderate, adverse effect on access
 92 to these park sites, limiting access for many
 93 potential visitors.

94 **Alcatraz Island—**

95
 96
 97 In the no-action alternative, transportation to
 98 and within Alcatraz Island is limited to
 99 concession-operated water transport only;
 100 visitors board the ferry at Pier 33 on San
 101 Francisco’s Embarcadero, and leave the ferry
 102 at the Alcatraz arrival area. Ferry access

1 would remain limited to the concessioner
2 from Pier 33. Private boats cannot land on the
3 island, although tour boats can come within
4 the 1,000-foot perimeter that defines the area
5 managed by the National Park Service.

6
7 **Conclusion.** In Marin County, auto access to
8 the most popular destinations is likely to
9 continue to be difficult during peak periods,
10 while bicycle and pedestrian access would
11 improve, particularly in the Marin
12 Headlands, because of projects outside this
13 planning process. Existing transit service
14 would continue to enable access to park
15 lands in Marin County for visitors without
16 cars. The no-action alternative would have a
17 long-term, minor to moderate to major,
18 adverse impact on the access to most popular
19 sites, and a long-term, minor, adverse effect
20 on transportation in other areas, such as the
21 Marin Headlands.

22
23 Park sites in San Francisco County in the
24 north part of the city would see long-term,
25 moderate, beneficial impact to access by land
26 via improved transit implemented by the San
27 Francisco Municipal Transportation Agency.

28
29 Park lands in San Mateo County would see a
30 long-term minor improvement in access by
31 land because of the Devil's Slide project and
32 accompanying transit stops. Taking no other
33 transportation improvement actions in San
34 Mateo would have a long-term, minor to
35 moderate, adverse effect on access to these
36 park sites.

37
38 The no-action alternative would have
39 negligible impacts on transportation to or
40 within Alcatraz Island.

41
42 ***Alternative 1: Connecting People***
43 ***with the Parks (NPS Preferred***
44 ***Alternative for Park Sites in Marin,***
45 ***San Francisco, and San Mateo***
46 ***Counties)***

47 **Analysis.** Alternative 1 proposes to improve
48 and expand connectivity and access to the
49 park and monument through new and

50 improved transit (land or water), bicycle, and
51 pedestrian access to and within the park.

52

53 **Marin County—**

54

55 In addition to the actions common to all
56 alternatives, transportation-related measures
57 in alternative 1 would improve public
58 transportation and multimodal access to all
59 park sites in Marin County. Trails would be
60 improved in all areas, increasing access and
61 connectivity to sites.

62

63 In the southeast coastal area (Rodeo Valley /
64 McCullough and Conzelman Road), safe
65 pedestrian, bicycle, and motor vehicle access
66 to overlooks and to interpretive and
67 recreational opportunities would be
68 provided. This would have a long-term,
69 moderate, beneficial impact for visitors to
70 this area. In the southwest coast area (Muir
71 Beach to Point Bonita) a trailhead and transit
72 stop would be added to the Golden Gate
73 Dairy. The National Park Service would
74 continue to work with Caltrans to improve
75 the safety of State Route 1, including
76 exploring regularly scheduled transit.
77 Increased transit access would have a long-
78 term, minor, beneficial impact for visitors in
79 this area. Trails in the Lower Redwood Creek
80 area would be improved to connect Muir
81 Woods Road to the equestrian facilities at
82 Santos Meadow. This may have a long-term,
83 negligible effect on connections for visitors to
84 this area.

85

86 The diverse opportunities zone in Rodeo
87 Valley could include visitor amenities such as
88 improved trailheads and accessible trails, as
89 well as camping, picnicking, and orientation.
90 These facilities would welcome visitors and
91 give access to the adjacent natural areas.
92 Improved and accessible trails would provide
93 a long-term, minor, beneficial effect on
94 circulation in this area. Housing for staff,
95 interns and volunteers would be provided
96 within and adjacent to this management
97 zone. A transit stop would be added at Fort
98 Barry. Increased transit access would have a
99 long-term, minor, beneficial impact for park

1 and park partner’s employees as well as
2 visitors in this area.

3
4 The National Park Service would collaborate
5 with other agencies to develop a community
6 trailhead in Marin City. This would have a
7 long-term, moderate, beneficial effect for
8 hikers accessing the Marin Headlands from
9 Marin City.

10
11 In Tennessee Valley, in collaboration with
12 Marin County and the local community, park
13 managers would explore transit to the
14 trailheads on peak season weekends, extend a
15 multiuse trail to connect with the Mill Valley
16 Bike Path (and the San Francisco Bay Trail),
17 and manage traffic congestion. This may
18 enable more people to visit on peak
19 weekends, because currently, some visitors
20 are unable to find parking, and leave without
21 visiting the valley. These measures would
22 have a long-term, moderate, beneficial impact
23 for Tennessee Valley, affecting most visitors
24 by reducing traffic congestion on peak
25 weekends and providing other ways to access
26 this popular location besides driving.

27
28 Some additional parking would be added at
29 the trailhead in Oakwood Valley. This would
30 have a long-term, minor, beneficial impact in
31 reducing crowded parking conditions on
32 Tennessee Valley Road.

33
34 At Stinson Beach and along the State Route
35 1 / Panoramic park, the park staff would
36 collaborate with Caltrans, Marin County, and
37 other land management agencies to improve
38 roadways and trail crossings for the safety
39 and enjoyment of park visitors. New facilities
40 could include overlooks and trailheads with
41 parking, enhanced trail and transit
42 connections, and a unified wayfinding
43 system. A small trailhead parking area could
44 be developed in the vicinity of the former
45 White Gate Ranch. These transportation
46 improvements would have a long-term,
47 minor to moderate, beneficial impact on
48 access by land, parking availability, and
49 improved public safety. Improvements east of
50 Panoramic Highway in the vicinity of
51 Homestead Hill would enhance trail and

52 transit access in this area. Improvements
53 would fit with the rural character of the area.
54 Increased trail and transit access would have
55 a long-term, minor, beneficial impact in this
56 area. Park management would continue to
57 seek increased transit to the Beach on peak-
58 season weekends. Increased transit access
59 would have a long-term, moderate, beneficial
60 impact for visitors in this area.

61 **San Francisco—**

62
63
64 In addition to the actions common to all
65 alternatives, alternative 1 provides greater
66 connectivity to San Francisco parks through
67 improved transit, trails, and signage. This
68 alternative anticipates development of a
69 water shuttle system connecting bay front
70 parks.

71
72 The park would continue to improve trails
73 and trailheads throughout its San Francisco
74 park lands to make the park accessible to the
75 broadest array of visitors. Sites would be
76 connected to each other and to communities
77 by the trail system and the city’s transit and
78 multimodal access systems. These projects
79 would have a long-term, minor to moderate,
80 beneficial effect on visitor connections.

81
82 Visitor circulation and wayfinding
83 improvements would be implemented in
84 response to new adjacent bus, streetcar and
85 ferry connections. These projects would have
86 a long-term, minor, beneficial effect on
87 visitor connections.

88
89 The park would improve the California
90 Coastal Trail and other trail connections
91 linking Ocean Beach to Lands End, Fort
92 Funston, city neighborhoods, and other park
93 lands including Golden Gate Park and Lake
94 Merced. This would have a long-term, minor
95 to moderate, beneficial effect on connectivity
96 between the park and neighborhoods for
97 southwest San Francisco park sites.

98 **San Mateo County—**

99
100
101 In addition to the actions common to all
102 alternatives, alternative 1 attempts to mitigate

1 the remoteness and lack of access to the San
 2 Mateo park lands by focusing on providing
 3 more trail access to and between all park
 4 areas, as well as increasing parking and
 5 improving transit connections. A
 6 comprehensive trail plan would be prepared
 7 to create a sustainable regional trail network,
 8 providing greater opportunities to access
 9 park sites and connect with local
 10 communities. The California Coastal Trail is
 11 already built on Mori Point, allowing
 12 increased access north and south; it is
 13 partially built across the Pedro Point
 14 Headlands (Point San Pedro). Once the
 15 property is acquired and the trail is
 16 completed, it will substantially increase
 17 access to these areas.

18
 19 Park managers would work with county
 20 transit providers to improve transit
 21 connections to local trailheads and east-west
 22 transit between bayside communities and
 23 State Route 1. In cooperation with Caltrans
 24 and at the request of the town of Pacifica,
 25 signs along State Route 1 would be improved
 26 to make the park and monument more
 27 visible. The considerable increase in trail and
 28 transit access is likely to have a long-term,
 29 moderate, beneficial impact on all park lands
 30 in San Mateo County.

31
 32 Connections to the regional trail network at
 33 the Shelldance Nursery and the surrounding
 34 public lands (SFPUC, San Pedro Valley
 35 County Park, McNee Ranch State Park, and
 36 Rancho Corral de Tierra) would be
 37 developed in coordination with other land
 38 managers. Additional connections to the Bay
 39 Area Ridge Trail and the Sawyer Camp Trail
 40 in the SFPUC watershed would be enhanced.
 41 These projects would have a long-term,
 42 minor to moderate, beneficial effect on
 43 connecting Golden Gate National Recreation
 44 Area sites in San Mateo County to other local
 45 and state park sites, regional trails, and
 46 surrounding communities. Limited vehicular
 47 access to the San Francisco Bay Discovery
 48 Site National Historical Landmark would be
 49 available by permit. Together, these actions
 50 would have a long-term, minor, beneficial
 51 impact for visitors accessing these park lands.

52 Access to Mori Point would be enhanced
 53 with an ADA-accessible trailhead and
 54 parking improvements, providing a long-
 55 term, moderate, beneficial impact.

56
 57 Visitors would access the coastal areas
 58 through an enhanced and sustainable system
 59 of multiuse trails. The trail network would
 60 connect local communities to the park and
 61 link the ridges of Montara Mountain to the
 62 Pacific Ocean. Opportunities for a trail
 63 connection to Sweeney Ridge through the
 64 SFPUC watershed's northwest corner would
 65 be explored. Unnecessary management roads
 66 could be converted to trails or removed.
 67 These projects would have a long-term,
 68 moderate, beneficial impact on visitor access,
 69 connecting the coastal areas to each other
 70 and to surrounding communities.

71 **Alcatraz Island—**

72
 73
 74 Alternative 1 includes the following
 75 transportation-related actions for Alcatraz.
 76 Some indoor and outdoor areas on Alcatraz
 77 Island that are currently inaccessible would
 78 be reopened, while sensitive wildlife areas
 79 would remain protected. Parts of the
 80 perimeter trail would be made accessible
 81 year-round. This action would have a long-
 82 term, minor, beneficial impact on making
 83 currently inaccessible areas available to the
 84 public. The National Park Service would
 85 prohibit boat tours and small boat landing in
 86 the sensitive resources management zone
 87 (extending 100 feet from the island's western
 88 shore). This action would have a long-term,
 89 minor, adverse effect on water access to this
 90 side of the island. The scenic corridor zone
 91 (extending beyond the sensitive resources
 92 zone and along the island's eastern shore)
 93 would be managed to accommodate ferry
 94 service to the island. Boat tours around the
 95 island and some types of water-based
 96 recreation, such as fishing, could be
 97 permitted. These actions would have a long-
 98 term, minor, beneficial effect on access to the
 99 island.

100
 101 The area adjacent to the entry dock would be
 102 managed to expand the capacity and range of

1 uses that may occur. This would enable
2 Alcatraz Island to be part of the San
3 Francisco Bay Water Trail, welcoming
4 nonmotorized boats via permits or
5 reservations. This would have a long-term,
6 minor, beneficial effect on access to the
7 island for those arriving in private
8 nonmotorized boats.

9
10 **Conclusion.** In alternative 1, access by land
11 to park sites in Marin County, including
12 improved trails, increased transit services,
13 and wayfinding, would see a long-term,
14 moderate, beneficial effect, particularly
15 during peak and shoulder seasons, and on
16 holiday weekends throughout the year.
17 Increased transit service and stops would
18 have a moderately beneficial impact on both
19 the functionality of the land-based
20 transportation system and on connectivity. It
21 would not only provide more ways for people
22 to get to the park sites, but would also relieve
23 congestion on the roads for both transit and
24 motorists.

25
26 In San Francisco County, alternative 1 would
27 have a long-term, moderate, beneficial impact
28 on both visitor connections and the
29 functioning of the transportation system
30 through increased land and water transit and
31 improved trails.

32
33 In San Mateo County, enhanced trail systems
34 would provide a long-term, moderate to
35 major, beneficial effect on connections by
36 land; there would be a long-term, moderate,
37 beneficial effect on transportation
38 functionality through more transit availability
39 and a minor beneficial impact on parking.

40
41 At Alcatraz Island, the slight increase in boat
42 and ferry traffic in the scenic corridor zone as
43 well as the entry dock area could result in a
44 long-term, minor, beneficial impact by
45 increasing access by water to the island. Re-
46 opening improved areas of the park and
47 increasing currently limited trail access to
48 year-round access would have a long-term,
49 minor, beneficial impact on pedestrian access
50 to park features and circulation on the island.

51

52 **Alternative 2: Preserving and** 53 **Enjoying Coastal Ecosystems**

54 **Analysis.** Alternative 2 focuses on preserving
55 the natural resources of the park and
56 monument by carefully controlling access
57 and removing deteriorated or unused
58 human-made structures, and has the least
59 impacts on transportation.

60

61 **Marin County—**

62

63 In addition to the measures under “Actions
64 Common to all Alternatives,” previously
65 described, there are few actions in alternative
66 2 that would substantially improve or detract
67 from visitor access and connectivity. Little-
68 used roads would be converted to trails. The
69 main Tennessee Valley trail, which is
70 currently open to hikers and equestrians,
71 would be converted to a multiuse trail,
72 opening the trail to bicycles as well. These
73 actions would provide a long-term, negligible
74 to minor, beneficial impact in access and in
75 modes of travel.

76

77 Alternative 2 recommends that the South
78 parking lot at Stinson Beach be removed and
79 the wetland restored. Because this lot
80 comprises about 50% of the parking spaces at
81 Stinson Beach, removing the south parking
82 lot would have to be carefully coordinated
83 with the town of Stinson Beach, the County
84 of Marin, and Marin Transit in order to
85 prevent major adverse effects on the local
86 community. Data from the *Comprehensive*
87 *Transportation Management Plan for Park*
88 *lands in Southwest Marin, 2002*, shown in the
89 table below, indicates that at present, parking
90 capacity at Stinson (approximately 840 cars)
91 does not meet demand on peak weekends for
92 1,050 spaces (2002). The projected peak-
93 season parking demand for 2023 is 1,335
94 spaces, an increase of 285 spaces over the
95 current capacity.

96

97 Parking overflow might only be a problem
98 during peak weekends for the next few years,
99 with longer term excess demand on peak and
100 shoulder weekends. As shown in table 20,
101 reducing the parking to approximately 420

- 1 spaces is likely not to be a problem during the
- 2 off-season (October through April).
- 3 However, even during the off-season,
- 4 Stinson Beach does see increased visitors on
- 5 sunny weekends, particularly those with
- 6 holiday Mondays, so the off-season weekend
- 7 estimates may be lower than actual demand.

TABLE 20. PARKING CAPACITY AT STINSON BEACH, 2002 AND 2023

Parking Demand at Stinson Beach – 2002					
Peak Season		Shoulder Season		Off-Season	
Weekday	Weekend	Weekday	Weekend	Weekday	Weekend
365	1050	260	450	155	270
Estimated Parking Demand at Stinson Beach – 2023					
Peak Season		Shoulder Season		Off-Season	
Weekday	Weekend	Weekday	Weekend	Weekday	Weekend
465	1335	315	540	180	310

Note: 2009 parking capacity: 839; with south lot removed: approximately 420

- 1 The effects of inadequate parking on the
- 2 town include spillover parking in
- 3 neighborhoods and illegal parking.
- 4 Enforcement of parking restrictions in
- 5 Stinson Beach is under the jurisdiction of the
- 6 Marin County Sherriff. Because all of West
- 7 Marin is currently served by two law
- 8 enforcement officers, consistent enforcement
- 9 of parking restrictions is unlikely to occur;
- 10 enforcement and towing may have to be
- 11 managed and could involve support from the
- 12 National Park Service. Parking tickets alone
- 13 are ineffective in controlling where people
- 14 park in Stinson Beach; according to some
- 15 residents, some visitors appear to consider
- 16 the cost of a parking ticket simply the price
- 17 one pays to go to the beach. In a community
- 18 already experiencing severe levels of
- 19 congestion on peak weekends, parking
- 20 reduction could lead to even greater traffic
- 21 congestion as well as increased air pollution
- 22 as cars circle the parking lot and
- 23 neighborhoods looking for parking spaces.
- 24
- 25 As demonstrated in community meetings
- 26 held in May 2009, residents of Stinson Beach
- 27 are extremely concerned about the effects of
- 28 traffic and of parking overflow problems in
- 29 neighborhoods adjacent to the beach. Any
- 30 reduction in peak-season parking would have
- 31 to include as part of the measure significant
- 32 proven mitigations in order to get local
- 33 support and to prevent the town from being
- 34 inundated with vehicles. One such mitigation
- 35 might be increased transit service and greatly
- 36 expanded marketing of transit and alternative
- 37 modes, including signs on Highway 101
- 38 warning of the lack of parking in Stinson
- 39 Beach. Currently Stinson Beach is served by
- 40 Marin Transit’s Stagecoach service. Were
- 41 parking to be reduced, the park staff may
- 42 wish to partner with Marin Transit on
- 43 increased service frequency, earlier and later
- 44 hours, and joint marketing efforts to reduce
- 45 the number of cars entering Stinson Beach.
- 46 Closing the south parking lot may have long-
- 47 term, major, adverse impacts, because it
- 48 could substantially restrict access to Stinson
- 49 Beach and lower the quality of the visitor
- 50 experience because of increased traffic
- 51 congestion. Alternatively, with substantially
- 52 increased transit service, along with
- 53 aggressive marketing and consistent parking
- 54 enforcement, this may have a long-term,

1 moderate, beneficial impact on the Stinson
2 Beach area by reducing the number of cars on
3 local roads.

4
5 Alternative 2 also includes a recommendation
6 that, in the event of a catastrophic landslide
7 on State Route 1 (Shoreline Highway), park
8 managers would encourage abandonment of
9 State Route 1 between Muir Beach and
10 Stinson Beach in the affected segment. State
11 Route 1 is ultimately controlled by Caltrans.
12 If State Route 1 between Muir Beach and
13 Stinson Beach were damaged and then
14 abandoned at the affected segment, the
15 coastal communities would sustain a long-
16 term, moderate, adverse impact to
17 connectivity. This would more than double
18 the driving distance between Muir Beach and
19 Stinson Beach from 5 miles to 13 miles, and
20 lengthen the driving time from approximately
21 8 minutes to 30 minutes. This would have
22 implications for residents of both
23 communities and for emergency access to
24 those areas.

25
26 **San Francisco County—**

27
28 With its focus on preserving the natural
29 environment, this alternative has no
30 transportation-related measures affecting San
31 Francisco other than those common to all
32 alternatives.

33
34 **San Mateo County—**

35
36 In addition to the measures described in the
37 “Actions Common to all Alternatives” section
38 cited previously, the following narrative
39 describes the transportation measures for San
40 Mateo County. At Sweeney Ridge, Sneath
41 Lane could be converted to a trail and
42 connect to the Bay Area Ridge Trail in the
43 SFPUC watershed. Unnecessary fire roads
44 could also be converted to trails or removed
45 if not historic and natural resources restored.
46 If acquired, a trailhead would be sited at
47 Picardo Ranch with modest visitor support
48 facilities (restroom, picnic tables, parking).
49 These measures are likely to result in a long-
50 term, minor, beneficial impact at Sweeney
51 Ridge. In the SFPUC watershed easement,

52 park managers would promote access along
53 the existing multiuse trail and implemen-
54 tation of trail improvements proposed in the
55 *San Francisco Watershed Management Plan*
56 (2002), including completion of the north-
57 south corridor through the watershed in
58 areas of low sensitivity. Completion of these
59 actions could have a long-term, minor to
60 moderate, beneficial effect on access to these
61 areas.

62
63 **Alcatraz Island—**

64
65 In alternative 2, visitor access to now-closed
66 sites would be opened. Visitor access to the
67 north end of the island would be expanded to
68 provide wildlife viewing and research while
69 carefully managing impacts to prevent
70 disruption of natural resources. This would
71 result in a long-term, minor, beneficial impact
72 on visitor circulation on Alcatraz Island.

73
74 The scenic corridor zone (extending beyond
75 the sensitive resources zone and along the
76 island’s eastern shore) would be managed to
77 accommodate ferry access to the island.
78 Some other types of water-based recreation
79 could also be permitted. This would result in
80 a long-term, minor, beneficial impact on
81 visitor access to Alcatraz Island via water.

82
83 **Conclusion.** For park lands in Marin County,
84 impacts on access and connectivity for
85 alternative 2 are negligible, with two
86 exceptions. A 50% reduction in parking at
87 Stinson Beach could have either a long-term,
88 major, adverse impact on accessibility and
89 user experience in Stinson Beach during peak
90 periods and holiday weekends by
91 exacerbating an already difficult traffic
92 congestion situation, or a long-term,
93 moderate, beneficial effect if combined
94 effectively with other efforts such as
95 provision of transit, marketing of transit, and
96 enforcement of parking restrictions.

97
98 Closing a segment of State Route 1 between
99 Muir Beach and Stinson Beach may have a
100 moderate to major, adverse impact on
101 connectivity between these two communities.

102

1 There are no transportation actions for San
2 Francisco for alternative 2.

3
4 In San Mateo, the transportation actions in
5 alternative 2 may result in a minor to
6 moderate, beneficial effect on connections by
7 land through enhanced trail systems.

8
9 The improved access on Alcatraz Island to
10 previously closed areas could result in a long-
11 term, minor, beneficial impact to connectivity
12 by water transit, and access to sites on
13 Alcatraz Island via enhanced trails.

14
15 **Alternative 3: Focusing on National**
16 **Treasures (NPS Preferred Alternative**
17 **for Alcatraz Island)**

18 **Analysis.** In addition to the impacts
19 highlighted below, the transportation impacts
20 that are described above in alternative 1 also
21 apply to this alternative for park lands in
22 Marin, San Francisco, and San Mateo
23 counties.

24
25 At Fort Funston, alternative 3 proposes
26 relocating both access and parking to the
27 edge of Fort Funston, allowing restoration of
28 dunes. This measure has long-term, minor,
29 impacts that could be considered either
30 beneficial (for the restoration of the dunes)
31 or adverse (because visitors would have a
32 longer walk to reach the beach). This action
33 does not appreciably limit or enhance
34 visitors' ability to visit Fort Funston.

35
36 Alternative 3 envisions that visitors would be
37 able to go to a larger number of locations on
38 Alcatraz Island. Current barriers to visitor
39 access and circulation include rubble that
40 would be removed, buildings that would be
41 stabilized, and trails that would be upgraded,
42 including the perimeter trail. Pedestrian
43 circulation would be improved for many
44 visitors, with more sites accessible. This could
45 have a long-term, moderate, beneficial impact
46 on visitor experience at Alcatraz Island,
47 enhancing public safety by stabilizing
48 structures.

49

50 This alternative also includes consideration
51 of additional ferry service from San
52 Francisco. Multiple ferry embarkation points
53 could include a dock at Fort Mason, with
54 primary embarkation still from the San
55 Francisco waterfront. This would likely have
56 a long-term, moderate, beneficial impact on
57 visitor access to the island by providing more
58 than one place to board the ferry in San
59 Francisco.

60
61 **Conclusion.** In alternative 3, the relocation
62 of parking and access to Fort Funston in San
63 Francisco has a long-term, minor effect that
64 is both slightly beneficial for preservation of
65 the natural environment with a slightly
66 adverse impact on visitor access.

67

68 For Alcatraz Island, this alternative could
69 result in a long-term, moderate, beneficial
70 increase in connectivity through additional
71 ferry embarkation points; and a long-term,
72 moderate, beneficial increase in access to
73 additional historic features over an expanded
74 area of the island because of trail expansion
75 and improvement.

76

77

78 **Park Management, Operations,**
79 **and Facilities**

80 **No-action Alternative**

81 **Analysis.** The no-action alternative would
82 generally call for the continuation of current
83 management, programs, operations, funded
84 construction projects, and current levels of
85 annual operating funds.

86

87 Staffing levels would continue at current
88 levels. While some divisions are staffed
89 adequately, others have the need for
90 additional staff. For example, despite creative
91 approaches in supplementing the work of
92 park maintenance staff, the required
93 workload needed to maintain and support
94 park assets exceeds available staff resources,
95 resulting in a significant maintenance
96 backlog. The aging infrastructure in the park
97 requires increasing resources to maintain. A

1 majority of the maintenance needs annually
2 go unmet due to funding, which results in an
3 expanding backlog of deferred maintenance.

4
5 The demand for educational and interpretive
6 programs exceeds what the interpretive staff
7 is able to provide. Other divisions, such as the
8 cultural resources division, are supplemented
9 by volunteer staff. The natural resources
10 division's staffing levels prevent the park
11 from completing the baseline studies and
12 monitoring necessary to guide the park's
13 natural resources preservation efforts in the
14 future. A lack of sufficient patrol units has
15 resulted in adverse impacts on resources.
16 Additionally, due to staff limitations, the
17 management of volunteers is very limited;
18 and therefore the volunteer program does
19 not have the capacity to grow and provide
20 additional benefit to the park and monument.

21
22 While staff at Golden Gate National
23 Recreation Area and Muir Woods National
24 Monument lead the field in many of the
25 programs they spearhead, such as
26 development of partnerships, community
27 based stewardship, and increased
28 sustainability in many areas of park
29 operations, the continued impact of low
30 staffing levels on park operations is long
31 term, moderate, and adverse.

32
33 Facilities continue to deteriorate given
34 minimal additional project funding and the
35 current inadequate annual base funding for
36 maintenance. Even given the direction of the
37 park asset management plan for prioritizing
38 funds, a large gap in maintenance funding
39 would result in an increase in the deferred
40 maintenance backlog. Inadequate project and
41 operational funding would result in long-
42 term, moderate, adverse impacts on park
43 facilities.

44
45 Facilities at Alcatraz Island are in an
46 advanced stage of deterioration.
47 Infrastructure for utilities is another
48 constraint on the island. For example,
49 potable and wastewater must be transported
50 to and from the island by ferry. Water storage
51 constraints also place limits on the visitation

52 and operations presence on the island. Fire
53 system water storage and distribution is an
54 issue on the island. Power utilization and
55 energy demands are also an issue; power is
56 generated by diesel engines, which pollute
57 and also constrain operations on the island.
58 Each of these systems requires improvement
59 for continued use at current levels. A lack of
60 future project funding would result in long-
61 term, major, adverse impacts on mission
62 critical facilities on the island.

63
64 Facility location, condition, and available use
65 also impact park operations. Maintenance
66 facilities do not meet the needs of the park;
67 currently, long distances from storage and
68 maintenance facilities to job sites, and
69 inappropriate storage facilities for equipment
70 affect the operations adversely and result in
71 equipment deterioration. Park public safety is
72 also impacted negatively by the current
73 location of facilities; currently, law
74 enforcement staff has limited facilities in the
75 headlands and no base of operations in San
76 Mateo County. The operations would
77 continue to have long-term, moderate,
78 adverse impacts due to current maintenance
79 and public safety facility locations, size, and
80 lack of modern and secure features.

81
82 Park partners are vital to the continued
83 operation of the park, as they provide
84 generous funds, organize volunteers, and
85 provide interpretive and educational
86 programs. The park's continued efforts at
87 developing and maintaining partnerships
88 would continue to provide long-term,
89 moderate, beneficial impacts on park
90 operations.

91
92 The Volunteers-In-Parks program is critical
93 to the ongoing operation of Golden Gate
94 National Recreation Area and Muir Woods
95 National Monument. In a typical year,
96 between 10,000 and 14,000 volunteers
97 provide an excess of 300,000 volunteer hours
98 to various programs and efforts within the
99 park and monument. The continued
100 management of volunteer programs at the
101 park and monument contribute a continuing

1 long-term, moderate, beneficial impact to
2 park operations.

3
4 **Conclusion.** Inadequate staffing levels would
5 result in continued long-term, moderate, and
6 adverse impacts on operations. Continued
7 partner and volunteer efforts would result in
8 long-term, moderate, beneficial impacts on
9 park operations, although these efforts would
10 be limited by current staffing levels.

11 Inadequate project and operational funding
12 would result in long-term, major, adverse
13 impacts on park facilities throughout Golden
14 Gate National Recreation Area including
15 Alcatraz Island. The inadequate maintenance
16 and public safety facilities and their locations
17 would result in continued long-term,
18 moderate, and adverse impacts on
19 operations.

20
21 ***Alternative 1: Connecting People***
22 ***with the Parks (NPS Preferred***
23 ***Alternative for Park Sites in Marin,***
24 ***San Francisco, and San Mateo***
25 ***Counties)***

26 **Analysis.** While designed to contribute to
27 the protection of resources and the
28 enhancement of visitor opportunities, the
29 proposals of alternative 1 will achieve these
30 ends only if staffing and operating funds are
31 increased in accordance with the cost
32 estimates identified for this alternative. If
33 funding and needed staffing levels are not
34 made available when these actions are
35 implemented, then the proposed actions
36 would have long-term, moderate, adverse
37 effects on park operations.

38
39 Additional staff needs projected under this
40 alternative would supplement many of the
41 divisions with the people needed to achieve
42 the resource and visitor experience objectives
43 of the alternative. Expanding operations into
44 San Mateo County requires increasing
45 employees and support facilities in order to
46 manage the existing and newly acquired
47 lands. In addition, some staff would be
48 responsible for organizing and managing
49 volunteer groups, thus leveraging park

50 resources with the expertise and enthusiasm
51 of willing community members and youth
52 groups. While the park would be better able
53 to meet resource protection goals as well as
54 visitor experience and safety through the
55 addition of these full-time equivalent
56 employees, salaries for these employees
57 would appreciably increase the operating
58 budget and the need to develop additional
59 partnerships. Increased staff would result in
60 long-term, moderate, beneficial impacts on
61 operations if appropriate funding is available,
62 otherwise the actions of this alternative
63 would continue the adverse impacts
64 identified in the no-action alternative.

65
66 The proposed new or reconstructed facilities
67 in this alternative would require additional
68 capital investments. If funded, the
69 improvements would result in a decrease in
70 the park's deferred maintenance. Unless the
71 cyclic maintenance budget is adjusted to
72 maintain the park's facilities as identified in
73 this alternative, the deferred maintenance
74 will increase, even with an initial investment
75 in that asset. Adjusting the operations and
76 maintenance budget to realistically reflect the
77 true costs of a facility will have a long-term,
78 moderate, beneficial impact on park
79 operations; otherwise, the impact would be
80 adverse and result in an increase of deferred
81 maintenance.

82
83 Fundraising through park partners to support
84 specific programs to improve park facilities
85 has often been successful, although
86 maintenance funding is typically more
87 difficult to come by. The investment in
88 facilities would improve facility conditions,
89 reduce the deferred maintenance backlog,
90 meet sustainability goals, and improve the
91 ability of the park to meet its goals for natural
92 and cultural resource protection and improve
93 visitor experience. Construction,
94 rehabilitation, restoration, and demolition
95 projects proposed in the alternative would
96 result in long-term, major, beneficial impacts
97 on park operations if funding could be
98 obtained. Construction activities would
99 impact park operations in the short term and
100 would be minor and adverse, as some

1 inefficiency would be caused by the closure
2 of buildings during construction.

3

4 Enhancing park operations at Fort Funston
5 would improve maintenance and public
6 safety functions in that area. The proposed
7 “portals” at Rancho Corral de Tierra, Upper
8 Fort Mason, and Tennessee Valley would
9 improve interpretation and public safety
10 operations with opportunities for visitors to
11 access park staff. These changes would result
12 in long-term, moderate, beneficial impacts on
13 park operations.

14

15 At Alcatraz Island, increases in staff would
16 allow increased levels of maintenance, public
17 safety, resource protection, and visitor
18 services. These increases in staff would result
19 in long-term, moderate, beneficial impacts on
20 operations, if the positions are adequately
21 funded.

22

23 Alternative 1 proposes extensive restoration
24 and rehabilitation of facilities on Alcatraz
25 Island. These actions would result in long-
26 term, moderate, beneficial impacts on the
27 operations of Alcatraz Island. Construction
28 activities would result in minor, short-term,
29 adverse impacts due to the closure of
30 facilities.

31

32 **Conclusion.** Increased number of park staff
33 would result in long-term, moderate,
34 beneficial impacts on operations if
35 appropriate, annual base funding is available.
36 Construction, rehabilitation, restoration, and
37 demolition projects proposed in the
38 alternative would result in long-term,
39 moderate, beneficial impacts on park
40 operations by addressing deferred
41 maintenance. Construction activities would
42 result in short-term, minor, adverse impacts
43 on park operations, because of closures
44 during the work. An expanded maintenance
45 facility at Fort Funston and the addition of
46 three “portals” would result in long-term,
47 moderate, beneficial impacts on park
48 operations.

49

50 **Alternative 2: Preserving and** 51 **Enjoying Coastal Ecosystems**

52 **Analysis.** While designed to contribute to
53 the protection of resources and the
54 enhancement of visitor opportunities, the
55 proposed actions of alternative 2 would
56 achieve these ends only if staffing and
57 operating funds are increased in accordance
58 with the cost estimates identified for this
59 alternative. If funding and needed staffing
60 levels are not made available when these
61 actions are implemented, then the proposed
62 actions would have long-term, moderate,
63 adverse effects on park operations.

64

65 This alternative would require considerable
66 increases in park staffing to manage the new
67 park lands in San Mateo County; educate
68 visitors about the coastal ecosystems of the
69 area; gather baseline natural and cultural
70 resource information, and use this
71 information to guide the future of these
72 programs; maintain facilities and landscapes;
73 and provide for effective public safety in
74 areas where visitors are concentrated as well
75 as in more primitive areas. Increases in
76 staffing levels would result in a long-term,
77 moderate, beneficial impact in the ability of
78 the park to meet its operating and mission
79 goals while leveraging the support of partners
80 and volunteers. However, salaries for these
81 FTEs would appreciably increase the
82 operating budget and the need to develop
83 additional partnerships. Increased staffing
84 would result in long-term, moderate,
85 beneficial impacts on operations if adequate
86 funding accompanied the staffing increases.

87

88 The removal of noncritical facilities and the
89 restoration of those landscapes would result
90 in fewer maintenance needs and the removal
91 of the deferred maintenance associated with
92 those structures and the redistribution of
93 park personnel and funds to remaining
94 facilities.

95

96 Capital investment in facilities would
97 improve facility conditions, help to reduce
98 the deferred maintenance backlog, and help
99 to meet sustainability goals. If adequately

1 funded, construction, rehabilitation,
2 restoration, and demolition projects
3 proposed in the alternative would result in
4 long-term, moderate, beneficial impacts on
5 park operations. Construction and landscape
6 restoration activities would result in short-
7 term, minor, adverse impacts, caused by the
8 closure of buildings and lands during
9 construction or restoration.

10
11 On Alcatraz Island, increases in staff would
12 allow for improved maintenance as well as
13 increased resource protection and public
14 safety, especially if visitor use extends into
15 the late evenings. Such increases in staff and
16 work would result in long-term, moderate,
17 beneficial impacts on operations if positions
18 are adequately funded. The increased
19 difficulty for public safety to reach the more
20 primitive areas of the island that would
21 become open in this alternative would result
22 in long-term, negligible to minor, adverse
23 impacts on operations.

24
25 On Alcatraz Island, alternative 2 proposes
26 wilding of many areas on the island and
27 stabilizing some structures. In addition,
28 alternative 2 provides for various treatments
29 for each historic structure (e.g., stabilization,
30 restoration, or rehabilitation). Actions in this
31 alternative will address structures that are in
32 poor condition and pose threat of injury to
33 visitors and staff. The improved facility
34 conditions would result in long-term,
35 moderate, beneficial impacts on the
36 operations of Alcatraz Island and would
37 address the deferred maintenance issues.
38 Construction activities would result in minor,
39 short-term, adverse impacts due to the
40 closure of facilities. Increases in law
41 enforcement staff would allow for overnight
42 experiences on the island.

43
44 **Conclusion.** Increased staff would result in
45 long-term, moderate, beneficial impacts on
46 operations if accompanying funding is
47 appropriate. Construction, stabilization,
48 rehabilitation, restoration, and demolition
49 projects proposed in the alternative would
50 result in long-term, moderate, beneficial
51 impacts on park operations and address

52 deferred maintenance issues. Construction
53 and landscape restoration activities would
54 result in minor, adverse impact in the short
55 term, as some inefficiency would be caused
56 by closure of buildings and lands during
57 construction or restoration. The increased
58 difficulty for public safety personnel to reach
59 the more primitive areas would result in long-
60 term, minor, adverse impacts on operations.

61 62 **Alternative 3: Focusing on National** 63 **Treasures (NPS Preferred Alternative** 64 **for Alcatraz Island)**

65 **Analysis.** While designed to contribute to
66 the protection of resources and the
67 enhancement of visitor opportunities, the
68 proposals of alternative 3 will achieve these
69 ends only if staffing and operating funds are
70 increased in accordance with the cost
71 estimates identified for this alternative. If
72 funding and needed staffing levels are not
73 made available when these actions are
74 implemented, then the proposed actions
75 would have long-term, moderate, adverse
76 effects on park operations.

77
78 In addition to the impacts outlined in
79 alternative 1, alternative 3 would require
80 additional park staff and park partners to
81 support visitor programs and services
82 throughout the park, significant new
83 interpretive and educational programs at
84 Alcatraz Island, expanded natural and
85 cultural stewardship centers, and visitor
86 programs associated with the park
87 collections. These additional park staff would
88 enable the park to provide interpretive and
89 educational programs that are especially tied
90 to cultural and natural resources associated
91 with the historic immersion management
92 zone. Additionally, maintenance and public
93 safety staff would require expanded hours at
94 Alcatraz Island and for management of the
95 park lands in San Mateo County. Increased
96 staff would result in long-term, moderate,
97 beneficial impacts on operations if
98 appropriate funding is available; otherwise,
99 the actions of this alternative would continue

1 the adverse impacts identified in the no-
2 action alternative.
3
4 Increased restoration of nationally significant
5 resources would benefit operations by
6 reducing deferred maintenance, improving
7 facility conditions, and helping the park to
8 reach its sustainability goals. The
9 construction, stabilization, rehabilitation,
10 restoration, and demolition projects
11 proposed in the alternative would result in
12 long-term, moderate, beneficial impacts on
13 park operations if funding could be obtained.
14 Some construction and landscape restoration
15 activities would result in minor, adverse
16 impacts on park operations in the short term,
17 because of the closure of buildings and lands
18 during construction or restoration. Costs to
19 implement this alternative would be
20 somewhat greater than historic capital
21 project fund amounts. The ability of the park
22 and partners to raise needed funds would
23 dramatically affect the ability to achieve the
24 goals of alternative 3.
25
26 Changes in facility use and location would
27 result in moderate, long-term, beneficial
28 impacts on park operations. The
29 establishment of a visitor center at Capehart,
30 a hub at Rancho Corral de Tierra, and
31 additional visitor services at Fort Mason
32 would make it easier for park staff to provide
33 educational and interpretive information to
34 visitors throughout the park. An operations
35 area at Fort Miley would improve efficiencies
36 in public safety and maintenance in that area.
37 At Alcatraz Island, increases in staff would
38 permit improved maintenance as well as
39 increased levels of public safety and resource

40 protection. As this alternative proposes a high
41 level of restoration to nationally significant
42 resources, these areas would need to be
43 staffed and managed accordingly. If
44 adequately funded, these increases in staff
45 would result in long-term, moderate,
46 beneficial impacts on park operations.
47
48 Also at Alcatraz Island, national treasure
49 facilities would be stabilized, restored, or
50 rehabilitated. Currently, many of the facilities
51 are in poor condition and pose the threat of
52 injury to visitors and staff. The improved
53 facility conditions would result in long-term,
54 moderate, beneficial impacts on park
55 operations at Alcatraz Island and help to
56 address the deferred maintenance issues.
57 Construction activities would result in minor,
58 short-term, adverse impacts due to the
59 closure of facilities. The funding needed to
60 complete the projects in this alternative is
61 significant.
62
63 **Conclusion.** Increased staff would result in
64 long-term, moderate, beneficial impacts on
65 operations if adequate funding accompanies
66 the increase in park staffing. Construction,
67 stabilization, rehabilitation, restoration, and
68 demolition projects proposed in the
69 alternative would result in long-term,
70 moderate, beneficial impacts on park
71 operations, but would also result in short-
72 term, minor, adverse impacts while the
73 activities are underway. Facility use and
74 location changes would result in long-term,
75 moderate, and beneficial impacts on park
76 operations.

MUIR WOODS NATIONAL MONUMENT

1 NATURAL RESOURCES – PHYSICAL 2 RESOURCES

3 Carbon Footprint and Air Quality

4 *No-action Alternative*

5 **Analysis.** The continuation of current
6 conditions and management would continue
7 to result in adverse impacts on air quality/
8 carbon footprint. Baseline GHG emissions
9 (2008) for Muir Woods National Monument
10 are estimated at 2,257 MTCO₂e.

11
12 Mobile combustion associated with visitor
13 travel in personal automobiles and the pilot
14 shuttle would continue to be the largest
15 contributor of GHG emissions, (2,179
16 MTCO₂e), representing about 96% of gross
17 emissions at the monument.

18
19 Greenhouse gas emissions from visitors and
20 NPS operations do contribute to elevated
21 ozone and other air quality concerns. The
22 National Park Service would continue to
23 reduce greenhouse gas emissions by reducing
24 energy consumption and replacing high-
25 emitting apparatus with green technology,
26 resulting in a beneficial impact.

27
28 Overall, when compared to background
29 levels of air pollution and GHG emissions in
30 the region or the nation (estimated at 6 billion
31 in 2007), impacts on air quality from the no-
32 action alternative would be long term,
33 adverse, and negligible.

34
35 **Conclusion.** Total gross emissions for Muir
36 Woods National Monument would be
37 estimated at 2,257 MTCO₂e, resulting in
38 long-term, minor, adverse impacts on the
39 monument's carbon footprint. Overall, when
40 compared to background levels of air
41 pollution and GHG emissions in the region
42 or the nation (estimated at 6 billion in 2007),
43 impacts on air quality from the no-action

44 alternative would be long term, adverse, and
45 negligible.

46

47 ***Alternative 1: Connecting People*** 48 ***with the Parks (NPS Preferred*** 49 ***Alternative for Park Sites in Marin,*** 50 ***San Francisco, and San Mateo*** 51 ***Counties)***

52 **Analysis.** Under alternative 1 visitor travel to
53 the monument would be altered so that
54 dependency on personal automobiles would
55 be reduced. About 25% of parking would be
56 removed and the Muir Woods shuttle would
57 be expanded and could run on compressed
58 natural gas, a lower emissions fuel. As a
59 result, mobile combustion is estimated to be
60 reduced by 20% to 1,740 MTCO₂e. When
61 compared to the no-action alternative,
62 impacts on air quality/carbon footprint
63 would be reduced, resulting in a beneficial
64 impact.

65

66 Emissions from stationary combustion and
67 purchased electricity would be slightly
68 reduced when compared to the no-action
69 alternative as result of facility removal and
70 corresponding reductions in energy usage.
71 Emissions associated with wastewater
72 treatment and solid waste would be the same
73 as under the no-action alternative.

74

75 Short-term adverse impacts on air quality
76 would occur as a result of the construction
77 activities needed to remove facilities
78 (buildings and parking areas) and reclaim the
79 disturbed sites.

80

81 Long-term, adverse impacts on air quality /
82 carbon footprint would also be expected due
83 to increases in energy consumption and
84 related emissions attributed to the new
85 welcome center / shuttle parking on Highway
86 101.

87

1 The combined effect of the actions included
 2 in alternative 1 is estimated to decrease the
 3 gross emissions of Muir Woods National
 4 Monument by 20% to 1,812 MTCO₂e. This
 5 would result in long-term, minor, beneficial
 6 impacts on the NPS carbon footprint. As in
 7 the no-action alternative, impacts on air
 8 quality (when compared to background
 9 levels of air pollution in the region and
 10 nation) would be negligible.

11
 12 **Conclusion.** The combined effect of the
 13 actions included in alternative 1 is estimated
 14 to decrease the gross emissions of Muir
 15 Woods National Monument by 20% to 1,812
 16 MTCO₂e. This would result in long-term,
 17 minor, beneficial impacts on the NPS carbon
 18 footprint. As in the no-action alternative,
 19 impacts on air quality (when compared to
 20 background levels of air pollution in the
 21 region and nation) would be negligible.

22 23 **Alternative 2: Preserving and** 24 **Enjoying Coastal Ecosystems**

25 **Analysis.** Under alternative 2 visitor travel to
 26 the monument would be altered so that
 27 dependency on personal automobiles would
 28 be substantially reduced. Most of the parking
 29 at the monument would be removed and the
 30 Muir Woods shuttle would be expanded to a
 31 year-round operation and could run on
 32 compressed natural gas, a lower emissions
 33 fuel. As a result, mobile combustion is
 34 estimated to be reduced by 85% to 333
 35 MTCO₂e. When compared to the no-action
 36 alternative, impacts on air quality/carbon
 37 footprint would be reduced, resulting in a
 38 beneficial impact.

39
 40 Emissions from stationary combustion and
 41 purchased electricity would be slightly
 42 reduced when compared to the no-action
 43 alternative as result of facility removal and
 44 corresponding reductions in energy usage.
 45 Emissions associated with wastewater
 46 treatment and solid waste would be the same
 47 as under the no-action alternative.

48
 49 Short-term adverse impacts on air quality
 50 would occur as a result of the construction

51 activities needed to remove facilities
 52 (buildings and parking areas) and reclaim the
 53 disturbed sites as well as from the restoration
 54 of Redwood Creek.

55
 56 Long-term, adverse impacts on air quality/
 57 carbon footprint would also be expected due
 58 to increases in energy consumption and
 59 related emissions attributed to the new
 60 welcome center / shuttle parking on Highway
 61 101.

62
 63 The combined effect of the actions included
 64 in alternative 2 is estimated to decrease the
 65 gross emissions of Muir Woods National
 66 Monument by 82% to 401 MTCO₂e. This
 67 would result in long-term, major, beneficial
 68 impacts on the NPS carbon footprint. As in
 69 the no-action alternative, impacts on air
 70 quality (when compared to background
 71 levels of air pollution in the region and
 72 nation) would be negligible.

73
 74 **Conclusion.** The combined effect of the
 75 actions included in alternative 2 is estimated
 76 to decrease the gross emissions of Muir
 77 Woods National Monument by 82% to 401
 78 MTCO₂e. This would result in long-term,
 79 major, beneficial impacts on the NPS carbon
 80 footprint. As in the no-action alternative,
 81 impacts on air quality (when compared to
 82 background levels of air pollution in the
 83 region and nation) would be negligible.

84 85 **Alternative 3: Focusing on National** 86 **Treasures (NPS Preferred Alternative** 87 **for Muir Woods National Monument)**

88 **Analysis.** Under alternative 3 visitor travel to
 89 the monument would be altered so that
 90 dependency on personal automobiles would
 91 be reduced. About 25% of parking would be
 92 removed and the Muir Woods shuttle would
 93 be expanded and could run on compressed
 94 natural gas, a lower emissions fuel. As a
 95 result, mobile combustion is estimated to be
 96 reduced by 20% to 1,740 MTCO₂e. When
 97 compared to the no-action alternative,
 98 impacts on air quality/carbon footprint

1 would be reduced, resulting in a beneficial
2 impact.

3
4 Emissions from stationary combustion and
5 purchased electricity would be slightly
6 reduced when compared to the no-action
7 alternative as result of facility removal and
8 corresponding reductions in energy usage.
9 Emissions associated with wastewater
10 treatment and solid waste would be the same
11 as under the no-action alternative.

12
13 Short-term adverse impacts on air quality
14 would occur as a result of the construction
15 activities needed to remove facilities
16 (buildings and parking areas) and reclaim the
17 disturbed sites as well as from targeted
18 restoration of Redwood Creek.

19
20 The combined effect of the actions included
21 in alternative 3 is estimated to decrease the
22 gross emissions of Muir Woods National
23 Monument by 20% to 1,813 MTCO₂e. This
24 would result in long-term, minor, beneficial
25 impacts on the NPS carbon footprint. As in
26 the no-action alternative, impacts on air
27 quality (when compared to background
28 levels of air pollution in the region and
29 nation) would be negligible.

30
31 **Conclusion.** The combined effect of the
32 actions included in alternative 3 is estimated
33 to decrease the gross emissions of Muir
34 Woods National Monument by 20% to 1,813
35 MTCO₂e. This would result in long-term,
36 minor, beneficial impacts on the NPS carbon
37 footprint. As in the no-action alternative,
38 impacts on air quality (when compared to
39 background levels of air pollution in the
40 region and nation) would be negligible.

41
42 ***Carbon Footprint for the NPS***
43 ***Preferred Alternative for Golden***
44 ***Gate National Recreation Area***
45 ***(including Alcatraz Island) and Muir***
46 ***Woods National Monument***

47 A description of carbon footprint impacts for
48 the full preferred alternative (alternative 1 for
49 Marin, San Francisco, and San Mateo

50 counties; and alternative 3 for Alcatraz and
51 Muir Woods) is included here and at the end
52 of the related section for Muir Woods
53 National Monument. The impact analysis
54 concludes that the preferred alternative
55 would result in total emissions of 8,979
56 MTCO₂e, a decrease of 1% from the no-
57 action alternative's 9,075 MTCO₂e. This
58 would result in long-term, minor, beneficial
59 impacts on the NPS carbon footprint.

60
61
62 **Soils and Geologic Resources**
63 **and Processes**

64 ***No-action Alternative***

65 **Analysis.** Under the no-action alternative,
66 the presence and maintenance of existing
67 facilities (including structures, parking lots,
68 roads, and trails) would continue to cause
69 parkwide impacts on soils and geologic
70 resources due to the permanent loss and
71 function of these resources and from erosion
72 associated with unsustainable trails and
73 roads. The impact of these activities would be
74 long term, minor to moderate, adverse, and
75 localized, but would occur throughout Muir
76 Woods National Monument.

77
78 Projects to improve natural habitat values
79 and ecosystem function, such as the
80 modification of trails and roads, would have
81 beneficial effects on soils and geologic
82 resources and processes because they would
83 improve or restore the functionality of
84 natural processes—the impact would be long
85 term, minor, beneficial, and localized.

86
87 Recreational use would continue to cause
88 compaction and erosion of soils, resulting in
89 long-term, minor, adverse, localized impacts
90 throughout the monument.

91
92 NPS efforts to provide educational and
93 participatory stewardship programs would
94 continue to have a beneficial effect on
95 geologic resources and soils due to increased
96 public understanding and support for
97 resource protection and management—the

1 impact would be long term, minor, beneficial,
2 and monument wide.

3

4 **Conclusion.** Overall, the impact to geologic
5 resources and soils from the no-action
6 alternative would be long term, range from
7 minor to moderate adverse to minor
8 beneficial, and be localized and monument
9 wide. Adverse impacts would occur from the
10 presence and maintenance of existing
11 facilities and visitor use. Beneficial impacts
12 would occur from restoration and education
13 and stewardship activities.

14

15 **Alternative 1: Connecting People**
16 **with the Parks (NPS Preferred**
17 **Alternative for Park Sites in Marin,**
18 **San Francisco, and San Mateo**
19 **Counties)**

20 **Analysis.** Under alternative 1, a variety of
21 management zones would be used that would
22 assist in the protection of soils and geologic
23 resources and processes. Approximately 91%
24 of the monument would be zoned using the
25 natural and sensitive resources zones.

26

27 The removal of facilities/structures and the
28 reclamation of disturbed building sites in the
29 Camino del Canyon and Druid Heights area
30 and the current entrance to Muir Woods
31 National Monument, as well as the removal
32 of the upper parking lot, would improve soil
33 function and integrity and restore natural
34 geologic processes. The impact of these
35 activities would be long term, minor,
36 beneficial, and localized. Short-term, minor,
37 adverse impacts (such as increased erosion or
38 compaction in adjacent areas) would occur
39 during construction activities.

40

41 Visitor access and use would be expanded
42 under alternative 1, resulting in increased soil
43 compaction and erosion; however, compared
44 to use patterns under the no-action
45 alternative, only slight adverse impacts would
46 be expected. Most impacts would be
47 contained within defined visitor use areas
48 and on trails. The impact, especially in areas
49 off-trail, would be long term, minor, adverse,

50 and localized. This impact would occur in
51 areas throughout the monument.

52

53 New recreational development (new facilities
54 at Bridge 4 and welcome center / shuttle
55 parking at Highway 101) would have long-
56 term, adverse, localized impacts on soils and
57 geologic resources due to the permanent loss
58 of soil function and integrity resulting from
59 new development and increased erosion
60 from facility construction and maintenance.
61 The intensity of the impact would range from
62 negligible to minor because in some cases the
63 impact would be confined to previously
64 developed or disturbed sites.

65

66 Impacts from an expanded NPS educational
67 and stewardship programs would enhance
68 the beneficial effect on soils and geologic
69 processes due to increased public
70 understanding and support for resource
71 protection and management—the impact
72 would be long term, minor, beneficial, and
73 monument wide.

74

75 **Conclusion.** Overall, the impact to soils and
76 geologic resources and processes from
77 alternative 1 would be short and long term,
78 range from negligible adverse to minor
79 beneficial, and be localized. Adverse impacts
80 would occur from new recreational
81 development and expanded visitor use.
82 Beneficial impacts would occur from trail
83 relocation, the restoration of disturbed sites,
84 and improved resource understanding and
85 public support.

86

87 **Alternative 2: Preserving and**
88 **Enjoying Coastal Ecosystems**

89 **Analysis.** Under alternative 2, a variety of
90 management zones would be used to assist in
91 the protection of soils and geologic resources
92 and processes. Approximately 99% of the
93 park would be zoned using the natural and
94 sensitive resources zones—the most of all the
95 alternatives.

96

97 Nearly all of the built environment would be
98 removed from Muir Woods National
99 Monument. These include facilities and

1 structures in the Camino del Canyon and
 2 Druid Heights area as well as at the current
 3 entrance and within the primeval redwood
 4 forest of the monument, the upper and lower
 5 parking areas, unneeded management roads,
 6 and several miles of trails. In addition,
 7 Redwood Creek would be restored.
 8 Restoration of these areas would reduce soil
 9 erosion, improve soil function and integrity,
 10 and restore natural geologic processes. The
 11 impact of these activities would be long term,
 12 moderate, beneficial, and localized. Short-
 13 term, minor, adverse impacts (such as
 14 increased erosion or compaction in adjacent
 15 areas) would occur during demolition and
 16 restoration activities.

17
 18 Impacts from visitor access and use would be
 19 less than those described in the no-action
 20 alternative because it would be limited and
 21 highly controlled, resulting in long-term,
 22 minor, beneficial, localized impacts.

23
 24 Impacts from expanded NPS educational and
 25 stewardship programs would enhance the
 26 beneficial effect on soil and geologic
 27 resources due to increased public
 28 understanding and support for resource
 29 protection and management—the impact
 30 would be long term, minor, beneficial, and
 31 monument wide.

32
 33 **Conclusion.** Overall, the impact to soils and
 34 geologic resources and processes from
 35 alternative 2 would be short and long term,
 36 range from minor adverse to moderate
 37 beneficial, and localized. Adverse impacts
 38 would occur from visitor use and
 39 construction. Beneficial impacts would occur
 40 from the removal of facilities and structures
 41 and restoration of disturbed sites.

42
 43 ***Alternative 3: Focusing on National***
 44 ***Treasures (NPS Preferred Alternative***
 45 ***for Muir Woods National Monument)***

46 **Analysis.** Under alternative 3, a variety of
 47 management zones would be used that would
 48 assist in the protection of soils and geologic
 49 resources and processes. Approximately 85%

50 of the monument would be zoned using the
 51 natural and sensitive resources zones.

52
 53 The impacts on geologic resources and soils
 54 from the continued maintenance of existing
 55 facilities and structures under alternative 3
 56 would be the less than the no-action
 57 alternative. New recreational development
 58 (including new recreational amenities near
 59 Bridge 4, new trails in the monument, and
 60 picnicking facilities) would have long-term,
 61 minor, adverse, localized impacts on geologic
 62 resources and soils due to the permanent loss
 63 of soil function and integrity resulting from
 64 new development and increased erosion
 65 from facility construction and maintenance.

66
 67 Beneficial effects on geologic resources and
 68 soils would occur from the removal of
 69 facilities and structures and the restoration of
 70 disturbed sites throughout the monument
 71 (such as the removal of the upper parking
 72 area; a number of structures in the Camino
 73 del Canyon and Druid Heights; and targeted
 74 removal of riprap along Redwood Creek). A
 75 total of about 28 acres of built environment
 76 would be removed and restored to natural
 77 conditions. The impact of these activities
 78 would be long term, moderate, beneficial,
 79 and localized. Short-term, minor, adverse
 80 impacts (such as increased erosion or
 81 compaction in adjacent areas) would occur
 82 during construction activities.

83
 84 Visitor access and use would continue to
 85 cause adverse impacts on geologic resources
 86 and soils due to the effects compaction and
 87 erosion. However, the impact would be less
 88 than under the no-action alternative because
 89 primary use areas and trails would be moved
 90 away from the creek (where soils may be
 91 more prone to compaction and erosion) and
 92 new boardwalks would be developed that
 93 reduce these impacts, resulting in a beneficial
 94 impact. The impacts on geologic resources
 95 and soils from visitor use under alternative 3
 96 would be negligible.

97
 98 Impacts from NPS educational and
 99 stewardship programs would generally be the

1 same as those described in the no-action
2 alternative.

3
4 The expanded NPS interpretive, educational
5 and stewardship programs would engage
6 many more visitors and could have a long-
7 term, moderate, beneficial effect on soils and
8 geologic resources and processes due to
9 increased public understanding and support
10 for resource protection and management—
11 the impact would be long term, moderate,
12 beneficial, and monument wide.

13
14 **Conclusion.** Overall, the impact to soils and
15 geologic resources and processes from
16 alternative 3 would be short and long term,
17 range from negligible adverse to moderate
18 beneficial, and be localized. Adverse impacts
19 would occur from new recreational
20 development and visitor use. Beneficial
21 impacts would occur from the removal of
22 facilities and structures and restoration of the
23 upper parking lot and disturbed sites, as well
24 as creek restoration activities.

25

26 **Water Resources and** 27 **Hydrologic Processes**

28 ***No-action Alternative***

29 **Analysis.** Under the no-action alternative,
30 the presence and maintenance (or lack of
31 maintenance in some cases) of existing
32 facilities (including structures, roads, and
33 trails) would continue to cause localized
34 impacts on water quality due to pollution
35 from urban runoff and turbidity from soil
36 erosion. The impact of these activities would
37 be long term, minor to moderate, adverse,
38 and localized, but would occur throughout
39 the monument.

40

41 Structures would remain in the 100-year
42 floodplain of Redwood Creek resulting in
43 adverse impacts. Trails, bridges,
44 administrative/concession buildings, the gift
45 shop, restrooms are in the floodplain.
46 Retention of these facilities would continue
47 to affect floodplain function. The structures

48 themselves could affect the flow of water
49 during floods and paved surfaces such as the
50 parking area and portions of the trail system
51 could affect the capacity of the floodplain to
52 store floodwaters. Furthermore, the existing
53 rock revetment that lines portions of
54 Redwood Creek would continue to adversely
55 affect natural hydrologic processes and
56 floodplain function. Riparian wetland
57 expansion would continue to be adversely
58 affected by the presence of the parking area.
59 The impact of these activities would be long
60 term, moderate, adverse, and localized.

61

62 Recreational use would continue to cause
63 erosion of soils resulting in turbidity. Vehicle
64 use at parking areas and on roadways in the
65 vicinity of the monument would continue to
66 affect water quality from runoff that contains
67 chemical contaminants. These activities
68 would result in long-term, minor, adverse,
69 localized impacts on water quality.

70

71 NPS efforts to provide educational and
72 participatory stewardship programs would
73 continue to have a beneficial effect on water
74 resources and hydrologic processes due to
75 increased public understanding and support
76 for resource protection and management—
77 the impact would be long term, minor,
78 beneficial, and monument wide.

79

80 **Conclusion.** Overall, the impact to water
81 resources and hydrologic processes from the
82 no-action alternative would be long term,
83 range from minor adverse to minor
84 beneficial, and be localized and monument
85 wide. Adverse impacts would occur from the
86 presence and maintenance of existing
87 facilities (including rock revetment), visitor
88 use. Beneficial impacts would occur from
89 education and stewardship activities.

90

1 **Alternative 1: Connecting People**
 2 **with the Parks (NPS Preferred**
 3 **Alternative for Park Sites in Marin,**
 4 **San Francisco, and San Mateo**
 5 **Counties)**

6 **Analysis.** Under alternative 1, a variety of
 7 management zones would be used that would
 8 assist in the protection of water resources
 9 and hydrologic processes. Approximately
 10 91% of the park would be zoned using the
 11 natural and sensitive resources zones.

12
 13 The removal of some facilities and structures
 14 and the reclamation of disturbed building
 15 sites and roads in the Camino del Canyon
 16 and Druid Heights area and the main part of
 17 Muir Woods National Monument, including
 18 removal of the upper parking lot, would
 19 improve natural hydrologic processes. The
 20 impact would be long term, minor, beneficial,
 21 and localized. Short-term, minor, adverse
 22 impacts on water quality could occur from
 23 sedimentation and runoff during
 24 construction and restoration activities.

25
 26 Impacts on floodplains would be the same as
 27 described under the no-action alternative,
 28 except for those associated with the removal
 29 of the upper parking area and restoration of
 30 the site to a natural area. The removal of the
 31 upper parking area would eliminate the
 32 impervious surface at the site, restoring
 33 floodwater capacity and natural floodplain
 34 function, resulting in a long-term, minor,
 35 beneficial impact.

36
 37 Visitor access and use would be expanded
 38 under alternative 1, potentially resulting in
 39 some increase in erosion along trails and at
 40 primary visitor use areas that could have
 41 impacts on water quality—the impact would
 42 be long term, negligible to minor, adverse,
 43 and localized.

44
 45 New recreational development (new facilities
 46 at Bridge 4 and welcome center/shuttle
 47 parking at Highway 101) could have short-
 48 term, negligible to minor, adverse, localized
 49 impacts on water quality from increased

50 erosion and sedimentation and the potential
 51 for chemical contamination resulting from
 52 inadvertent chemical spills from heavy
 53 equipment at construction sites. Similar
 54 impacts on water quality could occur over the
 55 long term due to the increased potential for
 56 fecal coliform contamination and urban
 57 pollutants. These activities would result in
 58 long-term, minor, adverse, localized impacts
 59 on water quality. However, the new restroom
 60 facility may reduce the presence of human
 61 waste in Muir Woods National Monument
 62 and the associated water quality impacts.

63
 64 Impacts from expanded NPS educational and
 65 stewardship programs would enhance the
 66 beneficial effect on water resources and
 67 hydrologic processes due to increased public
 68 understanding and support for resource
 69 protection and management—the impact
 70 would be long term, minor, beneficial, and
 71 monument wide.

72
 73 **Conclusion.** Overall, the impact to water-
 74 related resources from alternative 1 would be
 75 short and long term, range from negligible
 76 adverse to minor beneficial, and be localized
 77 and parkwide. Adverse impacts would occur
 78 from the presence and maintenance of
 79 existing facilities (including rock revetment),
 80 new recreational development, and
 81 expanded visitor use. Beneficial impacts
 82 would occur from trail and road maintenance
 83 and the restoration of disturbed sites and
 84 removal of the upper parking area.

85
 86 **Alternative 2: Preserving and**
 87 **Enjoying Coastal Ecosystems**

88 **Analysis.** Under alternative 2, a variety of
 89 management zones would be used that would
 90 assist in the protection of water resources
 91 and hydrologic processes. Approximately
 92 99% of the park would be zoned using the
 93 natural and sensitive resources zones.

94
 95 Alternative 2 would reduce impacts on water
 96 quality by eliminating erosion from
 97 unsustainable trails and unneeded
 98 management roads, resulting in long-term,
 99 minor to moderate, beneficial, localized

1 impacts. Short-term, minor, adverse impacts
2 on water quality could occur from
3 sedimentation and runoff during
4 construction and restoration activities.

5
6 The substantial removal of facilities and
7 structures and the reclamation of disturbed
8 building sites and road in the Camino del
9 Canyon and Druid Heights area and the main
10 part of Muir Woods National Monument, as
11 well as the removal of the upper and lower
12 parking areas, would improve the natural
13 hydrologic processes. The impact would be
14 long term, moderate, beneficial, and
15 localized. Short-term, minor, adverse impacts
16 on water quality could occur from
17 sedimentation and runoff during
18 construction and restoration activities.

19
20 Impacts on floodplains would include the
21 removal of the upper and lower asphalt
22 parking areas and restoration of about 6,700
23 linear feet of Redwood Creek (including rock
24 revetment) and its floodplain. This would
25 restore floodwater capacity and natural
26 floodplain function and improve riparian
27 wetlands and hydrologic processes. Water
28 flow and floodplain function would also be
29 restored by removing or redesigning bridges.
30 These activities would result in long-term,
31 moderate to major, beneficial impacts on
32 floodplains and related water resources.

33
34 Impacts from expanded NPS educational and
35 stewardship programs would enhance the
36 beneficial effect on water resources and
37 hydrologic processes due to increased public
38 understanding and support for resource
39 protection and management—the impact
40 would be long term, minor, beneficial, and
41 monument wide.

42
43 **Conclusion.** Overall, the impact to water-
44 related resources from alternative 2 would be
45 short and long term, range from minor
46 adverse to moderate-major beneficial, and be
47 localized. Adverse impacts would occur from
48 expanded visitor use and restoration
49 activities. Beneficial impacts would occur
50 from the restoration of disturbed sites,
51 removal of structures, facilities, roads, and

52 asphalt parking areas and substantial creek
53 and floodplain restoration.

54
55 **Alternative 3: Focusing on National**
56 **Treasures (NPS Preferred Alternative**
57 **for Muir Woods National Monument)**

58 **Analysis.** Under alternative 3, a variety of
59 management zones would be used that would
60 assist in the protection of water resources
61 and hydrologic processes. Approximately
62 85% of the park would be zoned using the
63 natural and sensitive resources zones.

64
65 Alternative 3 would reduce impacts on water
66 quality by reducing erosion from
67 unsustainable trails and roads, resulting in
68 long-term, minor, beneficial, localized
69 impacts. Short-term, minor, adverse impacts
70 on water quality could occur from
71 sedimentation and runoff during
72 construction and restoration activities.

73
74 The removal of facilities, structures, roads,
75 and the reclamation of disturbed building
76 sites in the Camino del Canyon and Druid
77 Heights area and the main part of Muir
78 Woods National Monument, as well as the
79 removal of the upper parking area, would
80 improve natural hydrologic processes. The
81 impact would be long term, minor, beneficial,
82 and localized. Short-term, minor, adverse
83 impacts on water quality could occur from
84 sedimentation and runoff during
85 construction activities.

86
87 Impacts on floodplains would include the
88 removal of the upper parking area and
89 conversion of the remaining asphalt surface
90 to a more pervious surface, as well as targeted
91 restoration of Redwood Creek (including
92 rock revetment) and its floodplain. This
93 would restore flood water capacity and
94 natural floodplain function and improve
95 riparian wetlands and hydrologic processes.
96 Water flow and floodplain function would
97 also be restored by removing or redesigning
98 bridges. These activities would result in long-
99 term, moderate, beneficial impacts on
100 floodplains and related water resources.

1 Visitor access and use would be expanded
2 under alternative 3, potentially resulting in
3 some increase in erosion along trails and at
4 primary visitor use areas that could have
5 impacts on water quality—the impact would
6 be long term, negligible to minor, adverse,
7 and localized.

8
9 The expanded NPS interpretive, educational
10 and stewardship programs would engage
11 many more visitors and could have a long-
12 term, moderate, beneficial effect on water
13 resources and hydrologic processes due to
14 increased public understanding and support
15 for resource protection and management—
16 the impact would be long term, moderate,
17 beneficial, and monument wide.

18
19 **Conclusion.** Overall, the impacts on water-
20 related resources from alternative 3 would be
21 short and long term, range from negligible
22 adverse to moderate beneficial, and be
23 localized. Adverse impacts would occur from
24 the presence and maintenance of existing
25 facilities (including rock revetment), new
26 recreational development, expanded visitor
27 use, and construction and restoration
28 activities. Beneficial impacts would occur
29 from the restoration of disturbed sites,
30 removal of the upper parking area,
31 improvements to Redwood Creek, and
32 restoration of the Camino del Canyon and
33 Druid Heights area.

34 35 36 **Natural Resources – Biological** 37 **Resources**

38 **Habitat (vegetation and wildlife)**

39 ***No-action Alternative***

40 **Analysis.** Under the no-action alternative,
41 the presence and maintenance (or lack of
42 maintenance in some cases) of existing
43 facilities (including structures, parking lots,
44 roads, and trails) would continue to cause
45 localized impacts on vegetation and wildlife
46 habitat by fragmenting natural areas and
47 increasing the potential for nonnative plant

48 species to displace native species and affect
49 native habitat. The rock revetment that lines
50 Redwood Creek and the trails in the
51 floodplain are affecting vegetation and
52 wildlife habitat by limiting natural hydrologic
53 process that support natural conditions.
54 Furthermore, the developed and hardened
55 trails (such as boardwalks) themselves act as
56 barriers to wildlife movement on the ground
57 and in the forest canopy. The impact of these
58 activities would be long term, moderate,
59 adverse, and localized, but would occur
60 throughout the monument.

61
62 Rehabilitating disturbed sites would continue
63 to improve the integrity and diversity of
64 habitats available to aquatic and terrestrial
65 organisms. Ongoing vegetation management,
66 including the use of prescribed fire, and
67 monitoring of plants and wildlife allows the
68 National Park Service to improve native
69 habitat conditions. The impact of these
70 activities would be long term, minor,
71 beneficial, and localized.

72
73 Recreational use would continue to reduce
74 habitat integrity by trampling plants,
75 introducing and increasing the spread of
76 nonnative species, causing disturbance
77 (flushing and displacement) to animals, and
78 increasing the potential for human-wildlife
79 conflict resulting from habituation due to the
80 presence of humans and the introduction of
81 unnatural food sources. Recreational use also
82 generates noise and unnatural light sources
83 that affect wildlife. These activities would
84 result in long-term, minor to moderate,
85 adverse, localized impacts throughout the
86 monument.

87
88 NPS efforts to provide educational and
89 participatory stewardship programs would
90 continue to have a beneficial effect on water
91 resources and hydrologic processes due to
92 increased public understanding and support
93 for resource protection and management—
94 the impact would be long term, minor,
95 beneficial, and monument wide.

96
97 **Conclusion.** Overall, the impact to
98 vegetation and wildlife habitat from the no-

1 action alternative would be long term, range
2 from minor-moderate adverse to minor
3 beneficial, and be localized and monument
4 wide. Adverse impacts would occur from the
5 presence and maintenance of existing
6 facilities and visitor use. Beneficial impacts
7 would occur from restoration and ongoing
8 management and monitoring activities.

9
10 **Alternative 1: Connecting People**
11 **with the Parks (NPS Preferred**
12 **Alternative for Park Sites in Marin,**
13 **San Francisco, and San Mateo**
14 **Counties)**

15 **Analysis.** Under alternative 1, a variety of
16 management zones would be used that would
17 assist in the protection of vegetation and
18 wildlife habitat. Approximately 91% of the
19 park would be zoned using the natural and
20 sensitive resources zones.

21
22 The removal of facilities/structures and the
23 reclamation of disturbed building sites in the
24 Muir Woods Addition area and the main part
25 of Muir Woods, as well as the removal of the
26 upper parking lot, would improve vegetation
27 and wildlife habitat by improving habitat
28 structure and the diversity of habitats
29 available to support various species' needs.
30 Human-wildlife conflicts would be reduced
31 because the food concession in the
32 monument would be eliminated, resulting in
33 less wildlife habituation, resulting in a
34 beneficial impact. These kinds of activities
35 would reduce environmental stressors and
36 increase the resiliency of species and systems
37 to the effects of climate change. The impact
38 would be long term, minor to moderate,
39 beneficial, and localized. Short-term, minor,
40 adverse impacts on habitat could occur
41 during construction activities.

42
43 Visitor access and use would be expanded
44 under alternative 1, potentially resulting in
45 additional impacts on vegetation (trampling)
46 and wildlife (disturbance) along trails and at
47 primary visitor use areas—the impact would
48 be long term, minor, adverse, and localized.

49 New recreational development (new facilities
50 at Bridge 4 and welcome center at Highway
51 101) would have long-term, negligible,
52 adverse, localized impacts on vegetation and
53 wildlife due to the permanent loss of plants
54 and wildlife habitat within the construction
55 footprint. Short-term, minor, adverse impacts
56 on vegetation would also occur from injury
57 or loss of plants during construction
58 activities; however, the area would be
59 replanted with native plants and the natural
60 habitat would be reclaimed. Similarly, short-
61 term adverse impacts on wildlife, such as
62 disturbance, would occur during
63 construction.

64
65 Impacts from expanded NPS educational and
66 stewardship programs would enhance the
67 beneficial effect on impacts on habitats due
68 to increased public understanding and
69 support for resource protection and
70 management—the impact would be long
71 term, minor, beneficial, and monument wide.

72
73 **Conclusion.** Overall, the impact to
74 vegetation and wildlife habitat from
75 alternative 1 would be short and long term.
76 They would range from negligible adverse to
77 minor or moderate beneficial and would be
78 localized as well as monument wide. Adverse
79 impacts would occur from new recreational
80 development and expanded visitor use.
81 Beneficial impacts would occur from the
82 restoration of disturbed sites.

83
84 **Alternative 2: Preserving and**
85 **Enjoying Coastal Ecosystems**

86 **Analysis.** Under alternative 2, a variety of
87 management zones would be used that would
88 assist in the protection of vegetation and
89 wildlife habitat. Approximately 99% of the
90 park would be zoned using the natural and
91 sensitive resources zones.

92
93 Nearly all of the built environment would be
94 removed from Muir Woods—facilities/
95 structures in the Muir Woods Addition area
96 as well as in the main part of Muir Woods,
97 the upper and lower parking areas, unneeded
98 management roads, and several miles of trails.

1 Restoration of about 6,700 linear feet of
 2 Redwood Creek would improve habitat
 3 structure and the diversity of habitats
 4 available to support various species' needs—
 5 an enhancement for aquatic and terrestrial
 6 organisms. Restoring the creek and its
 7 floodplain function would result in increased
 8 soil deposition that would assist in the
 9 recruitment of redwood trees. Human-
 10 wildlife conflicts would be reduced because
 11 the food concession in the monument would
 12 be eliminated, resulting in less wildlife
 13 habituation, a beneficial impact. These kinds
 14 of activities would reduce environmental
 15 stressors and increase the resiliency of
 16 species and systems to the effects of climate
 17 change. The impact would be long term,
 18 moderate to major, beneficial, and localized.

19
 20 Short-term, minor, adverse impacts on
 21 vegetation would also occur from injury or
 22 loss of plants during construction activities;
 23 however, the area would be replanted with
 24 native plants and the natural habitat would be
 25 reclaimed. Similarly, short-term adverse
 26 impacts on wildlife, such as disturbance,
 27 would occur during construction.

28
 29 Impacts from visitor access and use would be
 30 less than those described in the no-action
 31 alternative because it would be limited and
 32 highly controlled, resulting in long-term,
 33 minor, beneficial, localized impacts. Some
 34 impacts on vegetation (trampling) and
 35 wildlife (disturbance) along trails and at
 36 primary visitor use areas would still occur.

37
 38 Impacts from an expanded NPS educational
 39 and stewardship programs would enhance
 40 the beneficial effect on habitats due to
 41 increased public understanding and support
 42 for resource protection and management. In
 43 addition, partnering with other agencies to
 44 manage visitor access and promote
 45 restoration and habitat management as part
 46 of the UNESCO Golden Gate Biosphere
 47 Reserve would elevate this issue and could
 48 result in benefits to vegetation and wildlife
 49 habitat. These actions would result in long-
 50 term, minor, beneficial, and monument wide
 51 impacts.

52 **Conclusion.** Overall, the impact to
 53 vegetation and wildlife habitat from
 54 alternative 2 would be short and long term.
 55 They would range from minor adverse to
 56 moderate or major beneficial and would be
 57 localized and monument wide. Adverse
 58 impacts would occur from visitor use and
 59 construction activities. Beneficial impacts
 60 would occur from the restoration of
 61 disturbed sites and creeks.

62
 63 ***Alternative 3: Focusing on National***
 64 ***Treasures (NPS Preferred Alternative***
 65 ***For Muir Woods National Monument)***

66 **Analysis.** Under alternative 3, a variety of
 67 management zones would be used that would
 68 assist in the protection of vegetation and
 69 wildlife habitat. Approximately 85% of the
 70 park would be zoned using the natural and
 71 sensitive resources zones.

72
 73 The removal of facilities/structures and the
 74 reclamation of disturbed building sites in the
 75 Muir Woods Addition area and the main part
 76 of Muir Woods, as well as the removal of the
 77 upper parking lot, would improve vegetation
 78 and wildlife habitat by improving habitat
 79 structure and the diversity of habitats
 80 available to support various species' needs.
 81 Targeted restoration of Redwood Creek and
 82 its floodplain would improve habitat
 83 structure and the diversity of habitats
 84 available to support various species' needs—
 85 an enhancement for aquatic and terrestrial
 86 organisms. Human-wildlife conflicts would
 87 be reduced because the food concession in
 88 the monument would be eliminated, resulting
 89 in less wildlife habituation—a beneficial
 90 impact. These kinds of activities would
 91 reduce environmental stressors and increase
 92 the resiliency of species and systems to the
 93 effects of climate change. The impact would
 94 be long term, moderate, beneficial, and
 95 localized.

96
 97 Short-term, minor, adverse impacts on
 98 vegetation would also occur from injury or
 99 loss of plants during construction activities;
 100 however, the area would be replanted with

1 native plants and the natural habitat would be
2 reclaimed. Similarly, short-term adverse
3 impacts on wildlife, such as disturbance,
4 would occur during construction.

5
6 New recreational development (new trails
7 and additional visitor amenities) would cause
8 increased habitat fragmentation and loss,
9 resulting in long-term, minor to moderate,
10 adverse, localized impacts.

11
12 Visitor access and use would be expanded
13 under alternative 3, potentially resulting in
14 additional impacts on vegetation (trampling)
15 and wildlife (disturbance) along trails and at
16 primary visitor use areas—the impact would
17 be long term, minor, adverse, and localized.

18
19 The expanded NPS interpretive, educational,
20 and stewardship programs would engage
21 many more visitors and could have a long-
22 term, moderate, beneficial effect on habitats
23 due to increased public understanding and
24 support for resource protection and
25 management—the impact would be long
26 term, moderate, beneficial, and monument
27 wide.

28
29 **Conclusion.** Overall, the impacts on
30 vegetation and wildlife habitat from
31 alternative 3 would be short and long term,
32 range from minor adverse to moderate
33 beneficial, and be localized and monument
34 wide. Adverse impacts would occur from
35 visitor use and construction activities.
36 Beneficial impacts would occur from the
37 restoration of disturbed sites and creeks.

38
39

40 **Special Status Species (federal and** 41 **state threatened and endangered** 42 **species)**

43 ***No-action Alternative***

44 In general, many of the impacts on vegetation
45 and wildlife described in the habitat section
46 of this part would apply to special status
47 species. For example, visitor use and new
48 development would result in changes that

49 would be adverse impacts on listed species
50 and their habitats. Likewise, vegetation
51 management and creek restoration would
52 result in beneficial impacts on listed species
53 and their habitats. Keeping this in mind, the
54 analysis provided below generalizes about the
55 effects of land management priorities and,
56 where possible, focuses on the impacts that
57 specific actions included in the alternatives
58 may have on listed species and their habitats.

59

60 **Federal Threatened and Endangered.**

61 *Coho salmon, Central California*
62 *Coast (Oncorhynchus kisutch) and*
63 *steelhead trout, Central California*
64 *Coast (O. mykiss)—*

65

66 These two listed salmonid species are
67 analyzed together because of the similarities
68 in their life characteristics, habitat
69 requirements, and the effects of impacts on
70 the two species.

71

72 Within the vicinity of Muir Woods National
73 Monument, coho salmon are restricted to
74 Redwood Creek and Eastkoot Creek in
75 Marin County. Steelhead trout are restricted
76 to Redwood Creek and the drainages to
77 Bolinas Lagoon and Rodeo Lagoon in Marin
78 County. Therefore, impacts would be
79 restricted to these locations.

80

81 National Park Service activities, such as
82 vegetation management, creek restoration,
83 and efforts to improve water quantity and
84 quality within the Redwood Creek
85 watershed, would have beneficial impacts on
86 maintaining habitat characteristics that
87 support anadromous fish. Projects at Muir
88 Woods National Monument (vegetation
89 management and creek restoration) would
90 have beneficial impacts on habitat parameters
91 required by the two species. These projects
92 would improve riparian vegetation and in-
93 stream habitat complexity, resulting in
94 improvements to spawning, rearing, and
95 migratory habitats. Critical habitat would be
96 affected by restoration activities. Within the
97 immediate project area, short-term, minor,
98 adverse, localized impacts on nearly all

1 essential features of critical habitat (substrate,
2 water quality, water quantity, water
3 temperature, water velocity, cover/shelter,
4 food, riparian vegetation, space, and safe
5 passage conditions) would be expected.
6 However, these short-term impacts would be
7 outweighed by the beneficial impacts
8 expected to occur over the long term. The
9 National Park Service would continue to
10 monitor coho and steelhead populations and
11 habitat and inventory potential habitat.
12

13 Controlling and managing visitor use would
14 reduce impacts on coho and steelhead, such
15 as habitat alteration and direct impacts from
16 recreational use and development; however,
17 some adverse impacts would continue. The
18 upper and lower parking areas, as well as the
19 rock revetment that lines sections of
20 Redwood Creek, would continue to
21 adversely affect the integrity of fish habitat by
22 impacting natural floodplain function and
23 therefore habitat integrity, resulting in an
24 adverse impact.
25

26 The primary threats to coho and steelhead
27 would continue to be loss and modification
28 of habitat, water diversions, habitat
29 channelization, sedimentation, and degraded
30 water quality—adverse impacts associated
31 with increased urbanization of the region.
32 Collectively, impacts on coho salmon and
33 steelhead trout resulting from NPS actions
34 that are part of the no-action alternative (the
35 continuation of current management and
36 trends) would be long term, beneficial,
37 minor, and localized. The determination of
38 effect under section 7 of the Endangered
39 Species Act would be “*may affect, likely to*
40 *adversely affect*” for project specific actions in
41 the short term, and “*may affect, not likely to*
42 *adversely affect*” for land use and monument
43 management over the long term.
44 Consultation for specific projects would
45 occur as necessary.
46

47 *Northern spotted owl (Strix*
48 *occidentalis caurina)*—
49

50 Suitable habitat for northern spotted owls
51 include all evergreen forested habitat north
52 of State Route 1 in Marin County. Within the
53 planning area, known spotted owl
54 populations are currently limited to Muir
55 Woods National Monument, Homestead
56 Valley, and the Stinson Gulch area.
57 Therefore, impacts would be restricted to
58 these locations.
59

60 Vegetation management actions designed to
61 protect and enhance coniferous forest,
62 including old-growth, second growth, and
63 remnant stands, would provide potential
64 roosting, feeding, and nesting habitat for the
65 owl—a beneficial impact. The National Park
66 Service would continue to monitor owl
67 populations and survey potential habitat.
68 Visitor use in the area would continue to
69 disturb owls. Barred owls would also likely
70 continue to invade preferred spotted owl
71 habitats—an adverse impact. Ongoing actions
72 to reduce human-created noise and light at
73 Muir Woods National Monument would
74 result in improvements to habitat conditions.
75 Current actions to reduce barred owl use and
76 nesting would help reduce adverse impacts
77 on spotted owls. The primary threat to the
78 northern spotted owl in the region would
79 continue to be the loss of habitat—an adverse
80 impact associated with increased
81 urbanization of the region. Other threats
82 include expansion in the range of the barred
83 owl, West Nile virus, changes in habitat due
84 to sudden oak death, and recreational
85 pressure. Locally, in Muir Woods National
86 Monument, the primary threat is from barred
87 owls. Collectively, impacts on the northern
88 spotted owl resulting from NPS actions that
89 are part of the no-action alternative (the
90 continuation of current management and
91 trends) would be long term, minor, beneficial
92 and localized. The determination of effect
93 under section 7 of the Endangered Species
94 Act would be “*may affect, not likely to*
95 *adversely affect.*”
96

1 **Marbled murrelet (*Brachyramphus***
 2 ***marmoratus marmoratus*)—**
 3
 4 Marbled murrelet surveys of Muir Woods
 5 National Monument have been completed,
 6 but no murrelets have been observed.
 7 Vegetation management actions designed to
 8 protect and enhance old-growth redwood
 9 forest at the monument would continue to
 10 provide suitable nesting locations for the
 11 murrelet—a beneficial impact. The primary
 12 threat to the marbled murrelet would
 13 continue to be the loss of nesting habitat and

14 increased nest predation due to high corvid
 15 (i.e., crows and jays) densities—this would
 16 result in an adverse impact associated with
 17 increased urbanization of the region.
 18 Collectively, impacts on the marbled murrelet
 19 resulting from NPS actions that are part of
 20 the no-action alternative (the continuation of
 21 current management and trends) would be
 22 long term, minor, beneficial and localized.
 23 The determination of effect under section 7
 24 of the Endangered Species Act would be
 25 “*may affect, not likely to adversely affect.*”
 26

TABLE 21. POTENTIAL IMPACTS ON SPECIAL STATUS SPECIES OF MUIR WOODS NATIONAL MONUMENT, NO-ACTION ALTERNATIVE

Species	Status	ESA Determination
Coho salmon, Central California Coast ESU (<i>Oncorhynchus kisutch</i>)	Federal endangered; state endangered	“ <i>may affect, likely to adversely affect</i> ” for project specific actions in the short term, and “ <i>may affect, not likely to adversely affect</i> ” for land use and monument management over the long term
Steelhead trout, Central California Coast ESU (<i>Oncorhynchus mykiss</i>)	Federal threatened	“ <i>may affect, likely to adversely affect</i> ” for project specific actions in the short term, and “ <i>may affect, not likely to adversely affect</i> ” for land use and monument management over the long term
Northern spotted owl (<i>Strix occidentalis caurina</i>)	Federal threatened	“ <i>may affect, not likely to adversely affect</i> ”
Marbled murrelet (<i>Brachyramphus marmoratus marmoratus</i>)	Federal threatened; state endangered	“ <i>may affect, not likely to adversely affect</i> ”

Alternative 1: Connecting People with the Parks (NPS Preferred Alternative for Park Sites in Marin, San Francisco, and San Mateo Counties)

Under alternative 1, a variety of management zones would be used that would assist in the protection of special status species. Approximately 91% of the monument would be zoned using the natural and sensitive resources zones.

Federal Threatened and Endangered.

Coho salmon, Central California Coast (Oncorhynchus kisutch) and steelhead trout, Central California Coast (O. mykiss)—

In addition to the impacts described under the no-action alternative, restoration activities (removal of some buildings and reclamation of native habitat in the Camino del Canyon and Druid Heights area, removal

of the upper asphalt parking lot at the entrance, and relocation of trails) under alternative 1 would improve water quality and habitat conditions—a beneficial impact. The construction of new facilities at Bridge 4 would affect water quality and instream habitat causing short-term, minor, adverse, localized impacts on salmonids due to construction and restoration activities. Collectively, impacts on coho salmon and steelhead trout resulting from alternative 1 would be long term, beneficial, minor, and localized. The determination of effect under section 7 of the Endangered Species Act would be “*may affect, likely to adversely affect*” for project specific actions in the short term, and “*may affect, not likely to adversely affect*” for land use and monument management over the long term. Consultation for specific projects would occur as necessary.

Northern spotted owl (Strix occidentalis caurina)—

In addition to the impacts described under the no-action alternative, restoration activities (removal of some buildings and reclamation of native habitat in the Camino del Canyon and Druid Heights area and removal of the upper parking lot at the

entrance) under alternative 1 would improve resource conditions and integrity, which could result in an increase of suitable nesting habitat for spotted owls at Muir Woods National Monument. Impacts on the northern spotted owl would be long term, minor, beneficial, and localized. The determination of effect under section 7 of the Endangered Species Act would be “*may affect, not likely to adversely affect.*”

Marbled murrelet (Brachyramphus marmoratus marmoratus)—

In addition to the impacts described under the no-action alternative, restoration activities (removal of some buildings and reclamation of native habitat in the Camino del Canyon and Druid Heights area and removal of the upper parking lot at the entrance) under alternative 1 would improve resource conditions and integrity, which could result in an increase of suitable nesting habitat for the marbled murrelet at Muir Woods National Monument. Impacts on the marbled murrelet would be long term, minor, beneficial, and localized. The determination of effect under section 7 of the Endangered Species Act would be “*may affect, not likely to adversely affect.*”

**TABLE 22. POTENTIAL IMPACTS ON SPECIAL STATUS SPECIES OF
MUIR WOODS NATIONAL MONUMENT, ALTERNATIVE 1**

Species	Status	ESA Determination
Coho salmon, Central California Coast ESU (<i>Oncorhynchus kisutch</i>)	Federal endangered; state endangered	"may affect, likely to adversely affect" for project specific actions in the short term, and "may affect, not likely to adversely affect" for land use and monument management over the long term
Steelhead trout, Central California Coast ESU (<i>Oncorhynchus mykiss</i>)	Federal threatened	"may affect, likely to adversely affect" for project specific actions in the short term, and "may affect, not likely to adversely affect" for land use and monument management over the long term
Northern spotted owl (<i>Strix occidentalis caurina</i>)	Federal threatened	"may affect, not likely to adversely affect"
Marbled murrelet (<i>Brachyramphus marmoratus marmoratus</i>)	Federal threatened	"may affect, not likely to adversely affect"

**1 Alternative 2: Preserving and
2 Enjoying Coastal Ecosystems**

3 Under alternative 2, a variety of management
4 zones would be used that would assist in the
5 protection of special status species.
6 Approximately 99% of the monument would
7 be zoned using the natural and sensitive
8 resources zones.

10 Federal Threatened and Endangered.

11
12 *Coho salmon, Central California*
13 *Coast (Oncorhynchus kisutch) and*
14 *steelhead trout, Central California*
15 *Coast (O. mykiss)—*

16
17 In addition to the impacts described under
18 the no-action alternative, restoration
19 activities (removal of buildings and
20 reclamation of native habitat throughout the
21 monument, removal of the upper and most of
22 the lower asphalt parking area, and the
23 restoration of about 6,700 linear feet of
24 Redwood Creek, including removal of the
25 rock riprap, and its floodplain) under
26 alternative 2 would improve water quality
27 and habitat conditions. Water flow and
28 floodplain function would be improved by

29 removing or redesigning bridges that
30 constrain floodplain function. Woody debris
31 in the creek would increase as a result of
32 restoring natural processes and would
33 improve habitat structure and available
34 nutrients to coho and steelhead. All of these
35 activities would result in improvements to
36 spawning and rearing habitat, resulting in a
37 beneficial impact. There would be short-term
38 adverse impacts from construction that
39 would be outweighed by long-term habitat
40 improvements. Collectively, impacts on coho
41 salmon and steelhead trout resulting from
42 alternative 2 would be long term, beneficial,
43 moderate, and localized. The determination
44 of effect under section 7 of the Endangered
45 Species Act would be "may affect, likely to
46 adversely affect" for project specific actions in
47 the short term, and "may affect, not likely to
48 adversely affect" for land use and monument
49 management over the long term.
50 Consultation for specific projects would
51 occur as necessary.

52
53 *Northern spotted owl (Strix*
54 *occidentalis caurina)—*

55
56 In addition to the impacts described under
57 the no-action alternative, restoration
58 activities (removal of buildings and

1 reclamation of native habitat throughout the
 2 monument, removal of the upper and most of
 3 the lower parking lot at the entrance, and the
 4 restoration of the Redwood Creek and its
 5 floodplain) under alternative 2 would
 6 improve resource conditions and integrity,
 7 which could result in an increase of suitable
 8 nesting habitat for spotted owls at Muir
 9 Woods National Monument. Forage
 10 opportunities would likely improve as a result
 11 of these activities. The scale of beneficial
 12 impacts under alternative 2 is greater than
 13 under the no-action alternative. Impacts on
 14 the northern spotted owl under alternative 2
 15 would be long term, minor to moderate,
 16 beneficial, and localized. The determination
 17 of effect under section 7 of the Endangered
 18 Species Act would be “*may affect, not likely to*
 19 *adversely affect.*”
 20

21 **Marbled murrelet (*Brachyramphus***
 22 ***marmoratus marmoratus*)—**
 23
 24 In addition to the impacts described under
 25 the no-action alternative, restoration
 26 activities (removal of buildings and
 27 reclamation of native habitat throughout the
 28 monument, removal of the upper and most of
 29 the lower parking lot at the entrance, and the
 30 restoration of the Redwood Creek and its
 31 floodplain) under alternative 2 would
 32 improve resource conditions and integrity,
 33 which could result in an increase of suitable
 34 nesting habitat for the marbled murrelet at
 35 Muir Woods National Monument. Forage
 36 opportunities would likely improve as a result
 37 of these activities. The scale of beneficial
 38 impacts under alternative 2 is greater than
 39 under the no-action alternative. Impacts on
 40 the marbled murrelet under alternative 2
 41 would be long term, minor to moderate,
 42 beneficial, and localized. The determination
 43 of effect under section 7 of the Endangered
 44 Species Act would be “*may affect, not likely to*
 45 *adversely affect.*”

**TABLE 23. POTENTIAL IMPACTS ON SPECIAL STATUS SPECIES OF
 MUIR WOODS NATIONAL MONUMENT, ALTERNATIVE 2**

Species	Status	ESA Determination
Coho salmon, Central California Coast ESU (<i>Oncorhynchus kisutch</i>)	Federal endangered; state endangered	“ <i>may affect, likely to adversely affect</i> ” for project specific actions in the short term, and “ <i>may affect, not likely to adversely affect</i> ” for land use and monument management over the long term
Steelhead trout, Central California Coast ESU (<i>Oncorhynchus mykiss</i>)	Federal threatened	“ <i>may affect, likely to adversely affect</i> ” for project specific actions in the short term, and “ <i>may affect, not likely to adversely affect</i> ” for land use and monument management over the long term
Northern spotted owl (<i>Strix occidentalis caurina</i>)	Federal threatened	“ <i>may affect, not likely to adversely affect</i> ”
Marbled murrelet (<i>Brachyramphus marmoratus marmoratus</i>)	Federal threatened; state endangered	“ <i>may affect, not likely to adversely affect</i> ”

1 **Alternative 3: Focusing on National**
 2 **Treasures (NPS Preferred Alternative**
 3 **for Muir Woods National Monument)**

4 Under alternative 3, a variety of management
 5 zones would be used that would assist in the
 6 protection of special status species.
 7 Approximately 85% of the monument would
 8 be zoned using the natural and sensitive
 9 resources zones.

10

11 **Federal Threatened and Endangered.**

12

13 *Coho salmon, Central California*
 14 *Coast (Oncorhynchus kisutch) and*
 15 *steelhead trout, Central California*
 16 *Coast (O. mykiss)—*

17

18 In addition to the impacts described under
 19 the no-action alternative, restoration
 20 activities (removal of buildings and
 21 reclamation of native habitat in the Camino
 22 del Canyon and Druid Heights area, removal
 23 of the upper asphalt parking lot at the
 24 entrance, and relocation of trails) under
 25 alternative 3 would improve water quality
 26 and habitat conditions—a beneficial impact.
 27 Targeted, but limited, restoration of
 28 Redwood Creek would improve resource
 29 conditions and integrity, resulting in
 30 improvements to spawning and rearing
 31 habitat. Water flow and floodplain function
 32 would be improved by removing or
 33 redesigning bridges that constrain floodplain
 34 function. There would be short-term adverse
 35 impacts from construction and restoration
 36 that would be outweighed by long-term
 37 habitat improvements. Collectively, impacts
 38 on coho salmon and steelhead trout resulting
 39 from alternative 3 would be long term,
 40 beneficial, minor to moderate, and localized.
 41 The determination of effect under section 7
 42 of the Endangered Species Act would be
 43 “*may affect, likely to adversely affect*” for
 44 project specific actions in the short term, and
 45 “*may affect, not likely to adversely affect*” for
 46 land use and monument management over
 47 the long term. Consultation for specific
 48 projects would occur as necessary.

49

50

Northern spotted owl (Strix
occidentalis caurina)—

51

52

53 In addition to the impacts described under
 54 the no-action alternative, restoration
 55 activities (removal of buildings and
 56 reclamation of native habitat in the Camino
 57 del Canyon and Druid Heights area and
 58 removal of the upper parking lot at the
 59 entrance) under alternative 3 would improve
 60 resource conditions and integrity, which
 61 could result in an increase of suitable nesting
 62 habitat for spotted owls. Realignment of the
 63 Old Muir Woods Road would reclaim some
 64 of the owl’s mapped foraging habitat.
 65 Targeted, but limited, restoration of
 66 Redwood Creek would improve resource
 67 conditions and integrity, resulting in
 68 potential improvements to nesting and
 69 foraging habitats. Visitor use would affect
 70 more areas of the monument under
 71 alternative 3, potentially increasing
 72 disturbance to individuals and potential owl
 73 nesting habitat, resulting in a long-term,
 74 minor, adverse, localized impact.
 75 Collectively, impacts on the northern spotted
 76 owl from alternative 3 would be long term,
 77 minor, beneficial, and localized. The
 78 determination of effect under section 7 of the
 79 Endangered Species Act would be “*may*
 80 *affect, not likely to adversely affect.*”

81

82

Marbled murrelet (Brachyramphus
marmoratus marmoratus)—

83

84

85 In addition to the impacts described under
 86 the no-action alternative, restoration
 87 activities (removal of buildings and
 88 reclamation of native habitat in the Camino
 89 del Canyon and Druid Heights area and
 90 removal of the upper parking lot at the
 91 entrance) under alternative 3 would improve
 92 resource conditions and integrity, which
 93 could result in an increase of suitable nesting
 94 habitat for the marbled murrelet at Muir
 95 Woods National Monument. Targeted, but
 96 limited, restoration of Redwood Creek would
 97 improve resource conditions and integrity,
 98 resulting in potential improvements to
 99 nesting and foraging habitats. Impacts on the
 100 marbled murrelet would be long term, minor,

1 beneficial, and localized. The determination
2 of effect under section 7 of the Endangered

3 Species Act would be “*may affect, not likely to*
4 *adversely affect.*”

5

**TABLE 24. POTENTIAL IMPACTS ON SPECIAL STATUS SPECIES OF
MUIR WOODS NATIONAL MONUMENT, ALTERNATIVE 3**

Species	Status	ESA Determination
Coho salmon, Central California Coast ESU (<i>Oncorhynchus kisutch</i>)	Federal endangered; state endangered	“ <i>may affect, likely to adversely affect</i> ” for project specific actions in the short term, and “ <i>may affect, not likely to adversely affect</i> ” for land use and monument management over the long term
Steelhead trout, Central California Coast ESU (<i>Oncorhynchus mykiss</i>)	Federal threatened	“ <i>may affect, likely to adversely affect</i> ” for project specific actions in the short term, and “ <i>may affect, not likely to adversely affect</i> ” for land use and monument management over the long term
Northern spotted owl (<i>Strix occidentalis caurina</i>)	Federal threatened	“ <i>may affect, not likely to adversely affect</i> ”
Marbled murrelet (<i>Brachyramphus marmoratus marmoratus</i>)	Federal threatened; state endangered	“ <i>may affect, not likely to adversely affect</i> ”

1 **CULTURAL RESOURCES – HISTORIC**
2 **STRUCTURES, HISTORIC DISTRICTS,**
3 **AND CULTURAL LANDSCAPES**

4 ***No-action Alternative***

5 **Analysis.** Under this alternative, the park
6 would continue to manage Muir Woods
7 National Monument as outlined in the 1980
8 General Management Plan. The no-action
9 alternative would result in few changes to
10 contributing features of historic structures,
11 districts and cultural landscapes within the
12 project area. The park would continue to
13 stabilize, preserve, and rehabilitate the
14 contributing historic structures and
15 landscape features of this district in
16 accordance with the *Secretary of the Interior’s*
17 *Standards for the Treatment of Historic*

18 *Properties*, though much of this work would
19 be subject to funding availability.

20

21 Historic structures would continue to be
22 preserved, rehabilitated, and maintained for
23 use by park operations and visitor services.
24 The primary arrival and entrance area would
25 remain in the general location and condition
26 as currently exists, with some improvements
27 made for visitor services, access and
28 circulation including shuttle drop-off and
29 loading, pedestrian connections, and parking.
30 Historic trails and roads, and other
31 contributing landscape features, would be
32 preserved and maintained. Efforts would be
33 made to stabilize those landscape features
34 that contribute to the historic district and
35 whose condition is deteriorating. Overall,
36 these ongoing preservation measures would
37 result in a long-term, negligible to minor,
38 beneficial impact and long-term, minor,

1 adverse impact on contributing structures
2 and landscapes of this historic district.

3
4 *Dipsea Trail*— The trail would be maintained
5 and improvements would address erosion
6 and natural resource issues resulting in long-
7 term, minor, beneficial and adverse impacts.

8
9 *Druid Heights*— Historic buildings and
10 landscape features would be stabilized to
11 arrest any further loss of historic fabric, and
12 preserved over time. This would result in a
13 long-term, minor, beneficial and adverse
14 impact. The national register eligibility of this
15 property must be determined.

16
17 *Hillwood Camp*— Historic buildings and
18 landscape features would be stabilized to
19 arrest any further loss of historic fabric and
20 preserved over time and continue to be
21 adaptively reused. This would result in a
22 long-term, minor, beneficial and adverse
23 impact.

24
25 **Conclusion.** When combined with the
26 effects of the actions common to all
27 alternatives, the impact to historic structures
28 and landscape resources in Muir Woods
29 National Monument under the no-action
30 alternative would be long-term, minor,
31 beneficial and adverse. Under this alternative,
32 the section 106 determination of effect on
33 historic structures, districts, and cultural
34 landscapes for Muir Woods National
35 Monument, would be *no adverse effect*.

36 37 **Alternative 1: Connecting** 38 **People with the Parks**

39 **Analysis.** Under this alternative, the park
40 would enhance programs, facilities, and trails
41 that access the redwood forest and connect
42 communities to the park and surrounding
43 open space. Significant historic structures
44 and landscape features would be preserved
45 and rehabilitated, with the introduction of
46 some new compatible elements to
47 accommodate these programs and enhance
48 visitor experience. Changes would be made
49 to the arrival and entrance area to the park;

50 an off-site welcome center for the shuttle
51 system, with parking and visitor services,
52 would be an important feature under this
53 alternative. The monument's existing
54 entrance area would be redesigned to
55 enhance the visitor's arrival experience,
56 protect resources, and improve safety. A
57 compatibly designed, modest arrival facility
58 would be provided and could include a
59 shuttle stop, passenger drop-off/pick-up
60 area, a sheltered waiting area, park
61 orientation, restrooms, food service, and
62 bookstore. Realignment of portions of Muir
63 Woods Road would also be considered to
64 improve its operational safety and visitor
65 access. These changes to the arrival sequence
66 and entrance area would result in long-term,
67 minor, adverse impacts.

68
69 The park would continue to stabilize,
70 preserve, and rehabilitate the contributing
71 historic structures and landscape features of
72 this district in accordance with the *Secretary*
73 *of the Interior's Standards for the Treatment of*
74 *Historic Properties*. The Administrative-
75 Concession Building would be rehabilitated
76 for interpretive, educational, and stewardship
77 programs with the Superintendent's
78 Residence, Garage, and Equipment Shed
79 rehabilitated for park operations and
80 administration. Nonhistoric structures would
81 be removed. These actions would result in
82 long-term, minor, beneficial and adverse
83 effects. The future use of the Old Inn would
84 be determined through more detailed site
85 planning that would include an evaluation of
86 its historic significance and integrity, and
87 consider its reuse for visitor services or
88 operational needs, or potential removal.

89
90 The park would maintain much of the
91 present system of trails through the forest
92 while some existing facilities and use areas,
93 such as the entrance area and parking lots,
94 would be modified or relocated. Historic
95 trails and roads, and other contributing
96 landscape features, would be stabilized,
97 preserved and maintained, which would
98 result in long term, minor, beneficial and
99 adverse impacts on these landscape features.
100 New elements would be introduced to the

1 cultural landscape, such as compatibly
2 designed, new restrooms and drinking water
3 facilities near Bridge 4, resulting in long-term,
4 minor, adverse impacts.

5
6 *Dipsea Trail*— The trail would be maintained
7 and improvements would address erosion
8 and natural resource issues resulting in long-
9 term, minor, beneficial and adverse impacts.

10
11 *Druid Heights*— the majority of the Camino
12 del Canyon and Druid Heights area would be
13 managed to preserve and restore the natural
14 setting. All nonhistoric structures would be
15 removed and the main access drive converted
16 to a trail. Due to the emphasis on natural
17 resource management, it is anticipated that
18 impacts on historic resources will be long-
19 term, moderate, and adverse. The national
20 register eligibility of this property must be
21 determined.

22
23 *Hillwood Camp*— Camp Hillwood and its
24 immediate surroundings would be
25 rehabilitated and adaptively reused for day
26 use and/or overnight educational programs.
27 These uses would be compatible with the
28 historic setting and their preservation would
29 result in a long-term, moderate, beneficial,
30 and long-term, minor, adverse impact.

31
32 **Conclusion.** When combined with the
33 effects of the actions common to all
34 alternatives, the impact to historic structures
35 and landscape resources in Muir Woods
36 National Monument under alternative 1
37 would be long-term, negligible to minor,
38 beneficial, and long-term, minor to moderate,
39 adverse. Under this alternative, the section
40 106 determination of effect on historic
41 structures, districts, and cultural landscapes
42 for Muir Woods National Monument, would
43 be *adverse effect*.

44 45 **Alternative 2: Preserving and** 46 **Enjoying Coastal Ecosystems**

47 **Analysis.** Under this alternative, the visitor
48 experience would be more primitive than
49 exists today, as the majority of the built

50 environment would be removed. All visitors
51 would arrive by shuttle, bicycle or on foot.
52 Similar to alternative 1, an off-site welcome
53 center for visitors would be developed and
54 shuttle service would run year round to take
55 visitors to the national monument. The park
56 entrance would be relocated to the current
57 “annex” parking lot and designed to
58 accommodate the shuttle operations. The
59 existing arrival area, including the upper
60 parking area and some of the lower parking
61 lot, restrooms, and visitor center, would be
62 removed to restore the natural setting.

63
64 To more fully restore the primeval character
65 and natural conditions of the old growth
66 redwood forest, several historic buildings
67 within the Muir Woods National Monument
68 Historic District, such as the former
69 Superintendent’s Residence and its
70 associated buildings and the Administration-
71 Concession Building, as well as associated site
72 features, would be removed. The Old Inn,
73 which may be a contributing building to the
74 historic district, would be retained for use by
75 park administrative and limited maintenance
76 operations. Where not in conflict with
77 natural resource goals, historic trails and
78 structures could be retained and adaptively
79 reused. The historic trail system throughout
80 the monument would be redesigned to a
81 more pristine setting that emphasized natural
82 resource preservation of the historic
83 redwood groves (including the Redwood
84 Forest, Bohemian Grove, and Cathedral
85 Grove). However, many historic trails and
86 bridges could be removed, relocated, or
87 redesigned to enhance the natural resource
88 conditions. Historic landscape features, such
89 as the stone revetment erosion-control
90 structures in Redwood Creek constructed by
91 the Civilian Conservation Corps, would be
92 removed for natural resource and floodplain
93 system restoration.

94
95 In accordance with the proposed mitigation
96 measures, prior to the removal of any
97 national register-contributing or national
98 register-eligible structure, appropriate
99 recordation of the building would be
100 prepared in accordance with section 110 (b)

1 of the National Historic Preservation Act and
 2 the documentation submitted to the
 3 HABS/HAER/HALS program. Taken
 4 together, actions under this alternative that
 5 include the removal of historic buildings and
 6 landscape features that contribute to the
 7 district's national register status would result
 8 in a long-term, major, adverse impact.

9
 10 *Dipsea Trail*— Under this alternative, a
 11 portion of the trail would be rerouted at the
 12 Redwood Creek crossing to reduce current
 13 impacts on adjacent natural resources. The
 14 balance of the trail would be maintained
 15 along its historic alignment. This would result
 16 in a long-term, minor, adverse impact.

17
 18 *Druid Heights*— all structures and landscape
 19 features associated with this site would be
 20 removed and the area's natural habitat and
 21 drainage systems restored. In accordance
 22 with mitigation measures stipulated in this
 23 document, the site would be documented
 24 and recorded in accordance with appropriate
 25 HABS/HAER/HALS standards. This would
 26 result in a long-term, major, adverse effect.

27
 28 *Hillwood Camp*— All structures and
 29 landscape features associated with this site
 30 would be removed and the area's native
 31 habitat and natural drainage systems
 32 restored. In accordance with mitigation
 33 measures stipulated in part 8 of this
 34 document, the site would be documented
 35 and recorded in accordance with appropriate
 36 HABS/HAER/HALS standards. This would
 37 result in a long-term, major, adverse effect.

38
 39 **Conclusion.** When the actions of alternative
 40 2 are combined with the effects of the actions
 41 common to all alternatives, the impact to
 42 historic structures and landscape resources in
 43 Muir Woods National Monument, as well as
 44 Druid Heights and Hillwood Camp, would be
 45 long-term, major, and adverse. Under this
 46 alternative, the section 106 determination of
 47 effect on cultural landscape resources in
 48 Muir Woods National Monument would be
 49 *adverse effect*.

50

51 **Alternative 3: Focusing on**
 52 **National Treasures (NPS Preferred**
 53 **Alternative for Muir Woods National**
 54 **Monument)**

55 **Analysis.** Under this alternative, the park
 56 would present the monument as a
 57 contemplative outdoor museum for visitors
 58 to discover and learn about the primeval
 59 forest ecosystem (including the preserved
 60 redwood forest, and Bohemian and
 61 Cathedral Grove) and the monument's place
 62 in the history of the American conservation
 63 movement. Accordingly, the majority of
 64 historic structures and landscape features
 65 associated with those themes would be
 66 rehabilitated and adaptively used to support
 67 visitor programming and services.

68
 69 Similar to alternative 1, an off-site shuttle
 70 system, with parking and visitor services,
 71 would be an important feature under this
 72 alternative. The monument's existing
 73 entrance area would be redesigned to
 74 enhance the visitor's arrival experience,
 75 protect resources, and improve safety. A
 76 compatibly designed, modest arrival facility
 77 would be provided and could include a
 78 shuttle stop, passenger drop-off / pick-up
 79 area, a sheltered waiting area, park
 80 orientation, restrooms, food service, and
 81 bookstore. Realignment of portions of Muir
 82 Woods Road and restrictions on shoulder
 83 parking would also be considered to improve
 84 operational safety and visitor access. These
 85 changes to the arrival sequence and entrance
 86 area would result in long-term, minor,
 87 adverse impacts.

88
 89 Under alternative 3, historically significant
 90 buildings in the Muir Woods National
 91 Monument Historic District, such as the
 92 Administration-Concession Building and
 93 Superintendent's Residence and associated
 94 buildings, would be rehabilitated and
 95 adaptively used to support visitor
 96 programming and services. Nonhistoric
 97 additions would be removed. These actions
 98 would result in long-term, minor, beneficial
 99 and adverse impacts. The future use of the

1 Old Inn would be determined through more
2 detailed site planning that would include an
3 evaluation of its historic significance and
4 integrity and consider its reuse for visitor
5 services or operational needs, or potential
6 removal.

7
8 Historic trails and roads, and other
9 contributing landscape features would be
10 preserved and maintained; some new trails
11 may be constructed to enhance visitor
12 experience, but would be designed to be
13 compatible with the historic setting.
14 Relocation or redesign of some historic trails
15 or segments of trails and the removal of
16 selected portions of the erosion-control
17 stone revetments in Redwood Creek
18 constructed by the Civilian Conservation
19 Corps would result in long-term, minor,
20 adverse impacts because of the loss of
21 historic features.

22
23 *Dipsea Trail*— The Dipsea Trail would be
24 preserved and maintained and highlighted by
25 park staff as an interpretive trail for visitors to
26 understand the area's history. This would
27 have a long-term, minor, beneficial and
28 adverse impact.

29
30 *Druid Heights*— Under alternative 3, some
31 historic structures and landscape features
32 associated with the bohemian community at
33 Druid Heights would be preserved. Camino
34 del Canyon would be converted to a trail with
35 access by foot or light service vehicle. These
36 modifications would result in long-term,
37 minor, adverse and beneficial impacts,
38 depending on the extent of historic structure
39 and landscape preservation work performed.
40 The national register eligibility of this
41 property must be determined.

42
43 *Hillwood Camp*— The historic structures and
44 landscape features would be preserved and
45 rehabilitated for educational and interpretive
46 programs when not in conflict with natural
47 resource conservation goals, and would have
48 a beneficial effect. However, some buildings
49 at Camp Hillwood could be removed,
50 resulting in long-term adverse impacts of
51 minor intensity. A segment of Conlon Avenue

52 would be downgraded from its current road
53 status and realigned to improve drainage and
54 natural processes for this tributary of
55 Redwood Creek. Overall, these changes
56 would result in a long-term, minor, beneficial
57 and adverse impact due to the potential
58 removal of some historic structures.

59
60 **Conclusion.** When combined with the
61 effects of the actions common to all
62 alternatives, the impact to historic structures
63 and landscape resources in Muir Woods
64 National Monument under alternative 3
65 would be long-term, minor, beneficial and
66 adverse. Under this alternative, the section
67 106 determination of effect on historic
68 structures, districts, and cultural landscapes
69 for Muir Woods National Monument would
70 be *no adverse effect*.

71

72

73 **CULTURAL RESOURCES –** 74 **ARCHEOLOGICAL RESOURCES**

75 ***No-action Alternative***

76 **Analysis.** Currently, there is little informa-
77 tion available concerning precontact and
78 historic archeological resources at Muir
79 Woods National Monument. Comprehensive
80 archeological surveys and consultation with
81 American Indian tribes regarding
82 archeological sites with ethnographic
83 significance are needed. However, those
84 known archeological resources, which
85 include eight archeological sites associated
86 with the Muir Woods National Monument
87 Historic District as well as two isolated sites,
88 are protected and preserved. Any additional
89 sites identified through future inventories
90 would also be protected. Without a
91 comprehensive approach to archeological
92 surveys and preservation; however,
93 archeological resources may be subject to
94 potential deterioration, lack of adequate
95 protection in some cases, and possible loss of
96 integrity from natural processes and/or
97 inadvertent visitor activity. Actions under this
98 alternative could have long-term to

1 permanent, minor to moderate, adverse
2 impacts on archeological resources.

3
4 **Conclusion.** Little information is available
5 concerning precontact and historic
6 archeological resources at Muir Woods
7 National Monument. A comprehensive
8 archeological survey and consultation with
9 American Indian tribes are needed. Known
10 archeological resources are protected and
11 preserved as they become identified. Until a
12 comprehensive survey is implemented, there
13 is a potential for deterioration and lack of
14 protection as a result of natural process
15 and/or inadvertent visitor activity. Actions
16 under this alternative could have long-term
17 to permanent, minor to moderate, adverse
18 impacts on archeological resources.

19
20 Under this alternative, the section 106
21 determination of effect on archeological
22 resources would be *adverse effect*.

23
24 **Alternative 1: Connecting People**
25 **with the Parks (NPS Preferred**
26 **Alternative for Park Sites in Marin,**
27 **San Francisco, and San Mateo**
28 **Counties)**

29 **Analysis.** Under this alternative, identified
30 archeological resources, such as the eight
31 archeological sites associated with the Muir
32 Woods National Monument Historic District
33 and two isolated sites, would be protected
34 from unauthorized removal or other
35 destructive activities. Modification or
36 relocation of trails and existing facilities
37 could affect the integrity of some
38 archeological resources, but every effort
39 would be undertaken to avoid known or
40 discovered archeological sites. If such sites
41 could not be avoided, mitigation procedures
42 would be undertaken in consultation with the
43 California state historic preservation office.

44
45 This alternative would result in more
46 opportunities to identify, evaluate, and
47 provide stabilization, security, or other
48 protection to archeological resources
49 commensurate with their significance and

50 sensitivity because the majority of the
51 monument would be in the natural zone. In
52 the diverse opportunities and scenic corridor
53 management zones archeological resources
54 would be stabilized and/or rehabilitated and
55 incorporated into visitor opportunities, thus
56 enhancing their protection through increased
57 awareness and understanding.

58
59 Although some archeological resources in the
60 national monument could be lost (resulting in
61 permanent adverse impacts of minor
62 intensity), these actions would generally
63 result in long-term, beneficial impacts on
64 archeological resources.

65
66 **Conclusion.** Identified archeological
67 resources would continue to be protected
68 and preserved under this alternative.
69 Generally, this alternative would result in
70 more opportunities to identify, evaluate, and
71 provide stabilization, security, or other
72 protection to archeological resources
73 because the majority of the monument would
74 be in the natural zone. Archeological
75 resources in the scenic corridor and diverse
76 opportunities zones would be stabilized or
77 rehabilitated and incorporated into visitor
78 opportunities. Although some archeological
79 resources could be lost (resulting in
80 permanent adverse impacts of minor
81 intensity), these actions would generally
82 result in long-term, beneficial impacts on
83 archeological resources.

84
85 Under this alternative, the section 106
86 determination of effect on archeological
87 resources in Muir Woods National
88 Monument would be *no adverse effect*.

89
90 **Alternative 2: Preserving and**
91 **Enjoying Coastal Ecosystems**

92 **Analysis.** Identified archeological resources,
93 such as the eight archeological sites
94 associated with the Muir Woods National
95 Monument Historic District and two isolated
96 sites, would be protected from unauthorized
97 removal or other destructive activities.
98 Removal of much of the built environment,
99 redesign of the monument's trail system, and

1 restoration of natural processes could affect
2 the integrity of some archeological resources,
3 but every effort would be undertaken to
4 avoid known or discovered archeological
5 sites. If such sites could not be avoided,
6 mitigation procedures would be undertaken
7 in consultation with the California state
8 historic preservation office.

9
10 Because much of the monument would be in
11 the sensitive resources zone under this
12 alternative, archeological resources would be
13 identified, evaluated, and provided
14 stabilization, security, or other protection
15 commensurate with their significance and
16 sensitivity.

17
18 Although some archeological resources could
19 be lost (resulting in permanent adverse
20 impacts of minor intensity), these actions
21 would generally result in long-term,
22 beneficial impacts on archeological
23 resources.

24
25 **Conclusion.** Identified archeological
26 resources would continue to be protected
27 and preserved under this alternative.
28 Removal of much of the built environment,
29 redesign of the monument's trail system, and
30 restoration of natural processes could affect
31 the integrity of some archeological resources.
32 Because much of the monument would be in
33 the sensitive resources zone under this
34 alternative, archeological resources would be
35 identified, evaluated, and provided
36 stabilization, security, or other protection
37 commensurate with their significance and
38 sensitivity.

39
40 Although some archeological resources could
41 be lost (resulting permanent adverse impacts
42 of minor intensity), these actions would
43 generally result in long-term, beneficial
44 impacts on archeological resources.

45
46 Under this alternative, the section 106
47 determination of effect on archeological
48 resources in Muir Woods National
49 Monument would be *no adverse effect*.

50

51 **Alternative 3: Focusing on National**
52 **Treasures (NPS Preferred Alternative**
53 **for Muir Woods National Monument)**

54 **Analysis.** Identified archeological resources,
55 such as the eight archeological sites
56 associated with the Muir Woods National
57 Monument Historic District, would be
58 protected from unauthorized removal or
59 other destructive activities. Archeological
60 surveys would be conducted to identify and
61 evaluate the significance of other precontact
62 and historic archeological resources in the
63 monument, and determine appropriate ways
64 to protect and preserve the sites while
65 incorporating information of their
66 contribution to the monument. Construction
67 of new trails and relocation/redesign of
68 others and restoration of some natural
69 processes could affect the integrity of some
70 archeological resources, but every effort
71 would be undertaken to avoid known or
72 discovered archeological sites. If such sites
73 could not be avoided, mitigation procedures
74 would be undertaken in consultation with the
75 California state historic preservation office.

76
77 In the interpretive corridor management
78 zone, which embraces the redwood groves
79 and Redwood Creek area in this alternative,
80 archeological resources might be
81 incorporated into interpretive opportunities
82 for visitors. Archeological resources in much
83 of the rest of the monument (managed under
84 the sensitive resources management zone)
85 would be identified, evaluated, and provided
86 stabilization, security, or other protection
87 commensurate with their significance and
88 sensitivity.

89
90 Although some archeological resources could
91 be lost in the national monument (resulting in
92 permanent adverse impacts of minor
93 intensity), these actions would generally
94 result in long-term, beneficial impacts on
95 archeological resources.

96
97 **Conclusion.** Identified archeological
98 resources would be protected and preserved.
99 In the interpretive corridor zone, which

1 embraces the redwood groves and Redwood
 2 Creek area, archeological resources might be
 3 incorporated into interpretive opportunities
 4 for visitors. Archeological resources in much
 5 of the rest of the monument (within the
 6 sensitive resources zone) would be identified,
 7 evaluated, and provided stabilization,
 8 security, or other protection commensurate
 9 with their significance and sensitivity.

10
 11 Although some archeological resources could
 12 be lost in the national monument (resulting in
 13 permanent adverse impacts of minor
 14 intensity), these actions would generally
 15 result in long-term, beneficial impacts on
 16 archeological resources.

17
 18 Under this alternative, the section 106
 19 determination of effect on archeological
 20 resources in Muir Woods National
 21 Monument would be *no adverse effect*.

22
 23

24 **CULTURAL RESOURCES –**
 25 **ETHNOGRAPHIC RESOURCES /**
 26 **TRADITIONAL CULTURAL PROPERTIES**

27 ***No-action Alternative***

28 **Analysis.** The National Park Service has not
 29 identified any ethnographic resources or
 30 traditional cultural properties within the
 31 national monument. However, an
 32 ethnographic survey and assessment needs to
 33 be conducted.

34

35 **Conclusion.** There are no identified
 36 ethnographic resources or traditional cultural
 37 properties in Muir Woods National
 38 Monument.

39

40 Under this alternative, the section 106
 41 determination of effect on ethnographic
 42 resources or traditional cultural properties
 43 would be *no resources or properties affected*.

44

45 ***Alternative 1: Connecting People***
 46 ***with the Parks (NPS Preferred***
 47 ***Alternative for Park Sites in Marin,***
 48 ***San Francisco, and San Mateo***
 49 ***Counties)***

50 **Analysis.** The National Park Service has not
 51 identified any ethnographic resources or
 52 traditional cultural properties within the
 53 national monument. However, an
 54 ethnographic survey and assessment needs to
 55 be conducted.

56

57 **Conclusion.** There are no identified
 58 ethnographic resources or traditional cultural
 59 properties in Muir Woods National
 60 Monument.

61

62 Under this alternative, the section 106
 63 determination of effect on ethnographic
 64 resources or traditional cultural properties
 65 would be *no resources or properties affected*.

66

67 ***Alternative 2: Preserving and***
 68 ***Enjoying Coastal Ecosystems***

69 **Analysis.** The National Park Service has not
 70 identified any ethnographic resources or
 71 traditional cultural properties within the
 72 national monument. However, an
 73 ethnographic survey and assessment needs to
 74 be conducted.

75

76 **Conclusion.** There are no identified
 77 ethnographic resources or traditional cultural
 78 properties in Muir Woods National
 79 Monument.

80

81 Under this alternative, the section 106
 82 determination of effect on ethnographic
 83 resources or traditional cultural properties
 84 would be *no resources or properties affected*.

1 **Alternative 3: Focusing on**
2 **National Treasures**

3 **Analysis.** The National Park Service has not
4 identified any ethnographic resources or
5 traditional cultural properties within the
6 national monument. However, an
7 ethnographic survey and assessment needs to
8 be conducted.

9
10 **Conclusion.** There are no identified
11 ethnographic resources or traditional cultural
12 properties in Muir Woods National
13 Monument.

14
15 Under this alternative, the section 106
16 determination of effect on ethnographic
17 resources / traditional cultural properties
18 would be *no resources or properties affected*.

19
20
21 **CULTURAL RESOURCES–**
22 **PARK COLLECTIONS**

23 The alternatives for Muir Woods National
24 Monument’s park collections are covered
25 under the environmental consequences in the
26 “Actions Common to All Actions
27 Alternatives” section and by each alternative
28 for Golden Gate National Recreation Area.

29
30
31 **VISITOR USE AND EXPERIENCE**

32 **No-action Alternative**

33 **Analysis.** The primary visitor activities of
34 hiking through the redwood forest and
35 enjoying the sights and sounds of Muir
36 Woods National Monument would continue
37 in this alternative. The existing interpretive
38 programs would also continue. In addition,
39 visitors would still have some opportunities
40 for self-guided exploration, which is a valued
41 characteristic of visiting the monument.
42 During scoping for the plan, there were some
43 mentions of additional recreation
44 opportunities that were desired including
45 more trail access to the Camino del Canyon
46 area and with connections to the surrounding

47 state park lands. In this alternative, the
48 Camino del Canyon area would remain
49 largely inaccessible to most visitors and no
50 additional trail connections would be
51 established with adjacent public lands.
52 Visitors have also expressed interest in more
53 diverse interpretive programs and this
54 alternative would not include additional
55 programming or educational facilities to
56 support programming. The lack of some of
57 these desired improvements would be a long-
58 term, moderate, adverse impact on those
59 visitors seeking these opportunities.

60
61 The monument continues to provide some
62 opportunities for solitude, quiet, and
63 connection with the primeval forest. These
64 characteristics of park visitor opportunities
65 are highly valued by the public. This
66 alternative would continue to promote these
67 values, including encouraging modification of
68 visitor behavior through strategies such as
69 quiet zones and quiet days to minimize
70 impacts on the natural soundscape. However,
71 a large number of visitors have expressed
72 concerns about the amount of noise and
73 crowding that still occurs during peak times,
74 especially when groups are present in the
75 woods.

76
77 Visitors would continue to have access to the
78 monument via private automobile as well as
79 the park shuttle during the peak season. The
80 shuttle has improved access options to the
81 monument and eased some of the congestion
82 on surrounding access roads, a long-term,
83 moderate, beneficial impact. However, there
84 is still concern about the amount of informal
85 parking that is occurring at the monument
86 and the amount of congestion from vehicles,
87 buses, and pedestrians competing for the
88 same space at the monument entrance. These
89 issues result in a long-term, moderate,
90 adverse impact on visitor experience.

91
92 Visitor safety at the monument is considered
93 to be good in the no-action alternative,
94 except for the safety concerns associated
95 with informal parking along the entrance
96 road during peak visitation. The real and
97 perceived safety problems associated with

1 informal parking will continue in this
2 alternative resulting in a long-term, minor,
3 adverse impact.

4
5 **Conclusion.** The no-action alternative would
6 result in long-term, minor to moderate,
7 beneficial impacts from continued
8 opportunities to experience the unique and
9 highly valued characteristics of the primeval
10 forest via hiking trails and educational
11 programs. These activities and experiences
12 are highly valued by visitors. However, minor
13 to moderate adverse impacts on visitor
14 experience from visitor crowding, noise, and
15 informal parking during peak times would
16 continue.

17
18 **Alternative 1: Connecting People**
19 **with the Parks (NPS Preferred**
20 **Alternative for Park Sites in Marin,**
21 **San Francisco, and San Mateo**
22 **Counties)**

23 **Analysis.** Alternative 1 would provide for
24 self-guided exploration in a natural park
25 setting while making connections to a wider
26 array of opportunities on adjacent public
27 lands. Some additional programming and
28 enhanced facilities would give visitors new
29 means to understand the conservation
30 history and primeval forest ecosystem.
31 Additional trail and overnight opportunities
32 in the Camino del Canyon area would also
33 allow for new visitor opportunities. All of
34 these actions would expand the range of
35 activities for visitors and allow them to better
36 understand the important stories of the
37 monument. These actions would provide
38 visitors with a long-term, minor to moderate,
39 beneficial impact on their use and
40 experience.

41
42 The monument would continue to welcome a
43 diversity of visitors and support a range of
44 recreation activities. New recreation activities
45 would largely be focused on new interpretive,
46 educational, and stewardship activities that
47 would be staged at the Administration-
48 Concession Building and in the Camino del
49 Canyon area. Also, visitors would be

50 introduced to ways of accessing adjacent
51 landscapes and recreational opportunities of
52 surrounding public lands, creating a more
53 seamless connection to the diversity of day
54 and overnight recreation opportunities in the
55 surrounding area.

56
57 Visitors would be provided a variety of
58 programs and opportunities in exploring the
59 natural and conservation themes throughout
60 the monument, appealing to many learning
61 styles and increasing the breadth of stories
62 being told. Interpretation on the shuttle bus
63 would orient visitors and allow them to better
64 plan their visit. Expanded structured
65 educational opportunities by park staff and
66 partners would also add to the learning
67 opportunities available to visitors. This would
68 include new overnight educational
69 opportunities in the Camp Hillwood area.
70 Improved learning opportunities were highly
71 desired by some members of the public.
72 These added interpretive and educational
73 programs would have a long-term, minor to
74 moderate, beneficial effect on visitor
75 experience.

76
77 Alternative 1 would allow visitors improved
78 access to the monument during peak times by
79 providing increased shuttle service and more
80 convenient shuttle stops. The increased
81 shuttle access to the woods would reduce
82 traffic congestion at the park entry,
83 minimizing visitor frustration and conflicts
84 on arrival. However, some visitors may
85 experience adverse effects if they are not able
86 to board the shuttle in a timely manner.
87 Visitors who would prefer to park at the
88 monument to maintain flexibility in their
89 schedule would also be adversely affected by
90 the proposed reduction in parking at the
91 monument. Within the monument, visitor
92 access would be improved and congestion
93 reduced through greater dispersion of
94 visitors, new facilities, and accessible trails.
95 This would include upgrades to trails for
96 purposes of accessibility and resource
97 protection, along with water and restroom
98 facilities at Bridge 4. These actions would
99 result in long-term, moderate, beneficial
100 impacts.

1 The monument's natural setting and its
 2 primary natural resource would be enhanced
 3 by reconfiguring parking away from the
 4 entrance to the primeval redwood forest and
 5 restricting parking along the road to the
 6 monument. Pulling vehicle circulation away
 7 from the monument would also improve the
 8 natural soundscape. Implementation of a
 9 quiet zone would allow visitors to understand
 10 the value that is placed on the natural quiet of
 11 the forest and encourage visitors to help
 12 provide a quiet and contemplative experience
 13 for all. These actions would have a long-term,
 14 moderate, beneficial impact on the visitor
 15 experience at Muir Woods National
 16 Monument.

17
 18 Because of the efforts made to improve the
 19 safety of the circulation system and parking at
 20 the monument, visitor safety would be
 21 improved. The potential for pedestrian and
 22 vehicular conflicts would be reduced as well
 23 as conflicts between vehicles.

24
 25 **Conclusion.** Under alternative 1, impacts on
 26 visitor experience would be long term, minor
 27 to moderate, and beneficial. The
 28 improvements to the arrival experience to the
 29 park, along with enhanced educational and
 30 interpretive opportunities, directly address
 31 the primary interests and concerns of most
 32 visitors to the monument. It is likely that a
 33 similar number of visitors could be
 34 accommodated in this alternative while still
 35 meeting desired conditions given the ability
 36 to better disperse and manage visitation on
 37 the park shuttle and trails, a long-term minor
 38 beneficial impact.

40 ***Alternative 2: Preserving and*** 41 ***Enjoying Coastal Ecosystems***

42 **Analysis.** Alternative 2 would restore the
 43 primeval character of the old-growth forest
 44 and the visitor experience would be more
 45 primitive than it is today. The majority of the
 46 built environment would be removed and
 47 only light-on-the-land trails would reach into
 48 the heart of the forest. While the range of
 49 activities would be limited, the experience of
 50 the primeval forest would be heightened,

51 benefiting visitors who are interested most in
 52 the natural ecological processes of the forest
 53 and creek.

54
 55 Visitors would still have opportunities to
 56 enjoy the primary recreation activity of the
 57 monument, hiking through the forest. The
 58 experience along the trail setting would be
 59 improved with fewer encounters with others
 60 and more emphasis on connection with the
 61 surrounding natural environment. Visitors
 62 would also have opportunities for
 63 educational and stewardship programs
 64 focused on exploring the redwood forest
 65 ecology and the conservation of Muir Woods
 66 National Monument. Participatory programs
 67 would encourage a deeper and more
 68 meaningful understanding of the forest.
 69 Interpretation on the shuttle bus would
 70 orient visitors and allow them to better plan
 71 their visit. This alternative provides a
 72 different visitor experience than the no-
 73 action alternative. If managed well,
 74 alternative 2 could result in a long-term,
 75 moderate, beneficial impact to visitor
 76 experience, with visitors enjoying a more
 77 hands-on interaction with the primeval
 78 redwood forest.

79
 80 The full-time shuttle access to Muir Woods
 81 National Monument will reduce traffic
 82 congestion at the park entry, minimizing
 83 visitor frustration and conflicts on arrival; a
 84 long-term, moderate, beneficial impact.
 85 However, there would be long-term,
 86 moderate, adverse effects for those that
 87 cannot get on the shuttle in a timely manner.
 88 Some visitors who would prefer to park at the
 89 monument would also be adversely affected
 90 by the substantial reduction in parking.
 91 Additionally, the restriction on tour bus
 92 access would make access for tour groups
 93 less convenient.

94
 95 The park setting would be restored to a more
 96 naturalistic setting, with few indications of
 97 built structures. All structures would be
 98 moved out of the woods, giving visitors more
 99 natural viewsapes and soundscapes. The
 100 removal of all parking except for a small
 101 accessible lot would increase the naturalness

1 of the arrival area to Muir Woods National
2 Monument. It also would reduce the noise
3 and pollution caused by personal vehicles
4 and tour buses.

5
6 Because of the efforts made to improve the
7 safety of the circulation system and parking at
8 the monument, visitor safety would be
9 improved. The potential for pedestrian and
10 vehicular conflicts would be reduced as well
11 as conflicts between vehicles. The increased
12 rustic nature of the trail system may slightly
13 increase the potential for safety incidences, a
14 potential adverse impact.

15
16 **Conclusion.** Alternative 2 would result in
17 long-term, minor to moderate, beneficial
18 impacts on visitor experience, primarily due
19 to enhancements to the monument’s natural
20 setting and the promotion of a more
21 authentic and connected visitor experience
22 with the primeval forest. However, long-
23 term, minor to moderate, adverse impacts on
24 visitor experience would also occur because
25 some visitors would likely find it challenging
26 to visit given the lack of parking and support
27 facilities, and the increased regulation of
28 visitor access. Also, it is likely that alternative
29 2 would not further encourage use of the
30 monument by diverse groups given more
31 limited visitor opportunities and services. It is
32 likely that a smaller number of visitors could
33 be accommodated in this alternative given
34 more limited facilities and the emphasis on
35 fewer visitor encounters in the woods, a long-
36 term, minor, adverse impact.

37
38 **Alternative 3: Focusing on National**
39 **Treasures (NPS Preferred Alternative**
40 **for Muir Woods National Monument)**

41 **Analysis.** Alternative 3 is the NPS preferred
42 alternative and would present Muir Woods
43 National Monument as a contemplative
44 outdoor museum where visitors would
45 explore and understand the primeval forest
46 and the monument’s place in American
47 conservation history. Visitors would have
48 greater diversity of recreational
49 opportunities, along with multiple types of

50 educational and stewardship opportunities
51 provided to reach a more diverse audience
52 with various learning styles.

53
54 Existing recreation activities would largely
55 continue, along with the addition of thematic
56 trails within the heart of the woods. There
57 would also be new trail opportunities in
58 Camino del Canyon. Other new
59 opportunities would involve increased
60 stewardship and educational programs that
61 allow visitors first-hand experience in the
62 “living museum” of the monument. The use
63 of the Administration-Concession Building in
64 the woods for expanded programs and
65 research would allow a wider range of
66 recreation and learning opportunities. The
67 park staff would be focused on facilitating
68 improved understanding of park values to a
69 broad audience. New and diverse learning
70 opportunities were highly desired by some
71 members of the public. Investment in new
72 and comprehensive onsite interpretive and
73 educational programs would expand the
74 visitor opportunities and understanding of
75 the monument’s resources and thereby effect
76 long-term, moderate, beneficial impacts on
77 visitor experience.

78
79 The preferred alternative would allow
80 visitors improved access to the monument
81 during peak times by providing increased
82 shuttle service and more convenient shuttle
83 stops. The increased shuttle access to Muir
84 Woods National Monument would reduce
85 traffic congestion at the park entry,
86 minimizing visitor frustration and conflicts
87 on arrival—a long-term, moderate, beneficial
88 impact. However, there would be long-term,
89 moderate, adverse effects for those that
90 cannot get on the shuttle in a timely manner.
91 Some visitors who would prefer to park at the
92 monument would also be adversely affected
93 by the partial reduction in parking.

94
95 Within the monument, visitor access would
96 be improved and congestion reduced
97 through greater dispersion of visitors on
98 thematic trails and within the newly opened
99 Camino del Canyon area. However, some
100 areas that would be zoned for sensitive

1 resources would have reduced or more
 2 controlled visitor access. Camp Hillwood
 3 would be used for walk-in day use programs
 4 and thereby restrict access for existing
 5 overnight group opportunities.
 6
 7 Viewsheds and soundscapes at the
 8 monument would be improved in the
 9 preferred alternative. Visitors would
 10 experience a more natural setting upon
 11 arrival at the monument as a result of the
 12 reconfiguration of the parking lots. Dispersal
 13 of visitors among thematic trails and within
 14 the Camino del Canyon area would improve
 15 both the soundscapes and viewsheds as fewer
 16 people would be in any one place at any one
 17 time. Soundscape management practices
 18 would also improve the soundscape. Overall,
 19 these actions would have a long-term,
 20 moderate, beneficial impact to visitor
 21 experience.

22
 23 Because of the efforts made to improve the
 24 safety of the circulation system and parking at
 25 the monument, visitor safety would be
 26 improved. The potential for pedestrian and
 27 vehicular conflicts would be reduced, as
 28 would the potential for conflicts between
 29 vehicles.

30
 31 **Conclusion.** Actions proposed in the NPS
 32 preferred alternative would result in long-
 33 term, minor to moderate, beneficial impacts
 34 on visitor experience. This alternative
 35 contributes to the purpose of the monument
 36 by providing high-quality recreation and
 37 education opportunities that welcome a wide
 38 audience to experience and understand the
 39 most important resources and stories of Muir
 40 Woods National Monument. It is likely that a
 41 reasonably large number of visitors could be
 42 accommodated in this alternative while still
 43 meeting desired conditions, given the ability
 44 to better disperse and manage visitation on
 45 the park shuttle and trails, a long-term,
 46 minor, beneficial impact.

47
 48

49 **SOCIAL AND ECONOMIC** 50 **ENVIRONMENT**

51 *No-action Alternative*

52 **Analysis.** As detailed in the “Social and
 53 Economic Environment” section of part 8,
 54 park lands such as Muir Woods National
 55 Monument are integral in sustaining a high
 56 quality of life in a highly urbanized
 57 community such as the Bay Area. The no-
 58 action alternative for the national monument
 59 would continue to provide open space, a
 60 wildland experience, and public access, while
 61 maintaining a nationally significant natural
 62 resource. As other Bay Area private land
 63 continues to develop and urbanize into the
 64 future, Muir Woods National Monument will
 65 become exponentially more valuable to the
 66 community and its quality of life. The
 67 education and stewardship opportunities for
 68 the residents would be maintained and
 69 possibly improved as resources become
 70 available, which would continue to enhance
 71 the quality of life for local residents by
 72 fostering a conservation ethic among them.
 73 Under the no-action alternative, the National
 74 Park Service would also continue to
 75 collaborate with other local land managers to
 76 maintain its “watershed approach” to land
 77 management. This would maintain a
 78 communitywide and perhaps regionwide
 79 effort for wildland protection, which
 80 ultimately would benefit the quality of life for
 81 local residents. This collaboration would also
 82 continue to improve community awareness
 83 and engagement in park and regional issues.
 84 Collectively, these effects to quality of life
 85 result in an impact that is long term,
 86 moderate, and beneficial in the context of the
 87 gateway communities in Marin County, and
 88 long term, minor, and beneficial for the three
 89 adjacent counties.

90
 91 In terms of effects on the local economy, the
 92 no-action alternative for Muir Woods
 93 National Monument would maintain the
 94 current level of employment for the National
 95 Park Service and concessioners and NPS
 96 spending for park operations and contracts.
 97 The value of these attributes to the local

1 economy is discussed in “Social and
 2 Economic Environment” of the “Affected
 3 Environment” section. The no-action
 4 alternative would result in a negligible change
 5 from current conditions in impact to the local
 6 economy in the future. However, as with all
 7 other alternatives, the no-action alternative
 8 would maintain Muir Woods National
 9 Monument’s overall intrinsic contribution to
 10 the local economy in the Bay Area. By
 11 continuing to provide open space
 12 preservation, recreation opportunities, and
 13 an aesthetic natural backdrop, the national
 14 monument would continue to help make the
 15 Bay Area a place for companies and talented
 16 professionals to call home. In other words,
 17 the Bay Area’s quality of life becomes a draw
 18 for business and economic growth with the
 19 help of places like Muir Woods National
 20 Monument. The no-action alternative will
 21 sustain and enhance this economic value to
 22 the Bay Area. This results in an impact that is
 23 long term, moderate, and beneficial in the
 24 context of local gateway communities in
 25 Marin County. The impact would be long
 26 term, minor to moderate, and beneficial for
 27 the adjacent three counties.

28
 29 **Conclusion.** In the context of the local
 30 gateway communities and the three adjacent
 31 counties, the beneficial impacts on the social
 32 and economic environment from the no-
 33 action alternative would be long term and
 34 minor to moderate. The beneficial impacts
 35 could result from maintaining the park’s
 36 contribution to the local economy and
 37 quality of life, existing education and
 38 stewardship programs, as well as maintaining
 39 collaborative efforts with several local
 40 governments and land managers to maintain
 41 and expand open land protection in the
 42 region.

43

44 **Alternative 1: Connecting People**
 45 **with the Parks (NPS Preferred**
 46 **Alternative for Park Sites in Marin,**
 47 **San Francisco, and San Mateo**
 48 **Counties)**

49 **Analysis.** Alternative 1 would maintain the
 50 quality of life and economic benefits that the
 51 national monument provides to the local
 52 communities and counties, as described in
 53 the analysis of the no-action alternative. By
 54 providing open lands adjacent to a large
 55 urban center and continuing education and
 56 stewardship programs for local residents, the
 57 monument would continue to improve the
 58 quality of life for those in nearby
 59 communities. This alternative would also
 60 sustain the monument’s intrinsic
 61 contribution to the local economy in the Bay
 62 Area (once again, as noted in the no-action
 63 alternative analysis). By continuing to provide
 64 open space preservation, recreation
 65 opportunities, and an aesthetic natural
 66 backdrop, the national monument would
 67 continue to help make the Bay Area a place
 68 for companies and talented professionals to
 69 call home. These contributions to the local
 70 economy and quality of life would result in an
 71 impact that is long term, moderate, and
 72 beneficial in the context of local gateway
 73 communities in Marin County. The impact
 74 would be long term, minor to moderate, and
 75 beneficial for the adjacent three counties.

76

77 In addition to continuing these attributes of
 78 the no-action alternative, the public
 79 outreach, welcoming, and orientation focus
 80 of alternative 1 would contribute more to the
 81 quality of life of many residents in the area.
 82 Improved orientation, outreach, and support
 83 facilities that would be aimed at reaching the
 84 diverse populations of the Bay Area could
 85 connect with local residents and promote
 86 more awareness of the monument. Also, this
 87 alternative includes an improvement in park
 88 accessibility via an expanded shuttle bus
 89 service that would contribute to an improved
 90 quality of life in the community by allowing
 91 more local residents to access the park (e.g.,
 92 those without personal vehicles), and by

1 reducing traffic congestion on local and
 2 regional roads. All of these efforts would
 3 improve the quality of life of more residents
 4 by exposing them to the health, education,
 5 and recreation benefits of visiting Muir
 6 Woods National Monument and other park
 7 sites. This could result in an impact that is
 8 long term, minor to moderate, and beneficial
 9 in the context of the local gateway
 10 communities and three adjacent counties.

11
 12 In addition, alternative 1 includes a variety of
 13 construction projects that would support the
 14 local economy by offering new contract work
 15 for local and regional firms. Most of these
 16 park projects would be associated with the
 17 improved visitor welcoming facilities that
 18 would complement the NPS effort at
 19 welcoming and orienting people at Muir
 20 Woods National Monument. These projects
 21 would generate new contract work for
 22 private firms in the Bay Area, including
 23 engineering consultants, construction
 24 contractors, and environmental consultants.
 25 These projects would not only support these
 26 contracting businesses and their employees
 27 directly, but the economic multiplier effect
 28 would circulate this contract money through
 29 the local economy. This phenomenon is
 30 explained in “Social and Economic
 31 Environment” under the “Affected
 32 Environment” section. The collective result
 33 of these actions would be impacts that are
 34 short term, minor, and beneficial for local
 35 gateway communities and possibly the three
 36 adjacent counties.

37
 38 The need for some new NPS or concession
 39 staffing may also be generated at the new
 40 welcome centers to provide new visitor
 41 services. The expanded shuttle bus services
 42 could also generate additional concession
 43 jobs. These new jobs may result in an impact
 44 that is long term, minor, and beneficial to the
 45 local gateway communities in Marin County.
 46 Impacts on the three adjacent counties would
 47 be negligible.

48
 49 Lastly, alternative 1 includes an action that
 50 expands the shuttle bus service to the park
 51 and connects the shuttle with local and

52 regional transportation systems. With the
 53 possibility of fewer park visitors accessing the
 54 park via personal vehicles because of this
 55 service, the potential exists for a reduction in
 56 local business activity in the Marin County
 57 communities (because those in personal
 58 vehicles can more readily access local sites
 59 and businesses while en route to the park).
 60 Therefore, the shuttle bus program could
 61 have a negative effect on the local economy.
 62 This loss of business would also have
 63 secondary negative effects on the local
 64 economy due to the reduction of the
 65 multiplier effect of the business revenues that
 66 would no longer be circulating further
 67 through the local economy. This action may
 68 result in an impact that is long term, minor,
 69 and adverse to the local gateway communities
 70 in Marin County. Impacts on the adjacent
 71 three counties would likely be negligible.

72
 73 **Conclusion.** The overall beneficial impact to
 74 the quality of life and local economy from
 75 alternative 1 would be short term to long
 76 term, and range from minor to moderate for
 77 the local gateway communities and the three
 78 adjacent counties. The beneficial impacts
 79 would primarily result from

- 80
- 81 ▪ a significant increase in public
- 82 outreach programs, visitor
- 83 orientation, and new welcoming
- 84 facilities at the park;
- 85 ▪ improved connections to local and
- 86 regional transportation systems and
- 87 less traffic congestion in the
- 88 community;
- 89 ▪ various new engineering and
- 90 construction contracts for facility
- 91 improvement projects; or
- 92 ▪ job creation from the proposed
- 93 increase in visitor services in the park
- 94 and the shuttle service expansion.

95 The adverse impacts of alternative 1 could be
 96 long term and minor in the context of the
 97 local gateway communities. The adverse
 98 impacts could result from the possible
 99 reduction in local business activity from park

1 visitors who opt for public transit and the
2 park shuttle.

3 4 **Alternative 2: Preserving and** 5 **Enjoying Coastal Ecosystems**

6 **Analysis.** Alternative 2 would maintain many
7 of the quality of life and economic benefits
8 that the national monument provides to the
9 local communities and counties, as described
10 in the analysis of the no-action alternative. By
11 providing open lands adjacent to a large
12 urban center and continuing education and
13 stewardship programs for local residents, the
14 monument would continue to improve the
15 quality of life for those in nearby
16 communities. This alternative would also
17 sustain the monument’s intrinsic
18 contribution to the local economy in the Bay
19 Area (once again, as noted in the no-action
20 alternative analysis). By continuing to provide
21 open space preservation, recreation
22 opportunities, and an aesthetic natural
23 backdrop, the national monument would
24 continue to help make the Bay Area a place
25 for companies and talented professionals to
26 call home. These contributions to the local
27 economy and quality of life would result in an
28 impact that is long term, moderate, and
29 beneficial in the context of the local gateway
30 communities in Marin County. The impact
31 would be long term, minor to moderate, and
32 beneficial for the adjacent three counties.

33
34 Because alternative 2 places a priority on
35 ecological restoration, recreational
36 opportunities in the park may be somewhat
37 reduced for local residents. This may slightly
38 reduce the amount of exercising, learning,
39 and/or recreating in the local communities.
40 However, given the availability of other park
41 sites in the immediate proximity of Marin
42 County, this adverse impact to quality of life
43 would likely be negligible and localized.

44
45 Alternative 2 includes a considerable change
46 in park accessibility. The proposed shuttle
47 bus program will contribute to an improved
48 quality of life by allowing more local
49 residents to access the park (e.g., those
50 without personal vehicles), and by reducing

51 traffic congestion on local and regional roads
52 in Marin County. This transportation change
53 may result in an impact that is long term,
54 minor, and beneficial for the local gateway
55 communities in Marin County. The impact to
56 the overall three adjacent counties would
57 likely be negligible.

58
59 The focus on restoration of habitat
60 connections may increase opportunities and
61 reasons for local government land managers
62 to preserve land in vicinity of the national
63 monument (to establish public land
64 connections and reduce further habitat
65 fragmentation). If the adjacent local land
66 managers pursue additional open space
67 around Muir Woods in Marin County, the
68 local residents of the area may have
69 additional park sites to visit in the future.
70 This would enhance the quality of life for
71 residents of the area. The impact would be
72 long term, minor, and beneficial for the local
73 gateway communities. Impact to the adjacent
74 three counties would be negligible.

75
76 As for impacts on the local economy, because
77 alternative 2 focuses on preserving ecological
78 resources, several actions in this alternative
79 aim at restoring and reclaiming natural
80 features in and around Muir Woods National
81 Monument. These reclamation efforts would
82 necessitate various types of construction and
83 restoration projects that would support the
84 local economy by offering new contract work
85 for local and regional firms (including
86 engineering consultants, construction
87 contractors, and environmental consultants).
88 These projects would not only support these
89 contracting businesses and their employees
90 directly, but the economic multiplier effect
91 would circulate this contract money through
92 the local economy. This phenomenon is
93 explained in part 3, in the “Social and
94 Economic Environment” under the “Affected
95 Environment” section. The collective result
96 of these actions would be impacts that are
97 short term, minor, and beneficial for local
98 gateway communities and possibly the three
99 adjacent counties.

100

1 Some new NPS or concession staffing may be
 2 generated by the substantial expansion to
 3 shuttle service to the park. These new jobs
 4 may result in an impact that is long term,
 5 minor, and beneficial to the local gateway
 6 communities in Marin County.

7
 8 Lastly, alternative 2 would require that all
 9 national monument visitors access the park
 10 via their own power (e.g., bike, walk) or via
 11 an expanded shuttle bus service that connects
 12 with local and regional transportation
 13 systems. Thus, this action would reduce the
 14 number of people traveling through Marin
 15 County via their personal vehicles. In terms
 16 of local economic impact, this transportation
 17 mode shift would result in less business
 18 activity for local businesses in Marin County
 19 because bus passengers cannot easily access
 20 local sites and businesses while en route to
 21 the park (unlike those in personal vehicles).
 22 This loss in business would also have
 23 secondary negative effects on the local
 24 economy due to the reduction of the
 25 multiplier effect of the business revenues that
 26 would no longer be circulating further
 27 through the local economy. This action may
 28 result in an impact that is long term, minor to
 29 moderate, and adverse to the local gateway
 30 communities in Marin County. Impacts on
 31 the adjacent three counties would likely be
 32 negligible, or possibly long term, minor, and
 33 adverse.

34
 35 **Conclusion.** The beneficial impacts on the
 36 quality of life and local economy from
 37 alternative 2 would be short term to long
 38 term and minor for the local gateway
 39 communities and the three adjacent counties.
 40 The beneficial impacts could result from

- 41
- 42 ▪ increased cooperation with other
 43 local governments and land managers
 44 to pursue the preservation of
 45 additional publicly accessible lands in
 46 the area,
- 47 ▪ contract work created by various
 48 reclamation projects,

- 49 ▪ possible new jobs created by the
 50 substantial expansion in the shuttle
 51 service that serves the park, or
- 52 ▪ the expanded shuttle service that
 53 would allow more local residents to
 54 access the park and reduce traffic
 55 congestion.

56
 57 The adverse impacts from alternative 2 could
 58 be long term, ranging from minor to
 59 moderate for the local gateway communities,
 60 the three adjacent counties, as well as the Bay
 61 Area. The adverse impacts could result from
 62 the possible reduction in local business
 63 activity from park visitors who would need to
 64 take public transit to the park.

65 66 **Alternative 3: Focusing on National** 67 **Treasures (NPS Preferred Alternative** 68 **for Muir Woods National Monument)**

69 **Analysis.** Alternative 3 would maintain the
 70 quality of life and economic benefits that the
 71 national monument provides to the local
 72 communities and counties as described in the
 73 analysis of the no-action alternative. By
 74 providing open lands adjacent to a large
 75 urban center and continuing education and
 76 stewardship programs for local residents, the
 77 monument would continue to improve the
 78 quality of life for those in nearby
 79 communities. This alternative would also
 80 sustain the monument's intrinsic
 81 contribution to the local economy in the Bay
 82 Area (once again, as noted in the no-action
 83 alternative analysis). By continuing to provide
 84 open space preservation, recreation
 85 opportunities, and an aesthetic natural
 86 backdrop, the national monument would
 87 continue to help make the Bay Area a place
 88 for companies and talented professionals to
 89 call home. These contributions to the local
 90 economy and quality of life would result in an
 91 impact that is long term, moderate, and
 92 beneficial in the context of the local gateway
 93 communities in Marin County. The impact
 94 would be long term, minor to moderate, and
 95 beneficial for the adjacent three counties.

96

1 Alternative 3 for Muir Woods National
2 Monument includes actions that provide
3 some new visitor information and
4 orientation, as well as interpretation
5 programs that would be aimed at attracting
6 the diverse populations of the Bay Area to the
7 park. The attempts to connect with local
8 residents would be complemented with
9 improved visitor welcoming center facilities
10 at Muir Woods National Monument access
11 points. In addition, alternative 3 includes an
12 improvement in park accessibility via an
13 expanded schedule of shuttle bus
14 connections with local and regional
15 transportation systems. The shuttle bus
16 program could contribute to an improved
17 quality of life by allowing more local
18 residents to access the park (e.g., those
19 without personal vehicles), and by reducing
20 traffic congestion on roads in Marin County.
21 Collectively, these efforts could improve the
22 quality of life of more Bay Area residents by
23 exposing them to the health, education, and
24 recreation benefits of visiting Muir Woods
25 National Monument and other park sites.
26 This could result in an impact that is long
27 term, minor to moderate, and beneficial in
28 the context of the local gateway communities
29 and three adjacent counties.

31 Alternative 3 places a strong emphasis on the
32 national significance of Muir Woods
33 National Monument (natural and historical)
34 and educating the public on this significance.
35 As the residents of Marin County and the Bay
36 Area as a whole become more aware of the
37 uniqueness and importance of Muir Woods
38 National Monument, they may develop a
39 stronger sense of pride or identity in the
40 community in which they live. These
41 personal appreciation values and sense of
42 community belonging can contribute to one's
43 quality of life. This identification with the
44 unique resources of the community may yield
45 an impact that is long term, minor, and
46 beneficial in the context of the local gateway
47 communities and three adjacent counties.

49 The new welcome center proposed as part of
50 alternative 3 could generate a need for new
51 NPS or concession staffing to provide new or

52 expanded visitor services at the national
53 monument. New concession jobs could also
54 be created by the expanded shuttle bus
55 services. This potential increase in jobs may
56 result in an impact that is long term, minor,
57 and beneficial in the context of the local
58 gateway communities. Impacts on the three
59 adjacent counties would be negligible.

61 Lastly, alternative 3 would expand the shuttle
62 bus service to the park. Because this shuttle
63 connects with local and regional
64 transportation systems, many park visitors
65 may choose to leave their car at home and
66 access the park via public transportation. If
67 this happens, local businesses in Marin
68 County communities would experience a
69 reduction in customers and business activity
70 because bus passengers cannot easily access
71 local sites and businesses while en route to
72 the park (unlike those in personal vehicles).
73 Therefore, the shuttle bus program could
74 have a negative effect on the local economy.
75 This loss in business would also have
76 secondary negative effects on the local
77 economy due to the reduction of the
78 multiplier effect of the business revenues that
79 would no longer be circulating further
80 through the local economy. As a result, the
81 impacts on the local gateway communities in
82 Marin County could be long term, minor, and
83 adverse. Impacts on the adjacent three
84 counties would likely be negligible.

86 **Conclusion.** The beneficial impacts of
87 alternative 3 on the quality of life and local
88 economy could be long term, ranging from
89 minor to moderate for local gateway
90 communities and the three adjacent counties.
91 Overall, the beneficial impacts of alternative 3
92 could result from

- 94 ■ a moderate increase in public
95 outreach, visitor orientation, and new
96 welcoming facilities at the park,
- 97 ■ improved connections to local and
98 regional transportation systems and
99 less traffic congestion in the
100 community,

- 1 ▪ a modest number of possible jobs
2 created by expanded visitor
3 welcoming services and expanded
4 shuttle service, or
- 5 ▪ the community's improved
6 awareness, pride, and appreciation of
7 the national significance of Muir
8 Woods National Monument.

9
10 The adverse impacts of alternative 3 could be
11 long term and minor for the gateway
12 communities. The adverse impacts on the
13 social and economic environment could
14 result from a reduction in local business
15 activity due to a park visitors shifting from
16 using personal vehicles to using public
17 transportation

18 19 20 **TRANSPORTATION**

21 The analysis of transportation impacts in this
22 section is based in part on several earlier
23 studies, including:

- 24
25 ▪ four years of studies of the Muir
26 Woods Shuttle pilot program
27 conducted for the County of Marin
28 (Nelson\Nygaard 2008b)
- 29 ▪ the "Muir Woods Shuttle
30 Alternatives," a memo to park
31 managers (Nelson\Nygaard 2008a)
- 32 ▪ the Comprehensive Transportation
33 Management Plan (NPS and Marin
34 County 2002)
- 35 ▪ the Transportation Planning to
36 Address Access and Congestion
37 Issues – Muir Woods National
38 Monument

39
40 See these documents for more details on the
41 Muir Wood Shuttle operations, performance
42 and cost, analysis of parking changes at Muir
43 Woods National Monument, and traffic
44 congestion analysis for the Muir Woods
45 National Monument area.

46 47 **No-action Alternative**

48 **Analysis.** Currently, about 760,000 visitors
49 per year travel to Muir Woods National
50 Monument. Visitation peaks during the
51 summer months, particularly on weekends.
52 Managing these crowds and balancing the
53 impact of the large number of visitors with
54 the preservation of the park resources has
55 been an ever-increasing challenge for park
56 managers.

57
58 Muir Woods is reached by narrow two-lane
59 county and state roads that wind through
60 canyons and over Mount Tamalpais. There is
61 little opportunity for passing, thus the roads
62 are heavily congested on busy summer
63 weekends, particularly on State Route 1
64 between Highway 101 and Panoramic
65 Highway. Marin County is committed to
66 keeping roads in West Marin at two lanes to
67 preserve the rural character of the area, so
68 reducing congestion through increased
69 capacity is not a realistic option.

70
71 Most visitors arrive at Muir Woods National
72 Monument by automobile. The monument
73 provides 179 parking spaces in three parking
74 lots, supplemented by approximately 175
75 spaces along Muir Woods Road. Estimated
76 demand for parking spaces on peak season
77 weekends in 2002 was 450 spaces (NPS and
78 Marin County 2002), a figure that exceeds the
79 formal and informal parking capacity.
80 Parking on the roadway often has extended
81 to areas where parking is prohibited and
82 there is minimal enforcement. Marin County
83 has recently restricted some of the shoulder
84 area with fences and signs, slightly reducing
85 the number of available spaces. On busy
86 weekends, cars can be found parked along
87 the road up to a mile from the monument.
88 This can create safety issues because people
89 walk in the road to get to the monument, and
90 the parked cars make the navigable roadway
91 narrower while also obscuring the view of
92 pedestrians and oncoming traffic.

93
94 A shuttle system connecting off-site parking
95 lots with Muir Woods National Monument
96 was introduced in the summer of 2005. This

1 was originally a three-year pilot program;
 2 now the National Park Service has entered
 3 into a three-year partnership with the County
 4 of Marin to jointly fund the service from 2009
 5 through 2011 with the objective of continuing
 6 the service into the future indefinitely. The
 7 shuttle runs on weekends and holidays from
 8 May through September and has gradually
 9 increased hours of service each year.
 10 Passengers board the shuttle in Sausalito, in
 11 Marin City, or from two Park-and-Ride lots
 12 in Mill Valley. These satellite parking lots are
 13 more than adequate to accommodate cars of
 14 shuttle riders on the weekends. More than
 15 half of shuttle riders choose to take the
 16 shuttle because of changeable message signs
 17 on Highway 101 informing them that the lot
 18 at Muir Woods is full and directing them to a
 19 shuttle stop.

20
 21 Data gathered during the 2008 season shows
 22 that 14% of visitors to Muir Woods National
 23 Monument took the shuttle on days when the
 24 shuttle was available (Nelson/Nygaard 2009).

25
 26 Ridership has grown substantially each year
 27 of service, increasing farebox revenue and
 28 sometimes requiring additional vehicles for
 29 the mid-day rush peak use period, and at the
 30 end of the day. Even with this large number
 31 of riders, roads continue to be heavily
 32 congested with visitors arriving by auto, such
 33 that the shuttle is thrown off schedule during
 34 peak periods as it waits in traffic.

35
 36 In addition to the Muir Woods Shuttle, park
 37 staff estimates that 20% of visitors arrive by
 38 tour bus (pers. comm. with Mia Monroe, Site
 39 Supervisor - Interpretation, Marin Headlands
 40 and Muir Woods).

41
 42 **Conclusion.** With no further action taken,
 43 visitor connections to Muir Woods National
 44 Monument and the functionality of the
 45 transportation system to the monument
 46 could experience a long-term, minor to
 47 moderate, adverse impact. Access roads and
 48 intersections on State Route 1 between
 49 Highway 101 and Muir Woods National
 50 Monument would continue to be congested,
 51 slowing shuttle service, and making it difficult

52 at peak times for emergency vehicles to travel
 53 in the area. The existing parking lots at the
 54 monument are likely to continue to fill early
 55 in the day from May to September,
 56 particularly on the weekends and the unsafe
 57 roadside parking situation could also
 58 continue. On a positive note, shuttle service
 59 can be expected to see continued increases in
 60 ridership, helping reduce road congestion.

61 **All of the Action Alternatives**

62
 63 **Analysis.** Recognizing the difficulty of
 64 accommodating the large number of visitor
 65 vehicles, all alternatives move toward
 66 reducing the number of cars coming to the
 67 monument and increasing the proportion of
 68 visitors coming by transit. This latter
 69 objective is accomplished by both increasing
 70 transit service and by intercepting travelers
 71 earlier in their trip so that more, if not all, of
 72 the trip is on transit rather than by car. The
 73 following transportation-related measures
 74 are incorporated in alternatives 1 through 3
 75 for Muir Woods National Monument.
 76 Although described independently, they
 77 should be considered parts of a whole
 78 strategy to be implemented in conjunction
 79 with each other.

80
 81 In alternatives 1 and 2, a new off-site
 82 welcome center would be created in the
 83 vicinity of State Route 1 and Highway 101
 84 where visitors would board the shuttle. The
 85 center would provide parking, shelter,
 86 restrooms, park information, and snacks, and
 87 would be a transfer point between regional
 88 and local transit and national park
 89 destinations. The creation of the welcome
 90 center would have a long-term, major,
 91 beneficial impact on transit facility capacity,
 92 amenities, conditions, and on unsafe road
 93 shoulder parking on Muir Woods Road near
 94 the monument.

95
 96 Express transit service from downtown San
 97 Francisco and improved connections with
 98 the regional ferry services would be pursued.
 99 This action is likely to result in a long-term,
 100 moderate, beneficial impact to connectivity
 101 to Muir Woods, including number and

1 capacity of connections, and available modes
2 of travel.

3
4 In alternatives 1 and 3, shuttle service would
5 be provided during shoulder periods (May
6 and September) and peak periods (Memorial
7 Day through Labor Day weekends), as well as
8 on holiday weekends throughout the year.
9 This would have a long-term, moderate,
10 beneficial effect by making transit service
11 available on holidays during the nonpeak
12 period. In alternative 2, service would run
13 365 days a year, which is likely to have a long-
14 term, major, beneficial impact on transit
15 availability and an increase in modes of travel
16 to Muir Woods National Monument.

17
18 Parking at the monument would be reduced
19 in alternatives 1 and 3 and eliminated (except
20 for space needed for those with special
21 accessibility needs) in alternative 2. Impacts
22 of this are multidimensional and are
23 discussed below.

24
25 In all action alternatives, a main feature
26 would be a reduction in or elimination of
27 parking capacity at the monument (including
28 unsafe road shoulder parking), offset by
29 parking at one or more satellite lots (possibly
30 including Kent Canyon), and increased
31 shuttle service. Parking at the off-site shuttle
32 lots would accommodate autos, while other
33 lots in the vicinity may also be available to
34 accommodate visitors' cars. Some of the
35 satellite parking lots are also used by
36 commuters during the week, so these may not
37 be available for shuttle passengers during that
38 time unless other changes increase capacity.
39 By shifting the majority of visitors to the
40 shuttle and the San Francisco Express
41 service, automobile congestion on local roads
42 would be expected to be reduced.

43
44 Taking the place of driving to the Muir
45 Woods National Monument would be
46 increased shuttle and transit service. The
47 transit service would be the logical primary
48 mode of access for monument visitors
49 because the potential for increased access by
50 bicycle, on foot, or by tour bus is limited.
51 Continued reasonably convenient access is

52 essential to maintain (and if possible,
53 enhance) a high-quality visitor experience.

54
55 The overall impacts of these measures would
56 likely be long term, moderate to major,
57 beneficial on the functionality and safety of
58 the transportation system, with a moderate to
59 major increase in transit access from San
60 Francisco, the Sausalito Ferry, and other
61 points in southern Marin County. There
62 would be an increase in access by land- and
63 water-based regional transit, increased
64 number and capacity of connections, and an
65 increase in the available modes of travel.
66 These measures could result in a long-term,
67 major, beneficial impact on connections,
68 transit service availability, and transportation
69 facility capacity and amenities.

70
71 There would be a major, adverse impact on
72 parking availability at the monument, offset
73 to a large degree by parking availability at off-
74 site lots and increased transit. Visitors are still
75 likely to arrive by car from points west of the
76 monument, which means that they would
77 have no opportunity to park and take transit.
78 These visitors would be most affected by the
79 lack of parking, and their ability to visit the
80 monument would be adversely affected.

81
82 **Conclusion.** There would be a major,
83 adverse impact on parking availability at the
84 monument, offset to a large degree by
85 parking availability at off-site lots and
86 increased shuttle and transit service. Visitors
87 are still likely to arrive by car from points
88 west of the monument, which means that
89 they would have no opportunity to park and
90 take transit. These visitors would be most
91 affected by the lack of parking, and their
92 ability to visit the monument would be
93 adversely affected.

94
95 Establishing permanent shuttle services with
96 an off-site parking area and increasing transit
97 from both the Sausalito Ferry and San
98 Francisco to Muir Woods National
99 Monument would have a long-term,
100 moderate to major, beneficial impact on the
101 transit system serving the monument.
102 Reducing parking at the monument is also

1 likely to have a long-term, moderate to major,
2 adverse impact on parking availability for
3 visitors.

4
5 **Alternative 1: Connecting People**
6 **with the Parks (NPS Preferred**
7 **Alternative for Muir Woods National**
8 **Monument)**

9 **Analysis.** In addition to the actions common
10 to all alternatives, alternative 1 includes the
11 following transportation-related actions for
12 Muir Woods National Monument. It should
13 be noted that the transportation measures in
14 alternative 3 are identical to those in
15 alternative 1.

16
17 The monument's existing entry area would
18 be redesigned. Pedestrian access would be
19 improved by separating pedestrians from
20 roads and parking. A modest facility would
21 be provided to receive visitors arriving by
22 different modes of transportation including
23 the shuttle. The entry area might include such
24 services as restrooms, orientation and
25 information, food service, and sheltered areas
26 for passengers waiting for buses. This
27 measure may have a long-term, moderate,
28 beneficial impact on transit facility capacity,
29 amenities, and conditions, encouraging and
30 supporting use of the shuttle.

31
32 In order to improve pedestrian safety and
33 protect Redwood Creek, the monument
34 would collaborate with Marin County to
35 restrict shoulder parking along Muir Woods
36 Road in nontrailhead areas when sufficient
37 transit is available to meet visitation demand.

38
39 Parking in the monument lots and on the
40 road shoulders would be reconfigured or
41 relocated using sustainable design practices
42 to reduce impacts on the creek and other
43 sensitive resources. Parking would be
44 decreased by an estimated 33% (primarily
45 from a reduction in road shoulder parking);
46 capacity would meet demand during the off-
47 season. This is likely to have a long-term,
48 minor, adverse impact on parking availability
49 during those times when the shuttle is not

50 running, and a long-term, minor, beneficial
51 impact on pedestrian access.

52
53 Data from the *Comprehensive Transportation*
54 *Management Plan* for park lands in
55 southwestern Marin indicates that off-
56 season and shoulder season typical weekday
57 parking demand at the monument ranges
58 between 115 and 155 spaces. By 2023, this is
59 projected to increase to 135 to 190 spaces. A
60 33% reduction in parking supply, or
61 removing 117 spaces, would leave 265 spaces;
62 this would be more than adequate to meet
63 parking demand during those times when the
64 shuttle would not be operating (weekdays
65 during the shoulder and off-season months).
66 This assumes that the current supply includes
67 179 spaces in the parking lots and an
68 estimated 175 spaces on the shoulders of the
69 road totaling 354 spaces.

70
71 The following table shows estimated parking
72 demand for 2002 and 2023 using data from
73 the *Comprehensive Transportation*
74 *Management Plan*.

75
76 With removal of some parking and an
77 increase in shuttle service, parking demand
78 would be shifted to off-site lots in the vicinity
79 of State Route 1 and Highway 101. The off-
80 site shuttle services (in all alternatives) could
81 provide parking, shelter, restrooms, park
82 information, snacks, etc., for shuttle riders. In
83 addition, the existing transit hub in the
84 vicinity of State Route 1 and Highway 101
85 could continue to serve as a shuttle intercept
86 facility, and if so, could accommodate cars of
87 shuttle riders. These lots, normally used by
88 weekday commuters, would not be able to
89 accommodate large numbers of monument
90 visitors during the work week without some
91 reconfiguration. Turnover in these lots would
92 be slower than turnover in the current
93 monument lots because parking duration
94 would include both the time visiting the
95 monument and the travel time to and from
96 the monument. Detailed analysis of this and
97 other potential locations would be the subject
98 of a separate planning effort.

99

TABLE 25. PARKING DEMAND AT MUIR WOODS NATIONAL MONUMENT, 2002 AND 2023

Existing Parking Demand (2002)					
Peak Season (Memorial Day through Labor Day weekends)		Shoulder Season (May and September)		Off-Season (October 1 to May 1)	
Weekday	Weekend	Weekday	Weekend	Weekday	Weekend
380	450	155*	300	115*	250
Projected Parking Demand (2023)					
Peak Season (Memorial Day through Labor Day weekends)		Shoulder Season (May and September)		Off-Season (October 1 to May 1)	
Weekday	Weekend	Weekday	Weekend	Weekday	Weekend
485	575	190*	360	135*	285

*Periods when shuttle would not run

1 Depending on the level of available funding,
2 shuttle service would be increased from its
3 current weekends-only schedule to seven
4 days a week during the peak period, and on
5 weekends and holidays during the rest of the
6 year. Service could run on approximately 15-
7 minute headways during the peak and
8 shoulder seasons and on holidays, with 30-
9 minute headways during other times
10 (nonpeak weekends). This is in addition to
11 the downtown San Francisco Express Service
12 proposed in all alternatives.

13
14 Operating costs for the increase in shuttle
15 service required to carry a greater number of
16 visitors to the monument are difficult to
17 predict because of the variable costs of
18 administration and marketing, as well as the
19 effect the reduction in parking would have on
20 the demand for transit. An analysis of the cost
21 of shuttles was performed in the “Muir
22 Woods Shuttle Alternatives” memo
23 (Nelson\Nygaard 2008a). In that analysis,
24 based on the hourly cost of shuttle service,
25 requirements for layovers and other factors,

26 two cost estimates were developed for a 75%
27 parking scenario (a 25% reduction); they are
28 presented below.

29
30 Scenarios involving a 25% removal of parking
31 result in substantial shuttle operational costs,
32 if the intent is to fully compensate for
33 removed parking. Note that these estimates
34 do not include the cost of the vehicles or bus
35 stop amenities necessary to support increased
36 service, which would also be substantial.

37
38 **Conclusion.** The transportation measures
39 included in this alternative are likely to have a
40 long-term, major, beneficial impact on
41 connections between both ferry and regional
42 bus transit and Muir Woods National
43 Monument and the Muir Woods Shuttle. The
44 shuttle would become the primary mode of
45 access to the monument during peak demand
46 periods. A much larger proportion of visitors
47 could be expected to park remotely and take
48 the shuttle or express service from San
49 Francisco.

TABLE 26. ESTIMATED ANNUAL COST OF SHUTTLE, 75% PARKING AT MUIR WOODS NATIONAL MONUMENT

Scenario	Peak off-site parking demand	Peak buses per hour	Fleet requirement	Annual Cost*	
				\$75/hr.	\$180/hr.
Alternatives 1 and 3 Scenario A: 75% on-site parking	170	9	9	\$500,000	\$1,200,000
Alternatives 1 and 3 Scenario B: 75% on-site parking, S.F. shuttles	130	8	10	\$600,000	\$1,400,000

* Based on low and high hourly rates for transit service providers.

1 The reduction in the number of cars on the
 2 roads approaching Muir Woods National
 3 Monument would have a long-term,
 4 moderate, beneficial impact on the
 5 functionality of the transportation system by
 6 reducing congestion. The reduction in
 7 visitor-related congestion would allow the
 8 shuttles to stay on schedule, and would allow
 9 emergency vehicles improved access to the
 10 area. This alternative could have a long-term,
 11 minor to moderate, beneficial impact on
 12 pedestrian and bicycle access by making the
 13 access roads safer for these visitors due to
 14 reduced traffic and congestion and reduction
 15 of road shoulder parking and by redesigning
 16 the walkways from the entry area to the
 17 monument so they are separated from auto
 18 traffic. Even with a 33% reduction in parking
 19 and a projected increase in demand, there
 20 would still be adequate parking during the
 21 off-season (October through April) when the
 22 shuttle is not running. During the peak
 23 season, the reduction in parking would be
 24 offset by an increase in transit service. The
 25 reduction in parking could have a long-term,
 26 moderate, adverse impact on parking
 27 availability on those days when the shuttle is
 28 not running.

29 **Alternative 2: Preserving and**
 30 **Enjoying Coastal Ecosystems**

31 **Analysis.** In alternative 2, the majority of the
 32 built environment (buildings, parking lots,
 33 and paved trails) would be removed and all
 34 visitors would arrive by shuttle, bicycle, or on
 35 foot. Only a small parking area would be
 36 available for special needs. The monument
 37 entrance as well as all visitor services would
 38 be relocated to the current lower parking lot
 39 and the area would be designed to
 40 accommodate a transit stop for the shuttle.
 41 Tour buses would no longer be
 42 accommodated.

43
 44 In addition to changes in modes of access to
 45 the monument, the trail system would be
 46 redesigned to accommodate fewer visitors.
 47 The existing main trail would be relocated
 48 out of the floodplain, paved surfaces would
 49 be removed, and other trails and bridges
 50 could be removed or relocated to promote
 51 natural processes. These measures could
 52 have a long-term, moderate, adverse impact
 53 on visitor ability to access areas of the mature
 54 redwood forest now available to them.

55
 56 Trails in the monument would be designed to
 57 connect to other regional trails; Dipsea Trail

1 would be realigned where it crosses
2 Redwood Creek. This is likely to have a long-
3 term, minor, beneficial impact for those
4 visitors connecting to the monument by trail.
5

6 Most auto access would be eliminated, with
7 all parking, both in parking lots and on the
8 roadside, removed. Only essential parking for
9 park operations and to meet the needs of
10 visitors with disabilities would be retained.

11 The upper lot and most of the lower lot in the
12 monument would be restored to their natural
13 condition. This action would have a long-
14 term, major, adverse impact on parking
15 availability at the monument. However, the
16 lack of parking would be offset by greatly
17 increased transit service and off-site parking
18 described below.

19
20 As discussed, a welcome center would be
21 created in the vicinity of Highway 101 and
22 State Route 1, which would include parking
23 for visitors and connections to transit,
24 including the Muir Woods Shuttle. Some
25 additional parking may also be provided in
26 other lots in the area that are currently used
27 for weekend shuttle service. Park-and-Ride
28 lots, normally used by commuters, would not
29 be able to accommodate monument visitors
30 during the work week without some
31 reconfiguration. Recent parking counts on
32 weekdays show the Manzanita Park-and-
33 Ride lot is filled to slightly over 100%
34 capacity from 8:00 a.m. to 3:30 p.m., and the
35 Pohono parking lot is at 90% of its maximum
36 use by noon. Turnover in these lots would be
37 slower than those currently in the
38 monument, because the parking duration
39 would include both the time visiting the
40 monument and the travel time to and from
41 the monument. Detailed analysis of lot
42 configuration would take place in future
43 planning efforts.

44
45 A lack of access to the monument entrance by
46 auto may affect visitation. There remains the
47 potential for a large number of would-be
48 visitors to not make the trip to Muir Woods
49 National Monument if they could not drive
50 their cars. This group includes people who
51 are continuing on to other destinations after

52 their visit at the monument—for example,
53 Stinson Beach or Mount Tamalpais State
54 Park. Another segment of visitors are
55 traveling in large groups, have small children,
56 or have members in their party with special
57 needs requiring them to use a car. Thus it
58 could be assumed that elimination of all
59 parking at the monument (except for special
60 needs) might depress visitation, although an
61 exact percentage cannot be modeled.

62
63 In addition, there will inevitably be those who
64 drive to Muir Woods National Monument
65 regardless of whether there is any official
66 parking provided. Muir Woods Road is
67 public and connects to small coastal
68 communities, so access to the monument by
69 road cannot be prohibited or even limited.
70 Some visitors will arrive from points west and
71 north, and will not have an opportunity to
72 board transit to get to the monument.
73 Enforcement of parking regulations at the
74 monument would have to increase
75 considerably for the elimination of roadside
76 parking to be effective. This cost would likely
77 be borne by the National Park Service rather
78 than Marin County, because county law
79 enforcement staff is extremely limited in
80 West Marin.

81
82 Transit service to the monument would be
83 dramatically increased. The Muir Woods
84 Shuttle would run every day of the year, and
85 would include express service from and to
86 downtown San Francisco. Shuttle service
87 originating in Marin County could run every
88 10 minutes during the peak and shoulder
89 seasons and on holidays; on other days, it
90 would run every 30 minutes. Providing
91 increased service from Sausalito and express
92 service from San Francisco could be expected
93 to reduce parking demand by 25% or more. A
94 substantial increase in transit service,
95 including San Francisco Express and Muir
96 Woods Shuttle service to the Sausalito Ferry,
97 would have a long-term, major, beneficial
98 impact on the functionality of the
99 transportation system to Muir Woods
100 National Monument by increasing the
101 number and capacity of connections,

1 increasing the availability and choices of
 2 modes of travel, and reducing congestion.
 3
 4 Operating costs for the increase in shuttle
 5 service required to carry all visitors to the
 6 monument are difficult to predict because of
 7 the unpredictable effect on visitation, and
 8 also the variable costs of administration and
 9 marketing. An analysis of the cost of shuttles
 10 was performed in the “Muir Woods Shuttle
 11 Alternatives” memo (Nelson\Nygaard 2008a).
 12 In that analysis, based on the hourly cost of

13 shuttle service, requirements for layovers and
 14 other factors, three cost estimates were
 15 developed for the zero-parking scenario, and
 16 are presented below. Scenarios involving
 17 complete removal of parking appear to be
 18 prohibitively expensive, as much as \$9.5
 19 million per year for a package including San
 20 Francisco service. If tour bus access were
 21 removed, costs would increase further, to as
 22 much as \$11.5 million per year. Note that
 23 these estimates do not include the cost of the
 24 vehicles or bus stop amenities.

**TABLE 27. ESTIMATED ANNUAL COSTS OF SHUTTLE OPERATIONS,
 NO PARKING AT MUIR WOODS NATIONAL MONUMENT**

Scenario	Peak off-site parking demand	Peak buses per hour	Fleet requirement	Annual Cost	
				\$75/hr.	\$180/hr.
Alternative 2 Scenario A: 0% on-site parking	690	23	23	\$3,000,000	\$7,300,000
Alternative 2 Scenario B: 0% on-site parking, S.F. shuttles	520	22	28	\$4,000,000	\$9,500,000
Alternative 2 Scenario C: 0% on-site parking, S.F. shuttles no tour buses	550	25	34	\$4,800,000	\$11,500,000

1 Managers at the monument estimate that
 2 20% of visitors arrive by tour bus. In this
 3 alternative, private tour buses would not be
 4 allowed in the monument. The elimination of
 5 tour bus service would substantially reduce
 6 access to this site for certain populations.
 7 People who use this mode are generally from
 8 out of the area, are traveling in groups, and
 9 want to visit multiple destinations on one
 10 trip—a major factor for those choosing not to
 11 take the shuttle, according to surveys of
 12 monument visitors. Tour buses address the
 13 needs of this group and also allow them to

14 visit the monument without an auto. Without
 15 tour bus service, this group may not visit the
 16 monument at all. This measure could have a
 17 long-term, moderate, adverse impact on
 18 access to the monument.
 19

20 **Conclusion.** Alternative 2 proposes actions
 21 that would substantially alter the
 22 transportation system serving Muir Woods
 23 National Monument. Redesign of pedestrian
 24 access to the monument entrance is likely to
 25 have a long-term, moderate, beneficial impact
 26 on visitor access and safety.

1 In conjunction with the parking provided at
 2 the off-site welcome center and other remote
 3 parking lots and the greatly increased transit
 4 service to the monument, this alternative
 5 would have a long-term, major, beneficial,
 6 impact on availability of transit, improved
 7 traffic flow, and number and capacity of
 8 transit connections.

9
 10 Removing parking from Muir Woods
 11 National Monument is likely to result in a
 12 reduction in the number of cars on the roads
 13 in southwest Marin, allowing transit to better
 14 run on schedule and emergency vehicles to
 15 have access, and offering less auto congestion
 16 to residents. However, while expanded
 17 transportation options may increase
 18 visitation, from the point of view of the
 19 visitor who arrives at the monument by car
 20 and is unable to park, the impact would be
 21 long term, moderate, and adverse, limiting
 22 the ability of some visitors to visit the
 23 monument.

24
 25 The increase in transit services from San
 26 Francisco and the Sausalito Ferry, if fully
 27 funded through points in south Marin, is
 28 likely to have long-term, major, beneficial
 29 effects on the transportation system to the
 30 monument as well as throughout southwest
 31 Marin County, by increasing multimodal
 32 opportunities to get to the monument and
 33 increasing connectivity to regional
 34 transportation.

35
 36 Auto access may experience a long-term,
 37 minor to moderate, beneficial impact because
 38 there may be much less auto traffic on Muir
 39 Woods Road, while bus traffic on State Route
 40 1 would increase substantially.

41
 42 ***Alternative 3: Focusing on National***
 43 ***Treasures (NPS Preferred Alternative***
 44 ***for Muir Woods National Monument)***

45 Transportation impacts for alternative 3 for
 46 Muir Woods National Monument are
 47 identical to those in alternative 1.

48 **PARK MANAGEMENT, OPERATIONS,**
 49 **AND FACILITIES**

50 ***No-action Alternative***

51 **Analysis.** Under the no-action alternative,
 52 current management, programs, operations,
 53 and funded construction projects would
 54 continue, along with the necessary annual
 55 operating funding.

56
 57 Muir Woods maintains high standards of
 58 visitor service thanks to a committed team of
 59 NPS staff, partnerships with the Golden Gate
 60 National Parks Conservancy and
 61 concessions, and a team approach that also
 62 includes close working relationships with the
 63 state parks and neighboring communities.
 64 However, there is much operationally that is
 65 marginal due to the small staff size; this
 66 results in little time for long-term planning,
 67 major project implementation, and training.

68
 69 Staffing levels would continue at current
 70 levels, which are inadequate to meet the
 71 responsibilities of the monument. With only
 72 3.5 interpreters and no seasonal interpreters,
 73 there are often periods of time when no
 74 ranger is onsite, and the NPS presence is
 75 loosely covered by interns or volunteers. The
 76 interpreters handle educational programs
 77 and volunteer management, but there is no
 78 one to handle media, training, or partner
 79 programming. The law enforcement division
 80 operates with one staff member assigned to
 81 the area; which includes the monument as
 82 well as Muir Beach, Stinson Beach, Olema
 83 Valley, Slide Ranch, and Tennessee Valley.
 84 One seasonal law enforcement officer is
 85 assigned to the monument in the summer as
 86 well. This level of staffing is not enough to
 87 provide adequate coverage, and results in
 88 delays in response time—often interpreters
 89 onsite end up spending time responding to
 90 emergency incidents. Traffic congestion and
 91 conflict is one area of needed additional law
 92 enforcement staff. A ranger is needed to
 93 provide visitor use assistance for the shuttle
 94 and parking. The maintenance division is also
 95 understaffed to adequately maintain the
 96 monument in good condition. As a result,

1 deferred maintenance has accrued at park
2 facilities. Low staffing levels contribute to
3 continued moderate, long-term, adverse
4 impacts on park operations.

5
6 Primary monument partners are the Golden
7 Gate National Parks Conservancy and the
8 Muir Woods Trading Company, the
9 concessions operation. These partners
10 provide a host of valuable services and
11 products to the monument, such as contact
12 with the visitors, research, restoration, and
13 messaging. They also provide needed funding
14 from fee collection and concession sales.
15 Other partners offer educational programs.
16 The Save-the-Redwoods League is a major
17 funder to enable young people to visit the
18 park and support research. Marin County is a
19 partner in providing shuttle service to the
20 monument. The partners offer something
21 invaluable that would not otherwise be
22 provided and their continued involvement
23 and support is a moderate, long-term,
24 beneficial impact to park operations.

25
26 Volunteers are indispensable to the
27 monument. They provide personal
28 interpretive services, conduct special tours,
29 support educational programs, complete
30 much of the restoration work, and offer a
31 special approach that the public responds to
32 very favorably. Thousands of hours per year
33 are logged by volunteers. Volunteer efforts
34 are a continued long-term, moderate,
35 beneficial impact to park operations.

36
37 Currently, the condition of many of the
38 buildings is good, but not accessible for
39 persons with disabilities. However, the
40 monument has substantial amounts of
41 deferred maintenance. Even given the
42 direction of the park asset management plan
43 for prioritizing funds, a continued gap in
44 maintenance funding (and staff) would result
45 in an increasing deferred maintenance
46 backlog. Some facilities are better maintained
47 than others are; the Administration-
48 Concession Building is in good condition.
49 Maintenance facilities, such as the Old Inn,
50 are generally in much poorer condition.
51 Facilities in the Camino del Canyon and

52 Conlon Avenue areas are also in poor
53 condition. Infrastructure such as power,
54 water, and phones need to be upgraded and
55 frequently have lapses in service. Inadequate
56 project funds and operational funds would
57 result in moderate, long-term, adverse
58 impacts on mission critical facilities at the
59 monument.

60
61 Monument buildings are inadequate for their
62 current uses due to small size and their lack
63 of modern functionality. For example, in the
64 office areas, all desks are shared, and half the
65 computers are not hooked up to the internet.
66 There are no break rooms or meeting rooms.
67 The maintenance division does not have
68 adequate storage space for equipment, or
69 appropriate work space. Inadequate
70 operational facilities would have a continued
71 long-term, minor to moderate, adverse
72 impact on park operations.

73
74 **Conclusion.** The continuation of current
75 management would have both beneficial and
76 adverse impacts on park operations.
77 Continued long-term, moderate, beneficial
78 impacts on operations would result from
79 partner and volunteer efforts.

80
81 The continued impact of low staffing levels
82 on park operations is moderate, long term,
83 and adverse. Inadequate project and
84 operational funding would result in major,
85 long-term, adverse impacts on park facilities.
86 Inappropriate space for staff would also
87 result in continued long-term, minor to
88 moderate, adverse impacts on monument
89 operations.

90
91 **Alternative 1: Connecting People**
92 **with the Parks (NPS Preferred**
93 **Alternative for Park Sites in Marin,**
94 **San Francisco, and San Mateo**
95 **Counties)**

96 **Analysis.** There are several proposed
97 changes identified in alternative 1 that would
98 influence park management, operations, and
99 facilities. While designed to contribute to the
100 protection of resources and the enhancement

1 of visitor opportunities, the proposed
 2 changes will achieve these ends only if
 3 staffing, capital funds, and operating funds
 4 are increased in accordance with the cost
 5 estimates identified. If funding and needed
 6 staffing levels are not made available when
 7 these actions are implemented, the proposed
 8 actions would have long-term, moderate,
 9 adverse effects on park operations.

10
 11 Additional law enforcement officers are
 12 proposed to cover increased picnicking,
 13 expanded visitor activities, and the potential
 14 for a greater number of lost or injured people.
 15 Additional rangers would also assist in
 16 parking management at the shuttle station.
 17 New maintenance staff would support trail
 18 maintenance, upkeep of interpretive signs,
 19 increased picnicking, and relocated and new
 20 visitor facilities. Increased staff would result
 21 in long-term, moderate, beneficial impacts on
 22 operations if appropriate funding is available,
 23 otherwise the actions of this alternative
 24 would result in adverse impacts such as an
 25 inability to maintain facilities and an inability
 26 to ensure public safety and protection of
 27 resources.

28
 29 The proposed new or reconstructed facilities,
 30 such as the Highway 101 / State Route 1
 31 welcome center and parking area, would
 32 require additional capital investments. Unless
 33 the cyclic maintenance budget is collaborated
 34 to maintain the park's facilities as identified
 35 in this alternative, the deferred maintenance
 36 will increase, even with an initial investment
 37 in that asset. Adjusting the operations and
 38 maintenance budget to realistically reflect the
 39 true costs of a facility will have a long-term,
 40 moderate, beneficial impact on park
 41 operations; otherwise, the impact would be
 42 adverse and result in an increase of deferred
 43 maintenance.

44
 45 Removal of nonessential buildings and
 46 parking would reduce associated
 47 maintenance and utility costs. Construction,
 48 rehabilitation, restoration, and demolition
 49 projects proposed in the alternative would
 50 result in moderate, long-term, beneficial
 51 impacts on park operations. These activities

52 would also have short-term, minor, adverse
 53 impacts on operations due to the closure of
 54 buildings and lands during construction or
 55 restoration.

56

57 **Conclusion.** Increased staff would result in
 58 moderate, long-term, beneficial impacts, if
 59 funded. If funding is available for
 60 construction, rehabilitation, restoration, and
 61 demolition projects, these projects would
 62 result in moderate, long-term, beneficial
 63 impacts on park operations. Construction
 64 and landscape restoration activities would
 65 also result in short-term, minor, adverse
 66 impacts while they are underway. However, if
 67 funding and needed staffing levels are not
 68 made available when these actions are
 69 implemented, the proposed actions would
 70 have long-term, moderate, adverse effects on
 71 park operations.

72

73 ***Alternative 2: Preserving and*** 74 ***Enjoying Coastal Ecosystems***

75 **Analysis.** If adequate funding is available for
 76 additional staff for the public safety division
 77 at Muir Woods National Monument, such
 78 increases would result in moderate, long-
 79 term, beneficial impacts on operations.
 80 Increased law enforcement staff is
 81 recommended to manage the controlled
 82 visitor areas and to protect sensitive
 83 resources. Additional rangers would also
 84 assist in parking management at the shuttle
 85 station. Maintenance staff would decrease
 86 under this alternative because of the reduced
 87 number of facilities.

88

89 The effort to remove most facilities from the
 90 monument would have both positive and
 91 negative impacts on the operations. While
 92 demolition and natural resource restoration
 93 would require additional project funding and
 94 require staff effort in the short term, over the
 95 long term, staff efforts in maintenance of
 96 facilities would be reduced, and deferred
 97 maintenance would be reduced. However,
 98 new proposed facilities, such as the Highway
 99 101 / State Route 1 welcome center and the
 100 Muir Woods National Monument welcome
 101 center would require adjustment of the

1 operations and maintenance budget to
 2 realistically reflect the true costs of the
 3 facilities in order to have beneficial impacts
 4 on park operations; otherwise, the impact
 5 would be adverse and result in an increase of
 6 deferred maintenance. Construction,
 7 rehabilitation, restoration, and demolition
 8 projects proposed in the alternative would
 9 result in major, long-term, beneficial impacts
 10 on park operations if funded. Construction
 11 and landscape restoration activities would
 12 result in short-term, minor, adverse impacts
 13 while they are underway due to area and
 14 facility closures.

15
 16 **Conclusion.** Increased staff would result in
 17 moderate, long-term, beneficial impacts. If
 18 fully funded, construction, rehabilitation,
 19 restoration, and demolition projects
 20 proposed in the alternative would result in
 21 major, long-term, beneficial impacts on park
 22 operations. Construction and landscape
 23 restoration activities also would result in
 24 short-term, minor, adverse impacts on park
 25 operations. Removal of much of the
 26 development from inside the monument
 27 could make public safety responses more
 28 difficult, and would result in a minor to
 29 moderate, long-term, adverse impact to park
 30 operations. However, if funding and needed
 31 staffing levels are not made available when
 32 these actions are implemented, the proposed
 33 actions would have long-term, moderate,
 34 adverse effects on park operations.

35
 36 ***Alternative 3: Focusing on National***
 37 ***Treasures (NPS Preferred Alternative***
 38 ***for Muir Woods National Monument)***

39 **Analysis.** If adequate funding is available for
 40 additional public safety and maintenance
 41 staff at Muir Woods National Monument,
 42 such increases would result in moderate,
 43 long-term, beneficial impacts on operations.
 44 Additional law enforcement officers are
 45 proposed to cover increased picnicking,
 46 expanded visitor activities, and the potential
 47 for a greater number of lost and injured
 48 people. Additional rangers would also assist
 49 in parking management at the shuttle station.

50 Additional maintenance staff would support
 51 trail maintenance, upkeep of interpretive
 52 signs, increased picnicking, and relocated
 53 welcome center.

54
 55 Proposed new or reconstructed facilities,
 56 such as the Muir Woods entrance welcome
 57 center and interpretive trail improvements,
 58 would require additional capital investment.
 59 Unless the cyclic maintenance budget is
 60 collaborated to maintain the park's facilities
 61 as identified in this alternative, the deferred
 62 maintenance will increase, even with an
 63 initial investment in that asset. Adjusting the
 64 operations and maintenance budget to
 65 realistically reflect the true costs of facilities
 66 would have a long-term, moderate, beneficial
 67 impact on park operations; otherwise, the
 68 impact would be adverse and would result in
 69 an increase in deferred maintenance.

70
 71 Removal of nonessential buildings and
 72 parking would reduce associated
 73 maintenance and utility costs. If fully funded,
 74 construction, rehabilitation, restoration, and
 75 demolition projects proposed in the
 76 alternative would result in moderate, long-
 77 term, beneficial impacts on park operations.
 78 Construction and landscape restoration
 79 activities would result in short-term, minor,
 80 and adverse impacts park operations while
 81 the activities are underway.

82
 83 **Conclusion.** Increased staff would result in
 84 moderate, long-term, beneficial impact if
 85 adequate funding is available. If funding is
 86 available, construction, rehabilitation,
 87 restoration, and demolition projects
 88 proposed in the alternative would result in
 89 moderate, long-term, beneficial impacts on
 90 park operations. Construction and landscape
 91 restoration activities also would result in
 92 short-term, minor, adverse impacts on park
 93 operations while the activities are underway.
 94 However, if funding and needed staffing
 95 levels are not made available when these
 96 actions are implemented, the proposed
 97 actions would have long-term, moderate,
 98 adverse effects on park operations.



INTRODUCTION AND METHODOLOGY

- 1 This part of the document discusses other
2 impact analyses required by National
3 Environmental Policy Act and the Council on
4 Environmental Quality. It includes
5 discussions regarding the potential for
6 cumulative impacts, natural or depletable
7 resource requirements and conservation
- 8 potential, effects on energy requirements and
9 conservation potential, irretrievable or
10 irreversible commitments of resources,
11 unavoidable adverse impacts, and the
12 relationship between short-term uses and
13 long-term productivity of the environment.

CUMULATIVE IMPACT ANALYSIS AT GOLDEN GATE NATIONAL RECREATION AREA, INCLUDING ALCATRAZ ISLAND

1 METHODOLOGY

2 The National Environmental Policy Act
3 requires an environmental impact statement
4 to identify and analyze cumulative impacts. A
5 cumulative impact is described in the CEQ
6 regulation 1508.7 as follows:

7
8 *Cumulative impacts* are the impacts that result
9 from incremental impacts of the action when
10 added to other past, present, and reasonably
11 foreseeable actions, regardless of what
12 agency (federal or nonfederal) or person
13 undertakes such other action. Cumulative
14 impacts can result from individually minor,
15 but collectively significant, actions taking
16 place over time.

17
18 The analysis of cumulative impacts must also
19 evaluate the proposed project's potential to
20 contribute to the significant cumulative
21 impacts identified and it must discuss feasible
22 options for mitigating or avoiding any
23 contributions assessed as cumulatively
24 considerable. The discussion of cumulative
25 impacts is not required to provide as much
26 detail as the discussion of the project's
27 *individual impacts*, or the effects attributable
28 to the project alone. Rather, the level of detail
29 should be guided by what is practical and
30 reasonable. The analysis of cumulative
31 impacts uses the same concepts of type,
32 duration, timing, and intensity as described
33 for individual impacts.

34
35 The action area for assessing cumulative
36 impacts on the resources retained for
37 detailed analysis is the three-county area
38 (Marin, San Francisco, and San Mateo).

39
40 To determine the potential cumulative
41 impacts on the resources, other projects and
42 actions within the three-county area were
43 identified (see appendix B: "Description of
44 Management Plans Related to this Plan" for a

45 detailed listing of plans with actions that
46 could have cumulative impacts). Projects
47 were identified by discussions with NPS staff,
48 other public land managers, and representa-
49 tives of city and county governments.
50 Potential projects identified as possible
51 contributors to cumulative impacts included
52 any planning or development activity that
53 was currently being implemented, or is
54 expected to be implemented in the future.
55 Impacts of past actions were also considered
56 in the analysis. A summary of the plans and
57 projects that were determined to be relevant
58 to each of the impact topics is included at the
59 beginning of each cumulative impacts
60 section.

61
62 These projects and actions were evaluated in
63 conjunction with the impacts of each
64 alternative to determine if they would result
65 in any cumulative impacts on a particular
66 natural or cultural resource, visitor use and
67 experience, the social and economic environ-
68 ment, transportation, or NPS operations and
69 management. The evaluation of cumulative
70 impacts is qualitative and based on a general
71 description of the project. Cumulative
72 impacts at Golden Gate National Recreation
73 Area and Muir Woods National Monument
74 are discussed independently.

77 NATURAL RESOURCES

78 A number of plans and projects, if
79 implemented, could contribute to cumulative
80 impacts on natural resources. Plans and
81 projects that have a relationship to this
82 general management plan are identified and
83 described in appendix B. Those plans and
84 projects that are most relevant to natural
85 resources and could contribute to cumulative
86 impacts on this topic include the Redwood
87 Creek Watershed Vision and various
88 restoration projects in the watershed; county

1 transportation plans; management plans for
2 various California state parks; the Point
3 Reyes National Seashore draft general
4 management plan and fire management plan;
5 interagency planning efforts such as the
6 Ocean Beach Master Plan; other plans and
7 projects at Golden Gate National Recreation
8 Area, such as the fire management plan, dog
9 management plan, and the redevelopment of
10 Fort Baker; the Gulf of the Farallones, and
11 Monterey Bay National Marine Sanctuaries
12 plan ; beach nourishment activities; regional
13 land protection plans and activities such as
14 Golden Lands, Golden Opportunities; the
15 management of lands adjacent to the park;
16 and past land use practices in the region.

17
18

19 **Carbon Footprint and Air Quality**

20 Implementation of the plans and projects
21 mentioned in the opening paragraph of this
22 section would contribute to cumulative
23 impacts on carbon footprint and air quality.
24 County transportation plans and projects
25 aimed at reducing personal automobile use
26 and improving alternative transportation
27 would have beneficial cumulative impacts by
28 reducing transportation-related emissions.
29 Projects aimed at improving ecosystems and
30 enhancing natural resources would result in
31 adverse cumulative impacts in the short term,
32 but these would be outweighed by long-term
33 reductions in emissions and the resultant
34 improvement in air quality. The same would
35 be true for the actions related to the
36 management of adjacent public lands, where
37 near-term projects would have short-term
38 adverse impacts on carbon footprint and air
39 quality, but the actions associated with long-
40 term objectives to reduce energy use and
41 emissions and improve the condition of
42 natural systems would have long-term
43 beneficial cumulative impacts. Regional land
44 protection efforts would continue to preserve
45 open space. This would reduce the amount of
46 land available for development and would
47 provide air quality benefits. The actions
48 associated with the management of private
49 lands in the region would likely continue to
50 result in adverse impacts on carbon footprint

51 and air quality, as these actions would likely
52 continue to be sources of energy use and air
53 quality emissions that could increase over
54 time as densities increase.

55

56 While the no-action alternative and action
57 alternative 1 would have adverse impact to
58 the park's carbon footprint, alternatives 2 and
59 3 would have beneficial effects on the carbon
60 footprint. All action alternatives would have a
61 negligible effect on air quality. When the
62 likely effects of implementing the actions
63 contained in the GMP alternatives are added
64 to the effects of other past, present, and
65 reasonably foreseeable actions described
66 above, there would be a minor, adverse
67 cumulative impact on carbon footprint and
68 air quality in the short term, and a minor,
69 beneficial, cumulative impact on carbon
70 footprint and air quality over the long term.
71 The actions contained in the GMP
72 alternatives would contribute a very small
73 increment to this cumulative impact.

74
75

76 **Soils and Geologic Resources 77 and Processes**

78 Implementation of the plans and projects
79 mentioned in the opening paragraph of this
80 section would have cumulative impacts on
81 soils and geologic resources and processes.
82 Implementation of county transportation
83 plans and projects that would modify
84 roadways would likely result in adverse
85 impacts on roadside soils and geologic
86 resources and would contribute to changes in
87 the functionality of geologic processes in the
88 area. Beach nourishment activities would
89 continue to provide essential sources of sand
90 to offshore and shoreline environments,
91 resulting in a beneficial impact; however, the
92 continuation of dredging and alteration of
93 offshore sand deposits would continue to
94 cause adverse impacts on natural sand
95 transport processes. Projects aimed at
96 improving ecosystems and enhancing natural
97 resources could result in adverse cumulative
98 impacts in the short term, but these would be
99 outweighed by long-term improvements to
100 function and integrity of soils and natural

1 geologic processes. The same would be true
 2 for actions associated with the management
 3 of adjacent public lands, where near-term
 4 projects could have short-term adverse
 5 impacts on soils and geologic resources, but
 6 actions to achieve long-term objectives to
 7 improve natural systems would have long-
 8 term beneficial cumulative impacts on soils
 9 and geologic processes. Regional land
 10 protection efforts would continue to preserve
 11 open space and protect soils and geologic
 12 resources. The actions associated with the
 13 management of private lands in the region
 14 would continue to have both adverse and
 15 beneficial impacts on soils and geologic
 16 processes, depending on the nature of land
 17 use and stewardship practices.

18
 19 The existing recreation facilities and new
 20 recreation development actions in all GMP
 21 alternatives would have localized adverse
 22 effects on soils and geological resources.
 23 However, action alternatives 1, 2, and 3
 24 would also have beneficial effects on soil
 25 conditions in other areas, by eliminating
 26 unsustainable roads and trails, removing
 27 facilities and structures, and restoring the
 28 respective sites. Alternative 2 would have the
 29 least amount of adverse effect from new
 30 recreation and the most beneficial effect from
 31 natural restoration. When the likely effects of
 32 implementing the actions contained in the
 33 GMP alternatives are added to the effects of
 34 other past, present, and reasonably
 35 foreseeable actions described above, there
 36 would be a long-term, minor, beneficial
 37 cumulative impact on soils and geologic
 38 resources and processes.

41 **Water Resources and** 42 **Hydrologic Processes**

43 Implementation of the plans and projects
 44 mentioned in the introduction to this section
 45 would have cumulative impacts on water
 46 resources and hydrologic processes. County
 47 transportation plans and projects would
 48 modify roadways that could modify surface
 49 water flow and drainage. Roadway projects
 50 would also likely result in soil erosion and

51 generate urban pollutants that would
 52 adversely impact water quality. Conversely,
 53 certain projects would reduce sedimentation
 54 and improve the conveyance of water—
 55 beneficial impacts. Projects aimed at
 56 improving ecosystems and enhancing natural
 57 resources (i.e., Big Lagoon restoration, Lower
 58 Redwood Creek floodplain restoration, Fern
 59 Creek riparian fencing, Coast Trail habitat
 60 enhancement projects, sediment reduction
 61 projects) could result in adverse cumulative
 62 impacts on water resources and water quality
 63 in the short term, but these impacts would be
 64 outweighed by long-term improvements to
 65 the integrity and function of water resources,
 66 especially for wetlands, floodplains, and
 67 natural creek processes. The same would be
 68 true for actions associated with the
 69 management of adjacent public lands, where
 70 near-term projects could have short-term
 71 adverse impacts on water resources
 72 (including water quality and quantity), but
 73 actions to achieve long-term objectives of
 74 improved natural systems would have long-
 75 term beneficial cumulative impacts on water
 76 resources and hydrologic processes. Regional
 77 land protection efforts would continue to
 78 preserve open space and protect water
 79 resources. Actions associated with the
 80 management of private lands in the region
 81 would continue to have both adverse and
 82 beneficial impacts on water resources and
 83 hydrologic processes, depending on the
 84 nature of land use and stewardship practices.

85
 86 All GMP alternatives include actions that
 87 provide for the restoration of natural areas
 88 and ecological processes, which directly and
 89 indirectly help restore the natural hydrologic
 90 regime. When the likely effects of
 91 implementing the actions contained in the
 92 GMP alternatives are added to the effects of
 93 other past, present, and reasonably
 94 foreseeable actions previously described,
 95 there would be a long-term, minor to
 96 moderate, beneficial cumulative impact on
 97 water resources and hydrologic processes.

98
 99

1 **Habitat (vegetation and wildlife) and**
2 **Special Status Species (federal and**
3 **state threatened and endangered**
4 **species)**

5 All of the plans and projects mentioned in the
6 introduction to this section (and appendix B)
7 would have cumulative impacts on vegetation
8 and wildlife habitat, if implemented. County
9 transportation plans and projects would
10 modify roadways that could alter the integrity
11 of native habitat, increase habitat fragmenta-
12 tion, and introduce nonnative plants and
13 animals that could displace and adversely
14 affect native species, including special status
15 species. Roadway projects would also likely
16 result in soil erosion and generate urban
17 pollutants that would adversely impact
18 aquatic habitats. Conversely, certain projects
19 would reduce impacts from roadways and
20 improve migration corridors. Restoration
21 projects aimed at improving ecosystems and
22 enhancing natural resources could result in
23 adverse cumulative impacts on native habitat
24 in the short term, but these impacts would be
25 outweighed by long-term improvements to
26 the integrity and function of habitat. The
27 same would be true for actions associated
28 with the management of adjacent public
29 lands, where near-term projects could have
30 short-term adverse impacts on habitat, but
31 actions implemented to achieve long-term
32 objectives to improve natural systems would
33 have long-term beneficial cumulative impacts
34 on habitat integrity and function. Regional
35 land protection efforts would continue to
36 preserve open space and protect a variety of
37 habitat types. Actions associated with the
38 management of private lands in the region
39 would continue to have both adverse and
40 beneficial impacts on vegetation and wildlife
41 habitat, depending on the nature of land use
42 and stewardship practices.

43
44 All of the GMP alternatives include actions
45 that provide for natural restoration,
46 education, and stewardship that would have
47 beneficial effects on wildlife habitat. Action
48 alternatives 1, 2, and 3 include actions that
49 would provide additional habitat benefits by

50 eliminating unsustainable or unneeded roads,
51 trails, or facilities, and restoring the
52 respective sites. However, action alternatives
53 1, 2, and 3 would also yield some adverse
54 effects by expanding visitor access and
55 recreation development in some areas. As for
56 the waterbird habitat at Alcatraz Island, the
57 no-action alternative and action alternatives 1
58 and 3 would have adverse effects, while
59 alternative 2 would have beneficial effects.

60
61 When the likely effects of implementing the
62 actions contained in the GMP alternatives are
63 added to the effects of other past, present,
64 and reasonably foreseeable actions
65 previously described, there would be a long-
66 term, minor to moderate, beneficial
67 cumulative impact on vegetation and wildlife
68 habitat. However, when the continuing
69 effects of past, present, and future urbaniza-
70 tion throughout the Bay Area region (and
71 beyond) are factored into the assessment, the
72 overall cumulative effect on vegetation and
73 wildlife could be long-term, minor to
74 moderate, and adverse. Similarly, although
75 impacts on local special status species and
76 their habitat in the project area would be
77 mitigated to minimize potential impacts, and
78 impacts of other projects in the area would
79 generally be beneficial, the adverse impacts
80 from urbanization of the region would
81 continue to result in habitat loss; the
82 cumulative impact to most special status
83 species and their habitat would be adverse.

84
85 It should be noted that although projects
86 throughout the region (including NPS
87 projects in the park) may have notable
88 beneficial and adverse effects on wildlife
89 habitat and/or wildlife individuals, the overall
90 effect on the state, national, or global
91 populations of the various species would be
92 considerably smaller and in most cases,
93 rather negligible. The only exceptions would
94 be cases of small, distinct, isolated popula-
95 tions of a particular species. As noted above,
96 the continuing urbanization of the Bay Area
97 and several others areas of coastal and inland
98 California over time would only further
99 contribute to the adverse effects to wildlife,
100 not only to individuals and habitat, but in

1 some cases to species populations. One
 2 example of this potential relates to avian
 3 species, particularly waterbird species that
 4 depend highly on limited, specialized habitat
 5 conditions along coastal areas. As
 6 urbanization and coastal development
 7 continues in the future, the cumulative effects
 8 to species (and in some case populations) of
 9 some of these waterbird species may become
 10 increasingly adverse.

13 CULTURAL RESOURCES

14 A number of past, present, and ongoing
 15 plans, programs, and projects, if imple-
 16 mented, could contribute to cumulative
 17 impacts on cultural resources. Plans,
 18 programs, and projects that have a relation-
 19 ship to this general management plan are
 20 described in the section “Relationship of This
 21 Plan to Other Plans” in part 1 and in volume
 22 1, appendix B. Those plans and projects that
 23 are most relevant to and could contribute to
 24 cumulative impacts on cultural resources
 25 include the following:

- 27 ▪ National Park Service plans currently
 28 being prepared such as the Extension
 29 of San Francisco Municipal Railway’s
 30 Historic Streetcar Draft
 31 Environmental Impact Statement
- 32 ▪ National Park Service trails and
 33 transportation plans and programs
 34 such as the *Marin Headlands and Fort
 35 Baker Transportation Infrastructure
 36 and Management Plan Final
 37 Environmental Impact Statement
 38* (2009)
- 39 ▪ National Park Service restoration
 40 plans such as the *Alcatraz Island
 41 Historic Preservation and Safety
 42 Construction Program Environmental
 43 Impact Statement* (2001), the *Sutro
 44 Historic District Comprehensive Design
 45 and Environmental Assessment*, and
 46 restoration plans for Redwood Creek
 47 and Big Lagoon
- 48 ▪ National Park Service program
 49 implementation plans such as the *Bay*

50 *Area Museum Resource Center Plan,*
 51 *and the redevelopment plan for Fort
 52 Baker*

- 53 ▪ State and regional plans such as the
 54 *California Department of Parks and
 55 Recreation – Angel Island State Park
 56 Resource Management Plan / General
 57 Development Plan / Environmental
 58 Impact Report* (1979), and the *San
 59 Francisco Planning and Urban
 60 Research Ocean Beach Master Plan*
- 61 ▪ County and local plans such as the
 62 *Marin Countywide Plan* (2007) and
 63 amended (2009), *Pacific Gas and
 64 Electric Jefferson-Martin 230 KV
 65 Transmission Line Proposed Settlement
 66 and Environmental Assessment* (2004),
 67 *San Francisco Public Utilities
 68 Commission Peninsula Watershed
 69 Management Plan* (2001), the *San
 70 Francisco General Plan* (2004), the
 71 *Presidio Trust Vegetation Management
 72 Plan* (2001), the *Presidio Trust
 73 Management Plan* (2002), and the
 74 *Ocean Beach Master Plan* (2012)

75
 76 Past human use and practices and
 77 management of lands in and around Golden
 78 Gate National Recreation Area, such as
 79 agricultural operations and construction
 80 associated with urban, suburban, military,
 81 and recreational development, have also
 82 contributed to cumulative impacts on
 83 cultural resources.

86 Archeological Resources

87 The actions in the plans, programs, and
 88 projects that are listed above, as well as past
 89 human use and management of lands in and
 90 near the park would have cumulative impacts
 91 on archeological resources. Development
 92 projects, NPS trails and transportation
 93 programs, NPS restoration and redevelop-
 94 ment projects, and county and local plans
 95 could result in adverse cumulative impacts on
 96 archeological resources as a result of ground
 97 disturbance operations; however, NPS
 98 projects and plans implemented on park

1 lands would include every effort to preserve
2 archeological resources or mitigate sites that
3 could not be avoided. National Park Service
4 restoration and redevelopment plans would
5 have beneficial cumulative impacts on
6 archeological resources because they would
7 emphasize cultural resource protection and
8 preservation as well as mitigation if sites
9 could not be avoided. Past human use and
10 management of lands in and around the park,
11 such as agricultural operations, ranching, and
12 construction associated with urban,
13 suburban, military, and recreational
14 development, may have already resulted in
15 adverse cumulative impacts on archeological
16 resources because these resources could have
17 been lost or degraded as a result of ground
18 disturbing operations and the lack of
19 understanding and appreciation of these
20 resources. Due to funding and staffing
21 constraints, a programmatic lack of baseline
22 surveys for archeological resources in the
23 park over the last 40 years may have resulted
24 in deterioration and loss of archeological
25 resources.

26
27 When the likely impacts of implementing the
28 actions contained in the GMP alternatives are
29 added to the impacts of other past, present,
30 and reasonably foreseeable actions
31 previously described, there would be
32 cumulative, long-term, minor to moderate,
33 adverse impacts on archeological resources
34 on lands in and near the park. The actions
35 contained in the GMP alternatives would
36 generally contribute a small beneficial
37 increment to the overall adverse cumulative
38 impacts on archeological resources.

41 **Ethnographic Resources**

42 National Park Service restoration plans
43 associated with Alcatraz Island would
44 provide for repair, stabilization, and
45 rehabilitation of cultural resources on the
46 island, resulting in long-term, minor to
47 moderate, beneficial cumulative impacts on
48 the island's ethnographic resources and
49 contributing to the island's ethnographic
50 significance for American Indian tribes and

51 organizations. Past human use and
52 management of Alcatraz Island, such as
53 agricultural operations and construction
54 associated with military, penitentiary and
55 recreational development, may have resulted
56 in the lost or degradation of ethnographic
57 resources, adding to the adverse cumulative
58 impacts.

59
60 When the likely effects of implementing the
61 actions contained in the GMP alternatives are
62 added to the impacts of other past, present,
63 and reasonably foreseeable actions
64 previously described, there would be long-
65 term, minor, adverse cumulative impacts on
66 ethnographic resources on Alcatraz Island.
67 However, the actions contained in the GMP
68 alternatives would generally contribute a
69 small beneficial increment to the overall
70 adverse cumulative impacts on ethnographic
71 resources.

74 **Historic Structures**

75 Past human use and management of lands
76 that are in and near the park (such as
77 construction associated with urban,
78 suburban, and recreational development and
79 other activities) have resulted in the loss or
80 deterioration of historic buildings in the San
81 Francisco Bay area. The park's seacoast
82 fortifications today comprise what is widely
83 considered to be the most comprehensive
84 collection of military architecture and coastal
85 defense systems and the finest surviving
86 examples of military engineering for coastal
87 defense in the United States. National Park
88 Service trails and transportation plans and
89 programs, NPS restoration and
90 redevelopment plans, NPS program
91 implementation plans, state and regional
92 plans; and county and local plans, all provide
93 for the protection and preservation of
94 historic buildings and their architectural
95 values and therefore the implementation of
96 these plans would contribute to beneficial
97 cumulative impacts on historic buildings.

98
99 When the likely effects of implementing the
100 actions contained in the GMP alternatives are

1 added to the impacts of other past, present,
2 and reasonably foreseeable actions
3 previously described, there would be a
4 cumulative, long-term, moderate, beneficial
5 impact to historic buildings. The actions
6 contained in the GMP alternatives would
7 contribute a relatively large beneficial
8 increment to the overall cumulative impacts
9 on historic buildings.

10
11

12 Cultural Landscape Resources

13 Implementation of NPS trails and
14 transportation plans and programs and
15 county and local plans, such as the *Marin*
16 *Countywide Plan* and the *San Francisco*
17 *General Plan*, would have beneficial
18 cumulative impacts on cultural landscape
19 resources because of their emphasis on
20 preservation of cultural landscapes and
21 minimization of adverse effects on cultural
22 landscapes. Implementation of NPS plans
23 currently being prepared, such as the
24 Extension of San Francisco Municipal
25 Railway's Historic Streetcar, and county and
26 local plans, such as the Pacific Gas and
27 Electric Jefferson-Martin 230 KV
28 Transmission Line Proposed Settlement,
29 would result in the introduction of new
30 elements to the cultural landscapes of the San
31 Francisco Bay area and thus potentially
32 compromise the integrity of those cultural
33 landscapes. Implementation of NPS
34 restoration plans, such as those for Redwood
35 Creek and Big Lagoon, could result in the loss
36 of some cultural landscape resources and
37 thus compromise their cultural landscape
38 values.

39

40 Implementation of NPS restoration and
41 program plans, state and regional plans, and
42 county and local plans would result in
43 beneficial cumulative impacts on cultural
44 landscape resources because of their
45 emphasis on protection, preservation, and
46 rehabilitation of cultural landscape resources
47 and values. Past human use and management
48 of lands in and near the park, such as
49 agricultural operations, ranching, and
50 construction associated with urban,

51 suburban, military, and recreational
52 development, have compromised the
53 integrity of cultural landscapes, and have
54 resulted in the loss of many of the region's
55 cultural landscape resources and values.

56

57 When the likely impacts of implementing the
58 actions contained in the GMP alternatives are
59 added to the effects of other past, present,
60 and reasonably foreseeable actions
61 previously described, there would be a long-
62 term, minor to moderate, adverse cumulative
63 impact on cultural landscape resources. The
64 actions contained in the GMP alternatives
65 would contribute to beneficial impacts on
66 cultural landscape resources, but they would
67 contribute only a small increment to the
68 overall cumulative impacts on cultural
69 landscape resources.

70

71

72 Park Collections

73 None of the past, present, or ongoing plans,
74 programs, and projects described in the
75 "Relationship of This Plan to Other Plans"
76 section in part 1 of this document or in
77 appendix B would have any appreciable
78 cumulative impacts on park collections.
79 Ongoing actions in the park, in conjunction
80 with the *Bay Area Museum Resource Center*
81 *Plan* and the *Ocean Beach Master Plan*, will
82 have appreciable beneficial cumulative
83 impacts. The actions contained in the GMP
84 alternatives would contribute to cumulative,
85 long-term, moderate, beneficial impacts on
86 the park collections.

87

88

89 VISITOR USE AND EXPERIENCE

90 The cumulative impacts on visitor use and
91 experience resulting from the actions
92 described in the GMP alternatives in
93 combination with actions resulting from
94 related projects and policies of other entities
95 within the Bay Area are identified in this
96 section. In preparing the cumulative impacts
97 analysis, the actions of the past, present, and
98 foreseeable future were estimated at a
99 qualitative level given the visionary nature of

1 the general management plan. In estimating
2 the impacts of other actions in combination
3 with the GMP alternatives the team relied on
4 the actions or potential actions from various
5 local, state, and federal plans and projects as
6 well as the knowledge of the park staff. A
7 summary of these other plans can be found in
8 the sections titled “Relationship to Other
9 Plans” and in “Appendix B: Description of
10 Management Plans Related to this Plan.”

11
12 The actions from plans and projects that are
13 most relevant to visitor use and experience
14 and could contribute to cumulative impacts
15 include: county comprehensive plans; local
16 open space and transportation plans and
17 projects; area park plans such as those for
18 Angel Island State Park, Mount Tamalpais
19 State Park, San Francisco Maritime National
20 Historical Park and Point Reyes National
21 Seashore; the Redwood Creek Watershed
22 Vision; plans and projects at Golden Gate
23 National Recreation Areas such as the Trails
24 Forever Initiative, a dog management plan,
25 equestrian planning in Marin County, the
26 redevelopment of Fort Baker, trails and
27 bikeways planning in the Presidio, and the
28 Ocean Beach Mater Plan; as well as several
29 other educational, stewardship, and
30 recreation plans and projects taking place in
31 the Bay Area. These various other actions
32 would generally have beneficial impacts on
33 visitor use and experience in the area by
34 providing an increased diversity of recreation
35 opportunities, additional educational and
36 stewardship programs, and improved
37 connectivity between public lands and open
38 space in the region.

39
40 Specific actions in the GMP alternatives
41 include management tools to regulate access
42 to park lands in order to ensure the quality of
43 recreational opportunities and resources
44 available to visitors. These actions in
45 combination with other plans and projects
46 may result in a small number of visitors seeks
47 out other park locations such as state or local
48 parks, therefore potentially having minor
49 beneficial and/or adverse impacts on those
50 local jurisdictions.

51 **Diversity of Recreation Opportunities** 52 **and Availability of Other Visitor** 53 **Support Services and Facilities**

54 The GMP alternatives provide for a wide
55 variety of recreational opportunities for park
56 visitors, as well as a network of other visitor
57 support services and facilities. The variety of
58 existing and new recreational opportunities
59 provided by the no-action alternative and
60 action alternatives 1 and 3, respectively,
61 would all have notable beneficial effects on
62 visitor use and experience. Although each
63 alternative has a similar mix of visitor
64 opportunities, the alternatives differ in the
65 number and type of opportunities provided.
66 In the no-action alternative and alternative 1,
67 the emphasis is on providing visitors with a
68 greater mix of options and a choice of
69 opportunities and self-guiding exploration.
70 In alternative 2, there is a greater emphasis on
71 providing more primitive types of visitor
72 opportunities within a natural and wild
73 setting. Finally, alternative 3 provides visitors
74 with the opportunity to be immersed in the
75 settings of those natural and cultural
76 resources that are nationally significant. This
77 alternative relies on park educational and
78 interpretive programs to help visitors learn
79 about and explore these resources.

80
81 In addition to the impacts resulting from the
82 actions of implementing the GMP
83 alternatives (discussed previously in the
84 environmental consequences section), the
85 various other actions described below
86 collectively contribute to visitor use and
87 experience in the park. The actions resulting
88 from implementation of the comprehensive
89 plans for each county, the master plans for
90 gateway municipalities, along with their
91 respective specific community plans for
92 parks, trails, open space, and transportation,
93 would all have a long-term, minor to
94 moderate, beneficial impact on visitor
95 experiences in and around the park. Many of
96 these recreational opportunities occur
97 outside the park and other activities cross
98 back and forth of the park boundary such as
99 hiking, running, and horseback riding. The
100 Bay Area contains many local, states, and

1 federal park lands that provide a wide variety
 2 of complementary day-use and overnight
 3 recreation opportunities; this further
 4 provides choices for visitors and local
 5 residents in the recreational opportunities
 6 and outdoor settings that they participate in.
 7 The combination of these managed open
 8 space lands provide for long-term, moderate,
 9 beneficial cumulative effects on the visitor
 10 use and experience.

11
 12 The National Park Service has completed or
 13 is in the process of preparing plans with
 14 actions that combined with those of the GMP
 15 alternatives will enhance recreational
 16 opportunities for park visitors. For example,
 17 a dog management plan is currently under
 18 development and will designate appropriate
 19 locations and management strategies for dog-
 20 walking activities in the park. A plan to
 21 address equestrian activities and facilities in
 22 Marin County is being developed. The recent
 23 renovation of historical Fort Baker into the
 24 Cavallo Point Lodge and the expansion of the
 25 Headlands Institute and other park partner
 26 programs all complement the actions in the
 27 GMP alternatives and contribute to the
 28 diversity of visitor opportunities.

29
 30 Finally, several other projects and initiatives
 31 are being undertaken throughout the Bay
 32 Area by a variety of other public, private, and
 33 nonprofit organizations. These projects and
 34 initiatives include preserving additional open
 35 space, renting recreational equipment,
 36 providing connections to a larger regional
 37 trail network, and promoting other outdoor
 38 recreation activities such as hiking, running,
 39 surfing, biking, touring, scenic driving,
 40 wildlife viewing, and equestrian
 41 opportunities. The past, present, and
 42 reasonably foreseeable actions of other
 43 entities, public and private, combined with
 44 those actions resulting from the GMP
 45 alternatives will have a long-term, moderate,
 46 beneficial cumulative impact on the
 47 availability and diversity of outdoor
 48 recreational opportunities.

49
 50

51 **Education, Interpretation, and** 52 **Stewardship Programs and** 53 **Opportunities**

54 The GMP alternatives include several actions
 55 that would also expand and enhance
 56 education, interpretation, and stewardship
 57 programs and opportunities. Thus, all GMP
 58 alternatives would have a beneficial effect on
 59 visitor use and experience in this regard. The
 60 actions included in alternatives 2 and 3 would
 61 provide the greatest level of education and
 62 stewardship programs compared with the no-
 63 action alternative and alternative 1, where
 64 programs are provided but the emphasis is
 65 more on self-guided exploration.

66 Additionally, alternative 3 would improve the
 67 depth and content of available interpretive
 68 information and would encourage visitors to
 69 actively immerse themselves in the resource-
 70 based experiences (whether natural or
 71 cultural). Park partners—such as the Institute
 72 at the Golden Gate, Slide Ranch, Crissy Field
 73 Center, Headlands Center for the Arts, and
 74 numerous others—also play an integral role
 75 in all GMP alternatives by complementing
 76 and expanding beyond NPS programs. The
 77 contribution from a variety of park partners
 78 provides educational, interpretive, and
 79 stewardship opportunities for all ages from
 80 toddlers to the elderly.

81
 82 In addition to the NPS and park partner
 83 programs, there are additional environmental
 84 education, interpretive, and stewardship
 85 opportunities provided by Bay Area
 86 educational institutions, environmental
 87 education and open space organizations, and
 88 the many local, state, and other federal parks
 89 that promote an understanding of the
 90 region's important and diverse ecological
 91 systems and cultural history.

92
 93 The past, present, and reasonably foreseeable
 94 actions of other entities, public and private,
 95 combined with those actions resulting from
 96 the GMP alternatives will have a long-term,
 97 moderate, beneficial cumulative impact on
 98 the availability and diversity of educational,
 99 interpretive, and stewardship programs.

100

1 **Access and Connectivity to Parks and**
2 **Open Space in the Bay Area**

3 All of the GMP alternatives include actions
4 that would expand or enhance access to the
5 park and its connectivity with other parks,
6 trails, and communities in the Bay Area, and
7 thus, all alternatives would have a beneficial
8 effect on visitor use and experience. These
9 expansions and enhancements would
10 primarily come in the form of improved
11 connections with public transportation
12 networks, multimodal access, and increased
13 trail connections with local communities and
14 parks.

15
16 These various other actions, projects, and
17 initiatives would also contribute to visitor use
18 and experience. For example, most of the
19 comprehensive plans and master plans for
20 the surrounding counties and cities include
21 elements that promote connections with
22 surrounding parks and communities (i.e.,
23 transportation connections, pedestrian/
24 bicycle connection, and even parkland
25 connections). Several communities also have
26 issue-specific plans that guide connectivity
27 development, such as public trail plans,
28 transportation plans, and open space plans.
29 Other local, state, and federal parks and open
30 space programs in the Bay Area also
31 implement management plans and projects
32 that improve park land-to-park land trail
33 connections or land connections. This also
34 includes the actions associated with
35 enhancing ferry access throughout the Bay
36 Area and those of the Golden Gate Bridge
37 Highway and Transportation District, that
38 provide connections for hikers and bikers—
39 in addition to vehicles—between Marin and
40 San Francisco counties. The contribution of
41 other public transportation agencies also
42 beneficially impact visitor use and experience
43 in combination with the GMP alternatives by
44 providing more diverse and efficient options
45 for access to major units of Golden Gate
46 National Recreation Area.

47
48 Some specific projects at Golden Gate
49 National Recreation Area (independent of
50 the GMP action alternatives) will also

51 contribute to the cumulative impacts on
52 visitor use and experience. The Trails
53 Forever Initiative, launched in 2003 by the
54 Golden Gate National Parks Conservancy,
55 provides a systematic approach to connecting
56 a world-class system of trails throughout the
57 park. The Muir Woods National Monument
58 shuttle improves access to Muir Woods
59 National Monument and the backcountry of
60 Mount Tamalpais State Park when parking is
61 in short supply. In addition, the park
62 continues to coordinate with local and
63 regional land and water transportation
64 services and their links to the greater Bay
65 Area to provide alternative visitor access to
66 open spaces including the park. These
67 programs, in combination with the GMP
68 alternatives, will provide enhanced recreation
69 opportunities along with better travel
70 connections between park sites, and between
71 communities and the park.

72
73 The past, present, and reasonably foreseeable
74 actions of other entities, public and private,
75 combined with those actions in the GMP
76 alternatives will have a long-term, moderate,
77 beneficial cumulative impact on access and
78 connectivity to parks and open spaces in the
79 Bay Area.

80
81
82 **SOCIAL AND ECONOMIC**
83 **ENVIRONMENT**

84 Along with the actions identified in this
85 general management plan, the actions
86 identified in a number of plans and projects
87 in the local gateway communities, the three
88 adjacent counties, and the overall San
89 Francisco Bay Area could contribute to
90 cumulative impacts on the social and
91 economic environment in the area. Plans and
92 projects that have a relationship to this
93 general management plan are identified and
94 described in the “Relationship of This Plan to
95 Other Plans” section in part 1, and in
96 “Appendix B: Description of Management
97 Plans Related to this Plan.” The proposed
98 actions in these plans and other management
99 actions all have effects on the social and
100 economic environment, both individually

1 and collectively. These effects mainly relate
 2 to the quality of life of area residents and the
 3 economy of the area. The cumulative
 4 contributions to the quality of life and
 5 economy could extend throughout the
 6 gateway communities, the three adjacent
 7 counties, and the overall Bay Area.

8

9

10 **Quality of Life**

11 The quality of life for residents living in
 12 proximity of park lands could be influenced
 13 by the actions proposed in the alternatives of
 14 this general management plan in addition to
 15 those that are proposed or implemented by
 16 other local and regional entities.

17

18 Golden Gate National Recreation Area and
 19 Point Reyes National Seashore make up a
 20 large open space adjacent to many other state
 21 and local parks and open spaces within close
 22 proximity to San Francisco Bay cities and
 23 communities. The area's open space is
 24 integral to the quality of life for its residents.
 25 As described in the part 8 of this document,
 26 the location of Golden Gate National
 27 Recreation Area at the urban-wildland
 28 interface makes it particularly important for
 29 residents' physiological and psychological
 30 health, community identity, landscape
 31 aesthetics, and community building. As other
 32 private land continues to be developed and
 33 urbanized, the park will become more
 34 valuable to the community and to the quality
 35 of life of its residents. All GMP alternatives
 36 would maintain and expand the park's role in
 37 contributing to the quality of life of Bay Area
 38 residents.

39

40 Similarly, the mosaic of other park and open
 41 space lands in the Bay Area contribute to
 42 quality of life. These other park lands, which
 43 are owned and managed by various cities,
 44 counties, the state, and other preservation
 45 organizations, complement Golden Gate
 46 National Recreation Area in providing many
 47 benefits relating to resident health,
 48 recreation, landscape aesthetics, and
 49 community-building. These other land
 50 management agencies and preservation

51 organizations also will continue to manage
 52 their existing park lands in a way that
 53 supports programs and opportunities that
 54 contribute to quality of life of Bay Area
 55 residents. In addition, these agencies will
 56 continue to work individually and to
 57 coordinate with each other to seek out new
 58 lands to acquire, with the collective goal of
 59 expanding the network of open space and
 60 urban recreation lands in the Bay Area.

61

62 When the likely effects of implementing the
 63 actions contained in each of the GMP
 64 alternatives are added to the effects of these
 65 other past, present, and reasonably
 66 foreseeable open space preservation actions,
 67 a long-term, minor to moderate, beneficial
 68 cumulative impact on the quality of life for
 69 residents in the Bay Area could result. The
 70 impacts that could result from implementing
 71 the actions in the GMP alternatives would
 72 constitute a substantial contribution to this
 73 overall cumulative effect in the local gateway
 74 communities near the park, but constitute a
 75 small contribution to the overall cumulative
 76 effect in the other communities throughout
 77 the Bay Area. This difference would be due to
 78 the existence of other park lands in closer
 79 proximity to these other communities.

80

81 The no-action alternative and action
 82 alternatives 1, 2, and 3 emphasize outreach,
 83 welcoming efforts, and community building
 84 that would help foster a new relationship
 85 between the park and the diverse residents of
 86 the Bay Area. As discussed in "Part 9:
 87 Resources and Values that could be Affected
 88 by the Alternatives (Affected Environment)"
 89 when the GMP action alternatives are
 90 compared with the no-action alternative,
 91 there are notable variations in community
 92 outreach actions. However, when considered
 93 in the context of all other similar actions and
 94 projects in the surrounding communities and
 95 throughout the Bay Area, the differences
 96 between the park GMP action alternatives
 97 become minimal. The actions proposed in the
 98 various alternatives include community
 99 outreach programs, maintaining or adding
 100 group facilities, developing new park
 101 programs that reach out to new and

1 underserved residents, and establishing new
2 welcome/orientation facilities in key
3 locations in the park.

4
5 Likewise, there are many local and regional
6 entities, including social service organizations
7 and church groups, that reach out to many
8 different communities and provide programs
9 and access to the area's open spaces. Local
10 educational institutions facilitate community
11 outreach programs and outdoor and
12 environmental clubs. Local, county, and state
13 parks offer additional programs and access to
14 open spaces. These programs and
15 opportunities create a diverse choice for Bay
16 Area residents that contribute to healthy
17 communities, related amenities, and access to
18 outdoor recreation opportunities.

19
20 When the likely effects of implementing the
21 actions contained in each of the GMP
22 alternatives are added to the effects of these
23 other past, present, and reasonably
24 foreseeable outreach actions, a long-term,
25 minor to moderate, beneficial cumulative
26 impact on the quality of life for residents in
27 the respective local communities could result.
28 The impacts of implementing the actions in
29 the GMP alternatives would constitute a
30 substantial contribution to this overall
31 cumulative effect in the local gateway
32 communities, but would constitute only a
33 small contribution to the overall cumulative
34 effect in the communities that are farther
35 from the park.

36
37 Another important attribute to quality of life
38 in the Bay Area is visitor's access to education
39 and resource stewardship opportunities. All
40 the GMP alternatives contain a strong
41 component on education and stewardship
42 that includes improving facilities and
43 enhancing programs at park sites throughout
44 the three gateway counties. Similarly, our
45 park partners, educational institutions, and
46 most local and state government park and
47 open space programs throughout the Bay
48 Area offer active and diverse education and
49 stewardship opportunities for residents in the
50 respective communities. The Bay Area is
51 home to numerous nonprofit organizations

52 with missions to improve community
53 awareness and engagement through
54 education and resource stewardship activities
55 and programs. Various local school districts
56 also provide such opportunities and
57 programs to their students, often by using
58 local parks and open space lands as "natural
59 classrooms" to give students hands-on
60 learning and stewardship experiences.

61
62 When the likely effects of implementing the
63 actions contained in each of the GMP
64 alternatives are added to the effects of these
65 other past, present, and reasonably
66 foreseeable education and stewardship
67 actions, a long-term, minor to moderate,
68 beneficial cumulative impact on the quality of
69 life for residents in the respective local
70 communities could result. The impacts of the
71 GMP actions on the quality of life of the local
72 residents would contribute to this overall
73 cumulative effect in the local gateway
74 communities relatively close to the park, but
75 would constitute only a small contribution to
76 the overall cumulative effect in the
77 communities that are farther from the park.

78
79 The accessibility and connectivity of park
80 land is another key contributor to quality of
81 life. As previously described, park and open
82 space lands in and around a densely
83 populated area are important for the
84 following reasons: (1) they provide enjoyable
85 recreation opportunities for residents; (2)
86 they offer opportunities for diverse members
87 of the community to gather and interact in a
88 common setting; and (3) they help encourage
89 local residents to exercise and stay active,
90 which yields innumerable health benefits
91 (individually, and collectively as a
92 community). Thus, providing easy access and
93 connection to these parks is equally
94 important to a community's quality of life. All
95 alternatives for the general management plan
96 include distinct actions that would expand
97 public accessibility to the park and improve
98 connectivity with other local and regional
99 parks and trails. However, action alternatives
100 1 and 3 would accomplish this to a greater
101 extent. Under all alternatives, improvements
102 to park accessibility and connectivity would

1 be accomplished by two means: improved
2 local and regional connections to other trails
3 and parks; and improved public
4 transportation facilities that better serve the
5 park and other open space lands and
6 communities in the area.

7
8 Along with these actions of the GMP
9 alternatives, various other plans, projects, and
10 actions in the Bay Area would contribute to
11 quality of life by improving park land
12 accessibility and connectivity. For example,
13 the park management plans for most local
14 government parks and open spaces in the
15 region charge the respective land managers
16 with the task of identifying and pursuing new
17 and better connections to other regional
18 trails or parks. Some of the city and county
19 comprehensive plans also include regional
20 trail planning elements (e.g., San Francisco
21 Bay Trail and the California Coastal Trail)
22 that highlight key connection corridors and
23 include community connectivity as an
24 integral goal or objective in land use
25 planning. These elements and goals will
26 enable urban planners to ensure that local
27 and regional trail connections are both
28 retrofitted to existing developments and
29 included in future developments as the
30 communities grow.

31
32 Also, some of the local governments and
33 nonprofit groups throughout the Bay Area
34 (e.g., Association of Bay Area Governments,
35 Bay Area Open Space Council, Golden Gate
36 National Parks Conservancy) have adopted
37 specific trail plans that promote accessibility
38 and connections to local parks and identify
39 regional trail corridors for pedestrians and
40 bicyclists. These plans will likely give way to
41 future local and regional trail construction
42 actions as funding and trail development
43 partners become available. Also, in addition
44 to local and regional trail planning efforts,
45 various local governments have taken on
46 local and regional transportation system
47 planning projects that could serve to improve
48 park land access, and thus improve quality of
49 life in the area. The actions set forth by these
50 transportation plans could improve park
51 access by expanding public transit

52 opportunities (via road, rail, or water) and by
53 minimizing traffic congestion, which could
54 reduce drive times to and from park sites.

55
56 When the likely effects of implementing the
57 actions contained in each GMP alternatives
58 are added to the effects of these other past,
59 present, and reasonably foreseeable
60 accessibility and connectivity actions, a long-
61 term, moderate, beneficial cumulative impact
62 on the quality of life for residents in the
63 respective local communities could result.
64 The impacts of the park's GMP alternative
65 actions on the quality of life of the local
66 residents would constitute a small to
67 moderate component of this overall
68 cumulative effect in the local gateway
69 communities that abut the park, but would
70 constitute only a small component of the
71 overall cumulative effect in the communities
72 that are farther from the park.

73
74 The availability of equestrian facilities is also
75 considered an important quality of life
76 attribute for many in the Bay Area. The GMP
77 action alternatives 1 and 3 would maintain
78 and expand the available equestrian facilities
79 and programs in the park. Action
80 alternative 2 would maintain the use of the
81 existing facilities, but might result in the
82 removal of some equestrian facilities within
83 the park. Beyond the park, other private
84 equestrian facilities exist in the Bay Area on
85 private lands. These other equestrian
86 facilities contribute to the overall supply of
87 equestrian opportunities and therefore to the
88 quality of life for local residents.

89
90 When the likely effects of implementing the
91 actions contained in the GMP no-action
92 alternative and alternatives 1 and 3 are added
93 to the effects of these other past, present, and
94 reasonably foreseeable actions and trends
95 related to equestrian opportunities, a long-
96 term, moderate, beneficial cumulative impact
97 on the quality of life for residents in the
98 nearby communities could result, based on
99 the continuation of the current availability of
100 non-Park Service equestrian facilities. When
101 the effects of alternative 2 are combined with
102 the impacts of these other actions and trends,

1 a long-term, minor, beneficial cumulative
2 impact on the quality of life could result. If
3 privately owned equestrian facilities decline
4 in the Bay Area, then the cumulative impacts
5 on the quality of life could be long term,
6 moderate, and adverse. The impacts of the
7 GMP alternatives on the quality of life of the
8 local residents would constitute a moderate
9 contribution to this overall cumulative effect
10 in the local gateway communities but would
11 constitute a small contribution to the overall
12 cumulative effect in the communities that are
13 farther from the park.

14
15 Quality of life is also indirectly affected by
16 outcomes from interagency relationships and
17 from collaboration between the National
18 Park Service, park partners, other local land
19 managers, and surrounding local
20 governments. If public, private, and nonprofit
21 entities maximize their cooperation in
22 providing natural, cultural, educational, and
23 recreational opportunities for the public, the
24 quality and quantity of the resulting
25 opportunities also will be maximized. Cost
26 sharing, idea sharing, facility interconnect-
27 edness, and program coordination are just a
28 few of the benefits that stem from
29 interagency collaboration. Collectively, the
30 actions that result from regional
31 collaboration can provide a range of benefits;
32 all contributing to improving the quality of
33 life for residents. The focus and prioritization
34 of the collaboration efforts may vary slightly
35 across all GMP alternatives; however, all
36 alternatives include actions that aim to
37 improve and expand relationships with park
38 partners, other land managers, local
39 recreation, environmental, and historic
40 organizations, and surrounding local and
41 state governments.

42
43 Likewise, many of the Bay Area public land
44 managers and local governments that are in
45 proximity to the park also place a high
46 priority on interagency coordination and
47 partnership development. Such priorities are
48 set forth in most of the comprehensive plans
49 and park management plans for these
50 communities and open space programs. Just
51 as all GMP alternatives would charge NPS

52 staff with working closely with other land
53 managers, municipalities, and park partners,
54 these other city plans, county plans, and park
55 management plans charge their respective
56 staff to do the same. In addition, several
57 nonprofit and private sector organizations in
58 the Bay Area include the development of
59 public-private partnerships as a key to their
60 organizational missions. Given the large
61 number of government jurisdictions,
62 nonprofit organizations, and other park-
63 related interests that exist in the Bay Area,
64 interagency collaboration and partnership
65 development have become an integral part of
66 most planning efforts in this relatively small
67 geographic area.

68
69 When the likely effects of implementing the
70 actions contained in each of the GMP
71 alternatives are added to the effects of these
72 other past, present, and reasonably
73 foreseeable relationship-building actions, a
74 long-term, minor to moderate, beneficial
75 cumulative impact on the quality of life for
76 residents in the respective local communities
77 could result. The impacts of the GMP
78 alternative actions would constitute a
79 moderate contribution of this overall
80 cumulative effect in the local gateway
81 communities, but would constitute a small
82 contribution to the overall cumulative effect
83 in the communities that are farther from the
84 park.

85 86 87 **Economy**

88 Actions that are proposed in the GMP
89 alternatives would contribute to the economy
90 of the local gateway communities and the
91 overall Bay Area. The breadth and intensity
92 of the park's economic influence varies
93 considerably among economic sectors and
94 locations in the Bay Area. However, given the
95 multiplier effect of economic activity (as
96 explained in "Part 9: Resources and Values
97 that could be Affected by the Alternatives
98 [Affected Environment]"), money spent or
99 earned in one locality or economic sector
100 typically circulates to and from other
101 localities or sectors. Therefore, just as

1 regional economic activity can contribute to
 2 local economic conditions, the reverse is true
 3 as well. Given the interactions and
 4 relationships of local and regional
 5 economies, the cumulative effects that are
 6 discussed below should be considered
 7 holistically, with overlaps expected. For the
 8 purpose of identifying and explaining these
 9 effects, this section separates the economic
 10 impacts discussion into three categories: local
 11 economy of the gateway communities and
 12 adjacent three counties, tourism industry
 13 economy of San Francisco, and regional
 14 economy of the overall Bay Area.

16 **Local Economy of the Gateway** 17 **Communities and Adjacent Three** 18 **Counties**

19 The economy of the gateway communities,
 20 the three adjacent counties, and the overall
 21 Bay Area would be influenced by the GMP
 22 alternatives and the other plans and
 23 management actions identified in the above
 24 discussions. Actions and policies in all of
 25 these plans have the potential to generate
 26 economic activity via visitation increases,
 27 planning and project contracting,
 28 construction and restoration, implemen-
 29 tation of new programs, facility development
 30 and expansion, job creation, expenditures by
 31 NPS staff living in local communities, or
 32 other sources.

34 As discussed in the impact analysis of the
 35 GMP alternatives, alternatives 1, 2, and 3 all
 36 include substantial construction, site
 37 restoration, and reclamation projects that
 38 would create and accommodate new or
 39 restored historic structures or park facilities,
 40 and would restore the park's natural
 41 resources. Alternatives 1 and 3 would provide
 42 the highest level of historic structure
 43 restoration and new or expanded park
 44 facilities and programs. Many of these
 45 construction and restoration projects would
 46 generate economic activity in the region via
 47 NPS contracts awarded to local planning,
 48 design, and construction firms in future
 49 years. The implementation of these actions
 50 would also result in an expansion of

51 programs and services that would generate
 52 more attractions for visitors (and the
 53 potential for increased visitation), more park
 54 concession business opportunities, more
 55 tourist revenue for gateway community
 56 businesses (e.g., hotels, restaurants), and
 57 more opportunities for park partners. For
 58 example, alternatives 1 and 3 include various
 59 facility and visitor service expansions at park
 60 sites throughout the three counties and on
 61 Alcatraz Island. Many of these expansions
 62 would necessitate the hiring of new
 63 employees by park partners, concessioners,
 64 or the National Park Service.

66 In addition, the increased community
 67 outreach efforts associated with alternatives 1
 68 and 3 would likely generate an increase in
 69 park visitation (e.g., by reaching out to the
 70 diverse population of the Bay Area). This
 71 potential increase in visitation could yield
 72 economic activity by generating additional
 73 revenues for the park and the tourism
 74 businesses that support park visitors.

76 Many of the employees of park partners,
 77 concessions, and the National Park Service
 78 reside in the gateway communities around
 79 the park in all three adjacent counties. These
 80 employees contribute to the local economy
 81 directly by spending their earned salaries at
 82 local businesses and paying local taxes. New
 83 jobs with park partners, concessions, and the
 84 National Park Service that result from
 85 implementing actions in the GMP alterna-
 86 tives would also yield such economic
 87 contributions to the local economy. The
 88 actions that prompt economic activity would
 89 not only support these businesses and their
 90 employees directly, but the economic
 91 multiplier effect would also circulate this
 92 generated money through the local and
 93 regional economy.

95 In addition to Golden Gate National
 96 Recreation Area, there are other major
 97 contributors to the economic conditions of
 98 the area. Many of the local small businesses
 99 support park visitors with sports equipment
 100 and hospitality services. Changes in park
 101 visitation can influence the success of these

1 businesses. Most of the local gateway
2 communities are also dependent on
3 nontourism businesses that generate
4 substantial economic benefits and
5 community support. These businesses
6 include those associated with residential,
7 commercial (retail), educational, medical,
8 governmental, and industrial sectors of these
9 communities. The continuous operation of
10 and improvement to the infrastructure of
11 local communities also contribute
12 economically in addition to allowing for
13 economic growth. The construction of
14 several infrastructure projects that would
15 serve these communities would have direct
16 effects on the local economy. Roadway
17 projects, water utility projects, and gas and
18 electric supply projects are just a few
19 examples of other actions that would
20 generate economic activity in the area.
21 Management actions at the other local, state,
22 and federal lands in the Bay Area would
23 include actions that would contribute to
24 economic activity associated with
25 transportation and regional services (e.g.,
26 ferry service, schools, social services, airports,
27 waste disposal). Future economic growth can
28 be guided by the visions that the communities
29 develop through city and county
30 comprehensive plans, land use policies,
31 zoning ordinances, and other community
32 economic and redevelopment efforts. These
33 plans and policies can guide and encourage
34 direct economic activity such as commercial
35 business growth (e.g., retail, professional, and
36 hotel/restaurant), housing growth, tourism,
37 and industrial growth.

38
39 When the likely effects of implementing the
40 actions contained in each GMP alternative
41 are added to the effects of these other past,
42 present, and reasonably foreseeable
43 economic development actions, a long-term,
44 minor to moderate, beneficial cumulative
45 impact on gateway community economies
46 could result. However, the impacts of the
47 GMP actions on the local economy would
48 constitute only a small component of this
49 overall cumulative effect in the local gateway
50 communities and a negligible portion of the

51 overall cumulative effect on the Bay Area
52 economy.

53

54 **Tourism Industry Economy** 55 **of San Francisco**

56 The implementation of the actions in each of
57 the GMP alternatives will contribute to the
58 San Francisco tourism industry by providing
59 many natural, cultural, educational, and
60 recreational opportunities for visiting
61 tourists. The tourists who visit the park play
62 an important role in sustaining the tourism
63 industry of the area by generating more
64 business for San Francisco area hotels,
65 restaurants, bars, retail shops, boat tours, and
66 other tourism support businesses (e.g., bike
67 rentals and tour companies).

68

69 San Francisco provides an abundant supply
70 of tourist attractions that include, but are not
71 limited to, music and art events, culinary
72 adventures, ethnic neighborhoods, sporting
73 events, historic sites, conventions, city tours,
74 cable cars, world class shopping, unique
75 neighborhoods, and community parks. These
76 attractions all contribute to a critical mass of
77 opportunities that makes San Francisco one
78 of the premier tourist attractions in the
79 country. Adding to the attractions of San
80 Francisco is the natural openness and space
81 of San Francisco Bay, the surrounding wild
82 character of Golden Gate National
83 Recreation Area, and the views of historic
84 Alcatraz Island. Together these features
85 create a unique setting that both contrasts
86 and complements the urban feel of a great
87 city—making the city a national and
88 international travel destination. In other
89 words, a synergistic effect of tourist
90 attractions is present. For example, a large
91 number of the out-of-state and international
92 tourists will visit Alcatraz Island, the Marin
93 Headlands, and Muir Woods National
94 Monument in addition to the many urban
95 sites and activities that are abundant in and
96 around San Francisco. This combination or
97 “package” of attractions and tourist
98 opportunities in and around San Francisco
99 results in a sustainable, thriving tourist

1 industry. This industry directly contributes to
2 the local and regional economy.

3
4 When the likely effects of implementing the
5 actions contained in each of the GMP
6 alternatives are added to the effects of other
7 past, present, and reasonably foreseeable
8 tourism industry actions and attractions, a
9 long-term, moderate, beneficial cumulative
10 impact on the economy would result. The
11 impacts of each GMP alternative on the
12 overall cumulative economy would
13 contribute a long-term, minor, beneficial
14 effect to the overall economy of San
15 Francisco.

16 17 **Regional Economy of the** 18 **Overall Bay Area**

19 As noted in the subsection on quality of life,
20 the implementation of actions in each GMP
21 alternative would continue to provide open
22 space preservation, numerous recreation
23 opportunities, facilities, and park settings for
24 organized group activities, and other
25 amenities that make the park an intrinsic,
26 attractive component of the Bay Area
27 community. This quality of life contribution
28 also has an effect on the economy. By
29 providing aesthetic, community, and
30 recreational values, the park would continue
31 to help make the Bay Area an attractive place
32 for companies and talented professionals to
33 call home. The Bay Area's quality of life
34 becomes a draw for business and economic
35 growth because of places like the park. The
36 economic growth and success of Silicon
37 Valley is a prime example of how economic
38 growth can occur in a quality business
39 location with a natural landscape backdrop.
40 Similarly, the other city, county, and state
41 parks and open spaces throughout the Bay
42 Area contribute to making this region an
43 attractive place to do business and to live.
44 The region's cultural diversity and
45 abundance of urban attractions also
46 complement the parks and help to attract
47 business growth.

48
49 When the likely effects of implementing the
50 actions contained in each GMP alternative

51 are added to the effects of these other past,
52 present, and reasonably foreseeable actions
53 and trends, a long-term, minor to moderate,
54 beneficial cumulative impact on the economy
55 would result. The impacts of the GMP
56 alternative actions on the economy would
57 contribute a small to medium component of
58 this overall cumulative effect in the gateway
59 communities and counties near the park, and
60 would contribute an even smaller component
61 to the overall cumulative effect when the
62 overall Bay Area is considered.

63
64

65 **TRANSPORTATION**

66 The cumulative impacts on transportation
67 resulting from the actions described in the
68 GMP alternatives in combination with
69 actions resulting from transportation projects
70 and policies of other entities within the Bay
71 Area are identified in this section. In
72 preparing the cumulative impacts on
73 transportation, the actions of the past,
74 present, and foreseeable future were
75 estimated. Input into these cumulative
76 impacts included actions by others within the
77 areas around the park, or potential actions
78 that are described in various park plans
79 already underway or recently completed.
80 Transportation projects external to the park
81 may result in an increase in visitation to the
82 park by improving access for any of the travel
83 modes discussed; or conversely, they may
84 impede movement or burden transportation
85 systems and reduce access. Cumulative
86 transportation impacts of both external and
87 park-originated projects are described below.

88

89 The transportation actions in the general
90 management plan include expanding regional
91 park ferry access to primary park sites in San
92 Francisco Bay, new embarkations for
93 Alcatraz Ferry, developing strategies for
94 congestion management, and improving the
95 intelligent transportation system and
96 wayfinding applications. Throughout the
97 park, improvements will be made to better
98 connect the park trail system to the regional
99 trail network and to local communities. In
100 addition, improvements will be made to the

1 trail system in Marin and San Francisco
2 counties that include sustainable alignments
3 and design, improved accessibility, and
4 wayfinding signs. In San Mateo, work will
5 begin on a comprehensive trail plan that will
6 guide the development of a trail network on
7 park lands and will identify logical trail
8 connections to strengthen the regional trail
9 network.

10
11 These GMP actions, when combined with
12 major past, present, and foreseeable future
13 transportation actions of others, will have a
14 cumulative impact to the transportation
15 system that influences visitor access and
16 circulation. At the Marin Headlands and Fort
17 Baker area, there will be enhanced
18 multimodal access to park sites. The roadway
19 infrastructure would be rehabilitated or
20 reconstructed without altering the historic
21 character, and parking facilities would be
22 improved. Additional transit options would
23 be provided to and within the Marin
24 Headlands and Fort Baker to improve access
25 to the area. Pedestrian and bicycle access
26 would be improved by closing and rerouting
27 existing trails and constructing new trails.
28 Connectivity—access to the park by all
29 nonmotorized modes, and access to sites
30 within the park by all modes—is likely to be
31 improved. Hiking and biking across the
32 Golden Gate Bridge to the Marin Headlands
33 and Fort Baker will grow as a popular
34 recreational activity; continued coordination
35 between the National Park Service and the
36 Golden Gate Bridge, Highway and
37 Transportation District is required to address
38 increased demands and safety issues. The
39 cumulative impacts of implementing these
40 actions could be long term, moderate to
41 major, and beneficial.

42
43 In Marin County, the transportation element
44 of the *Marin Countywide General Plan*
45 *Update* of 2007 guides the list of
46 transportation projects underway or already
47 approved. Projects focus on increasing
48 capacity of arterials and Highway 101; by
49 reducing congestion in the eastern part of the
50 county, these measures may make some park
51 sites at Golden Gate National Recreation

52 Area more easily accessible. Completion of
53 these projects would represent a long-term,
54 minor, beneficial cumulative impact on auto
55 and transit access to Marin park lands, which
56 are primarily in more rural west Marin
57 County.

58
59 The *Marin Countywide General Plan* includes
60 an explicitly stated policy to maintain West
61 Marin’s rural character, so roads in that area
62 will continue to be two-lane only, with
63 turning lanes, pullouts, and bicycle paths
64 allowable. Muir Beach, Muir Woods
65 National Monument, and Stinson Beach are
66 accessed by these small roads, so congestion
67 during peak periods can be expected to
68 continue or to get worse if there are no
69 programs to provide public transportation or
70 improve bicycle routes. This scenario would
71 have a long-term, minor to moderate, adverse
72 cumulative impact on auto travel to West
73 Marin sites.

74
75 Many of Golden Gate National Recreation
76 Area’s park sites in Marin and San Francisco
77 counties are along San Francisco Bay. To
78 improve visitor connection and circulation,
79 planners are working to develop a Golden
80 Gate National Recreation Area Water Shuttle
81 Terminals Plan. Although only at the
82 conceptual stage, the plan proposes a water
83 shuttle system to connect park sites on the
84 shore of the San Francisco Bay (Angel Island,
85 Sausalito, Fort Baker, Crissy Field, Fort
86 Mason) as well as the Ferry Building. Routes
87 and destinations have not been finalized, yet.
88 The system itself could be a significant
89 attraction, unique within the national park
90 system. Some visitors could be expected to
91 take the water shuttle from one location to
92 another without disembarking until reaching
93 their point of origin, as a form of recreation
94 in itself. If implemented, this system could
95 have a long-term, moderate to major,
96 beneficial cumulative effect on the
97 connectivity of bayside sites, access to park
98 sites by water, and an increase in the modes
99 of travel.

100
101 In San Francisco County, the San Francisco
102 Municipal Transportation Authority is

1 implementing a Bus Rapid Transit system for
2 Van Ness Avenue, which is a collection of
3 measures to provide rapid and reliable transit
4 on Van Ness Avenue. The north end of this
5 service terminates within two blocks of
6 Upper Fort Mason and San Francisco
7 Maritime National Historical Park. Given
8 that this part of the city is already served by
9 some transit operations, this project could
10 have long-term, moderate, beneficial
11 cumulative effects on visitor access and on
12 connectivity to the park, allowing visitors to
13 get to the north part of the city without
14 driving and parking a vehicle.

15
16 A plan is being developed for the E-Line
17 Streetcar Extension that proposes to extend
18 streetcar service from the Embarcadero
19 through San Francisco Maritime National
20 Historical Park and a tunnel under Upper
21 Fort Mason. The E-line Streetcar Extension
22 connects Fisherman's Wharf to Lower Fort
23 Mason and someday it could extend to Crissy
24 Field. If this project were to go forward, it
25 could have a long-term, major, beneficial
26 cumulative effect on both connectivity and
27 access to this area of Golden Gate National
28 Recreation Area.

29
30 The Doyle Drive project will rehabilitate a
31 major artery along the northern waterfront of
32 San Francisco through several Golden Gate
33 National Recreation Area sites. The purpose
34 of the proposed project is to improve the
35 seismic, structural, and traffic safety of Doyle
36 Drive and its approach to the Golden Gate
37 Bridge. The project is intended to
38 substantially reduce the adverse effects of the
39 current structure, including noise, visual
40 impacts, and air pollution. The project would
41 place portions of the low viaduct structure
42 below grade or underground, thus removing
43 it from the landscape and restoring visual
44 connections between areas of the Presidio of
45 San Francisco. The results of the project, a
46 safer parkway with some segments
47 underground, is likely to have long-term,
48 major, beneficial cumulative impacts on
49 access to this part of Golden Gate National
50 Recreation Area by all modes, motorized and
51 nonmotorized. Planned modifications in the

52 Presidio of San Francisco, currently behind
53 Doyle Drive, reconnect it to the shoreline,
54 making it much more accessible by bicycle
55 and foot.

56
57 In San Mateo County, the California
58 Department of Transportation is working to
59 reroute State Route 1 at Devil's Slide. This
60 project involves boring two tunnels (one in
61 each direction of traffic flow) beneath an
62 unstable portion of a steep Pacific Coast
63 hillside. This section of road has a long
64 history of rockslides and land slippage,
65 causing lengthy closures and millions of
66 dollars in repair costs. This section of State
67 Route 1 lies between two Golden Gate
68 National Recreation Area's park sites: the
69 Mori Point / Cattle Hill area and Corral de
70 Tierra. It is likely that Point San Pedro will be
71 added to the park in the foreseeable future.
72 The completion of this project should
73 expedite traffic, reduce traffic congestion,
74 and make travel in the area more reliable,
75 enabling a greater number of people to visit
76 these areas of Golden Gate National
77 Recreation Area. This would likely have a
78 long-term, minor, beneficial cumulative
79 impact on travel in the area. This
80 improvement may also encourage more
81 people to drive in the area, and therefore
82 could trigger a need for more parking
83 accommodation in the future.

84
85 The trail system of Golden Gate National
86 Recreation Area and Muir Woods National
87 Monument contribute to a larger county and
88 regional trail network. For example, the
89 Association of Bay Area Governments
90 adopted the *San Francisco Bay Trail Plan* that
91 proposes to create a trail encircling the San
92 Francisco Bay. A portion of the trail connects
93 with park sites within Golden Gate National
94 Recreation Area in Marin and San Francisco
95 counties. In addition, the California Coastal
96 Trail, a 1,200-mile-long trail between Oregon
97 and Mexico, is integrated with the park's trail
98 network in Marin, San Francisco, and San
99 Mateo counties. The sections of the San
100 Francisco Bay trail and the California Coastal
101 Trail could increase pedestrian and bicycle
102 access to areas throughout the park. These

1 developments would result in a long-term,
2 minor, beneficial cumulative effect on
3 pedestrian and bicycle access to this area, and
4 connectivity to regional transportation.

5
6 The Golden Gate National Parks
7 Conservancy developed a trail initiative,
8 “Trails Forever,” to establish a world-class
9 trail system and protect park resources. Trails
10 Forever is likely to increase pedestrian access
11 (and bicycle access as permitted) to all areas
12 of Golden Gate National Recreation Area by
13 establishing and repairing trails that connect
14 to surrounding areas, as well as those that
15 connect sites within each park area. As the
16 Trails Forever efforts continue, they are likely
17 to have a long-term, moderate, beneficial
18 cumulative effect on safe, expanded access,
19 connectivity, and circulation to more parts of
20 Golden Gate National Recreation Area.

21
22 The wide variety of past, present, and
23 foreseeable future transportation actions
24 resulting from the management of the park
25 and actions of other entities throughout
26 Marin, San Francisco, and San Mateo
27 counties, combined with the actions
28 described in the GMP alternatives would
29 have long-term, moderate to major, beneficial
30 cumulative impacts on the transportation and
31 trail systems.

32
33

34 **PARK MANAGEMENT, OPERATIONS,** 35 **AND FACILITIES**

36 Some past, present and foreseeable future
37 actions being undertaken outside of this
38 general management plan would have
39 impacts on park operations. These “outside”
40 actions, added to the actions proposed in the
41 GMP alternatives, would result in the
42 cumulative impacts on park operations
43 explored below.

44
45 Park partners engage in a wide variety of
46 activities, including providing interpretation
47 of the park, running concessions such as
48 bookstores and hostels, and organizing
49 volunteers to improve the park. One example
50 of partner support of park operations is

51 fundraising for the renovation of facilities.
52 Increased park staff levels in combination
53 with the actions that park partners have taken
54 and may take in the future would result in
55 beneficial impacts on park operations,
56 including improvements to mission critical
57 assets, improvements to natural and cultural
58 resources, and increased ability to reach out
59 to the community and leverage staff work
60 with volunteer and partner efforts. This
61 would result in major, long-term, beneficial
62 impacts on park operations for all action
63 alternatives. In the no-action alternative, with
64 staff levels remaining at current levels, the
65 ability to further leverage partner support
66 would be limited and would have little
67 additional impact, although the continuing
68 impact of staff and partner support is major
69 and beneficial.

70

71 Agency and partner decisions to share
72 facilities with the National Park Service, such
73 as potentially in San Mateo County, would
74 result in increased operating efficiencies
75 through resource and space sharing,
76 increased quality of working relationships
77 with other organizations, and coordination
78 on land uses; this would have moderate, long-
79 term, beneficial impact to all action
80 alternatives.

81

82 The National Park Service is pursuing new
83 sustainability measures on Alcatraz Island,
84 including solar power and a submarine
85 electric line to be laid from the peninsula to
86 the island. Those projects, in combination
87 with the GMP policy to improve sustain-
88 ability, would have moderate to major,
89 beneficial, long-term impacts on the park
90 operations for all action alternatives.

91

92 If the park pursues future acquisition of lands
93 and the development of facilities not
94 addressed in the GMP alternatives, given the
95 estimated budget and staffing needs of the
96 alternatives, the park budgets and staff would
97 be adversely impacted by being diverted from
98 planned actions. The resulting impact would
99 be long term, minor to moderate, and adverse
100 for all action alternatives.

101

1 The current and future expected high cost of
2 housing in the San Francisco Bay Area could
3 make the recruitment and retention of park
4 and partner staff challenging. The action
5 alternatives each propose substantial
6 numbers of new staff. Park and partner
7 salaries are frequently lower than needed to
8 afford adequate housing in the Bay Area.
9 Additionally, alternatives 2 and 3 propose
10 reductions in park and partner housing.
11 Given these factors, potential staff may find it
12 difficult to find adequate and affordable
13 housing, and therefore may choose not to
14 work at the park. Not meeting staffing needs
15 identified in the alternatives would result in
16 long-term, moderate to major, adverse
17 impacts on park operations.
18
19 The major, long-term, beneficial impacts on
20 operations of increased staffing, in
21 combination with the impacts of partner
22 support of park operations, would result in
23 major, long-term, beneficial impacts on park

24 operations in the action alternatives. In the
25 no-action alternative, with staff levels
26 remaining at current levels, the ability to
27 further leverage partner support would be
28 limited and would have little additional
29 impact, although the continuing impact of
30 staff and partner support is major and
31 beneficial. Administrative and interpretive
32 office space sharing with other agencies
33 would have moderate, long-term, beneficial
34 impact. Sustainable energy projects on
35 Alcatraz Island in combination with the GMP
36 policy on sustainability would result in
37 moderate to major, beneficial, long-term
38 impacts on park operations. The impact of
39 pursuing land acquisition or facility
40 development outside of GMP proposals
41 would be long term, minor to moderate, and
42 adverse. Not meeting staffing needs
43 identified in the alternatives would result in
44 long-term, moderate to major, adverse
45 impacts on park operations.

CUMULATIVE IMPACT ANALYSIS AT MUIR WOODS NATIONAL MONUMENT

1 METHODOLOGY

2 See the discussion under “Cumulative Impact
3 Analysis at Golden Gate National Recreation
4 Area.”

7 NATURAL RESOURCES

8 A number of plans and projects could have
9 cumulative impacts on natural resources.
10 Plans and projects that have a relationship to
11 this general management plan are identified
12 and described in appendix B. Those plans
13 and projects that are most relevant to natural
14 resources and could contribute to cumulative
15 impacts on this topic, a subset of those
16 included in appendix B, include the
17 Redwood Creek Watershed Vision and
18 various restoration projects in the watershed;
19 the Marin County transportation plan; the
20 Muir Woods pilot shuttle; the Mount
21 Tamalpais State Park management plan; the
22 Golden Gate National Recreation Area /
23 Muir Woods National Monument fire
24 management plan; the management of lands
25 adjacent to the monument; and past land use
26 practices in the region. Cumulative impacts
27 for Muir Woods National Monument are
28 similar to those described for Golden Gate
29 National Recreation Area, with a few
30 exceptions noted below in the analysis.

33 Carbon Footprint and Air Quality

34 All of the plans and projects mentioned in the
35 introduction to this section would have
36 cumulative impacts on carbon footprint and
37 air quality. County transportation plans and
38 projects aimed at reducing personal
39 automobile use and improving alternative
40 transportation would have beneficial
41 cumulative impacts by reducing
42 transportation-related emissions. The Muir

43 Woods National Monument pilot shuttle
44 would continue to reduce emissions from
45 personal automobile use, lower the carbon
46 footprint of the monument and improving air
47 quality. Projects aimed at improving
48 ecosystems and enhancing natural resources
49 would result in adverse cumulative impacts in
50 the short term, but would be outweighed by
51 long-term reductions in emissions and the
52 resultant improvement in air quality. The
53 same would be true for the management of
54 adjacent public lands, where near-term
55 projects would have short-term adverse
56 impacts on carbon footprint and air quality,
57 but long-term objectives to reduce energy use
58 and emissions and improve the condition of
59 natural systems would have long-term
60 beneficial cumulative impacts. Regional land
61 protection efforts would continue to preserve
62 open space that removes land available for
63 development and provides air quality
64 benefits. The management of private lands in
65 the region would likely continue to result in
66 adverse impacts on carbon footprint and air
67 quality as they would continue to be sources
68 of energy use and air quality emissions that
69 could increase over time as densities increase.

70
71 When the likely effects of implementing the
72 actions contained in the GMP alternatives are
73 added to the effects of other past, present,
74 and reasonably foreseeable actions
75 previously described, there would be a
76 cumulative adverse impact on carbon
77 footprint and air quality in the short term and
78 a beneficial cumulative impact on carbon
79 footprint and air quality over the long term.
80 The actions contained in the GMP
81 alternatives would contribute a very small
82 increment to this cumulative impact.

83
84

1 **Soils and Geologic Resources** 2 **and Processes**

3 All of the plans and projects mentioned in the
4 introduction to this section would have
5 cumulative impacts on soils and geologic
6 resources and processes. County
7 transportation plans and projects would
8 modify roadways that would likely result in
9 adverse impacts on roadside soils and
10 geologic resources and would contribute to
11 changes in the functionality of geologic
12 processes in the area. Projects aimed at
13 improving ecosystems and enhancing natural
14 resources could result in adverse cumulative
15 impacts in the short term, but would be
16 outweighed by long-term improvements to
17 function and integrity of soils and natural
18 geologic processes. The same would be true
19 for the management of adjacent public lands,
20 where near-term projects could have short-
21 term adverse impacts on soils and geologic
22 resources, but long-term objectives to
23 improve natural systems would have long-
24 term beneficial cumulative impacts on soils
25 and geologic processes. Regional land
26 protection efforts would continue to preserve
27 open space and protect soils and geologic
28 resources. The management of private lands
29 in the region would continue to have adverse
30 and beneficial impacts on soils and geologic
31 processes depending on the nature of land
32 use and stewardship practices.

33
34 When the likely effects of implementing the
35 actions contained in the GMP alternatives are
36 added to the effects of other past, present,
37 and reasonably foreseeable actions
38 previously described, there would be a
39 cumulative beneficial impact on soils and
40 geologic resources and processes. The
41 actions contained in the GMP alternatives
42 would contribute a small increment to this
43 cumulative impact.

46 **Water Resources and** 47 **Hydrologic Processes**

48 All of the plans and projects mentioned in the
49 introduction to this section would have

50 cumulative impacts on water resources and
51 hydrologic processes. County transportation
52 plans and projects would modify roadways
53 that could modify surface water flow and
54 drainage. Roadway projects would also likely
55 result in soil erosion and generate urban
56 pollutants that would adversely impact water
57 quality. Conversely, certain projects would
58 reduce sedimentation and improve the
59 conveyance of water—beneficial impacts.
60 Projects aimed at improving ecosystems and
61 enhancing natural resources (i.e., Big Lagoon
62 restoration, Lower Redwood Creek
63 floodplain restoration, Fern Creek riparian
64 fencing, mission blue butterfly habitat
65 restoration, Coast Trail habitat enhancement
66 projects, sediment reduction projects, and
67 the decommissioning of Muir Woods Road)
68 could result in adverse cumulative impacts on
69 water resources and water quality in the short
70 term, but would be outweighed by long-term
71 improvements to the integrity and function of
72 water resources, especially for wetlands,
73 floodplains, and natural creek processes.
74 These projects would benefit water quality by
75 reducing erosion and sediment transport and
76 restoring Redwood Creek and the area's
77 natural drainage patterns. The impacts of the
78 project would be beneficial when considered
79 with other projects in the watershed that also
80 reduce sediment and nutrient transport and
81 generally enhance the watershed's water
82 quality. The same would be true for the
83 management of adjacent public lands: short-
84 term projects could have short-term adverse
85 impacts on water resources (including water
86 quality and quantity); but would result in
87 long-term beneficial cumulative impacts on
88 water resources and hydrologic processes.
89 Regional land protection efforts would
90 continue to preserve open space and protect
91 water resources. The management of private
92 lands in the region would continue to have
93 adverse and beneficial impacts on water
94 resources and hydrologic processes
95 depending on the nature of land use and
96 stewardship practices.

97
98 When the likely effects of implementing the
99 actions contained in the GMP alternatives are
100 added to the effects of other past, present,

1 and reasonably foreseeable actions
 2 previously described, there would be a
 3 cumulative beneficial impact on water
 4 resources and hydrologic processes. The
 5 actions contained in the GMP alternatives
 6 would contribute a small increment to this
 7 cumulative impact.

8
 9

10 **Habitat (vegetation and wildlife) and**
 11 **Special Status Species (federal and**
 12 **state threatened and endangered**
 13 **species)**

14 All of the plans and projects mentioned in the
 15 introduction to this section would have
 16 cumulative impacts on vegetation and
 17 wildlife habitat. County transportation plans
 18 and projects would modify roadways that
 19 could alter the integrity of native habitat,
 20 increase habitat fragmentation, and introduce
 21 nonnative plants and animals that could
 22 displace and adversely affect native species,
 23 including special status species. Roadway
 24 projects would also likely result in soil
 25 erosion and generate urban pollutants that
 26 would adversely impact aquatic habitats.
 27 Conversely, certain projects would reduce
 28 impacts from roadways and improve
 29 migration corridors. Restoration projects
 30 aimed at improving ecosystems and
 31 enhancing natural resources include the
 32 following:

33

- 34 ▪ Big Lagoon restoration
- 35 ▪ Lower Redwood Creek floodplain
- 36 restoration
- 37 ▪ Fern Creek riparian fencing
- 38 ▪ mission blue butterfly habitat
- 39 restoration
- 40 ▪ Coast Trail habitat enhancement
- 41 projects
- 42 ▪ sediment reduction projects
- 43 ▪ decommissioning of Muir Woods
- 44 Road
- 45 ▪ park fire road rehabilitation

46

- Green Gulch Farm—removal of
- 47 concrete lining from tributary
- 48 ▪ Kent Canyon culvert replacement

49

50 These could result in adverse cumulative
 51 impacts on native habitat in the short term,
 52 but would be outweighed by long-term
 53 improvements to the integrity and function of
 54 habitat. These projects would improve water
 55 quality by reducing sediment inputs, prevent
 56 the trampling of vegetation, remove invasive
 57 riparian plants, improve fish passage, create
 58 pool habitat, and remove artificial bank
 59 protection. The 2003 and 2007 Lower
 60 Redwood Creek projects have direct benefits
 61 for salmonids by expanding and enhancing
 62 available winter and summer rearing habitat.
 63 Therefore, the impacts of the project,
 64 considered with the beneficial impacts of
 65 other local projects, would be cumulatively
 66 beneficial.

67

68 The same would be true for the management
 69 of adjacent public lands, where near-term
 70 projects could have short-term adverse
 71 impacts on habitat, but long-term objectives
 72 to improve natural systems would have long-
 73 term beneficial cumulative impacts on habitat
 74 integrity and function. Regional land
 75 protection efforts would continue to preserve
 76 open space and protect a variety of habitat
 77 types. The management of private lands in
 78 the region would continue to have adverse
 79 and beneficial impacts on vegetation and
 80 wildlife habitat depending on the nature of
 81 land use and stewardship practices.

82

83 When the likely effects of implementing the
 84 actions contained in the GMP alternatives are
 85 added to the effects of other past, present,
 86 and reasonably foreseeable actions
 87 previously described, there would be a
 88 cumulative beneficial impact on vegetation
 89 and wildlife habitat. Although impacts on
 90 local special status species and their habitat in
 91 the project area would be mitigated to
 92 minimize potential impacts and impacts of
 93 other projects in the area would generally be
 94 beneficial, impacts from urbanization of the
 95 region would continue to result in habitat

1 loss and the cumulative impact to most
 2 special status species and their habitat would
 3 be adverse. The actions contained in the
 4 GMP alternatives would contribute a small
 5 increment to this cumulative impact.

6

7

8 **CULTURAL RESOURCES**

9 A number of past, present, and ongoing
 10 plans, programs, and projects could have
 11 cumulative impacts on cultural resources, if
 12 implemented. Plans, programs, and projects
 13 that have a relationship to this general
 14 management plan are described in the
 15 “Relationship of This Plan to Other Plans”
 16 section in part 1 and in “Appendix B:
 17 Description of Management Plans Related to
 18 this Plan.” Those plans and projects that are
 19 most relevant to and could contribute to
 20 cumulative impacts on cultural resources at
 21 Muir Woods National Monument include
 22 the following:

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45 **Archeological Resources**

46 Implementation of NPS restoration plans,
 47 state and regional plans, and county and local
 48 plans would have generally beneficial

49 cumulative impacts on archeological
 50 resources if those plans specifically included
 51 an emphasis on protection and preservation
 52 of cultural resources and mitigation if sites
 53 cannot be avoided. However, generally
 54 speaking, past human use and management of
 55 lands in and near the monument, such as
 56 construction associated with urban,
 57 suburban, and recreational development,
 58 have generally had adverse impacts on
 59 archeological resources because of the
 60 unknown number of archeological sites that
 61 may have been lost or degraded as a result of
 62 ground disturbing operations.

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78 **Historic Buildings**

79 National Park Service restoration plans, state
 80 and regional plans, and county and local
 81 plans all provide for the protection and
 82 preservation of historic buildings and their
 83 architectural values and, therefore, would
 84 contribute to beneficial cumulative impacts
 85 on historic buildings, if implemented. Past
 86 human use and management of lands in and
 87 near the monument, such as construction
 88 associated with urban, suburban, and
 89 recreational development, have generally had
 90 adverse impacts on historic buildings,
 91 resulting in the loss of historic buildings and
 92 historic fabric.

93

94

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98

When the likely effects of implementing the
 actions contained in the GMP alternatives are
 added to the impacts of other past, present,
 and reasonably foreseeable actions
 previously described, there would be a long-

1 term, minor, beneficial cumulative impact to
 2 historic buildings. The actions contained in
 3 the GMP alternatives would contribute a
 4 small increment to these overall cumulative
 5 impacts.

6
 7

8 **Cultural Landscape Resources**

9 National Park Service restoration plans, state
 10 and regional plans, and county and local
 11 plans all provide for the protection and
 12 preservation of cultural landscape resources
 13 and, therefore, would contribute to beneficial
 14 cumulative impacts on cultural landscape
 15 resources, if implemented. Past human use
 16 and management of lands in and near the
 17 monument, such as construction associated
 18 with urban, suburban, and recreational
 19 development, have generally had adverse
 20 impacts on cultural landscapes, resulting in
 21 the loss or degradation of numerous cultural
 22 landscape resources.

23

24 When the likely effects of implementing the
 25 actions contained in the GMP alternatives are
 26 added to the impacts of other past, present,
 27 and reasonably foreseeable actions
 28 previously described, there would be a long-
 29 term, minor to moderate, beneficial
 30 cumulative impact to cultural landscape
 31 resources. However, the actions contained in
 32 the GMP alternatives would contribute only
 33 a small increment to the overall cumulative
 34 impacts on cultural landscape resources.

35
 36

37 **Park Collections**

38 The cumulative impacts on the park
 39 collections are addressed in the “Golden
 40 Gate National Recreation Area” section.

41
 42

43 **VISITOR USE AND EXPERIENCE**

44 The cumulative impacts for visitor use and
 45 experience at Muir Woods National
 46 Monument are the same as those described
 47 for Golden Gate National Recreation Area.

48

49 **SOCIAL AND ECONOMIC**
 50 **ENVIRONMENT**

51 Along with the actions identified in this
 52 general management plan for Muir Woods
 53 National Monument, the actions identified in
 54 a number of plans and projects in the local
 55 gateway communities, the three adjacent
 56 counties, and the overall San Francisco Bay
 57 Area could contribute to cumulative impacts
 58 on the social and economic environment in
 59 the area. Plans and projects that have a
 60 relationship to this general management plan
 61 are identified and described in the
 62 “Relationship of This Plan to Other Plans”
 63 section in part 1 and in “Appendix B:
 64 Description of Management Plans Related to
 65 this Plan.” These other plans and
 66 management actions all have effects on the
 67 social and economic environment, both
 68 individually and collectively. These effects
 69 mainly relate to the quality of life of local
 70 residents and the economy. The cumulative
 71 contributions to the quality of life and
 72 economy could extend throughout the
 73 gateway communities, the three adjacent
 74 counties, and the overall Bay Area.

75

76 In relationship to the social and economic
 77 environment, the cumulative effect of
 78 implementing these other plans and projects
 79 and the GMP alternatives for Muir Woods
 80 National Monument would be quite similar
 81 to the cumulative effect of implementing
 82 these other plans and projects and the GMP
 83 alternatives for Golden Gate National
 84 Recreation Area. Therefore, to avoid
 85 repeating analyses and conclusions, please
 86 refer to the section titled “Cumulative Impact
 87 Analysis at Golden Gate National Recreation
 88 Area (including Alcatraz Island).” However,
 89 the transportation component of the
 90 monument’s GMP alternatives is unique to
 91 this park. The transportation actions
 92 included in the GMP action alternatives
 93 could affect traffic patterns, park
 94 accessibility, and park visitor contributions to
 95 the local economy in the gateway
 96 communities and Marin County. Thus, these
 97 actions could influence the local social and

1 economic environment. A discussion and
2 analysis of this topic are provided below.

3
4 The no-action alternative and alternatives 1,
5 2, and 3 include measures to expand shuttle
6 services to and from the monument. The
7 shuttle service would originate at selected
8 transit hubs in Marin County. Although all
9 action alternatives would include actions that
10 address this change, alternative 2 includes
11 actions that would yield the greatest amount
12 of change, because under this alternative, the
13 majority of personal motorized vehicles
14 would be prohibited from entering the park.
15 Under alternative 2, all park visitors would
16 access the park via the shuttle, by bicycle, or
17 by foot. The primary goal for these actions is
18 to substantially reduce the impacts of
19 motorized vehicular use in and around the
20 park; this would reduce motor vehicle
21 impacts such as noise, air pollution, traffic,
22 and overflow parking problems. While
23 minimizing these impacts, the proposed
24 actions would also provide an alternate,
25 public transportation option for local
26 residents who otherwise may not have easy
27 access to the park. These actions also would
28 reduce traffic on some Marin County roads
29 that lead to the park. All of these impacts
30 could be beneficial to the quality of life for
31 local residents in Marin County. Alternative 2
32 would yield the greatest benefit in terms of
33 removing individual vehicles from local
34 roads. However, because these actions could
35 reduce the amount of vehicular traffic en
36 route to the park, a reduction in local
37 business activity may be noticed in the local
38 gateway communities. Fewer people would
39 be driving to and from the park through the
40 local towns, and thus, fewer people would be
41 stopping at local restaurants, stores, and
42 other businesses. As described in the
43 “Environmental Consequences” section, this
44 could result in an adverse impact to the local
45 economy.

46
47 GMP actions that would affect the local
48 economy and the quality of life for local
49 residents could be complemented by the
50 transportation plan actions of the local
51 governments in Marin County and the local

52 and regional transit authorities. These entities
53 will continue to improve and expand public
54 transportation options in Marin County and
55 beyond. As the public transportation network
56 grows and becomes more refined, local and
57 regional residents will have more options to
58 visit the park, with a probable reduction in
59 transit time. These efforts will contribute to
60 quality of life by improving geographic
61 accessibility and reducing traffic congestion.
62 As for economic impacts, because local and
63 regional transportation planning and projects
64 would likely conform to municipal and
65 county master plans, some commercial
66 zoning sectors in Marin County may shift
67 over the years to become concentrated
68 around mass transit hubs. Thus, the initial
69 impacts on local businesses from a reduction
70 in vehicular traffic may eventually be offset
71 by a gain in local business activity in and
72 around the planned transit hub areas.

73
74 When the likely effects of implementing the
75 actions contained in each of the GMP
76 alternatives for the monument are added to
77 the effects of these other past, present, and
78 reasonably foreseeable transportation
79 actions, a long-term, minor to moderate,
80 beneficial cumulative impact on the quality of
81 life for local residents could result.

82
83 The impacts of the actions of each GMP
84 alternative on the local economy would
85 constitute a small portion of this overall
86 cumulative effect in the gateway communities
87 and Marin County. When the likely effects of
88 implementing the GMP actions are added to
89 the effects of these other past, present, and
90 reasonably foreseeable transportation
91 actions, a minor, adverse cumulative impact
92 on the local economy could result. However,
93 over time, the cumulative impact could
94 become negligible or beneficial as the
95 transportation systems become predictable
96 and local businesses adapt.

97
98

1 **TRANSPORTATION**

2 See the transportation discussion under
3 “Cumulative Impact Analysis at Golden Gate
4 National Recreation Area.”

5
6
7 **PARK MANAGEMENT, OPERATIONS,
8 AND FACILITIES**

9 Staffing increases described in the analysis in
10 combination with actions that partners may
11 take would result in long-term, beneficial
12 impacts on park operations, including
13 improvements to mission critical assets and
14 natural and cultural resources, and increased
15 ability to reach out to the community and
16 leverage staff work with volunteer and
17 partner efforts. This would result in major,
18 long-term, beneficial impact to park
19 operations for all action alternatives. In the
20 no-action alternative, with staff levels
21 remaining the same as existing, the ability to
22 further leverage partner support would be
23 limited and would have little additional
24 impact, although the continuing impact of
25 staff and partner support is major and
26 beneficial.

27
28 If the park pursues future acquisition of lands
29 and development of facilities not addressed
30 in the GMP alternatives, given the estimated
31 budget and staffing needs of the alternatives,
32 the park budgets and staff would be adversely
33 impacted by being diverted from planned
34 actions. The resulting impact would be long
35 term, minor to moderate, and adverse.

36
37

38 The current and future expected high cost of
39 housing in the San Francisco Bay Area could
40 make the recruitment and retention of park
41 and partner staff challenging. The action
42 alternatives each propose substantial
43 numbers of new staff. Park and partner
44 salaries are frequently lower than needed to
45 afford adequate housing in the Bay Area.
46 Given these factors, potential staff may find it
47 difficult to find adequate and affordable
48 housing, and therefore may choose not to
49 work at the park. Not meeting staffing needs
50 identified in the alternatives would result in
51 long-term, moderate to major, adverse
52 impacts on park operations.

53
54 The major, long-term, beneficial impacts on
55 operations of increased staffing, in
56 combination with the impacts of partner
57 support of park operations, would result in
58 major, long-term, beneficial impacts on park
59 operations in the action alternatives. In the
60 no-action alternative, with staff levels
61 remaining at current levels, the ability to
62 further leverage partner support would be
63 limited and would have little additional
64 impact, although the continuing impact of
65 staff and partner support is major and
66 beneficial. The impact of pursuing land
67 acquisition or facility development outside of
68 GMP proposals would be long term, minor to
69 moderate, and adverse. Not meeting staffing
70 needs due to the high cost of housing would
71 result in long-term, moderate to major,
72 adverse impacts on park operations.

ADDITIONAL ANALYSES

1 **NATURAL OR DEPLETABLE** 2 **RESOURCE REQUIREMENTS AND** 3 **CONSERVATION POTENTIAL**

4 None of the alternatives being considered
5 would result in the extraction of new
6 resources from the park or monument. In all
7 of the alternatives, ecological principles
8 would be applied to ensure that the natural
9 resources of the park and monument were
10 maintained and protected. Certain resources
11 could continue to be collected for scientific
12 and educational purposes, but the specimens
13 would be stored in the NPS collection.
14 Agricultural operations on NPS lands would
15 continue to result in the extraction of
16 resources through the harvesting of crops,
17 which assist in meeting cultural landscape
18 objectives. The fields would be managed to
19 sustain this harvest. Implementation of the
20 alternatives would result in the use of limited
21 natural resources and energy for
22 construction and operation of new
23 recreational facilities and for restoration
24 activities. New development would be
25 designed to be sustainable to the maximum
26 extent practicable. The use and consumption
27 of fuel and other nonrenewable resources for
28 NPS operations, activities, and development
29 associated with the alternatives would be very
30 small in comparison to that of the region.
31 Overall, the impact on this topic resulting
32 from implementation of this general
33 management plan would likely be negligible.

34 35 36 **EFFECTS ON ENERGY REQUIREMENTS** 37 **AND CONSERVATION**

38 The CEQ guidelines for implementing the
39 National Environmental Policy Act require
40 examination of energy requirements and
41 conservation potential in environmental
42 impact statements. Park Service staff strive to
43 incorporate the principles of sustainable
44 design and development into all facilities and

45 park operations. Sustainability can be
46 described as the result achieved by doing
47 things in ways that do not compromise the
48 environment or its capacity to provide for
49 present and future generations. Sustainable
50 practices minimize the short-term and long-
51 term environmental impacts of developments
52 and other activities through resource
53 conservation, recycling, waste minimization,
54 and the use of energy efficient and
55 ecologically responsible materials and
56 techniques.

57
58 The NPS *Guiding Principles of Sustainable*
59 *Design* (1993) provides a basis for achieving
60 sustainability in facility planning and design,
61 emphasizes the importance of biodiversity,
62 and encourages responsible decisions. The
63 guidebook describes principles to be used in
64 the design and management of visitor
65 facilities that emphasize environmental
66 sensitivity in construction, use of nontoxic
67 materials, resource conservation, recycling,
68 and integration of visitors with natural and
69 cultural settings. The National Park Service
70 would minimize energy costs, eliminate
71 waste, and conserve energy resources by
72 using energy efficient and cost effective
73 technology wherever possible. Recent
74 examples include projects to install
75 photovoltaic panels on the NPS head-
76 quarters building at Fort Mason and projects
77 to pursue alternative energy options at
78 Alcatraz Island (both part of the no-action
79 alternative). Energy efficiency would also be
80 incorporated into any decision-making
81 process during the design or acquisition of
82 facilities, as well as all decisions affecting park
83 operations.

84
85 The use of value analysis and value
86 engineering, including life cycle cost analysis,
87 would be performed to examine energy,
88 environmental, and economic implications of
89 proposed NPS development. NPS staff would
90 encourage suppliers, permittees, and

1 contractors to follow sustainable practices
2 and would address sustainable park and park
3 partner practices in interpretive programs.

4
5 The energy requirements of the plan's
6 alternatives (for Alcatraz Island, Muir
7 Woods, and the three-county area) were
8 examined. At Muir Woods, propane (gallons
9 of fuel) and electricity (kilowatt hours per
10 year) usage would be reduced under all of the
11 action alternatives; while the use of natural
12 gas to provide expanded shuttle service
13 would increase substantially.

14
15 On Alcatraz Island, diesel use (gallons of fuel)
16 and electricity use (kilowatt hours per year)
17 would be increased under all of the action
18 alternatives.

19
20 At park sites within the three-county area of
21 Golden Gate National Recreation Area,
22 diesel use (gallons of fuel) and electricity use
23 (kilowatt hours per year) would be slightly
24 reduced under all of the action alternatives.
25 In San Mateo County, energy requirements
26 would increase under all of the action
27 alternatives because facilities would be
28 developed where the National Park Service
29 currently has no recreational or operational
30 presence.

31
32 Overall, compared to energy requirements
33 and use in the local area or the region, energy
34 consumption by the National Park Service
35 would be negligible. Consequently, any
36 adverse impacts relating to energy use,
37 availability, or conservation would be
38 negligible.

41 **IRRETRIEVABLE OR IRREVERSIBLE** 42 **COMMITMENTS OF RESOURCES**

43 The energy requirements identified above
44 (for all alternatives) would result in an
45 irreversible commitment of resources.
46 Furthermore, construction materials,
47 including gravel and other rock and earthen
48 materials, would be irretrievably committed
49 toward the construction of new recreational
50 and operations facilities. National Park

51 Service employee time would be committed
52 to implementation of various elements of the
53 plan, which would also constitute an
54 irretrievable commitment of resources. There
55 would be no permanent effects on park
56 resources resulting from these actions.

59 **UNAVOIDABLE ADVERSE IMPACTS**

60 Unavoidable adverse impacts are defined as
61 impacts that cannot be fully mitigated or
62 avoided. Adverse impacts on natural and
63 cultural resources and visitor experience
64 could occur in some areas throughout the
65 two parks as a result of public use (e.g.,
66 impacts on resources from concentrated
67 visitor use or vandalism) or NPS management
68 activities (e.g., impacts from construction
69 activities or emergency response).

72 **RELATIONSHIP BETWEEN SHORT- 73 TERM USES AND LONG-TERM 74 PRODUCTIVITY OF THE 75 ENVIRONMENT**

76 Under the no-action alternative, short-term
77 uses of the environment such as public use of
78 the area would continue. Public use and new
79 recreational development would be
80 expanded under one or more of the action
81 alternatives, resulting in potential temporary
82 disturbances to vegetation communities,
83 various species of wildlife, and visitor access
84 and experiences. The use of construction
85 phasing and/or implementation of mitigation
86 measures would reduce or eliminate the
87 potential for most of these short-term
88 impacts.

89
90 Under all of the alternatives, most of the park
91 lands would be protected in a natural state
92 and would maintain their long-term
93 productivity. Only a small percentage of the
94 park and monument would be maintained as
95 developed areas. Furthermore, the action
96 alternatives include improvements to existing
97 site conditions and the restoration of natural
98 habitats and steam systems. These actions

1 would improve ecological function and the
2 long-term productivity of the environment.

3 4 5 **COASTAL ZONE MANAGEMENT** 6 **ACT CONSISTENCY**

7 The Coastal Zone Management Act of 1972
8 (CZMA) was enacted by Congress to
9 encourage states to protect, preserve,
10 develop, and, when possible, restore or
11 enhance valuable natural coastal resources.
12 The program is a voluntary partnership
13 between the federal government and the U.S.
14 coastal states. If a proposed project is a
15 federal action requiring NEPA review and the
16 project is in the coastal zone, then a CZMA
17 consistency certification must be prepared.

18
19 The San Francisco Bay Conservation and
20 Development Commission and the California
21 Coastal Commission are the California State
22 agencies whose coastal management
23 programs are consistent with the Coastal
24 Zone Management Act.

25
26 The California Coastal program was
27 approved as part of a National Coastal Zone
28 Management Program authorized by the
29 Coastal Zone Management Act of 1972. The
30 California Coastal Commission was
31 established through the adoption of the
32 California Coastal Act of 1976 and is an
33 independent state agency whose mission is to
34 “protect, conserve, restore, and enhance
35 environmental and human-based resources
36 of the California coast and ocean for
37 environmentally sustainable and prudent use
38 by current and future generations.” In
39 keeping with their mission, the California
40 Coastal Commission is an independent state
41 agency responsible for planning and review
42 of activities within the coastal zone through
43 specific policies outlined in the California
44 Coastal Act such as shoreline public access
45 and recreation, lower cost visitor
46 accommodations, terrestrial and marine
47 habitat protection, visual resources, landform
48 alteration, agricultural lands, commercial
49 fisheries, industrial uses, water quality,
50 offshore oil and gas development,

51 transportation, development design, power
52 plants, ports, and public works”. Although
53 federally owned lands within the coastal zone
54 are exempt from the act, federal agencies are
55 encouraged to coordinate and cooperate with
56 the state to meet the purposes of the
57 California Coastal Act and be consistent with
58 the policies of the California Coastal Act.

59
60 The San Francisco Bay Conservation and
61 Development Commission (BCDC) is
62 responsible for carrying out the provisions of
63 the McAteer-Petris Act of 1965 and the San
64 Francisco Bay Plan. The San Francisco Bay
65 Plan guides the protection and use of the San
66 Francisco Bay and its shoreline. The
67 commission is charged with issuing or
68 denying permit applications for placing fill,
69 extracting materials, or changing the use of
70 any land, water, or structure within the area
71 of its jurisdiction. Permit applications for
72 such activities must account for the
73 provisions and policies of the McAteer-Petris
74 Act and the San Francisco Bay Plan.

75
76 Based on the analysis within this draft general
77 management plan/environmental impact
78 statement, the preferred alternative should,
79 over the long term, result in beneficial effects
80 to coastal resources by (1) providing and
81 managing public use within coastal areas; (2)
82 reducing opportunities for soil disturbance
83 and erosion that could impact water quality
84 and aquatic habitats; and (3) protecting and
85 conserving important and sensitive natural
86 resources.

87
88 Based on the anticipated benefits to coastal
89 resources, the National Park Service has
90 determined that the preferred alternative
91 presented in this plan is consistent with the
92 Coastal Zone Management Act. A copy of
93 this plan was sent to the Federal Consistency
94 Coordinator at the California Coastal
95 Commission, requesting their concurrence
96 with the determination. A copy of the plan
97 was also sent to the San Francisco Bay
98 Conservation and Development
99 Commission.

100

1 The San Francisco Bay Conservation and
2 Development Commission provided
3 comments on the draft general management
4 plan and the NPS consistency determination
5 in December of 2011. The San Francisco Bay
6 Conservation and Development Commission
7 stated the requirement for project-specific
8 consultation as components of the general
9 management plan are carried out in the
10 future within their jurisdiction. The
11 commission also summarized the major
12 policies of the Bay Plan that must be
13 considered by the NPS during site-specific
14 planning and development efforts, including
15 policies related to Public Access,

16 Transportation, Recreation, Fish and
17 Wildlife, and Climate Change. This letter is
18 included in appendix G.

19
20 The California Coastal Commission provided
21 comments on the draft general management
22 plan and concurred with the NPS consistency
23 determination in December 2012. Their letter
24 is included in appendix H. The NPS will
25 continue to coordinate and consult with both
26 the San Francisco Bay Conservation and
27 Development Commission and the California
28 Coastal Commission, and other federal, state,
29 and local agencies, as specific components of
30 this plan are carried out.



PUBLIC INVOLVEMENT

1 GENERAL

2 This section describes the processes
3 employed by the National Park Service to
4 include the public in the development of the
5 draft general management plan /
6 environmental impact statement for Golden
7 Gate National Recreation Area and Muir
8 Woods National Monument. The plan
9 represents important contributions from not
10 only NPS staff, but hundreds of members of
11 the public: individuals, organizations, and a
12 variety of local, state, and federal public
13 agencies—all of whom are interested in the
14 vision that will successfully guide the park in
15 the future. To prepare this plan, the park
16 actively sought out and regularly consulted
17 with existing and potential visitors,
18 neighbors, American Indian scientists and
19 scholars, concessioners, neighboring
20 communities, other partners, and
21 government agencies. The park adhered to
22 NPS policy by inviting the public to
23 participate in planning and decision making
24 as a way to ensure that the National Park
25 Service fully understands and considers the
26 public's interests in the park, which is part of
27 the public's national heritage, cultural
28 traditions, and community surroundings.

29
30 Throughout the multi-year planning process,
31 the National Park Service used a variety of
32 methods to regularly communicate with the
33 public interested in the development of the
34 general management plan. The foundation of
35 two-way communication was the preparation
36 of informative newsletters and the many
37 open house-style public meetings held by the
38 park in neighboring communities.

41 PLAN DEVELOPMENT

42 **Scoping:** Public involvement in the plan
43 began with an invitation to participate in
44 scoping: identifying the scope, or range, of

45 the issues that the plan would address. The
46 legal requirement (Notice of Intent) of
47 informing the public that the National Park
48 Service was beginning to prepare an
49 environmental impact statement for a general
50 management plan was published in the
51 *Federal Register*, Vol. 71, No. 60, March 29,
52 2006. Immediately afterwards, a newsletter
53 (the first of 5), was sent to more than 4,000
54 addresses on the park's mailing list. It
55 described the general management plan
56 process and invited people to describe what
57 they value and like most about the park, what
58 they like least, their suggestions for
59 management, their major concerns for the
60 future of the park, and any other comments
61 they wanted to provide to the NPS planning
62 team. The newsletter included a postage-paid
63 reply form. Nearly 300 electronic and mailed
64 comments were received in response to the
65 newsletter.

66
67 In tandem with the newsletter, the National
68 Park Service held five public open houses in
69 Marin, San Francisco, and San Mateo
70 counties to gather additional input. The Park
71 Service also hosted focused meetings with
72 environmental, historic, and diversity
73 organizations, as well as meetings with
74 American Indian representatives, current
75 park partners, and groups that included some
76 of the park founders in order to collect broad
77 input.

78
79 The information gathered in these outreach
80 activities was summarized in a newsletter
81 (2), "What We Heard," which was distributed
82 in February 2007. The newsletter also
83 incorporated comments gathered at scoping
84 meetings held with park staff in 2001, 2003,
85 and 2006 as the National Park Service was
86 beginning to formulate the planning process.

87
88 With the distribution of newsletter 2, the
89 National Park Service began to routinely

1 employ a set of tools that included the
2 following:

- 3
- 4 ▪ feedback sessions at quarterly open
5 houses held in neighboring
6 communities
- 7 ▪ distribution of project information by
8 email (approximately 1,000 addresses
9 at present)
- 10 ▪ translation of newsletters or parts of
11 newsletters into Chinese and Spanish
- 12 ▪ distribution of project information at
13 other park sites such as Alcatraz
14 Island and Muir Woods which are
15 popular with national and
16 international visitors
- 17 ▪ posting of project information on the
18 park’s website: www.nps.gov/goga
- 19 ▪ posting of project information on the
20 NPS planning website:
21 <http://parkplanning.nps.gov/goga>
- 22 ▪ briefings for park partners and
23 interested organizations such as the
24 Crissy Field Center’s IYELL program,
25 People for the Parks, the City of
26 Pacifica Golden Gate National
27 Recreation Area Advisory Committee,
28 and the San Francisco Planning and
29 Urban Research Association (SPUR)

30
31 All public scoping comments and the NPS
32 analysis of those comments were
33 documented in a report, *Scoping Summary*
34 *2006, General Management Plan*, and made
35 available at the two websites. The comments
36 and analysis helped guide the National Park
37 Service to develop alternative ways to address
38 the planning issues in the plan.

41 **Alternatives Development**

42 Public involvement in developing the
43 management alternatives described in this
44 general management plan was focused on
45 two tasks. First, a set of alternative concepts
46 was prepared to describe a range of different
47 ways that the scoping issues could be

48 addressed. These different concepts were the
49 main subject of newsletter (3) which was
50 distributed in fall of 2007. Public feedback
51 gathered in a variety of formats was generally
52 positive.

53
54 Second, a robust description of “Preliminary
55 Alternatives” was distributed by mail in the
56 spring of 2008 (48-page newsletter 4.) The
57 alternatives described how the different
58 concepts were leading to different park
59 management actions. The newsletter
60 included short narratives for each alternative
61 describing the future conditions of resources
62 and visitor experiences at the various park
63 sites, along with a set of zoning maps. It
64 invited the public to send comments to the
65 National Park Service between April 29 and
66 August 1, 2008.

67
68 The National Park Service employed some
69 additional tools to share the preliminary
70 alternatives and gather feedback. These tools
71 included the following:

- 72
- 73 ▪ “Planning Tables” hosted by members
74 of the planning team at special events
75 and park sites such as Marin City,
76 Tennessee Valley, Rodeo Beach, Half
77 Moon Bay State Beach, Crissy Field,
78 and Point Reyes National Seashore
- 79 ▪ “Planning Walks” where the public
80 was invited to walk various sites with
81 members of the planning team
- 82 ▪ Hikes in the park led by NPS
83 interpretive rangers
- 84 ▪ Special community meetings, as with
85 the residents of Muir Beach

86
87 The core public involvement activity
88 centered on a series of five public open
89 houses dedicated to discussion of the
90 preliminary alternatives. These were held in
91 June 2008, in Marin (Sausalito), San
92 Francisco, and San Mateo communities
93 (Princeton and Woodside). These workshops
94 were attended by approximately 300 people.

95

1 As a result, the National Park Service
2 gathered a substantial volume of comments.
3 More than 200 responses were posted by
4 individuals and groups at the park website.
5 More than 180 letters and comment forms
6 were received from a variety of individuals,
7 organizations, and agencies. Overall, more
8 than 45 people provided some 1,500
9 substantive comments on the preliminary
10 alternatives. All public comments, petitions,
11 and letters, including the planning team's
12 analysis of those comments, were
13 documented in a report, *Summary of Public*
14 *Comments on the Preliminary Alternatives*,
15 and made available at the NPS planning
16 website in 2008.

17
18

19 **Draft General Management Plan/EIS**

20 The draft general management plan /
21 environmental impact statement was released
22 to the public on September 9, 2011. Three

23 public meetings were held in the bay area to
24 review the draft plan and receive public
25 input: September 24, in San Francisco,
26 September 27, in Pacifica, and October 4, in
27 Mill Valley. The public review period was 90
28 days, and ended on December 9, 2011. The
29 National Park Service also held meetings with
30 affected agencies on September 26, 2011.

31

32 A total of 541 pieces of correspondence
33 about the draft plan were received from
34 individuals, organizations, and agencies.
35 Comments and responses are summarized
36 below. Agency letters are reproduced in
37 appendix H.

38

39 The National Park Service has responded to
40 all substantive comments raised by the public
41 as part of developing the Final General
42 Management Plan / Environmental Impact
43 Statement. In some cases, the content of the
44 document was modified in response to public
45 comments.

CONSULTATION WITH OTHER AGENCIES, OFFICIALS, AND ORGANIZATIONS

SECTION 7 CONSULTATION

The Endangered Species Act of 1973, as amended, requires in section 7 (a)(2) that each federal agency, in consultation with the Secretary of the Interior, ensure that any action the agency authorizes, funds, or carries out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. This section sets out the consultation process as implemented by regulation 50 CFR 402.

During the preparation of the draft general management plan, the National Park Service contacted the Sacramento office of the U.S. Fish and Wildlife Service and the Santa Rosa office of NOAA-National Marine Fisheries Service to begin the consultation process for section 7 of the Endangered Species Act. In accordance with the Endangered Species Act and relevant regulations at 50 CFR 402, the National Park Service determined that this general management plan is not likely to adversely affect any federal listed threatened or endangered species.

In September 2011, the National Park Service sent copies of the Draft General Management Plan / Environmental Impact Statement to the above offices with a request for written concurrence with this determination.

[NOTE: As a result of this request, the National Park Service received no section 7 review correspondence from the USFWS. And while the NMFS submitted general comments regarding section 7 compliance (as part of NOAA's comment letter), the comments did not clarify whether NMFS concurred with the determinations of effect in the DGMP/EIS. Subsequently, follow-up concurrence request memos were submitted to both offices in March 2013 to clarify

section 7 compliance needs. NPS is currently awaiting responses from both agencies.]

The National Park Service has also committed to consult with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service on future actions conducted under the framework described in this management plan to ensure that such actions are not likely to adversely affect threatened or endangered species.

Via letters dated _____, and _____, the Sacramento office of the U.S. Fish and Wildlife Service and the Santa Rosa office of NOAA-National Marine Fisheries Service, respectively, concurred with the section 7 assessment determinations made by the National Park Service on the potential effects to listed species from the general management plan. [NOTE: The above statement is dependent on the pending responses from NMFS and USFWS regarding section 7 compliance.]

SECTION 106 CONSULTATION WITH THE STATE HISTORIC PRESERVATION OFFICE

Prior to implementing an "undertaking," Section 106 of the National Historic Preservation Act requires federal agencies to consider the effects of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation and the state historic preservation office (SHPO) a reasonable opportunity to comment on any undertaking that would potentially affect properties listed or eligible for listing in the national register. An undertaking is defined as "a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal

1 agency; those carried out with federal
2 financial assistance; and those requiring a
3 federal permit, license or approval.”

4
5 Consultation and scoping with the SHPO,
6 other agencies, tribes, and interested parties
7 began in 2006 and is ongoing. The National
8 Park Service sent a letter on February 7, 2006,
9 to the SHPO and the Advisory Council on
10 Historic Preservation inviting their
11 participation in the GMP planning process.
12 In a letter dated May 29, 2008, the SHPO and
13 Advisory Council were given the opportunity
14 to provide feedback in the development of
15 preliminary alternatives. In addition, NPS
16 representatives held a scoping meeting with
17 interested historic preservation groups on
18 April 18, 2006. NPS staff also traveled to
19 Sacramento to meet with the SHPO on
20 March 16, 2010. Prior notification of the
21 meeting was provided to the Advisory
22 Council. Items on the meeting agenda
23 included:

- 24
25 1. review of the proposed alternatives
26 in the GMP/DEIS
- 27 2. discussion of the review and
28 submittal process under section 106
- 29 3. discussion of the appropriate
30 methodology for establishing the
31 area of potential effects
- 32 4. discussion on the preparation of the
33 finding of effect
- 34 5. preparation of a parkwide
35 programmatic agreement

36
37 Documentation associated with NHPA
38 section 106 compliance is being prepared by
39 the National Park Service as a separate
40 submittal, in coordination with the NEPA
41 process. In a letter to the SHPO dated
42 November 20, 2012, the National Park
43 Service sought concurrence on the extent of
44 the area of potential effect and the
45 identification of historic properties as

46 required under 36 CFR 800.4. The SHPO
47 concurred with the National Park Service on
48 these issues in a letter dated January 10, 2012.
49 The National Park Service is currently
50 preparing a finding of effect. Once it has been
51 completed, the National Park Service will
52 continue to work with the SHPO, Advisory
53 Council, tribal representatives, and interested
54 parties to complete a comprehensive
55 parkwide programmatic agreement for the
56 treatment of historic resources, consistent
57 with the proposed actions under the
58 GMP/DEIS.

59 **NATIVE AMERICAN CONSULTATION**

60 On April 26, 2006, meetings were held with
61 Ohlone and Coast Miwok representatives to
62 discuss issues, concerns, and opportunities
63 related to the GMP planning process. Tribal
64 consultation is ongoing and will continue as
65 the National Park Service prepares the
66 finding of effect and the programmatic
67 agreement.

68 69 70 **CONSULTATION WITH OTHER LOCAL, 71 STATE, AND FEDERAL AGENCIES**

During the preparation of the general management plan, NPS staff held a series of public agency roundtables with local, state, and federal agencies such as California State Parks, National Oceanic and Atmospheric Administration, and Marin County, and local organizations such as the San Mateo County Historical Association. Three round tables were held. First, general scoping of these agencies was conducted concerning the upcoming general management plan. Second, preliminary alternatives were presented and discussed. Finally, a review of the draft general management plan was presented and discussed with the various local agencies.

COMMENTS ON, CHANGES TO, AND RESPONSES TO COMMENTS ON THE DRAFT PLAN

1 INTRODUCTION

2 This section of the plan describes the
3 comments that the National Park Service
4 received on the Draft General Management
5 Plan. It includes an overview of the range of
6 comments received and summarized
7 substantive comments with specific
8 responses.

11 COMMENTERS ON THE DRAFT PLAN

12 In September 2011, Golden Gate National
13 Recreation Area (the park) released the Draft
14 General Management Plan Environmental
15 Impact Statement for public review and
16 comment. The GMP/EIS was available locally
17 at the park and on the National Park Service
18 planning website (<http://parkplanning.nps.gov/goga>). The public was invited to submit
19 comments on the GMP/EIS through
20 December 7, 2011.

23 During the public comment period, 542
24 pieces of correspondence were received.
25 While private individuals submitted most of
26 the correspondence, a variety of conservation
27 organizations (such as the Marin
28 Conservation League, Presidio Trust, and
29 Marin Audubon Society); recreational groups
30 (such as the Bay Area Sea Kayakers, San
31 Francisco Dog Owners Group, and Crissy
32 Field Dog Group); and government agencies
33 also submitted correspondences.

36 Agencies

37 The following government agencies
38 submitted comments on the draft plan.
39 Copies of all letters received from agencies
40 are in appendixes G and H.

43 California Coastal Commission
44 California Department of
45 Transportation
46 California State Parks Office of Historic
47 Preservation (added; anticipating a
48 letter re section 106 compliance)
49 Environmental Protection Agency
50 Federal Emergency Management
51 Agency
52 Marin County Department of Public
53 Works
54 National Oceanic and Atmospheric
55 Administration, Gulf of the
56 Farallones National Marine
57 Sanctuary
58 Presidio Trust
59 San Francisco Public Utilities
60 Commission
61 San Francisco Municipal Transportation
62 Agency
63 San Mateo County Department of Public
64 Works
65 San Francisco Bay Conservation and
66 Development Commission
67 U.S. Coast Guard
68 U.S. Fish and Wildlife Service
69 (anticipating a new letter re section
70 7 compliance?)

73 Organizations

74 The following organizations submitted
75 comments on the draft plan.

76
77 Bay Area Sea Kayakers
78 California Watershed Posse
79 Crissy Field Dog Group
80 DogPAC of San Francisco
81 Environmental Action Committee of
82 West Marin
83 Golden Gate Audubon Society
84 Golden Gate Raptor Observatory
85 Marin Audubon Society
86 Marin County Bicycle Coalition

1 PRBO Conservation Science
2 Responsible Organized Mountain Pedalers
3 San Francisco Bay Joint Venture
4 San Francisco Board Sailing Association
5 San Francisco Dog Owners Group
6 San Mateo County Historical Association
7 San Mateo County/Silicon Valley
8 Convention and Visitors Bureau
9 Wild Equity Institute

12 Individuals

13 There were 506 individuals that provided
14 comments on the draft plan.

17 RANGE OF COMMENTS

18 Overall, there was considerable support for
19 the plan and the alternatives analyzed. For
20 example, several commenters expressed
21 support for the park's ideas and methods for
22 protecting wildlife and wildlife habitat,
23 enhancing visitor experience, preserving
24 historical features within the park, and
25 maintaining and expanding recreational
26 opportunities. In general, comments
27 primarily expressing support or opposition to
28 the Draft Plan/EIS are not included in this
29 report because they were considered to be
30 non-substantive comments; therefore, no
31 response is warranted. However, because the
32 National Park Service wanted to respond to
33 as many comments as possible, many
34 comments that express opposition to the
35 Draft Plan/EIS or the alternatives analyzed
36 are identified in this report. Park planners
37 want to be comprehensive and transparent in
38 their responses to comments, thus it was
39 decided that some comments warranted
40 responses, even though they may not
41 technically fall under the definition of
42 "substantive." Consequently, despite the
43 comments in opposition to the Draft
44 GMP/EIS in this section, the overall feedback
45 on the Draft GMP/EIS was generally
46 supportive.

48 The comment and response section is
49 organized into fifteen response topics,

50 starting with resource topics. Following these
51 various topics are response topics that relate
52 to specific chapters of the Draft Plan/EIS
53 because some comments refer directly to a
54 specific chapter or to sections within those
55 chapters. Each response topic contains one
56 or more concern statements related to that
57 topic. The response topics are:

- 58
- 59 1. Recreation / Conservation
- 60 2. Birds at Alcatraz Island
- 61 3. Sensitive Resources Zone
- 62 4. Equestrian Facilities and Use
- 63 5. Maintenance and Design of
- 64 Park Facilities
- 65 6. Transportation
- 66 7. Estimated Costs and Investments
- 67 8. Trails
- 68 9. Historic Resources for San Mateo
- 69 County
- 70 10. Coordination with the Presidio Trust
- 71 11. San Francisco Peninsula Watershed
- 72 Lands
- 73 12. Background
- 74 13. The Alternatives
- 75 14. The Affected Environment
- 76 15. Potential Environmental
- 77 Consequences

78

79 The National Park Service has responded to
80 all substantive comments raised by the public
81 as part of finalizing the GMP/EIS. In the
82 Comment/Response Report, the planning
83 team provided responses to the substantive
84 comments and indicated, where appropriate,
85 how the text in the final environmental
86 impact statement was revised. In general, the
87 planning team responded to comments by:

- 88
- 89 ■ modifying the alternatives as
90 requested
- 91 ■ developing and evaluating suggested
92 alternatives
- 93 ■ supplementing, improving, or
94 modifying the analysis
- 95 ■ making factual corrections
- 96 ■ or explaining why the comments do
97 not warrant further agency response,

1 citing sources, authorities, or reasons
2 that support the agency’s position
3
4

5 **RESPONSE TOPIC 1:**
6 **RECREATION/CONSERVATION**

7 **Balancing Preservation and**
8 **Recreation**

9 **CONCERN STATEMENT:** Commenters stated
10 that the National Park Service should include
11 new text in the “Purpose and Need” section
12 explaining that since 1980, the importance of
13 GGNRA in protecting biodiversity has been
14 studied and much better understood and that
15 the GMP prioritizes protection of the park’s
16 natural resources and describes measures to
17 manage demands on park lands that conflict
18 with wildlife habitats.
19

20 **CONCERN STATEMENT:** Commenters stated
21 that the primary purpose of GGNRA is to
22 provide for public use and enjoyment. They
23 did not agree with the purpose to “offer
24 national park experiences” because of the
25 urban nature of the park, and felt that the
26 park was trying to use the Draft GMP to
27 illegally change the enabling legislation,
28 which they believed established GGNRA for
29 recreation. They further stated that the plan
30 violates previous agreements the National
31 Park Service made with the City and County
32 of San Francisco regarding lands transferred
33 by the city to the National Park Service. As a
34 result, some commenters felt that the Draft
35 GMP should be considered unlawful.
36 Commenters also stated that recreation
37 should be the highest priority of GGNRA,
38 suggesting that there should be more
39 emphasis on increasing recreation within the
40 Draft GMP and that GGNRA should not
41 attempt to control or limit visitor access and
42 recreational opportunities. Commenters also
43 requested that the language “aggressively
44 administer” and “controlled access” be
45 removed from the GMP.
46

47 **CONCERN STATEMENT:** One commenter
48 objected to a statement in the Draft GMP

49 regarding management of natural resources
50 within the natural zone, which read, “native
51 wildlife communities and ecosystem
52 processes would be preserved and restored to
53 the greatest extent possible. Exotic invasive
54 animals would be managed with the goal of
55 eradication in the park.” This commenter
56 suggested that rather than restoring native
57 biodiversity, a focus should be on minimizing
58 the extinction of species that exist today—
59 which may include species that “could be
60 deemed exotic and invasive” because they are
61 not native to the area, such as coyotes.
62

63 **CONCERN STATEMENT::** Some commenters
64 stated that the Draft GMP puts too much
65 emphasis on conservation and a backcountry
66 experience that would have an adverse
67 impact on visitors. Commenters stated that
68 since most of GGNRA experiences visitation
69 from the local population, requiring permits
70 or having limits on visitation would have an
71 adverse impact on visitor experience, which
72 should be considered in the Draft GMP.
73

74 **CONCERN STATEMENT:** One commenter
75 stated that recreation must be a priority for
76 San Francisco, San Mateo, and Marin
77 counties. The commenter also stated that
78 recreation, the health and well-being of
79 people, and the impact on local communities
80 is not a stated goal of alternative 1.
81

82 **RESPONSE**

83 The fundamental purpose of the National
84 Park Service, established by the NPS Organic
85 Act of 1916, and reaffirmed by the NPS
86 General Authorities Act, begins with a
87 mandate to conserve park resources and
88 values. The fundamental purpose also
89 includes providing for the enjoyment of park
90 resources and values by the people of the
91 United States. Congress has provided that
92 when there is a conflict between conserving
93 resources and values and providing for
94 enjoyment of them, conservation is to prevail.
95 *NPS Management Policies 2006* state that the
96 National Park Service will focus special
97 attention on visitor enjoyment while
98 recognizing that the NPS mission is to

1 conserve unimpaired each park’s natural and
2 cultural resources and values for the
3 enjoyment, education, and inspiration of
4 present and future generations (section 1.4.3,
5 *NPS Management Policies 2006*).

6
7 The Draft GMP “Foundation Statement” and
8 “Park Purpose” sections summarize why
9 Congress established GGNRA as a unit of the
10 national park system. Establishment of
11 GGNRA was a principal gesture in the
12 “national parks to the people” initiative. The
13 park’s legislation does not place a priority on
14 recreation over preservation. The purposes
15 for which GGNRA was established are
16 succinctly stated in the preamble to Public
17 Law 92-589 (also included in the GMP
18 appendix):

19
20 In order to preserve for public use
21 and enjoyment certain areas of
22 Marin and San Francisco Counties
23 (San Mateo County lands were
24 added by PL 96-607) possessing
25 outstanding natural, historic, scenic
26 and recreational values, and in
27 order to provide for the
28 maintenance of needed recreational
29 open space necessary to urban
30 environment and planning, the
31 Golden Gate National Recreation
32 Area (hereinafter referred to as the
33 “recreation area”) is hereby
34 established. In the management of
35 the recreation area, the Secretary of
36 the Interior (hereinafter referred to
37 as the “Secretary”) shall utilize the
38 resources in a manner which will
39 provide for recreation and
40 educational opportunities
41 consistent with sound principles of
42 land use planning and management.
43 In carrying out the provisions of this
44 Act, the Secretary shall preserve the
45 recreation area, as far as possible, in
46 its natural setting, and protect it
47 from development and uses which
48 would destroy the scenic beauty and
49 natural character of the area.
50

51 The 1975 consultation agreement between
52 the City and County of San Francisco and
53 National Park Service referenced by some
54 commenters echoes this language as guidance
55 for management of lands transferred by the
56 city to GGNRA.

57
58 The preferred alternative proposes that
59 GGNRA will remain a “park for the people”
60 supporting diverse recreational activities. The
61 purpose of GGNRA is not being altered in
62 this plan.

63
64 The balance between preservation and
65 recreation is a challenging task that GGNRA
66 managers continuously address. The
67 National Park Service worked to strike this
68 balance in the Draft GMP by recommending
69 a diversity of settings and opportunities,
70 which are represented in the eight
71 management zones, which define a range of
72 desired conditions for natural and cultural
73 resources and visitor experience throughout
74 the different sections of the park. Both the
75 zoning and supporting narrative descriptions
76 of the preferred alternative continue to
77 support most of the current activities that
78 occur in the park today. In addition, the
79 preferred alternative provides the addition of
80 new opportunities and services, while
81 preserving resources, which could enhance
82 visitor experience in the future.

83
84 Various text changes have been made to the
85 zoning tables to remove or clarify language
86 that created concerns related to supporting
87 recreation. Language has been added to
88 clarify NPS legislated responsibilities, and the
89 1975 consultation agreement with the City
90 and County of San Francisco has been added
91 to the “Special Mandates” section of the
92 GMP.

93 94 95 **Importance of Education**

96 **CONCERN STATEMENT:** One commenter felt
97 that sensitive resources zones could be
98 mapped and that education and outreach
99 about these areas, including the use of new

1 technologies, could be used instead of
2 enforcement.

3
4 **RESPONSE**

5 The importance of education on sensitive
6 resources is included throughout the
7 document, particularly in the user capacity
8 section, which outlines how visitor use will be
9 managed to protect resources. Enforcement
10 is also an important tool for managing park
11 resources, particularly as it relates to highly
12 sensitive and vulnerable assets. Both tools are
13 important for NPS management to achieve
14 desired conditions and fulfill policy
15 requirements. To emphasize the important
16 role of education in managing park resources,
17 the following goal statement has been added
18 to the natural resource goals for alternative 1
19 in the “Executive Summary” and “Concepts
20 for Future Management” sections of the
21 document: “increase visitor understanding,
22 awareness, and support for park resources
23 through education and interpretive
24 opportunities that include messages on the
25 sensitivity of park resources, park
26 regulations, and appropriate visitor
27 behaviors.”

28
29

30 **Regulation of Access**

31 **CONCERN STATEMENT** One commenter
32 expressed concern that regulating access to
33 GGNRA would result in increased visitation
34 to city parks, which may not have the funding
35 to accommodate increased use, and is in
36 opposition to the GGNRA enabling
37 legislation.

38

39 **CONCERN STATEMENT:** One commenter
40 stated that the Draft GMP does not address
41 the impacts of restricting access/activities of
42 current uses on the surrounding jurisdictions
43 and the people that use these parks on a daily
44 basis.

45

46 **RESPONSE**

47 Management tools to regulate access to park
48 lands (e.g., permits, reservations) would be

49 used sparingly, in sensitive resource areas, for
50 high demand facilities such as campgrounds
51 and/or at high use areas, such as Alcatraz and
52 Muir Woods, and to manage special uses
53 such as events. It is expected that these
54 actions may disperse some use to other areas
55 of the park and possibly to other times of the
56 day or year, especially at peak times. It may
57 also result in a small number of visitors
58 seeking out other park locations such as state
59 and local parks. Most current activities will
60 continue as part of the preferred alternative,
61 with the addition of new opportunities and
62 services which may draw visitors from other
63 park lands into the park.

64

65

66 **Economic Value**

67 **CONCERN STATEMENT** Commenters
68 questioned where the analysis of social and
69 economic values was included and also
70 requested that this discussion be moved to
71 the summary and introduction sections of the
72 Draft GMP.

73

74 **RESPONSE**

75 The GMP includes analysis of the social and
76 economic environment related to the park in
77 the “Cumulative Impact Analysis” section of
78 the document. The cumulative impact section
79 for the social and economic environment has
80 been moved forward in the document. A
81 paragraph was added to the introduction
82 section of the document that highlights the
83 social and economic value of the park.

84

85

86 **Visitor Surveys**

87 **CONCERN STATEMENT:** Commenters
88 suggested that GGNRA should conduct
89 systematic and routine visitor surveys,
90 including visitor counts, in order to ensure
91 that the recreational value of GGNRA is not
92 being impeded by NPS management
93 decisions.

94

1 **RESPONSE**

2 Understanding who visits Golden Gate
3 National Recreation Area and how they
4 experience the park is vital to park
5 management decisions. Park staff and other
6 social science researchers collect visitor use
7 statistics on an ongoing basis and this data
8 can be accessed by the public at:
9 <http://www.nature.nps.gov/stats/>. In
10 addition, park staff have conducted and will
11 continue to conduct routine visitor surveys
12 throughout the park. Lastly, a commitment to
13 continuing to monitor visitor use and related
14 expectations and experiences is included in
15 the user capacity section of the GMP.

16
17
18 **Clarification of Recreational Uses,
19 Including on New Lands**

20 **CONCERN STATEMENT:** Commenters posed
21 questions regarding the definition of types of
22 activities that are explicitly allowed at
23 GGNRA under the Draft GMP such as
24 surfing, family events, running events,
25 compatible recreation, and dog walking.
26 Commenters stated that the Draft GMP
27 needs to be revised to define the range of
28 recreational activities on GGNRA lands,
29 describe the environmental baseline with
30 regard to recreation, and describe impacts on
31 the recreation baseline of the proposed
32 action alternatives.

33
34 **CONCERN STATEMENT:** One commenter
35 suggested that guided tours should not be
36 excluded from urban recreational areas.

37
38 **CONCERN STATEMENT:** One commenter
39 provided several suggestions regarding
40 specific improvements to the preferred
41 alternative, such as additional environmental
42 review of the preferred alternative be
43 undertaken when specific projects are
44 planned, and that the GMP should allow
45 recreational uses to continue on newly
46 acquired lands (except when regulated
47 through site-specific public land planning
48 processes and associated environmental
49 review).

50 **RESPONSE**

51 The GMP uses the terms visitor experience
52 and visitor opportunities to be inclusive of
53 recreation opportunities and activities.
54 Recreational opportunities vary widely, and
55 not all permissible activities are explicitly
56 listed in the GMP. The eight management
57 zones describe the type of activities that
58 could occur in each zone.

59
60 One of the key management goals of this
61 GMP is to engage community members and
62 visitors in the enjoyment, understanding, and
63 stewardship of park resources and values.
64 The first management concept “emphasizes
65 the park’s management commitment to the
66 founding idea of ‘parks to the people,’ and
67 the park’s fundamental purpose of bringing
68 national park experiences to a large and
69 diverse urban population. Improving
70 connections between the park and the people
71 is fundamental to achieving the park’s
72 purpose and to maintaining the public’s
73 continued interest and support” (see
74 “Concept 1: Connecting People with the
75 Parks” in the “Concepts for Future
76 Management” section of the GMP). The
77 preferred alternative includes the goal of
78 encouraging a wide range of recreational
79 opportunities and experiences in a diversity
80 of settings.

81
82 Concerning newly acquired lands, the goals
83 of the preferred alternative for national park
84 lands in San Mateo County (see the
85 “Alternatives for Park Lands in Marin, San
86 Francisco, and San Mateo Counties” section
87 of the GMP) include focusing on the
88 importance of providing access and engaging
89 the community in the newest park lands, and
90 “key improvements would include a
91 sustainable system of trails that will connect
92 with local communities and contribute to an
93 exceptional regional trail network.” In
94 addition, the need for more directional signs
95 and trailhead parking throughout these areas
96 was also emphasized. These goals would
97 allow consideration of many of the specific
98 ideas provided by commenters. Some trail
99 and trailhead improvements are noted for

1 specific areas, however, detailing specific
 2 trails and related trailhead parking
 3 improvements in all areas of the park is
 4 outside the scope of this plan and would be
 5 addressed in more detailed implementation
 6 plans with associated environmental review
 7 as the commenters suggested (also see
 8 response topics 6 “Transportation” and 8
 9 “Trails”).

10
 11 As part of National Environmental Policy Act
 12 (NEPA) compliance, environmental baselines
 13 have been conducted for this plan. An
 14 environmental baseline specific to recreation
 15 is included under the category of “Visitor Use
 16 and Experience.” Existing uses on newly
 17 acquired lands will be evaluated for
 18 consistency with NPS regulations and
 19 policies. If uses are not consistent, they may
 20 necessarily be restricted. Other existing uses
 21 will be guided by subsequent planning
 22 efforts.

23
 24 To address specific comments regarding
 25 clarification to the zone descriptions, the
 26 reference to “informal beach sports” has
 27 been changed to “informal sports,” and “such
 28 as guided activities” has been removed from
 29 the references for commercial services in the
 30 natural zone description.

31 32 33 **Recreation in Management Zones**

34 **CONCERN STATEMENT:** One commenter
 35 expressed a concern that the Draft GMP only
 36 identifies recreation within the diverse
 37 opportunities zone, and that popular
 38 recreation activities would be prohibited in
 39 the natural zones. One commenter objected
 40 to the designation of active recreation areas
 41 as diverse opportunities zones, and noted
 42 that the terminology suggests that visitors
 43 may find these zones more attractive.

44
 45 **CONCERN STATEMENT:** One commenter
 46 stated that many natural zones are adjacent to
 47 urban areas, and should be removed from
 48 natural zone designation.

49

50 **CONCERN STATEMENT::** Commenters
 51 suggested that the zone management
 52 definitions do not reflect the enabling
 53 legislation, which addresses urban recreation,
 54 and provided language to describe the natural
 55 and other management zones.

56
 57 **CONCERN STATEMENT:** One commenter
 58 suggested that Ocean Beach should be zoned
 59 as a diverse recreational zone.

60
 61 **CONCERN STATEMENT:** Commenters stated
 62 that GGNRA is within an urban setting with
 63 no backcountry wilderness, and as such
 64 should not be managed as a backcountry
 65 area, and that the only “controlled access”
 66 that should occur is through barriers and
 67 signs, not permitting. One commenter stated
 68 that these areas currently receive thousands
 69 of visitors every day, yet the Draft General
 70 Management Plan / Environmental Impact
 71 Statement (Draft GMP/EIS) proposes to
 72 manage two-thirds of Ocean Beach and most
 73 of Fort Funston as low-use natural zones and
 74 suggested that the GMP should acknowledge
 75 that Ocean Beach and Fort Funston are high-
 76 use areas and should be managed that way.

77
 78 **CONCERN STATEMENT:** Commenters
 79 suggested that future implementation actions
 80 preserve the natural, wild environment visitor
 81 experience and that maintaining the Marin
 82 Headlands as a natural landscape should have
 83 priority over providing services or visitor
 84 access typical in local county parks.

85
 86 **CONCERN STATEMENT:** Commenters
 87 suggested that recreational opportunities,
 88 and higher levels of visitor use, should be
 89 expanded, not reduced for Ocean Beach and
 90 Fort Funston. Commenters also stated that
 91 providing a backcountry experience in San
 92 Francisco is not feasible given the urban
 93 surroundings of GGNRA.

94 95 **RESPONSE**

96 The management zones in the GMP aspire to
 97 provide overall direction on the desired
 98 conditions for different areas within the park.
 99 The management zones provide a starting

1 point from which further management
2 decisions can be made. These zones will
3 guide management decisions that are
4 consistent with park purpose and significance
5 and related NPS management policies. The
6 diversity of natural settings and the
7 corresponding recreational opportunities
8 that exist within Golden Gate NRA result in
9 the need for a wide range of management
10 strategies. The eight management zones
11 define a range of desired conditions for
12 natural and cultural resources and visitor
13 experience opportunities throughout the
14 different sections of the park. Both the
15 zoning and supporting direction provided
16 within the preferred alternative, continue to
17 support most of the current activities that
18 occur in the park today. In addition, the
19 preferred alternative provides the addition of
20 new opportunities and services that will
21 enhance existing visitor experience.

22
23 The management zones describe the type of
24 activities that could typically occur in each of
25 the zones, and include a variety of
26 recreational opportunities ranging from
27 walking to participating in informal sports to
28 bird and wildlife viewing to camping. The list
29 of activities in the GMP is not exhaustive.
30 Additional opportunities not listed could take
31 place if they are consistent with the desired
32 conditions described for the zone. As with
33 any activity, an analysis would be conducted
34 to determine if a new use is appropriate for
35 the zone. To respond to a specific comment
36 regarding management of special events, the
37 reference to “family events,” has been
38 removed in the zone descriptions. The intent
39 of this description is to recognize that larger,
40 organized special events will be managed
41 according to policies and operational
42 guidance established by the National Park
43 Service, which would not typically include
44 family gatherings.

45
46 The natural zone offers a large area where
47 dynamic characteristics of ecological
48 processes can be observed and enjoyed.
49 Natural zones are not pristine wilderness-like
50 areas and recreational activities consistent
51 with the desired conditions in the zone may

52 occur here. To avoid confusion regarding the
53 intent of this zone, the term “backcountry”
54 has been removed from the description.
55 Despite neighboring urban areas, experiences
56 of nature and solitude are available in this
57 zone. This zone will be managed to preserve
58 the resources and their associated values.

59
60 Specific concerns about zoning for Fort
61 Funston and Ocean Beach were expressed by
62 commenters. In the preferred alternative, the
63 diverse opportunities and natural zones for
64 both Ocean Beach and Fort Funston would
65 allow for the range of current recreational
66 activities as well as enhance visitor
67 opportunities through landscape and trail
68 improvements and other visitor amenities
69 (e.g., restrooms, group picnicking).

70
71 Concerning Fort Funston, management
72 zoning includes resource protection. The
73 majority of Marin Headlands and a portion
74 of Fort Funston are zoned with the natural
75 zone to ensure protection of park resources,
76 including native habitat. Other zones in these
77 areas also provide resource protection,
78 particularly for sensitive species and habitat.
79 In addition to the zone description, the
80 description of the alternatives for these areas
81 identifies the need to restore and maintain
82 native habitat, particularly to protect
83 shorebirds, coastal bluffs, and bank swallows
84 and to allow natural coastal and marine
85 processes to occur. If needed, some areas
86 could be closed for the purpose of resource
87 protection. This zone recognizes the need to
88 manage for high-use areas along with
89 experiences of solitude and nature. The
90 natural zone has been applied to this area
91 because it accommodates the majority of
92 existing use.

93
94 Concerning Ocean Beach, the context of
95 management has changed in recent history as
96 federally listed endangered and threatened
97 species have been identified in this area.
98 Requirements for how this area is managed
99 are therefore different than when the land
100 was transferred to GGNRA. A master plan
101 for Ocean Beach itself will guide specific
102 implementation of future facilities and uses

1 and ensure that a balance between protection
2 of natural resources and visitor use
3 opportunities is found.

6 **NEPA Analysis and Dog Management**

7 **CONCERN STATEMENT:** One commenter
8 expressed the viewpoint that the Draft GMP
9 does not comply with NEPA for several
10 reasons, including the need for an analysis of
11 recreation as well as a failure to analyze the
12 impacts to the human environment from
13 limiting access. Further, they objected that
14 the Draft GMP pre-determines the outcome
15 of other ongoing planning documents (the
16 dog management plan) and incorrectly
17 excuses the park from further NEPA analysis
18 on future projects. Another commenter
19 stated that a separate land protection plan
20 should be prepared in advance of zoning
21 newly acquired lands.

23 **RESPONSE**

24 The National Park Service received many
25 public comments on the Draft GMP
26 addressing dog walking within GGNRA. Due
27 to the controversy and litigation surrounding
28 dog walking, and the site-specific analysis
29 needed to adequately describe the
30 implementation of a dog walking plan at 22
31 distinct areas, GGNRA initiated a planning
32 effort focusing solely on dog management,
33 separate from the GMP. The GMP's
34 proposed zoning is broadly consistent with
35 the dog management plan. However, the
36 GMP and dog management plan are separate
37 and distinct planning efforts; if real or
38 perceived inconsistencies are found, the final
39 dog management plan would take
40 precedence over the GMP for this particular
41 use.

42
43 During the GMP process, the National Park
44 Service studied all lands within the planning
45 area, including ones not currently under
46 federal ownership. The final GMP describes
47 the proposed zoning for those areas should
48 they be acquired by the park. The zones
49 established through the GMP for newly

50 acquired lands or areas planned for future
51 park addition allow for a wide range of
52 recreational opportunities for visitors.
53 Acquisition priorities are made through a
54 land protection plan, which is updated
55 following any legislated boundary
56 adjustments.

57
58 The GMP uses the terms “visitor experience”
59 and “visitor opportunities” to be inclusive of
60 recreation opportunities and activities.
61 Recreational opportunities vary widely, and
62 not all permissible activities are explicitly
63 listed in the GMP. The eight management
64 zones describe the type of activities that
65 could occur in each of the zones. The
66 preferred alternative includes the goal of
67 encouraging a wide range of recreational
68 opportunities and experiences in a diversity
69 of settings.

70
71 As part of NEPA compliance for this plan,
72 environmental review and analyses have been
73 conducted for all lands within the GMP
74 planning area, including lands the park
75 anticipates being added to the boundary,
76 such as Point San Pedro. Environmental
77 review specific to recreation on park lands is
78 included in the section “Visitor Use and
79 Experience.” Management zones have been
80 developed following that review and are
81 consistent with NPS regulations and policies.
82 Existing uses on lands not covered by the
83 GMP will be guided by subsequent planning
84 efforts. (Also see the response for
85 “Clarification of New Uses, Including on
86 New Lands.”)

89 **RESPONSE TOPIC 2: BIRDS** 90 **AT ALCATRAZ ISLAND**

91 **Birds at Alcatraz Island**

92 **CONCERN STATEMENT:** Commenters
93 questioned the analysis of impacts to birds on
94 Alcatraz Island, stating that night herons
95 would be disturbed if the ruins were
96 removed. Other concerns for bird species on
97 Alcatraz included providing more protection
98 for the Western gull and carefully

1 considering the impacts of increased
2 visitation on seabirds.

3
4 **CONCERN STATEMENT:** One commenter
5 stated that the proposed restoration and
6 management of buildings and landscapes in
7 the historic immersion zone (main prison
8 area on Alcatraz Island) and increased access
9 for visitors would negatively impact the
10 habitat of multiple bird populations and
11 colonies.

12
13 **CONCERN STATEMENT:** One commenter
14 stated that on Alcatraz Island, within the park
15 operations zone, the proposed rehabilitation
16 and stabilization activities for the
17 Quartermaster Warehouse and power plant
18 would probably have a negative impact on
19 adjacent Western gull colonies as well as
20 Pigeon Guillemot nesting habitat, and that
21 visitor access to the power plant should be
22 limited to the months outside of the breeding
23 season.

24
25 **CONCERN STATEMENT:** One commenter
26 suggested that providing overnight
27 accommodations should avoid disruption of
28 seabird nesting and roosting areas through
29 human activity, night-lighting, and noise, and
30 the potential for visitors to access
31 unauthorized areas.

32
33 **CONCERN STATEMENT:** One commenter
34 questioned whether increased visitation is
35 expected for Alcatraz Island under the Draft
36 GMP, while another commenter had
37 concerns that increased visitation would
38 negatively impact seabirds.

39
40 **CONCERN STATEMENT:** Commenters
41 suggested that maintenance and construction
42 on Alcatraz should be scheduled to avoid
43 disturbance to birds during nesting season
44 February 1 through July 8.

45
46 **CONCERN STATEMENT:** One commenter
47 suggested additional management actions to
48 reduce impacts to colonial nest sites on
49 Alcatraz Island, including having
50 maintenance and construction personnel
51 work with biologists to limit disturbance.

52 **CONCERN STATEMENT:** Commenters raised
53 concerns with the level of detail and accuracy
54 of the analysis of special status bird species
55 on Alcatraz Island. Specific concerns
56 included the long-term adverse impacts to
57 nesting and roosting bird colonies, the
58 negative impacts of increased visitor use, and
59 the negative impacts of introducing
60 food/kitchen services, as well as overnight
61 accommodations.

62
63 **CONCERN STATEMENT:** One commenter
64 questioned the impact analysis for vegetation
65 and wildlife habitat at Alcatraz and Muir
66 Woods, stating that the impacts of alternative
67 3 would be major and adverse for natural
68 resources, rather than minor and beneficial.

69
70 **RESPONSE**

71 *Impact Analysis in Final General*
72 *Management Plan / Environmental Impact*
73 *Statement:*

74 Given the broad scope and large geographic
75 scale of a general management plan, the
76 National Park Service considers the level of
77 habitat impact analysis in the final general
78 management plan / environmental impact
79 statement (FGMP/EIS) appropriate. This
80 GMP is a long-range, parkwide document.
81 When specific actions identified in the GMP
82 are implemented throughout the park, the
83 National Park Service will conduct further
84 environmental analysis and regulatory
85 compliance at a much more site-specific,
86 detailed level. This is when the level of
87 analysis noted in some public comments will
88 be addressed. The GMP includes an
89 “Implementation Planning and Mitigative
90 Measures” section that outlines this
91 commitment.

92
93 Also, the “Potential Environmental
94 Consequences” section for alternative 3
95 effects on “Habitat (Vegetation and
96 Wildlife)” has been modified in various areas
97 of the FGMP/EIS to clarify the anticipated
98 impacts to waterbird habitat on Alcatraz
99 Island. Most notably, the edited language
100 draws distinctions between the effects on
101 Western gulls and the effects on other

1 waterbird species on Alcatraz Island. Due to
 2 the proposed cleaning and/or removal of the
 3 ruins near the parade ground under the NPS
 4 preferred alternative (in the historic
 5 immersion zone), the impact to the Western
 6 gull species would be long-term, major,
 7 adverse, and localized. The parade ground is
 8 the only area within the historic immersion
 9 zone that would have notable natural
 10 resource impacts. Also, as clarified in the
 11 conclusion of the impact analysis for
 12 alternative 3 (in the “Habitat (Vegetation and
 13 Wildlife)” subsection), the National Park
 14 Service would ensure that impacts to other
 15 waterbird species on Alcatraz Island would
 16 not exceed a long-term, moderate, adverse,
 17 and localized effect due to the
 18 implementation of available adaptive
 19 management measures to protect bird
 20 habitat.

21
 22 Lastly, for clarification, there are no known
 23 state- or federal-listed threatened or
 24 endangered bird species on Alcatraz Island.
 25 This has also been noted in impact analysis of
 26 biological resources for alternative 3, the NPS
 27 preferred alternative for Alcatraz Island (see
 28 “Potential Environmental Consequences”
 29 section).

30
 31 ***Mitigating Visitation Impacts to Waterbird
 32 Habitat:***

33 The robust nature of the bird colonies on
 34 Alcatraz Island has sustained the colonies
 35 through many changes in uses and activities
 36 on the island since the decommissioning of
 37 the prison in the 1960s. Through the use of
 38 careful biological monitoring and adaptive
 39 management measures, NPS staff is confident
 40 that healthy bird colonies can be sustained on
 41 the island into the future under the guidance
 42 of the NPS preferred alternative for this GMP
 43 (alternative 3).

44
 45 More specifically, although the spatial area of
 46 possible visitor access on Alcatraz would
 47 increase under the GMP, the volume of
 48 visitation on the island would be monitored
 49 and managed closely by the National Park
 50 Service. The GMP includes a comprehensive
 51 user capacity strategy to manage and/or

52 address visitation volume issues (see the
 53 “User Capacity” section). This strategy sets
 54 forth the process that the National Park
 55 Service will apply to monitor visitation via the
 56 use of indicators and standards. For example,
 57 one indicator that monitors visitation effects
 58 on waterbirds is “the number of incidents of
 59 visitor disturbance to Brandt’s cormorants
 60 that result in impacts to individual birds
 61 during nesting season.” In this case, the
 62 Brandt’s cormorant would be used as an
 63 indicator species/resource that would help
 64 the National Park Service monitor overall
 65 impact to all waterbird species. When
 66 conditions of the particular resource
 67 indicators exceed the set standards, the
 68 National Park Service would apply the
 69 appropriate adaptive management and
 70 mitigation measures to protect the resources.
 71 For more detail and explanation, please refer
 72 to the “User Capacity” section of the
 73 document.

74
 75 Some concerns were raised about the
 76 possible increases in visitation in the park
 77 operations zone. As noted in the description
 78 of the park operations zone, visitor access to
 79 this zone would be extremely limited. Also
 80 noted in the alternative 3 description for
 81 Alcatraz Island, access to the yard (including
 82 the proposed rehabilitation and stabilization
 83 work on the Quartermaster Warehouse and
 84 power plant) “would employ measures to
 85 protect nearby seabird habitat.”

86
 87 In addition, the overnight accommodations
 88 on Alcatraz would be for participants in
 89 education, conservation, and stewardship
 90 programs, and would be managed and
 91 supervised to deter participants from
 92 disturbing waterbirds and bird habitat on the
 93 island.

94
 95 Lastly, an NPS staff biologist monitors all
 96 park activities and visitation on Alcatraz
 97 Island on a daily basis and assesses possible
 98 impacts to bird habitat. The island biologist is
 99 consulted regularly for input on ways to
 100 avoid and/or mitigate visitation impacts to
 101 birds and waterbird habitat on the island.

102

1 **Mitigating Maintenance and Construction**
2 **Impacts to Waterbird Habitat:**

3 Future NPS actions and implementation
4 plans associated with this GMP will
5 incorporate a variety of impact mitigation
6 measures to minimize or avoid impacts to
7 bird habitat from maintenance and
8 construction-related activities. This
9 commitment is consistent with efforts
10 associated with past and ongoing
11 maintenance and construction projects. For
12 example, the 10 projects encompassed by the
13 *Alcatraz Island Historic Preservation and*
14 *Safety Construction Program Final*
15 *Environmental Impact Statement (AIHPSCP)*
16 adhere to the restrictions and mitigation
17 guidelines noted in that document. Guidance
18 in the AIHPSCP include mitigation measures
19 that limit the timing, duration, and type of
20 disturbances associated with park operation
21 activities, such as avoiding activities during
22 waterbird breeding season on the island.

23 Implementation plans and activities
24 associated with this GMP will incorporate
25 similar mitigation measures, as appropriate.
26

27 In addition, an NPS staff biologist monitors
28 all park maintenance and construction
29 activities on Alcatraz Island on a daily basis
30 and assesses possible impacts to bird habitat.
31 The island biologist is consulted regularly for
32 input on ways to avoid and/or mitigate
33 maintenance and construction impacts to
34 birds and bird habitat on the island.
35
36

37 **RESPONSE TOPIC 3: SENSITIVE**
38 **RESOURCES ZONE**

39 **Kayak Recreational Use**

40 **CONCERN STATEMENT:** One commenter
41 made several suggestions regarding
42 recreational opportunities at GGNRA, such
43 as keeping coastal access open to small,
44 nonmotorized water craft.
45

46 **CONCERN STATEMENT:** Commenters
47 suggested that kayakers and other
48 nonmotorized vessels should be granted
49 access inside the proposed sensitive

50 resources zone in Marin County (especially at
51 Point Bonita Cove and Bird Rock), citing
52 visitor experience and safety concerns.
53

54 **CONCERN STATEMENT:** Commenters
55 objected to the designation of the offshore
56 areas at Point Bonita Cove and Bird Rock as
57 sensitive resources zones, stating that these
58 areas are needed for the kayaking
59 community, and for the safety of the kayakers
60 in the area. Commenters suggested that more
61 specific information should be provided
62 regarding the management zones at Bird
63 Rock and Bonita Cove including access and
64 restrictions. Other commenters suggested
65 that more emphasis should be given to
66 educating kayakers and boaters on the
67 potential to disturb marine birds, and that
68 there should be more signs informing people
69 of the ecological values at the Marin County
70 sites.
71

72 **RESPONSE**

73 The sensitive resources zone around Bonita
74 Cove and Bird Island has been changed in the
75 preferred alternative to extend 300 feet out
76 from the shoreline, rather than to the park
77 boundary at 0.25 mile. The natural zone
78 would replace the sensitive resources zone
79 for the remaining offshore area within the
80 park boundary, and kayaking is permitted
81 within this zone. The sensitive resources zone
82 description related to visitor experience has
83 been clarified and further limits visitor
84 activities that would be allowed within this
85 zone, to better meet the intention of this
86 zoning designation. In general, boating and
87 visitor access would be restricted or
88 prohibited, particularly during the most
89 sensitive times of the year. This is necessary
90 because nonmotorized boating can disturb
91 marine mammals on beaches and both
92 roosting or nesting birds as well as marine
93 mammals on nearshore rocks. Zoning
94 restrictions would not apply during actual
95 emergency situations. (Also see the
96 discussion of the sensitive resources zone
97 under Response Topic 15.)
98
99

1 **RESPONSE TOPIC 4: EQUESTRIAN**
2 **FACILITIES AND USE**

3 **Equestrian Uses**

4 **CONCERN STATEMENT:** Commenters
5 suggested that less emphasis should be placed
6 on equestrian facilities and uses and that
7 horses should not be allowed on unpaved
8 trails.

9
10 **RESPONSE**

11 The National Park Service recognizes that
12 horseback riding is a traditional and popular
13 means of recreation and that it expands the
14 variety of visitor experiences available in
15 GGNRA. The equestrian-related
16 improvements proposed in the GMP
17 preferred alternative are intended to address
18 important resource management goals and
19 balance this activity among other kinds of
20 recreational activities, including hiking and
21 bicycling.

22
23 GGNRA acknowledges that soil erosion on
24 trails is an important aspect of resource
25 management and planning for equestrian
26 uses and facilities would use best
27 management practices such as wet weather
28 closures or other use restrictions for trails on
29 erosive or unstable soils where appropriate.

30
31 **CONCERN STATEMENT:** One commenter
32 stated they would prefer to see bridge
33 crossings for horses over Redwood Creek to
34 avoid bank erosion and impacts to aquatic
35 species.

36
37 **RESPONSE**

38 The proposed creek crossings are in Mount
39 Tamalpais State Park, and not within NPS
40 jurisdiction or the scope of the GMP;
41 however, in the overview of the Muir Woods
42 preferred alternative the GMP expresses the
43 NPS intention to cooperate with other
44 agencies on restoration, stewardship, and
45 recreation in the Redwood Creek watershed.
46 The comment has been shared with
47 California state parks personnel in the

48 interest of advancing protection of creek
49 resources and providing safe and sustainable
50 trail connections in the watershed.

51
52 **CONCERN STATEMENT:** Commenters
53 suggested that it is important to maintain the
54 Rodeo Valley stable in the Marin Headlands
55 for recreational and historical preservation
56 reasons.

57
58 **RESPONSE**

59 The GMP preferred alternative proposes to
60 retain equestrian uses at the Rodeo Valley
61 stable, in the description of Fort Barry and
62 Fort Cronkhite. The *Marin Equestrian Stables*
63 *Plan and Environmental Assessment* provides
64 additional detail and will guide future
65 decisions for equestrian operations at the
66 Rodeo Valley stable.

67
68 **CONCERN STATEMENT:** Commenters stated
69 support for retaining the park horse patrol at
70 its current location at lower Tennessee Valley
71 and felt that the facility has historic
72 significance to the area. One commenter
73 noted that the format of the Draft GMP made
74 it difficult for the reader to easily understand
75 how the alternatives affect the lower
76 Tennessee Valley and park horse patrol.

77
78 **RESPONSE**

79 The park horse patrol, and all other
80 programs, facilities, and structures at lower
81 Tennessee Valley are not historic and would
82 be removed to enable restoration of native
83 wetland and riparian habitats, which would
84 greatly enhance ecological values and is a
85 high priority for the National Park Service in
86 this area. The *Marin Equestrian Stables Plan*
87 *and Environmental Assessment* will be used to
88 determine the new location for the park
89 horse patrol. Text has been clarified to better
90 describe this change in table 17 “Comparison
91 of Alternatives for Park Lands in Marin
92 County” and in the alternative 1 narrative
93 description.

94
95

1 **RESPONSE TOPIC 5: MAINTENANCE**
2 **AND DESIGN OF PARK FACILITIES**

3 **Maintaining and Repairing Facilities**

4 **CONCERN STATEMENT:** Commenters stated
5 that a top priority for GGNRA should be to
6 repair and maintain neglected facilities.

7 Others stated that GGNRA should remove
8 existing visitor facilities and discontinue
9 recreational uses where continued use is
10 unsafe, infeasible, or undesirable due to
11 changing environmental conditions.

12
13 **CONCERN STATEMENT:** One commenter
14 stated that high visitation areas such as Fort
15 Funston and Ocean Beach have almost no
16 facilities (such as bathrooms and water
17 fountains), and Stinson Beach facilities are in
18 need of urgent repair. Additionally, paved
19 walking paths are crumbling and eroding at
20 Fort Funston and at parking areas along the
21 Great Highway at Ocean Beach.

22
23 **CONCERN STATEMENT:** Commenters
24 suggested priority funding for paving and/or
25 restoring the walking paths at Fort Funston,
26 specifically the Sunset Trail, which provides
27 access for the disabled.

28
29 **RESPONSE**

30 Maintenance is an ongoing need for park
31 facilities. The GMP includes information
32 regarding large scale facility rehabilitation
33 and historic preservation projects, but does
34 not include details about year-to-year
35 maintenance priorities. Projected schedules
36 for maintaining facilities are addressed in the
37 park asset management plan (PAMP), which
38 uses a number of National Park Service-wide
39 criteria to identify maintenance priorities.

40
41 The park contains a large number of facilities,
42 not all of which support the park's mission.
43 The National Park Service examined those
44 facilities, and considered them for removal.
45 The goals and strategies may be found in the
46 GMP section titled "Facilities Not Directly
47 Related to the Park Mission."
48

49 The preferred alternative includes very few
50 new facilities. The vast majority of
51 recommendations are for historic
52 preservation and facility rehabilitation. The
53 cost estimates for new facilities are far
54 outweighed by estimates for historic
55 preservation and facility rehabilitation.
56

57 One of the goals of alternative 1 is to enhance
58 access to and within park lands and make
59 them welcoming places to visit, which is
60 consistent with providing visitor amenities.
61 At Ocean Beach and Fort Funston, the
62 preferred alternative calls for improved
63 visitor amenities, including parking,
64 restrooms, trails, and other items. Trail
65 improvements at Fort Funston are part of the
66 preferred alternative and could include the
67 Sunset Trail.

68
69 The preferred alternative recommends
70 replacement of Stinson Beach facilities with
71 sustainable new facilities that would replace
72 deteriorated restrooms, showers, picnic
73 areas, and parking lots. Descriptions may be
74 found in the alternatives section of the GMP.
75 *NPS Management Policies 2006* guides where
76 and if facilities would be rebuilt if destroyed
77 due to natural hazards, and the policy states
78 that new or rebuilt facilities should not be
79 located in areas where they would be
80 damaged or destroyed by natural physical
81 processes. This is also addressed broadly in
82 the climate change section of the GMP in the
83 "Elements Common to All Action
84 Alternatives" section.
85

86
87 **Facility Design**

88 **CONCERN STATEMENT:** Commenters
89 suggested that new building construction
90 should follow the profile of the landscape.
91

92 **RESPONSE**

93 *NPS Management Policies 2006* on park
94 facilities and design principles would guide
95 building design. Management policies require
96 that designs for facilities are "harmonious
97 with and integrated into the environment."

1 **RESPONSE TOPIC 6:**
2 **TRANSPORTATION**

3 **Improvements to Transportation**
4 **Network**

5 **CONCERN STATEMENT:** Commenters made
6 suggestions on how GGNRA could improve
7 the transportation network throughout
8 GGNRA, such as: maintaining better
9 wayfinding signage along the roads in order
10 to direct visitors to the park and parking
11 areas, using electric buses, connecting the
12 Dias Ridge Trail to the Redwood Creek along
13 State Route 1 in the vicinity of Muir Beach,
14 improving traffic and pedestrian crossings
15 along State Route 1, and bike racks and other
16 upgrades to make parking areas state-of-the-
17 art.

18
19 **CONCERN STATEMENT:** The California
20 Department of Transportation suggested
21 developing a long range transportation plan
22 for GGNRA to determine sustainable and
23 multimodal access to GGNRA sites that
24 would improve transit opportunities. They
25 encouraged interagency coordination for
26 appropriate decision making regarding
27 encouraging abandonment of State Route 1
28 in the event of a catastrophic landslide as
29 included in alternative 2. They also suggested
30 collaboration in drafting the long term
31 transportation plan and reducing overall
32 vehicle miles traveled to access GGNRA
33 through the implementation of non-single
34 occupancy vehicle modes of transport.

35
36 **RESPONSE**

37 The transportation section under “Elements
38 Common to All Action Alternatives” includes
39 management strategies that would reduce
40 overall vehicle miles traveled. The preferred
41 alternative also includes concepts that apply
42 to specific park sites, such as Muir Woods.
43 Other specific improvements to facilities to
44 improve nonmotorized access, such as bike
45 racks, typically are not addressed in a GMP,
46 which is a programmatic, conceptual

47 planning document, but will be in follow-on
48 plan implementation actions.

49

50 GGNRA is currently preparing the park’s
51 first long range transportation plan. The plan
52 will provide a vision and planning approach
53 to improving multimodal access to park sites.
54 It will be consistent with current guidelines
55 on the development of transportation plans
56 prepared by the California Department of
57 Transportation (Caltrans), and the
58 metropolitan planning organizations, and will
59 include the involvement of Caltrans and
60 other agencies as suggested in the comment.
61 The plan is scheduled for completion in 2013
62 following completion of a public outreach
63 process and a draft plan.

64

65 Alternative 2 is not the GMP preferred
66 alternative. The provision in alternative 2 that
67 suggested encouraging abandoning State
68 Route 1 in the event of a catastrophic
69 landslide was considered, but was not
70 selected.

71

72

73 **Bicycle and Multimodal Access in**
74 **Marin County**

75 **CONCERN STATEMENT:** One commenter
76 suggested several ways in which bicycle and
77 multi-modal access to sites within Marin
78 County could be improved. Suggestions
79 included separating bicycle and vehicular
80 traffic on Conzelman, Bunker, and
81 McCullough roads; repairing and reopening
82 damaged road segments (with consideration
83 to all user types); providing bicycle
84 parking/racks; improving bicycle access and
85 infrastructure to the Homestead Hill area;
86 and coordinating with the California
87 Department of Transportation to ensure the
88 provision of safe and sustainable multimodal
89 transportation facilities along State Route 1
90 and the Panoramic Highway.

91

92 **RESPONSE**

93 GGNRA is actively working to improve
94 multimodal access, including bicycle access,
95 to park sites. A more comprehensive

1 transportation planning effort to identify this
2 access is being considered in the long-range
3 transportation plan. Partners and
4 stakeholders such as Caltrans will be invited
5 to participate in this planning effort.

6
7 Improvements to Bunker, Conzelman, and
8 McCullough roads were determined through
9 the *Marin Headlands Fort Baker*
10 *Transportation Infrastructure and*
11 *Management Plan Final Environmental*
12 *Impact Statement* (2009), which included
13 some separation of bicycle and vehicle traffic,
14 as well as some widening of roads.

15
16 GGNRA is committed to improving
17 nonmotorized access as an important part of
18 reducing vehicle trips and congestion while
19 minimizing impacts to park resources.
20 However, the park is also committed to
21 balancing the need for access with the
22 protection of park resources, which can be
23 impacted by the construction of new facilities
24 and/or widening existing facilities.
25 Improvements to specific facilities for
26 nonmotorized access, such as bike racks,
27 typically are not addressed in a general
28 management plan; however, they are
29 consistent with concepts in the preferred
30 alternative, and with the management
31 strategies in the GMP transportation section,
32 which are common to all alternatives, that
33 include multimodal improvements to several
34 park areas. More detailed implementation
35 planning following the GMP would address
36 these concepts in more depth. Language has
37 been added to the GMP that clarifies the NPS
38 intention to improve nonmotorized access
39 and describes additional management
40 strategies that the National Park Service may
41 consider.

44 **Congestion Management Tools**

45 **CONCERN STATEMENT:** Marin County
46 Department of Public Works suggested
47 defining the “congestion management tools”
48 and efforts that would be used to manage
49 parking and reduce traffic in Stinson Beach to

50 achieve the beneficial impact conclusion for
51 visitor access stated in the Draft GMP/EIS.

53 **RESPONSE**

54 Examples of some of the broad range of tools
55 to reduce congestion and manage
56 transportation demand are identified in
57 “Elements Common to All Action
58 Alternatives” in the “Transportation” section,
59 under the heading “Management Strategies,”
60 bullet item “Employ Tools for Congestion
61 Management.” These include pursuing online
62 trip planning/wayfinding and employing
63 intelligent transportation systems
64 technologies. Other congestion management
65 tools are identified. Please refer to this
66 section for further details.

69 **State Route 1 and the Panoramic 70 Highway Area Improvements**

71 **CONCERN STATEMENT:** One commenter
72 suggested that the Draft GMP should specify
73 where and how State Route 1 and the
74 Panoramic Highway (in alternatives 1 and 2)
75 would be improved, and how the
76 improvements would retain scenic rural
77 character. The commenter suggested bicycle
78 access/infrastructure improvements in the
79 vicinity of Homestead Hill, including bicycle
80 parking.

82 **RESPONSE**

83 State Route 1 is a state highway managed by
84 Caltrans; Panoramic Highway is a county
85 road managed by Marin County. This section
86 of the plan refers to park lands adjacent to
87 these roads where they pass through the
88 park.

89
90 Protection of scenic resources is a high
91 priority for GGNRA. The GMP does not
92 specify site-specific improvements to State
93 Route 1 and the Panoramic Highway; but
94 future improvements to these roads may be
95 envisioned by Caltrans and Marin County or
96 proposed by GGNRA in order to improve
97 nonmotorized access and safety and to

1 protect the highways from slides or other
 2 environmental factors. The park is
 3 committed to coordinating with Caltrans and
 4 Marin County to balance these needs with
 5 the protection of resources, including scenic
 6 resources, which can be impacted by
 7 construction of new facilities and/or by
 8 widening existing roads. The park would
 9 coordinate with Caltrans and Marin County
 10 to encourage that future modifications are
 11 sensitively designed to preserve park
 12 resources including the scenic, rural
 13 character of these highways and adjacent
 14 areas, and to encourage improvements for
 15 visitor safety including safe crossings. The
 16 GMP identifies more specific improvements
 17 for some park lands adjacent to State Route 1
 18 and Panoramic Highway, such as White Gate
 19 Ranch and Homestead Hill; other
 20 improvements have not been identified and
 21 are beyond the scope of the GMP.

22
 23 Language has been added to the GMP
 24 clarifying that these roads are not managed
 25 by the National Park Service and better
 26 describing proposed improvements in the
 27 Homestead Hill area.

30 **Transportation Opportunities at** 31 **Fort Mason**

32 **CONCERN STATEMENT:** One commenter
 33 suggested that light rail and rapid bus transit
 34 could be used to provide access to Fort
 35 Mason.

37 **RESPONSE**

38 Improved public transit access to park lands,
 39 including Fort Mason, is an important goal
 40 for GGNRA. The park is coordinating with
 41 San Francisco Municipal Transportation
 42 Agency (SFMTA) on the two projects
 43 mentioned. In addition to the SFMTA
 44 extension of the F-Line Streetcar to Lower
 45 Fort Mason, and development of the bus
 46 rapid transit on Van Ness Avenue, the
 47 preferred alternative also anticipates
 48 improved access to Fort Mason through the
 49 potential development of a water shuttle at

50 Lower Fort Mason and improved walking
 51 paths.

54 **Partnerships to Improve** 55 **Access to Phleger Estate**

56 **CONCERN STATEMENT:** San Mateo County
 57 Department of Public Works stated an
 58 interest in working with GGNRA to fund and
 59 perform improvements to Richards Road,
 60 which provides trail and management vehicle
 61 access to the Phleger Estate and Huddart
 62 County Park.

64 **RESPONSE**

65 Richards Road links to the Miramontes Trail
 66 at the east end of the Phleger Estate and the
 67 Lonely Trail in the southwest corner of the
 68 property. The GMP alternative description
 69 for Phleger Estate includes collaboration with
 70 San Mateo County to improve trail
 71 connections; GGNRA is interested in
 72 working with the San Mateo County
 73 Department of Public Works to identify
 74 strategies to facilitate the desired
 75 improvements.

78 **Transportation on Sweeney Ridge**

79 **CONCERN STATEMENT:** Commenters
 80 suggested restricting cars on Sweeney Ridge
 81 and providing more parking at Milagra Ridge.

83 **RESPONSE**

84 Currently, visitors can access Sweeney Ridge
 85 via three primary trailheads: Skyline College
 86 (hiking only), Shelldance Nursery (hiking,
 87 bicycling, and equestrian) and Sneath Lane
 88 (hiking and bicycling). Additional access to
 89 Sweeney Ridge is permitted through adjacent
 90 lands, specifically from Fassler Avenue
 91 through Cattle Hill and from the Portola Gate
 92 through the Peninsula watershed (requires
 93 permission and gate access). No vehicles are
 94 permitted on Sweeney Ridge, with the
 95 exception of NPS personnel and
 96 authorization from the National Park Service

1 for specific uses to accommodate visitors
2 with disabilities and limited special events.
3 Under the preferred alternative vehicular
4 access to Sweeney Ridge would remain very
5 limited. This text has been clarified in the
6 GMP.

7
8 The GMP identifies trailhead parking as a
9 potential improvement at Milagra Ridge.
10

11 12 **Transportation Improvements** 13 **at the Montara Lighthouse**

14 **CONCERN STATEMENT:** San Mateo County
15 Department of Public Works stated that
16 California Coastal Trail improvements and a
17 safe crossing of State Route 1 should be
18 anticipated at the Montara Lighthouse
19 location.
20

21 **RESPONSE**

22 The GMP concept overview for park lands in
23 San Mateo County includes collaboration
24 with the community and Caltrans to provide
25 safe access to park sites along State Route 1.
26 The GMP concept for Montara Lighthouse
27 also includes access improvements and
28 improved trail connections. The National
29 Park Service has been participating as a
30 stakeholder in San Mateo County's *Midcoast*
31 *Highway 1 Safety and Mobility Study* ("*Traffic*
32 *and Trails*"). GGNRA is familiar with the
33 recommendations currently proposed for
34 State Route 1, including improved crossings,
35 and will continue to collaborate with other
36 agencies to facilitate implementation of these
37 improvements and to encourage the county
38 to continue to evaluate the study's
39 recommendations and prioritize safety
40 throughout the corridor.
41
42

43 **TRANSPORTATION FOR MARIN** 44 **COUNTY, INCLUDING MUIR WOODS**

45 **CONCERN STATEMENT:** Commenters made
46 specific suggestions for studying and
47 improving transportation and access to park

48 sites in Marin County, including Muir Woods
49 National Monument and Stinson Beach.
50 Suggestions for Muir Woods included
51 realigning Muir Woods Road, providing
52 consistent, year-round shuttle service,
53 installing a changeable message sign on
54 Shoreline Highway, exploring possible areas
55 for parking and using the shuttle between the
56 entrance of Muir Woods National
57 Monument and the Manzanita Park and Ride
58 area, defining how intelligent transportation
59 systems would be employed, installing
60 additional road signage, and completing
61 parking and traffic studies for the proposed
62 welcome center. Suggestions for Stinson
63 Beach included reducing the south parking
64 lot to create wetlands, converting the south
65 picnic area to parking, adding changeable
66 message signs at U.S. Highway 101 to provide
67 messages related to Stinson Beach parking
68 and traffic conditions, and partnering with
69 local transportation agencies to improve
70 transit to Stinson Beach. Other suggestions
71 for transportation in Marin County included
72 improving pedestrian safety, including trailer
73 parking for the Frank's Valley Horse Camp,
74 promoting the use of the Marin Stagecoach,
75 using speed bumps to control traffic speed,
76 conducting a study on visitor access in
77 Tennessee Valley, and working with Caltrans
78 and other organizations to conduct
79 transportation studies to improve congestion.
80

81 **RESPONSE**

82 Many suggestions for Muir Woods are
83 consistent with the GMP preferred
84 alternative, but are beyond the scope of the
85 GMP. More detailed analysis and
86 environmental review following the GMP
87 will address approaches to reduce congestion
88 and improve access to and in the entry area of
89 Muir Woods. Consistent with the GMP, goals
90 of more detailed planning for Muir Woods
91 will include reducing vehicle trips, improving
92 visitor access, and protecting park resources.
93 More detailed planning will also address
94 improving access for transit and tour
95 operators, capital improvements needed to
96 facilitate these improvements,
97 implementation of intelligent transportation

1 systems, and transportation demand
 2 management strategies.
 3
 4 GGNRA is currently preparing the park's
 5 first long-range transportation plan. The plan
 6 will provide a vision and planning approach
 7 to improve multimodal access to park sites,
 8 including those in Marin County. It will be
 9 consistent with current guidelines on the
 10 development of transportation plans
 11 prepared by the California Department of
 12 Transportation (Caltrans) and metropolitan
 13 planning organizations. The plan is scheduled
 14 for completion in 2013 following completion
 15 of a public outreach process and a draft plan.
 16
 17 Increasing transit access to Stinson Beach is
 18 included in the preferred alternative concept
 19 for Stinson Beach. Converting the south
 20 parking area to wetland was considered in
 21 alternative 2, but this alternative was not
 22 identified as the NPS preferred alternative.
 23 Other specific strategies for improving
 24 transportation at individual sites—such as the
 25 commenters' suggestions for Stinson Beach—
 26 are beyond the scope of the GMP and would
 27 be addressed in following implementation
 28 planning.
 29
 30

31 **Proposals for Marin County** 32 **Maintained Roads**

33 **CONCERN STATEMENT:** Marin County
 34 Department of Public Works stated that any
 35 change to the configuration of Muir Woods
 36 Road or any other county-maintained roads
 37 should be reviewed and approved by the
 38 Marin County Department of Public Works
 39 staff.
 40

41 **RESPONSE**

42 All proposed changes to non-NPS-managed
 43 roads would be pursued in coordination with
 44 the appropriate managing agency, including
 45 Marin County.
 46
 47

48 **RESPONSE TOPIC 7: ESTIMATED** 49 **COSTS AND INVESTMENTS**

50 **Funding for San Mateo Priority** 51 **Needs**

52 **CONCERN STATEMENT:** Commenters,
 53 including the County of San Mateo
 54 Department of Public Works, questioned the
 55 \$3 million of priority funds to be set aside for
 56 the equestrian center at Rancho Corral de
 57 Tierra, suggesting that it seems narrow in
 58 focus. Commenters questioned why so little
 59 capital was set aside for park lands in San
 60 Mateo (\$4.6 million of priority funds
 61 according to the Draft GMP cost estimates),
 62 and why \$3 million of that \$4.6 million was
 63 set aside for the proposed equestrian center
 64 at Rancho Corral de Tierra. Commenters
 65 suggested that other locations and needs
 66 were more significant and pressing (Phleger
 67 Estate, other possibilities in Pacifica, and
 68 improving connections between parklands in
 69 San Mateo County).
 70

71 **RESPONSE**

72 The park lands in San Mateo County make
 73 up a large percentage of park acreage,
 74 therefore, it is understandable to ask why the
 75 portion of estimated capital costs for this area
 76 is relatively small. The primary reason is that
 77 the highest costs identified in the GMP are
 78 for managing major constructed assets, and
 79 there are fewer of these in San Mateo
 80 County.
 81

82 It is important to note that the GMP
 83 identifies several critical natural resource
 84 restoration projects in San Mateo County in
 85 addition to the major capital projects focused
 86 on constructed assets at Sheldance Nursery,
 87 Rancho Corral de Tierra, and the Phleger
 88 Estate. Furthermore, the GMP identifies a \$4
 89 million increase in annual operating costs,
 90 much of which would be spent on park
 91 operations in San Mateo County.
 92
 93

1 **Cost Estimates for Tennessee Valley**

2 **CONCERN STATEMENT:** One commenter
3 expressed concern that the cost estimates at
4 Tennessee Valley do not account for the
5 removal of structures and are therefore not
6 accurate.

7
8 **RESPONSE**

9 The cost estimates for removal of facilities in
10 lower Tennessee Valley were grouped with
11 costs for natural resource restoration for
12 Marin County park lands. Table 12 has been
13 changed to clarify that the estimated costs of
14 facility removal at Tennessee Valley were
15 included in the natural resource restoration
16 costs and a row was added to the cost
17 estimate tables for alternatives 1 and 2 in
18 facility removal to include costs of removal of
19 roads and nonhistoric structures at lower
20 Tennessee Valley.

21

22

23 **RESPONSE TOPIC 8: TRAILS**

24 **Interpretive Trails in Muir Woods
25 National Monument**

26 **CONCERN STATEMENT:** One commenter y
27 questioned the level of trail development and
28 type of interpretation proposed for Muir
29 Woods National Monument. They suggested
30 that establishing thematic trails at Muir
31 Woods National Monument is unnecessary,
32 instead suggesting that modest interpretive
33 signs would inform visitors just as well.

34

35 **RESPONSE**

36 The proposal to interpret various themes on
37 trails should be viewed in the context of
38 existing and proposed high levels of resource
39 protection for the redwood forest ecosystem.
40 This proposal would rely on a variety of ways
41 to convey the thematic information,
42 including interpretive signs. This concept
43 would make use of existing trails as well as
44 modified existing alignments and limited new
45 construction to improve the trail system or to

46 allow creek and floodplain restoration and
47 improve the integrity of the ecosystem.

48

49 Subsequent, more detailed planning to define
50 the specific actions to be taken within the
51 trail corridor, including the appropriate level
52 of interpretive signs and other elements, will
53 be guided by the zone descriptions in the
54 GMP. In addition, the park closes at dusk,
55 and off-trail travel is prohibited in the park.

56

57

58 **Trail Improvements Planned as Part
59 of the Trails Forever Program**

60 **CONCERN STATEMENT:** One commenter
61 suggested that language from the Golden
62 Gate National Parks Conservancy website be
63 added to a specific section of the GMP. This
64 language would clarify that the Trust—rather
65 than the Presidio park site—collaborates with
66 the National Park Service regarding trail
67 improvements that are planned as part of the
68 Trails Forever Program.

69

70 **RESPONSE**

71 The text in the GMP has been revised to
72 clarify this relationship.

73

74

75 **Mountain Biking**

76 **CONCERN STATEMENT:** Commenters
77 expressed varying positions on mountain
78 biking within GGNRA. Certain commenters
79 requested that GGNRA restrict all bicycles to
80 existing paved surfaces. One commenter
81 requested that mountain biking be prohibited
82 from GGNRA, while another requested more
83 mountain bike access.

84

85 **RESPONSE**

86 The National Park Service recognizes that
87 bicycling—both on roads and on trails—is a
88 popular means of recreation and that it
89 expands the variety of visitor experiences
90 available in GGNRA. As stated in the GMP, a
91 goal of GGNRA is to establish and maintain a
92 trail system that offers a diversity of park

1 experiences, including bicycling (as well as
2 hiking, horseback riding, and other
3 activities). Within GGNRA, mountain biking
4 is, and will continue to be, permitted on
5 designated trails where this use is determined
6 through the required process. Hiking-only
7 trails or hiking/equestrian trails are also
8 included in the park’s trail system, offering a
9 variety of choices and experiences. The
10 National Park Service monitors trail use and
11 resource conditions and manages trail-based
12 recreation to minimize visitor conflicts and
13 resource impacts.

14
15 As stated in the GMP, bicycling may be
16 appropriate and permitted in certain areas
17 within the diverse opportunities, scenic
18 corridor, evolved cultural landscape, and
19 natural zones. The GMP identifies some
20 specific proposals for improved or new
21 multi-use trails. Mountain bike use would be
22 guided by the GMP, *NPS Management*
23 *Policies 2006*, and regulations.

24
25 The GMP does not propose changes to park
26 trails within Marin County that are currently
27 open to bicycling, as determined by prior
28 planning efforts. The *Presidio Trails and*
29 *Bikeways Master Plan and Environmental*
30 *Assessment* addressed bicycling and other trail
31 uses at the Presidio, which is outside the
32 scope of the general management plan.
33 Future, more detailed planning will
34 determine management of trail-based
35 recreation elsewhere in GGNRA, including
36 for park lands in San Mateo County.

37 38 39 **Marin County Trails**

40 **CONCERN STATEMENT:** Commenters
41 suggested that the Marin coastline should be
42 a designated access area that is part of the
43 greater San Francisco Bay Water Trail. Other
44 commenters felt that an increase in the
45 number of trails would result in more user
46 conflicts. Commenters also suggested that
47 GGNRA should continue the multiuse path
48 from Coyote Creek at the Tamalpais Valley
49 Community Center to Tennessee Valley, to
50 establish a safe connecting trail from the

51 bottom of Dias Trail into the Redwood Creek
52 Trail and Muir Woods, and to establish a safe
53 trail to Frank Valley. One commenter
54 suggested that planners take into account the
55 experience of the hiker on the new trail while
56 planning the new trail.

57 58 **RESPONSE**

59 Support for the Bay Area Water Trail is
60 included in the GMP in the “Common to All
61 Action Alternatives” sections on trails and
62 ocean stewardship. The preferred alternative
63 also identifies specific locations for Bay Area
64 Water Trail access, such as Kirby Cove.

65
66 Other specific recommendations for trail
67 improvements are already noted in the GMP,
68 such as the connection between Dias Ridge
69 and Redwood Creek trails near Muir Beach,
70 or would be considered in more detailed trail
71 planning following the GMP. The “Common
72 to All Action Alternatives” trails section
73 provides goals and management strategies to
74 guide planning and management of park
75 trails. When considering any changes to
76 trails—whether improvements to existing
77 trails, development of new trails, or closure of
78 trails—the National Park Service devotes
79 careful consideration to how both people and
80 natural resources may be affected.

81 82 83 **RESPONSE TOPIC 9: HISTORIC** 84 **RESOURCES FOR SAN MATEO** 85 **COUNTY**

86 **Historic Resources for San Mateo** 87 **County**

88 **CONCERN STATEMENT:** San Mateo County
89 Department of Public Works noted that
90 Sanchez Adobe is an historic property that is
91 owned and managed by the San Mateo
92 County Parks Division and jointly managed
93 and interpreted with the San Mateo County
94 Historical Association, and that there have
95 been discussions between GGNRA, San
96 Mateo County Parks, and the historical
97 association about a potential joint

1 partnership, which is not addressed in the
2 Draft GMP. Other commenters stated that no
3 historical resources were mentioned in the
4 GMP for San Mateo County nor any
5 reference to the Sanchez Adobe Historic Site
6 master plan, while another commenter
7 requested that the San Mateo County historic
8 resource study be listed in the GMP
9 references.

10
11 **CONCERN STATEMENT:** Commenters
12 suggested that the San Francisco Bay
13 Discovery Site needs better attention for
14 promotional and educational reasons.

15
16 **CONCERN STATEMENT:** One commenter
17 recommended archeological investigations
18 be conducted to determine the exact location
19 of the Guerrero Adobe at Rancho Corral de
20 Tierra and the whaling station at Pillar Point.

21
22 **CONCERN STATEMENT:** Commenters
23 suggested focusing on the Portola
24 Expedition, and making the Sanchez Adobe
25 Historic Site a shared multiagency visitor
26 center.

27
28 **CONCERN STATEMENT:** One commenter
29 suggested that the GMP clearly differentiate
30 the explorers Portola and Anza.

31
32 **CONCERN STATEMENT:** San Mateo County
33 Department of Public Works had concerns
34 with the proposed NPS partnership with the
35 San Mateo County Parks and the San Mateo
36 County Historical Association at the
37 Woodside Store as parking availability is
38 minimal and the community has concerns
39 about increases in visitation.

40
41 **RESPONSE**

42 During the final stages of preparing the Draft
43 GMP the historic resources study (HRS) for
44 GGNRA in San Mateo County was in the
45 process of being completed, and therefore,
46 was not referenced in the Draft GMP.
47 However, the draft HRS was consulted
48 during the drafting of the GMP. In particular
49 the identification of resources and their
50 significance was used in the development of

51 the management zones and the creation of
52 the alternatives. The draft HRS also helped
53 identify historic properties that are listed in
54 the affected environment section, and the
55 area of potential effect (APE) in the GMP.

56
57 Language has been added to the GMP
58 indicating that the Sanchez Adobe is an
59 excellent location from which to explore
60 partnerships in preservation and
61 interpretation to enhance the park's
62 connection to the Pacifica communities and
63 to recognize the importance of the Portola
64 Expedition. This language roughly parallels
65 what is stated for the Woodside Store, which
66 we understand has limited parking.

67
68 In regards to the Portola Expedition, the
69 GMP also references the upcoming 250th
70 anniversary of the discovery of San Francisco
71 Bay and suggests promoting preservation and
72 partnership-based programs for the San
73 Francisco Bay Discovery Site on Sweeney
74 Ridge to be developed between now and the
75 anniversary date.

76
77 The historic resource study has been added
78 to the GMP bibliography and the San Mateo
79 County Historical Association has been
80 added to the list of agencies consulted in the
81 preparation of the GMP. We have also
82 strengthened the language in the text about
83 the importance of the Portola Expedition and
84 its effects on the history of the region
85 including the Native American inhabitants.

86
87 The final GMP includes language that the
88 park needs to investigate the location of the
89 Guerrero Adobe and the Pillar Point Whaling
90 Station to determine if they are within the
91 park boundary, and if so, to identify proper
92 preservation strategies for each site.

93
94

1 **RESPONSE TOPIC 10: COORDINATION**
2 **WITH THE PRESIDIO TRUST**

3 **Presidio Trust**

4
5 **CONCERN STATEMENT:** The Presidio Trust
6 commenter stated that the *Presidio Trust*
7 *Management Plan* (PTMP) supersedes the
8 *Presidio General Management Plan*
9 *Amendment* (GMPA) as it applies to the area
10 under jurisdiction of the Presidio Trust.

11
12 **CONCERN STATEMENT:** The Presidio Trust
13 suggested that the Draft GMP be updated to
14 include the discussions between the Presidio
15 Trust and the National Park Service
16 regarding identifying another location for a
17 centralized maintenance facility at a location
18 outside of the cavalry stables.

19
20 **CONCERN STATEMENT:** The Presidio Trust
21 noted that references to resources within the
22 Presidio of San Francisco should be limited
23 or qualified based on expected impacts
24 within the planning area. As written in the
25 Draft GMP, the document could give the
26 reader a false impression that the Presidio is
27 actually within the planning area.

28
29 **CONCERN STATEMENT:** The Presidio Trust
30 stated that the rare plants found at the
31 Presidio are not within the GMP planning
32 area and, therefore, not part of the affected
33 environment and would not be affected by
34 implementation of any alternative, and as
35 such should not be included in the GMP.

36
37 **CONCERN STATEMENT:** The Presidio Trust
38 noted that they should be acknowledged
39 within the GMP for funding volunteer
40 opportunities within GGNRA, including trail
41 building, habitat restoration and
42 conservation, and organized youth programs.

43
44 **CONCERN STATEMENT:** The Presidio Trust
45 stated that the visitation numbers in the Draft
46 GMP are inflated and misleading, stating that
47 the visitors to the Presidio and other public

48 lands outside the planning area are included
49 in the overall number of visitors to GGNRA.
50

51 **CONCERN STATEMENT:** The Presidio Trust
52 stated that the discussion on watersheds is
53 limited to the Presidio, which is not part of
54 the affected environment and should be
55 omitted. In addition, the discussion
56 incorrectly implies that the Presidio East
57 watershed is managed by the National Park
58 Service.

59
60 **CONCERN STATEMENT:** The Presidio Trust
61 suggested that it should be acknowledged
62 that they funded the water quality monitoring
63 for the urban watershed project in Area B,
64 and that the urban watershed project has
65 since been replaced by Project WISE
66 (Watersheds Inspiring Student Education)
67 through the Golden Gate National Parks
68 Conservancy. The discussion indicates that
69 water quality monitoring has been conducted
70 “through a contract with the Presidio.” The
71 Presidio is not a management agency such as
72 the Presidio Trust or the National Park
73 Service, but is a park site. An appropriate
74 reference should be provided.

75
76 **CONCERN STATEMENT:** The Presidio Trust
77 requested that the National Park Service
78 delete the sentence stating that the GMPA
79 remains as the management plan for Presidio
80 Area A.

81
82 **RESPONSE**

83 Specific concerns about the Draft GMP/EIS
84 map and text descriptions of the Presidio
85 Trust management policies, the diverse
86 natural and cultural resources managed by
87 the Presidio Trust, public programs offered,
88 and the relationship among the Presidio
89 Trust, GGNRA, and Golden Gate National
90 Parks Conservancy have been addressed to
91 provide greater clarity and avoid
92 misrepresenting the proposals in the GMP
93 and their potential effects. This additional
94 clarity has not substantially changed the
95 different action alternatives.

96

1 Changes have been made to the “Facilities for
2 Maintenance, Public Safety, and Collections
3 Storage” subsection of the “Elements
4 Common to All Action Alternatives” section
5 to reflect recent discussions on a centralized
6 maintenance facility within the Presidio.

7 8 9 **Fire Department Operation within** 10 **the Presidio**

11 **CONCERN STATEMENT:** The Presidio Trust
12 noted that the GMP should note that
13 structural fires within the Presidio are
14 handled by the San Francisco Fire
15 Department and not the Presidio Fire
16 Department.

17 18 **RESPONSE**

19 The appropriate section of the GMP has been
20 corrected.

21 22 23 **RESPONSE TOPIC 11: SAN FRANCISCO** 24 **PENINSULA WATERSHED LANDS**

25 **Alternatives and Environmental** 26 **Consequences**

27 **CONCERN STATEMENT:** The San Francisco
28 Public Utilities Commission (SFPUC)
29 expressed concern that the Draft GMP is
30 deficient in the description of the alternatives
31 and does not adequately describe the
32 environmental consequences of the actions.
33 Additionally, the SFPUC wrote that the Draft
34 GMP does not adequately address possible
35 conflicts between the proposed action and
36 the objectives of local land use plans, policies,
37 and controls for the area concerned as
38 required by 40 CFR Part 1508.8.

39
40 **CONCERN STATEMENT:** SFPUC stated that
41 the Draft GMP repeatedly describes the
42 Peninsula watershed as park lands that would
43 receive park management guidance under the
44 Draft GMP, which conflates GGNRA’s
45 limited responsibility to administer the scenic
46 easement and recreation and scenic

47 easement. Further, the figures in the Draft
48 GMP depicting the boundaries of these
49 easements are inaccurate: the recreation and
50 scenic easement does not include the area of
51 the Peninsula watershed known as Polhemus
52 and the San Mateo Creek area below Crystal
53 Springs Dam.

54
55 **CONCERN STATEMENT:** SFPUC stated that
56 the analysis of water resources in the
57 Peninsula watershed in San Mateo County
58 should be discussed in greater detail, if the
59 watershed is included as part of the park, and
60 noted that data is available.

61
62 **CONCERN STATEMENT:** SFPUC questioned
63 the boundary adjustment proposed for
64 McNee Ranch in San Mateo County and
65 requested more information in analyzing the
66 impacts of the proposal.

67
68 **CONCERN STATEMENT:** SFPUC urged
69 GGNRA to either amend the existing
70 alternatives for Ocean Beach to specifically
71 provide for the option of continued
72 operation, maintenance, and upgrade of
73 existing critical infrastructure, including the
74 Oceanside Wastewater Treatment Plant and
75 the Westside Transport Box, or to create a
76 new alternative that provides this option.

77 78 **RESPONSE**

79 Many specific comments in the SFPUC letter
80 request more detailed description of specific
81 proposals and analysis of their impacts. The
82 general management plan is a long-term,
83 programmatic planning document and
84 precedes more detailed implementation
85 planning that will provide the details of
86 interest to SFPUC for specific plans and
87 projects. These subsequent implementation
88 plans and their associated environmental
89 compliance (e.g., NEPA) will assess
90 implementation alternatives, resources, and
91 impacts at a more site-specific level than the
92 GMP. SFPUC also identified concerns
93 related to uses and plans for NPS lands
94 adjacent to SFPUC lands. In areas of the park
95 adjacent to SFPUC-managed lands, the
96 National Park Service would coordinate

1 more detailed implementation planning and
 2 actions with the appropriate city department
 3 to address concerns including compatibility
 4 with SFPUC current planning and
 5 management.

6
 7 Text describing GMP alternatives for the
 8 NPS Peninsula watershed easements has
 9 been clarified to refer to the 2001 *Peninsula*
 10 *Watershed Management Plan* and to clarify
 11 the NPS role, acknowledging that these
 12 actions are within SFPUC jurisdiction and
 13 subject to SFPUC watershed approval or
 14 initiation and implementation. Accordingly,
 15 additional water resources data was not
 16 added to the GMP as the management of the
 17 areas has been clarified. General management
 18 plan language related to the Peninsula
 19 watershed lands that are within the NPS-
 20 administered easements describes NPS
 21 actions as cooperating with SFPUC and
 22 promoting or encouraging actions that are
 23 consistent with the easements and the 2001
 24 *Peninsula Watershed Management Plan*. “

25
 26 Regarding the “Boundary Adjustments”
 27 section for McNee Ranch, San Mateo
 28 County, the boundary adjustment described
 29 in the Draft GMP states that this action
 30 would be for the purpose of correcting a
 31 technical error and would facilitate
 32 cooperative management. It is not a proposal
 33 for acquisition, and the specific actions cited
 34 are not GMP proposals. Specific actions that
 35 may be proposed in the future would be
 36 subject to NEPA and California
 37 Environmental Quality Act (CEQA) analysis,
 38 depending on the nature of the proposed
 39 action. Text in the “Boundary Adjustments”
 40 section for McNee Ranch, San Mateo
 41 County, has been clarified.

42
 43 The National Park Service acknowledges that
 44 SFPUC will continue to operate and maintain
 45 its critical infrastructure. Text for Ocean
 46 Beach (alternative 1 description for Ocean
 47 Beach, both zones paragraph) has been
 48 modified to clarify that it refers to NPS
 49 facilities that would be relocated. Other
 50 corrections as suggested by SFPUC have also

51 been made, including the easement boundary
 52 corrections.

53

54

55 **Easements Information and Display**

56 **CONCERN STATEMENT:** Commenters stated
 57 that the GMP should accurately represent the
 58 NPS easement agreements and provide
 59 information on those agreements to allow the
 60 public and park personnel to reference the
 61 agreements. The map in the Draft GMP
 62 should accurately represent the easement
 63 agreement and information on all easement
 64 agreements. Furthermore, information on the
 65 easement agreement with the City of Pacifica
 66 should be accurately depicted and the
 67 easement information provided.

68 Commenters suggested that in addition to
 69 accurately depicting easement agreements
 70 and land ownership in the GMP, GGNRA
 71 should ensure that jurisdiction is accurately
 72 presented in all published GGNRA maps, and
 73 that GGNRA law enforcement fully
 74 understand those jurisdictions and can
 75 communicate those to the public.

76

77 **RESPONSE**

78 Sections of the GMP that refer to the
 79 easements have been clarified. Maps
 80 depicting the SFPUC easements have been
 81 corrected to accurately show the easements,
 82 remove any lands not in the easements, and
 83 include the (2007) conservation easement
 84 over the 7.2 acre parcel adjacent to the east
 85 terminus of Sneath Lane, known as the
 86 Sweeney Ridge Gateway. Text describing the
 87 NPS-administered easements over the
 88 Peninsula watershed has been clarified, as
 89 suggested to allow park staff and the public to
 90 reference the easements. Sections of the
 91 easement documents have been added to the
 92 GMP appendix.

93

94 The SFPUC requested that all maps and
 95 brochures accurately present the GGNRA
 96 jurisdiction and that GGNRA law
 97 enforcement staff understand and
 98 communicate GGNRA jurisdiction. Although

1 this comment is not within the scope of the
2 GMP, this is the practice and goal of the park.

5 **PUC Scenic Easement and Legislation**

6 **CONCERN STATEMENT:** SFPUC stated that
7 water operations and all utility functions are
8 expressly excluded from NPS management
9 or restrictions under the terms of the SFPUC
10 easements, and that the GMP should
11 acknowledge the SFPUC *Peninsula*
12 *Watershed Management Plan* and compare it
13 to the GMP alternatives, specifically which
14 projects are proposed for the watershed and
15 impacts of new facilities in a closed area.
16 Furthermore, while terming the watershed to
17 be “park lands,” and acknowledging that
18 federal legislation controls management
19 activities, there is no mention of the
20 legislation that transferred the easements to
21 the administration of the National Park
22 Service. Congress has mandated that the
23 scenic easements shall be administered in
24 accordance with their terms.

26 **RESPONSE**

27 The GMP has been updated to reference the
28 legislation in the legislation summary in
29 appendix A and to expand the description of
30 the *Peninsula Watershed Management Plan*.

33 **Ocean Beach Master Plan – 34 Considerations in Analysis**

35 **CONCERN STATEMENT:** SFPUC expressed
36 concern with an absence of analysis of
37 impacts with the Ocean Beach master plan
38 process led by San Francisco Planning and
39 Urban Research (SPUR) in cooperation with
40 the City and County of San Francisco, the
41 National Park Service, and the California
42 Coastal Conservancy. Another commenter
43 questioned the NPS authority in partnering
44 with local and state agencies and
45 organizations. Other commenters also
46 questioned the NPS authority to make
47 changes at the recreation area with what they
48 viewed as limited public input.

49 **RESPONSE**

50 The GMP references the Ocean Beach master
51 plan in the description of alternatives. This
52 visioning process was led by San Francisco
53 Planning and Urban Research (SPUR) in
54 cooperation with the National Park Service,
55 City and County of San Francisco, and
56 California Coastal Conservancy. The plan is a
57 SPUR document. The Draft GMP concepts
58 informed the SPUR Ocean Beach master plan
59 process, and the GMP preferred alternative
60 and the concepts identified in the Ocean
61 Beach master plan are compatible and
62 complementary. Specific actions
63 recommended in the SPUR Ocean Beach
64 master plan will require additional analysis to
65 confirm feasibility, and additional
66 environmental analysis prior to
67 implementation by the responsible agency.
68 See concern 36604 and its response for
69 further information on how alternatives and
70 specific proposed actions have been
71 addressed in the GMP.

72
73 Regarding the concern about public
74 involvement in the planning process, please
75 refer to concerns in the section titled “Public
76 Comment Period and Public Meetings” and
77 the corresponding response.

78
79 Regarding concerns about the ability of local
80 and state governments / organizations to
81 cooperate with the National Park Service due
82 to limited funding, interagency cooperation
83 by land managers also has the potential to
84 provide efficiencies in operation that could
85 provide cost savings and more effective land
86 management.

89 **RESPONSE TOPIC 12: BACKGROUND: 90 PROJECT INFORMATION AND 91 BACKGROUND – GENERAL**

92 **Park Relationships with the Coast 93 Miwok and the Ohlone Tribes**

94 **CONCERN STATEMENT:** One commenter
95 suggested that the National Park Service

1 research treaties that the U.S. (or State of
2 California or other legally constituted
3 governmental bodies) has signed with
4 sovereign American Indian nations or tribes
5 to make sure that they are accorded their
6 rights.

7
8 **RESPONSE**

9 The obligation for federal agencies, including
10 the National Park Service, to engage with
11 American Indian tribes on a government-to-
12 government basis is based on the U.S.
13 Constitution and federal treaties, statutes,
14 executive orders, and policies. GGNRA is
15 committed to fulfilling its tribal consultation
16 obligations by adhering to the consultation
17 framework in recognition of American Indian
18 tribes' right to self-governance and tribal
19 sovereignty. The park maintains relationships
20 with the associated Coast Miwok and the
21 Ohlone, and will continue to consult with
22 them on the GMP and in subsequent
23 planning and implementation activities.

24
25

26 **Coastal Zone Management Act**
27 **Consistency for Public Access and**
28 **New Facilities**

29 **CONCERN STATEMENT:** The San Francisco
30 Bay Conservation and Development
31 Commission stated that any project identified
32 in the Draft GMP that requires bay fill or new
33 shoreline facilities, such as the improvements
34 to the historic Alcatraz pier (Pier 4), should
35 address public access improvements.

36

37 **RESPONSE**

38 The National Park Service works with other
39 federal, state, and local agencies to ensure
40 management actions within GGNRA are
41 appropriate for both the resources within the
42 recreation area and the activities that visitors
43 partake in. The National Park Service
44 examined the policies of the California
45 Coastal Management Program, which is
46 administered by the California Coastal
47 Commission (CCC), and the San Francisco
48 Bay Plan, which is administered by the San

49 Francisco Bay Conservation and
50 Development Commission (BCDC), during
51 the development of the GMP. The National
52 Park Service determined that the plan was
53 consistent with both the California Coastal
54 Management Program and the San Francisco
55 Bay Plan. The National Park Service sent a
56 copy of the plan to the administering agencies
57 for review, and received concurrence from
58 both agencies regarding this consistency.
59 This information is further explained in the
60 FEIS/GMP in the section titled "Coastal
61 Zone Management Act Consistency" within
62 "Consultation, Coordination, and
63 Preparation."

64

65 The GMP aims to improve public access to
66 park lands and to waterfront areas within
67 park lands while accounting for the
68 preservation of cultural and natural
69 resources. Potential actions in the plan that
70 could improve public access to park lands
71 and to waterfront areas include expanding
72 regional park ferry access, adding new ferry
73 departure points for Alcatraz Island, and
74 improving automobile circulation in certain
75 areas. In addition, the plan aims to expand
76 nonmotorized access to waterfront areas and
77 better connect communities to park lands
78 through improvements to the park's existing
79 trail system and by linking park trails with
80 local and regional trail networks.

81

82 Project-specific consultation with the CCC,
83 BCDC, and other federal, state, and local
84 agencies will occur in the future as specific
85 components of the plan are carried out.
86 Detailed project-specific plans, such as
87 potential improvements to Pier 4 at Fort
88 Mason, will account for the policies of the
89 California Coastal Program and the Bay Area
90 Plan, including "maximum feasible access to
91 and along the waterfront."

92

93

94 **Coordination with Additional**
95 **Agencies and Groups**

96 **CONCERN STATEMENT:** Commenters
97 suggested coordinating with additional
98 agencies and groups such as: San Mateo

1 County Historical Association, the National
2 Oceanic and Atmospheric Administration
3 (NOAA) (to explore seabird protection and
4 disturbance on Alcatraz Island and
5 coordination of lighthouse properties at
6 Alcatraz Island), the Crissy Field Dog Group,
7 the Montara Dog Group, the San Mateo
8 County Historic Resources Advisory Board,
9 San Mateo County Historical Society,
10 Caltrans, San Mateo County Convention and
11 Visitors Bureau, U.S. Coast Guard, equestrian
12 groups, and sailing groups before proceeding
13 to the final GMP. The California Department
14 of Transportation was concerned with the
15 role of inter-agency coordinators throughout
16 the process and alternatives.

17

18 **RESPONSE**

19 Consultation and coordination in the
20 development of the plan was extensive and is
21 summarized in the section titled
22 “Consultation, Coordination, and
23 Preparation.” Between the draft and final
24 GMP/EIS, additional consultation was
25 conducted with some agencies. Additional
26 coordination would be conducted during
27 more detailed implementation planning
28 where NPS actions could affect other public
29 lands, where other approvals are needed, or
30 where there are opportunities for
31 collaboration that are consistent with the
32 guiding principles identified in this plan. See
33 “Guiding Principles for Park Management”
34 for “Civic Engagement,” “Regional
35 Collaboration,” and “Partnerships” in the
36 “Background” section of the GMP. Also,
37 refer to “Consultation, Coordination, and
38 Preparation” for more details of how
39 consultation with other agencies, officials,
40 and organizations was conducted.

41

42

43 **Management Policy and Map Review**

44 **CONCERN STATEMENT:** Several commenters
45 suggested that additional management
46 policies and maps be reviewed, while being in
47 compliance with other plans and policies.
48 Commenters, including the California
49 Department of Transportation, stated that if

50 the National Park Service closes State Route
51 1 due to a catastrophic landslide, an
52 independent assessment would need to be
53 written and any project in the GMP would
54 need to be consistent with the San Francisco
55 Bay Plan policies on fish, aquatic organisms,
56 and wildlife. The San Francisco Bay
57 Conservation and Development Commission
58 recommended that a determination under
59 Coastal Zone Management Act consistency
60 mandates would be required prior to
61 implementation of any proposed activities at
62 the recreation area. NOAA suggested that the
63 GMP include the current management
64 policies of NOAA’s joint management plan
65 for Cordell Bank, Gulf of the Farallones, and
66 Monterey Bay National Marine Sanctuaries.
67 The Federal Emergency Management Agency
68 (FEMA) stated that the flood insurance rate
69 maps for the City and County of San
70 Francisco, San Mateo County, and Marin
71 County were revised in May 2009 and should
72 be reviewed within the GMP.

73

74 **RESPONSE**

75 The National Park Service has worked, and
76 will continue to work, with other agencies
77 and programs to ensure that any management
78 actions taken within the recreation area are
79 consistent with other policies or management
80 agencies. We acknowledge the San Francisco
81 Bay Conservation and Development
82 Commission’s role in making consistency
83 determinations with the San Francisco Bay
84 Plan. Text has been added to the “Coastal
85 Zone Management Act Consistency” section
86 in the “Other Analyses and Statutory
87 Considerations” section to clarify the role of
88 BCDC and that a consistency determination
89 will be required prior to implementation of
90 actions in the GMP.

91

92

93 **Map Corrections and Suggestions**

94 **CONCERN STATEMENT:** Commenters
95 requested that maps in the Draft GMP be
96 improved in various ways including showing
97 trail connections and future transportation
98 conditions, improving trail maps, correcting

1 the map showing easement boundaries,
2 correcting discrepancies on the San
3 Francisco transportation network maps, and
4 providing plastic map overlays. One
5 commenter suggested that the no-action
6 alternative map should be made clearer and
7 rendered in the same style as the action
8 alternative maps.

9
10 **RESPONSE**

11 The no-action alternative map is replicated
12 directly from the 1980 general management
13 plan. The 1980 general management plan can
14 be referenced for more detail on the map and
15 related description of the preferred
16 alternative. The map used a different zoning
17 scheme and mapping protocol, so it cannot
18 be replicated in the same style as the action
19 alternatives. Other suggestions were
20 reviewed. Where appropriate, changes have
21 been made.

22
23
24 **BACKGROUND: MARIN COUNTY,
25 DEPARTMENT OF PUBLIC WORKS**

26 **Marin County, Department of Public
27 Works**

28 **CONCERN STATEMENT:** Marin County
29 Department of Public Works requested that
30 the word “created” be replaced with “to be
31 developed” in a reference to a welcome
32 center in the vicinity of the Manzanita Park &
33 Ride.

34
35 **CONCERN STATEMENT:** Marin County
36 Department of Public Works noted that the
37 proposed welcome center at State Route
38 1/Manzanita lacks design details, and
39 requested to see preliminary designs to
40 analyze grades, alignment, and topography to
41 determine grading necessary and to ensure it
42 properly conforms to existing infrastructure.

43
44 **RESPONSE**

45 The intent of the welcome center is to serve
46 as a transportation hub that would include
47 parking, interpretation, and a shuttle stop.

48 The facility has been scaled down in the
49 FGMP and the description has been modified
50 to clarify its purpose. The revised language is
51 located in the preferred alternative for Muir
52 Woods National Monument. Specific details
53 of such a center, including design details and
54 cost estimates, would be determined during a
55 planning effort specific to that center and are
56 therefore not included in this GMP.

57
58
59 **Public Comment Period and
60 Public Meetings**

61 **CONCERN STATEMENT:** Commenters said
62 the 60-day comment period should be
63 lengthened by 2 months. Commenters also
64 stated that more public meetings should be
65 held and better publicity should be used to
66 notify the public of the Draft GMP. One
67 additional commenter expressed discontent
68 with open houses and suggested that a public
69 hearing format should be used.

70
71 **RESPONSE**

72 The 60-day public comment period opened
73 on September 9, 2011, and was extended 30
74 days to accommodate public requests. The
75 full public comment period ran from
76 September 9, 2011, through December 9,
77 2011. During the public comment period,
78 multiple opportunities were provided for
79 public input. This included three meetings
80 held in San Francisco, Pacifica, and Mill
81 Valley, California. Meetings were advertised
82 through a press release, postcard, and email
83 sent to the park’s mailing list; the park’s
84 website; the NPS Planning, Environment, and
85 Public Comment (PEPC) website; and
86 through Twitter. Postcards and flyers were
87 also available at visitor destinations in the
88 park. The public open houses were one tool
89 used to collect verbal and written comments
90 on the Draft GMP. Comments were also
91 accepted on PEPC and by mail.

92
93 Open houses are a type of public meeting
94 frequently used by public agencies because
95 they offer people opportunities to engage in
96 conversation with members of the planning

1 team. The open houses enabled the NPS
2 planning team to listen to people’s
3 comments, explain the alternatives and
4 concepts in the draft plan, and collect
5 feedback from the public. Open houses gave
6 people opportunities to offer comments
7 without the pressure of public speaking. This
8 format allows participation by all types of
9 people with all types of communication styles
10 and allows agency staff to better understand
11 individual questions and concerns.

14 **Addition of Terms to the Glossary**

15 **CONCERN STATEMENT:** Commenters
16 requested that additional terms in the Draft
17 GMP be added to the definitions section of
18 the document, including: compatible
19 recreation, exotic species, nonnative species,
20 invasive species, family events, aggressively
21 addressing, external threats, backcountry,
22 controlling access, and sustainability.

24 **RESPONSE**

25 To address this concern, several specialized
26 terms have been added to the glossary in the
27 FGMP/EIS. Other words or phrases
28 identified as confusing by commenters have
29 been changed to clarify the intent of the
30 document.

31
32 **CONCERN STATEMENT:** One commenter
33 stated that the analysis of the environ-
34 mentally preferred alternative is not correct.
35 In their view, alternative 2 should be the
36 environmentally preferred alternative, based
37 on criteria.

39 **RESPONSE**

40 The NPS Director’s Order 12 handbook,
41 *Conservation Planning, Environmental Impact*
42 *Analysis, and Decision Making*, interprets the
43 environmentally preferable alternative in
44 section 2.7.D as the “alternative that will
45 promote the national environmental policy
46 expressed in NEPA (Sec. 101 (b)).” As stated
47 in the handbook, this is consistent with the
48 definition of the environmentally preferable

49 alternative given by CEQA and contained in
50 the Department of the Interior NEPA
51 guidance.

52
53 Under the criteria of the environmentally
54 preferable alternative, values related to
55 natural resources, cultural resources, and
56 human experiences must all be considered
57 and weighed. Therefore, the environmentally
58 preferable alternative analysis is not merely a
59 measurement of the alternative that is most
60 beneficial to biological and ecological
61 resources. The analysis of the
62 environmentally preferable criteria and the
63 identification of the environmentally
64 preferable alternative are not binding
65 decisions by the National Park Service. The
66 NPS preferred alternative may or may not be
67 the same as the environmentally preferable
68 alternative.

71 **Replacement of Equestrian Facilities 72 at Rancho Corral de Tierra with Fire 73 Fighting Facilities**

74 **CONCERN STATEMENT:** SFPUC suggested
75 that if the existing equestrian facilities at
76 Rancho Corral de Tierra include
77 infrastructure that could be used for
78 firefighting efforts, an evaluation into
79 whether the potential use of those facilities
80 for firefighting efforts outweighs the
81 recreational benefits of those equestrian
82 facilities, and therefore whether the removal
83 of the equestrian facilities should be
84 incorporated into the preferred alternative.

86 **RESPONSE**

87 Within the GMP preferred alternative, it is
88 proposed that equestrian facilities would be
89 retained, with the exact location, type, and
90 scale of facility improvements as well as the
91 mix of other uses determined in future
92 planning efforts. The GMP does not address
93 the logistics of fire management efforts
94 including repurposing existing public serving
95 facilities for fire protection needs within
96 GGNRA. Fire management for all NPS-
97 managed lands is addressed in the GGNRA

1 fire management plan (FMP). This document
2 is scheduled to be updated in 2013.

3
4
5 **RESPONSE TOPIC 13: THE**
6 **ALTERNATIVES – MANAGEMENT**
7 **ZONES**

8 **Additional Scenic Values and**
9 **Opportunities**

10 **CONCERN STATEMENT:** Commenters
11 suggested that there are more scenic values
12 and opportunities within the park than the
13 Draft GMP identifies, specifically along trails,
14 the Marin City Ridge, Gerbode Valley, Ocean
15 Beach, Fort Funston, and Muir Beach. In
16 addition, one commenter stated that the
17 proposed Draft GMP management zones do
18 not adequately address the 1980 natural
19 appearance subzones for areas that appear to
20 be natural but are actually high visitation
21 areas, for instance Ocean Beach and Fort
22 Funston.

23
24 **RESPONSE**

25 Scenic beauty is included in the “Foundation
26 Statements: Guidance for Planning” portion
27 of the GMP’s “Background” section, which
28 acknowledges the fundamental resources and
29 values related to this resource. Scenic views
30 are also addressed in the “Management
31 Zones” section of the document for each
32 zone. The scenic corridor zone, for instance,
33 includes both roads and trails, such as the
34 Sneath Lane trail to Sweeney Ridge and the
35 ridge top area. Roads and trails have been
36 included, at times, as scenic corridor zones
37 due to the scenic views available from them.

38
39 New zoning replaces the zoning in the 1980
40 GMP for all lands included in the GMP
41 planning area. To clarify, Rodeo Lagoon and
42 Lands End are not in the scenic corridor zone
43 as one commenter stated. Rodeo Lagoon is in
44 the sensitive resources zone, and Lands End
45 is in the evolved cultural landscape zone. Fort
46 Funston and Ocean Beach each have diverse
47 opportunity zones in the higher visitor use

48 areas. Detailed descriptions of each zone can
49 be found in the “Management Zones”
50 subsection of the “Building the Management
51 Alternatives” section. Additional concerns
52 about zoning within this plan have been
53 addressed under the larger topic of “Zoning.”
54 Please see the responses to concerns 36654,
55 36495, 36494 and others for clarifications of
56 the management zones.

57
58
59 **Extension of the Sensitive Resources**
60 **Zone**

61 **CONCERN STATEMENT:** Commenters
62 offered suggestions on areas that should be
63 managed as sensitive resources zones, such
64 as: all nearshore/offshore rocks and sea
65 stacks in San Francisco, the Wildlife
66 Protection Area in the Presidio, areas that are
67 seasonally managed for breeding birds on
68 Alcatraz, the Crissy Field Wildlife Protection
69 Area, and the area of Ocean Beach that
70 supports wintering snowy plovers. The
71 NOAA suggested that if GGNRA is expanded
72 to include the area offshore of the San Mateo
73 County coast, that a sensitive resources zone
74 should be designated for the area of Devil’s
75 Slide Rock and Mainland from Gray Whale
76 Cove to Pedro Point (Point San Pedro).

77
78 **CONCERN STATEMENT:** NOAA, the U.S.
79 Fish and Wildlife Service (USFWS), and
80 other commenters noted support for
81 extending the Sensitive Resources Zone to
82 300 feet from Alcatraz Island’s shore, and
83 suggested that buoys will be nearly essential
84 for effectiveness. One commenter asked if the
85 300-foot sensitive resources zone was
86 necessary, and if so, how it would be
87 enforced.

88
89 **RESPONSE**

90 A number of changes to the GMP have been
91 made and address these concerns. Changes
92 include the addition of clarifying language to
93 the plan and some changes to the zoning
94 maps. Where changes mentioned by
95 commenters were not appropriate,
96 clarifications are also offered below. The

1 zoning map for San Francisco within the
2 preferred alternative has been modified to
3 show the offshore portion of the Crissy Field
4 Wildlife Protection Area as a sensitive
5 resources zone. The terrestrial portion of the
6 Wildlife Protection Area is not part of this
7 plan and was addressed in the General
8 Management Plan Update for the Presidio
9 and the Crissy Field Environmental
10 Assessment.

11
12 Corrections have been made to Table 10:
13 Comparison of Alternatives for Alcatraz
14 Island, so that it correctly matches the
15 description of the preferred alternative
16 related to the sensitive resources zone in the
17 “Offshore Bay Environment” section, which
18 states that this zone would be demarcated by
19 warning buoys and closed to boats year
20 round. Details of enforcement of the closure
21 will be provided when the sensitive resources
22 zone is established.

23
24 The sensitive resources zone description
25 related to visitor experience has been
26 clarified. Any limitations to activities that
27 would be allowed within this zone are needed
28 to better meet the intention of this zoning
29 designation. In general, visitor access would
30 be restricted or prohibited, particularly
31 during the times of the year when species are
32 the most sensitive to visitor activities. The
33 portion of Ocean Beach inhabited by the
34 federally threatened western snowy plover is
35 heavily used by the public and designating
36 this area as a sensitive resources zone would
37 be incompatible with visitor use in the
38 preferred alternative. Designating this area as
39 a natural zone allows visitor use to be
40 managed to preserve resources and could
41 involve controlled access.

42
43 The nearshore/offshore rocks and sea stacks
44 in San Francisco are dispersed over a broad
45 area and contain lower concentrations of
46 dispersed sensitive resources than the
47 sensitive resources zones identified in the
48 preferred alternative. Designation of areas as
49 sensitive resources zones in the plan has been
50 reserved for areas that are highly sensitive to

51 a variety of activities and warrant highly
52 controlled access.

53
54 The map of proposed boundary adjustments
55 has been updated to show the proposed
56 zoning that would be applied to the offshore
57 waters in San Mateo County, including a
58 sensitive resources zone corresponding to the
59 Egg Rock to Devil’s Slide Special Closure.
60 The proposed zoning would be evaluated at
61 the time the boundary adjustments are
62 enacted and the state lands lease is acquired.

63 64 65 **ALTERNATIVES – ELEMENTS** 66 **COMMON TO ALL**

67 **Recommended Changes by NOAA**

68 **CONCERN STATEMENT:** NOAA (Gulf of the
69 Farallones National Marine Sanctuary)
70 recommended text changes throughout the
71 Draft GMP to include additional language for
72 implementation planning, roosting habitat,
73 sea level rise and coastal vulnerability, carbon
74 footprint and emissions mitigation, specific
75 use zones, ocean stewardship, management
76 strategies, the offshore ocean environment,
77 boundaries, cost effectiveness, and other
78 editorial suggestions.

79 80 **RESPONSE**

81 The comments submitted by NOAA / Gulf of
82 the Farallones National Marine Sanctuary
83 were wide-ranging, thorough, and insightful.
84 After careful analysis by the planning team,
85 almost every suggestion was incorporated in
86 the final document. The suggestions for
87 changing the natural resource goals related to
88 responding to climate change and urban
89 pressures were made. The natural resource
90 goals for the preferred alternative, alongside
91 continued consultation with the National
92 Marine Fisheries Service (NMFS) adequately
93 address NPS responsibilities under the
94 Endangered Species Act (ESA). Some of the
95 suggestions resulted in changes in impact
96 assessment or helped to refine the
97 description of the alternatives. Where these
98 are substantive, they have been described in

1 other sections of this report on public
2 comments.

3
4

5 **ALTERNATIVES – PARKWIDE**

6 **Construction and Birds on Alcatraz**

7 **CONCERN STATEMENT:** One commenter
8 suggested that wildlife sensitivity training
9 should be mandatory for park staff and
10 contractors on Alcatraz Island.

11

12 **RESPONSE**

13 Training for contractors to avoid impacting
14 birds during construction (rehabilitation) is
15 addressed in the *Alcatraz Island Historic*
16 *Preservation and Safety Construction Program*
17 *Environmental Impact Statement* for the
18 Alcatraz construction projects it included.
19 Specific reference to training park staff and
20 contractors has been added to the list of
21 mitigative measures in the GMP. The
22 National Park Service strives to avoid impacts
23 to sensitive species when management
24 actions are taken. Impacts to threatened and
25 endangered species resulting from facility
26 improvements or construction would be
27 determined during project proposal and
28 alignment processes rather than in this GMP
29 document. With any new facility, including
30 new or improved trails, the National Park
31 Service strives to avoid endangered species
32 habitat as much as possible in design. For
33 example, trail work occurring near marbled
34 murrelet habitat in other parts of GGNRA
35 could occur during non-breeding season
36 when murrelets are at sea rather than in the
37 conifer forests. This strategy would be similar
38 to those implemented for spotted owls. The
39 mitigative measures section of the GMP
40 addresses avoidance of impacts and use of
41 conservation measures taken in consultation
42 with the appropriate resource agencies for
43 both operations and for new facilities and
44 management actions.

45

46

47 **Costs**

48 **CONCERN STATEMENT:** One commenter
49 expressed concern that the cost estimate for
50 the preferred alternative is too high when
51 compared to the no-action alternative,
52 especially in the current economic climate.

53

54 **RESPONSE**

55 Footnotes and text in the DGMP/DEIS
56 “Executive Summary” and “Table 11: Costs
57 Associated with the Implementation of the
58 No-action Alternative for Park Lands in
59 Marin, San Francisco, and San Mateo
60 Counties” explain the approach to identifying
61 costs and why the no-action alternative costs
62 are substantially lower than the action
63 alternatives. To summarize, NPS planning
64 standards direct planners to only include in
65 the no-action alternative the capital costs for
66 projects already approved and funded.
67 Federal approval and funding usually only
68 covers projects to be executed over the next
69 few years. However, the standards also direct
70 planners to identify all major capital
71 expenditures anticipated over the next 20
72 years for all the action alternatives. This
73 makes a direct comparison uneven because it
74 suggests the no-action alternative would be
75 substantially less costly, whereas substantially
76 more than \$10,460,000 would be expended
77 under the no-action alternative over the 20-
78 year life of the GMP.

79

80

81 **Education and Interpretation Efforts**

82 **CONCERN STATEMENT:** Commenters had
83 several suggestions regarding education and
84 interpretation efforts at GGNRA, such as:
85 educating the public on invasive species,
86 providing educational films with public TV,
87 educating visitors about the role of the people
88 in founding and sustaining the park,
89 incorporating carbon emissions reduction
90 into park interpretation, offering educational
91 walks for visitors, and emphasizing the
92 “stewardship,” “partnership,” and “deep
93 personal connection” that visitors and
94 volunteers experience within GGNRA.

1 **RESPONSE**

2 These suggestions are consistent with the
3 GMP. The National Park Service strives to be
4 proactive in interpretive and educational
5 programming on these topics. The GMP
6 touches on general interpretive themes from
7 which specific programs, such as those
8 suggested by commenters, may be developed.
9 GGNRA's comprehensive interpretive plan
10 provides more specifics about interpretative
11 themes and stories, areas of emphasis, and
12 future recommendations, and can be found
13 on the GGNRA website. Within the GMP,
14 please refer to "Background," under
15 "Guiding Principles for Park Management,"
16 and the "Elements Common to all Action
17 Alternatives" section for examples of how
18 interpretive and educational programming
19 include these topics.

20
21

22 **ALTERNATIVES – ALCATRAZ ISLAND**

23 **New Construction, Waterfowl, and**
24 **Pest Management on Alcatraz**

25 **CONCERN STATEMENT:** Commenters want
26 to know more about how the National Park
27 Service plans to manage Alcatraz Island,
28 specifically how infrastructure such as
29 buildings will be balanced with the presence
30 of birds on the island. Commenters suggested
31 establishing a roof garden at the top of the
32 Alcatraz Island prison as well as a tunnel
33 network on the parade grounds that leads to
34 the agave trail. Commenters also stated that
35 the proposed rehabilitation of the New
36 Industries Building should be limited to
37 outside the waterbird breeding season and
38 such rehabilitation would have negative
39 effects on waterbirds. One commenter stated
40 that if a service kitchen is installed, then a
41 preventative rodent and pest plan should be
42 developed and implemented. Commenters
43 also suggested that the GMP should include a
44 decision-making method for when, or if,
45 some preservation will not be conducted due
46 to budgetary or other constraints.

47

48 **RESPONSE**

49 Alcatraz is a national historic landmark and
50 as such, any new construction (such as a
51 tunnel under the parade ground) would
52 create an adverse effect to the integrity of the
53 site. The park integrated pest manager
54 maintains plans for the island. The park
55 adheres to guidelines in the *Alcatraz Island*
56 *Historic Preservation and Safety Construction*
57 *Program Final Environmental Impact*
58 *Statement* regarding preservation work on
59 Alcatraz, which requires constant
60 consultation and avoiding implementation of
61 projects during the bird nesting season.

62

63 The *2010 Cultural Landscape Report for*
64 *Alcatraz Island National Historic Landmark*
65 sets clear treatment priorities for
66 rehabilitating structures and landscape
67 features on the island. Solar panels were
68 recently installed on the Alcatraz cell house
69 roof to reduce greenhouse gas emissions
70 from fossil-fuel based energy production on
71 the island using renewable energy sources in
72 order to meet current and future energy
73 demands while minimizing cultural and
74 natural resource impacts. Consequently, a
75 roof garden on the prison building is not
76 feasible.

77

78

79 **New Facilities on Alcatraz Island**

80 **CONCERN STATEMENT:** One commenter
81 suggested that a second dock at the fixed
82 wharf areas of Alcatraz Island could improve
83 visitor access. This dock should implement
84 new design technology for various vessels,
85 types of operations, technology, and new fuel
86 types.

87

88 **RESPONSE**

89 The suggested actions provided by the
90 commenter could be addressed in future
91 implementation planning for more efficient
92 and sustainable ferry service to Alcatraz. This
93 planning is not within the scope of the GMP.
94 Concerning the idea of an additional dock,
95 construction of an additional dock for a

1 second ferry has not been found to be
2 necessary or consistent with historic
3 preservation guidelines for the island.

6 **Nesting Bird Colonies and Boater 7 Access**

8 **CONCERN STATEMENT:** One commenter
9 suggested restricting boater access around
10 Alcatraz Island as this can cause loss of
11 nesting colonies.

13 **RESPONSE**

14 The preferred alternative for Alcatraz Island
15 includes an offshore sensitive resources zone
16 that extends 300 feet around most of Alcatraz
17 and is closed to boating year round.

20 **New Industries Building and Special 21 Events**

22 **CONCERN STATEMENT:** One commenter
23 posed questions regarding the availability of
24 the New Industries Building for special
25 events, and the times that those special events
26 would be allowed to occur.

28 **RESPONSE**

29 The preferred alternative states that the
30 second floor of the New Industries Building
31 would be rehabilitated as a multipurpose
32 facility. It would include flexible space and
33 accommodate a variety of activities with
34 appropriate controls to minimize impacts
35 during bird nesting season. The specific
36 details on how special events will be planned
37 and managed in the rehabilitated facility will
38 be identified in future operational plans and
39 are outside the scope of the GMP.

42 **Suggested Educational Components**

43 **CONCERN STATEMENT:** Commenters
44 offered suggestions on what educational
45 components should be identified at Alcatraz

46 Island, including: the island's geologic and
47 biotic conditions, the use of the island by
48 indigenous people, the sensitivity of nesting
49 birds, the natural history of the island, the use
50 of alternative energy on the island, and more
51 emphasis on the Civil War era. One
52 commenter also suggested installing buoys at
53 the historic distance from the island. One
54 commenter suggested additional visitation
55 opportunities such as multiple entrances to
56 the cell house tiers, adding garden and
57 walking trails to existing tours, and offering
58 additional opportunities for visitors to learn
59 more about the many eras of Alcatraz history.
60 NOAA suggested reducing CO2 emissions by
61 using alternative energy.

63 **RESPONSE**

64 The GMP includes general interpretive
65 themes from which specific interpretive
66 programs, such as those offered by
67 commenters, may be developed.
68 Commenters may reference GGNRA's
69 comprehensive interpretive plan on the
70 GGNRA website for more specifics about
71 interpretative stories and themes, areas of
72 emphasis, and future recommendations.
73 Concerning reducing CO2 emissions through
74 use of alternative energy, see the response to
75 a concern under Response Topic 13: The
76 Alternatives, Alternatives – New Elements of
77 the Alternatives, titled "Climate Change".

79 The preferred alternative includes plans for
80 buoys 300 feet around Alcatraz Island to
81 replicate the historic no trespass zone. While
82 the buoys would not be placed at the exact
83 location as they were historically, placement
84 would be in close proximity for the purposes
85 of protecting the natural resources and
86 replicating the historic feel of the island.

89 **Interpretive Sounds**

90 **CONCERN STATEMENT:** One commenter
91 asked if GGNRA incorporates "typical
92 sounds" for prisoners, meal calls, etc. with
93 the natural soundscape.

1 **RESPONSE**

2 The GMP does not address interpretive
3 themes and components to the level of detail
4 requested. When visitors experience the
5 island, it is unavoidable to hear the natural
6 soundscape of the island. If they choose to
7 participate in the island’s audio tour, visitors
8 will hear sounds that characterized the
9 historic prison, such as clanging metal,
10 footsteps, etc.

11
12
13 **Breeding Birds and Sensitive**
14 **Resources Zone**

15 **CONCERN STATEMENT:** One commenter
16 suggested that areas of Alcatraz Island that
17 are seasonally managed for breeding birds
18 should be given sensitive resources zone
19 designation during the breeding season, and
20 that such areas should be so indicated on the
21 management zones map.

22
23 **RESPONSE**

24 The entire Alcatraz Island is designated a
25 national historic landmark for its exceptional
26 historic significance. Because alternative 3
27 would focus management on the park’s
28 nationally important resources and promote
29 visitor enjoyment and appreciation for those
30 “national treasures,” designating a sensitive
31 resources zone to protect natural resources
32 on the island was not fully compatible with
33 this alternative. However, all of the zones
34 would protect native wildlife and wildlife
35 habitat to the greatest extent possible. With
36 the exception of the parade ground, the
37 majority of the bird breeding habitat within
38 the evolved cultural landscape zone will be
39 closed to the public during nesting season.
40 For further clarification on how impact
41 analysis concerning birds at Alcatraz Island
42 has been handled in this plan, please see the
43 NPS response under the topic of “Birds at
44 Alcatraz Island” relating to multiple
45 concerns.

46
47

48 **ALTERNATIVES – MARIN COUNTY**

49 **Cabins and Food Facilities in Marin**
50 **County**

51 **CONCERN STATEMENT:** Commenters stated
52 opposition to developing proposed cabins at
53 Kirby Cove and the proposed small
54 food/information kiosk at Tennessee Valley
55 Trailhead and suggested that development be
56 confined to areas outside GGNRA
57 boundaries, relying on private development
58 to provide visitor services.

59
60 **RESPONSE**

61 Adding a modest number of rustic cabins to
62 the existing Kirby Cove campground would
63 extend an overnight opportunity in the park
64 to people who might not otherwise come and
65 would be designed to be compatible with this
66 setting if implemented. Such an addition is
67 consistent with the concept of Alternative 1—
68 Connecting People with the Parks. The
69 number, location, size, and style of the cabins
70 would be determined through more detailed
71 planning that could follow the GMP. A small
72 kiosk at the Tennessee Valley Trailhead
73 would be within the developed
74 trailhead/parking area to provide basic
75 snacks and information to park visitors.

76
77

78 **Removal of Trails to Offset New Trail**
79 **Construction**

80 **CONCERN STATEMENT:** One commenter
81 suggests that any redesigned or new trails
82 deemed essential should be offset by the
83 removal of existing trails nearby.

84
85

86 **RESPONSE**

87 Alternative 1 identifies the conversion of
88 unnecessary management roads to trails in
89 several locations, reducing the overall
90 footprint of development in the park. The
91 “Trails” section (in “Elements Common to
92 All Action Alternatives”) includes a goal of
93 integrating improvements to the surrounding
94 cultural landscape and natural habitats when

1 creating or rehabilitating trails and
2 converting unnecessary management roads
3 to trails. The park will continue the practice
4 of identifying opportunities to include
5 restoration and removal of visitor created
6 social trails and unnecessary facilities and
7 restoring disturbed natural areas when
8 planning and implementing new trail
9 construction.

12 Improvements to Point Bonita 13 Lighthouse

14 **CONCERN STATEMENT:** Commenters
15 suggested that GGNRA should improve the
16 Point Bonita lighthouse area, add a bathroom
17 at the lighthouse, redesign the two picnic
18 areas, and have access to the fog horn
19 building.

21 **RESPONSE**

22 Recent improvements to the Point Bonita
23 Lighthouse trailhead have been completed
24 and a restroom will be added to this area in
25 the near future. The fog horn building is
26 currently managed by the Coast Guard and
27 does not serve a visitor function. Although
28 there have been some requests to open it to
29 the public, there are no current plans to do so
30 as major upgrades would be needed for
31 accessibility and safety.

34 Updating Structures at Slide Ranch

35 **CONCERN STATEMENT:** Commenters,
36 including the NOAA, noted that historic
37 structures should not be updated or
38 expanded (maintaining them is acceptable)
39 and that improving the facilities at Slide
40 Ranch should be weighed against
41 information related to sea level rise, storm
42 surges, and known geologic conditions.

44 **RESPONSE**

45 Buildings at Slide Ranch are not classified as
46 historic properties within the Secretary of the
47 Interior's standards. The buildings at Slide

48 Ranch would be treated as any other facility
49 at the park if any modifications were to be
50 considered in the future. Before any changes
51 are made to a building or facility at GGNRA,
52 a careful environmental review as part of the
53 NEPA process would be conducted to ensure
54 that changes are warranted and appropriate.

57 **Volunteer Program**

58 **CONCERN STATEMENT:** One commenter
59 suggested that the GMP include a discussion
60 regarding the volunteer programs in the
61 Marin Headlands, which has trained
62 hundreds of volunteers to become stewards
63 and naturalist advocates for the region.

65 **RESPONSE**

66 The National Park Service recognizes the
67 important and unique role that volunteers at
68 GGNRA play. GGNRA has more than 30,000
69 volunteers annually who assist in a variety of
70 tasks from stewardship of lands to education
71 of school children. They are critical to the
72 successful management and operations of the
73 parks. Recognition of the importance of
74 volunteers is referenced in the "Affected
75 Environment" section "Park Management,
76 Operations, and Facilities."

79 Inclusion of Water Quality Projects 80 into Alternative 1

81 **CONCERN STATEMENT:** The NOAA
82 requested that the National Park Service
83 move projects that can improve water quality
84 from alternative 2 into the preferred
85 alternative.

87 **RESPONSE**

88 In developing the draft plan, the National
89 Park Service reviewed the water quality-
90 related projects in alternative 2 and
91 incorporated several into the preferred
92 alternative. Changes included, for example,
93 the removal of all facilities and the
94 restoration of wetland and riparian habitat in

1 the lower Tennessee Valley. Subsequent
2 review did not identify other projects in
3 alternative 2 that could be incorporated in
4 the final preferred alternative; however, if
5 climate change results in unforeseen changes
6 in resource conditions during the life of the
7 GMP, the park would consider additional
8 restoration actions at that time, including
9 those identified in alternative 2.

10
11

12 **ALTERNATIVES – SAN FRANCISCO**

13 **Proposed Boundary Modifications**

14 **CONCERN STATEMENT:** The SFPUC has
15 expressed an interest in the County of San
16 Francisco jail property because it is within the
17 hydrologic boundary of the Peninsula
18 watershed. SFPUC noted that San Francisco
19 code for surplus property declares the city
20 department would be offered the property
21 before the National Park Service.

22

23 **RESPONSE**

24 We acknowledge SFPUC expression of
25 interest in the property and agree that it
26 would make sense to manage this area as part
27 of the Peninsula watershed because it is
28 within the hydrologic boundary of the
29 SFPUC-managed Peninsula watershed. The
30 language in the GMP “Boundary
31 Adjustment” section states that this would be
32 considered “should the county government
33 declare the property excess,” assuming that
34 an internal county process would be
35 completed before this property would be
36 identified as excess for NPS consideration. If
37 included as part of the Peninsula watershed,
38 it may still make sense to include it within the
39 GGNRA boundary consistent with the
40 majority of the watershed, and for the
41 reasons identified in the rationale for the
42 proposed boundary change. In the event that
43 the SFPUC would not be interested in
44 acquiring this property in the future and it
45 becomes excess to San Francisco, or to
46 facilitate future cooperative management,
47 this potential boundary adjustment will
48 remain identified at this time.

49 **Access to Infrastructure at Lands End 50 and Fort Funston**

51 **CONCERN STATEMENT:** SFPUC requested
52 that the alternatives be modified to ensure
53 that they will have continued access to
54 existing infrastructure in the Lands End area.

55

56 **CONCERN STATEMENT::** SFPUC stated that
57 the Draft GMP should include descriptions
58 of the two wastewater treatment assets at
59 Fort Funston that the SFPUC owns and that
60 the maintenance and operation of the
61 facilities should be part of the proposed
62 alternatives.

63

64 **RESPONSE**

65 As noted in the “Background” section, under
66 “Special Mandates and Administrative
67 Commitments Related to the Golden Gate
68 National Recreation Area,” under the
69 heading “Other Easements,” numerous
70 publicly and privately held rights, including
71 easements for access and utilities, exist within
72 the park’s boundary. The park will continue
73 to cooperate with easement holders to
74 provide access; however, they are not
75 individually described in the GMP.

76

77 Language has been added to the preferred
78 alternative description to clarify San
79 Francisco and Daly City stormwater and
80 wastewater infrastructure easements.

81

82 The topic of easement rights for access,
83 utilities, and other purposes is acknowledged
84 in the “Other Easements” section of this plan;
85 please reference it for further clarification.

86

87

88 **Bolinas Lagoon Restoration**

89 **CONCERN STATEMENT:** Commenters
90 suggested that the GMP should identify the
91 measures proposed to protect and restore
92 coastal ecosystems and restore natural
93 processes that affect Bolinas Lagoon.

94

1 **RESPONSE**

2 *The Bolinas Lagoon Restoration Project—*
 3 *Recommendations for Restoration and*
 4 *Management* (GFNMS 2008) identified key
 5 actions to protect and restore Bolinas Lagoon
 6 and its watershed. Three tables identify
 7 recommendations for restoration in the
 8 locally preferred plan, recommendations for
 9 management (best management practices),
 10 and recommendations for adaptive
 11 management and monitoring. Each action
 12 identifies the key land managers, including
 13 GGNRA, with a vested interest in
 14 implementation of each action. GGNRA
 15 involvement would be required to implement
 16 restoration actions in portions of the
 17 watershed, including improving floodplain
 18 function along Easkoot Creek, at the Bolinas
 19 Y, and along the east shore of Bolinas Lagoon
 20 (e.g., Stinson Gulch), and improving
 21 transitional habitat and habitat connectivity
 22 along the east shore of the lagoon.

23
 24
 25 **Safety Concerns – Proposed Visitor**
 26 **Facilities at Montara Lighthouse and**
 27 **Shelldance Nursery Areas**

28 **CONCERN STATEMENT:** Commenters
 29 questioned whether the Montara Lighthouse
 30 and Shelldance Nursery are appropriate sites
 31 for a potential visitor center or other visitor
 32 facilities, citing safety and traffic issues. One
 33 commenter requested that the National Park
 34 Service use the Sharp Park Clubhouse as the
 35 peninsula’s primary gateway visitor center.

36
37 **RESPONSE**

38 The GMP preferred alternative concept
 39 includes improvements to safe access and
 40 egress to the Montara Lighthouse. This is
 41 important for current uses and in planning
 42 for a new multiagency visitor orientation
 43 facility in this location. Access improvements
 44 to the Shelldance Nursery site are also
 45 identified in the GMP preferred alternative
 46 concept for that site to accommodate the
 47 proposed visitor facilities, although a visitor
 48 center is not proposed for that location in the

49 GMP. Some improvements may be
 50 developed as part of San Mateo County’s
 51 planned Calera Parkway project. The
 52 description in alternative 1 has been clarified
 53 regarding safe access to this site. San Mateo
 54 County’s “Traffic and Trails” study (2012) for
 55 the State Route 1 corridor between El
 56 Granada and Devil’s Slide identified some
 57 potential actions to improve safety for people
 58 arriving by vehicle and other modes and
 59 reviewed the potential for a safe bicycle and
 60 pedestrian crossing at the site.

61
 62 Sharp Park is not included in the GMP
 63 planning area. It is managed by San Francisco
 64 Recreation and Park Department and the
 65 commenter’s suggestion to locate a visitor
 66 orientation facility at the Sharp Park Golf
 67 Course Clubhouse is outside the scope of the
 68 GMP.

69
70
71 **ALTERNATIVES – SAN MATEO**
72 **COUNTY**73 **Proposed Trail and Trailhead**
74 **Improvements**

75 **CONCERN STATEMENT:** Commenters
 76 offered suggestions for which trails could be
 77 improved in San Mateo County, and how
 78 these improvements could be accomplished.
 79 Suggestions included adding signs on San
 80 Andreas Trail directing people to Sweeney
 81 Ridge, adding more loops to the trail system
 82 including longer loops to the coast, and
 83 connecting the San Andreas Trail to Sweeney
 84 Ridge.

85
 86 **CONCERN STATEMENT:** San Mateo County
 87 Department of Public Works stated that there
 88 is a lack of detail regarding where proposed
 89 trailhead improvements would go, how many
 90 would be provided, and that trailhead
 91 improvements and better parking
 92 accommodations should be studied at the
 93 Fassler Trailhead.

1 **RESPONSE**

2 GGNRA is committed to providing an
3 enduring system of sustainable trails. Goals
4 and strategies for the trail system may be
5 found in the “Elements Common to All
6 Action Alternatives” section of the GMP.
7 Several of the specific suggestions and
8 questions noted by the commenters are part
9 of alternative 1, the preferred alternative for
10 park lands in San Mateo County.

11
12 Language has been added to text of
13 alternative 1 for Sweeney Ridge to include
14 improved trailhead facilities at Fassler
15 Avenue.

16
17
18 **Description of Proposed Trails in**
19 **SFPUC Watershed**

20 **CONCERN STATEMENT:** SFPUC requested a
21 clearer description of the proposed trails in
22 the SFPUC watershed. They expressed that
23 there is no description of the restrictions in
24 the scenic easement on trail access, yet
25 alternatives mention providing such access.
26 Further, the National Park Service should
27 improve and provide better interpretation of
28 existing connector trails from Sweeney Ridge
29 to coastal areas in Pacifica. SFPUC asked that
30 more analysis be done for existing conditions
31 and the potential impacts to resources and if
32 a new watershed trail is to be built,
33 documentation of the effect to watershed
34 resources must be analyzed.

35
36 **RESPONSE**

37 Alternative 1 has been revised to emphasize
38 that any trails promoted by the National Park
39 Service through watershed lands would be
40 done in accordance with scenic and scenic
41 and recreation easements, and with the 2002
42 *San Francisco Watershed Management Plan*.

43
44 Trail improvements suggested by SFPUC for
45 other areas are included in alternative 1,
46 either specifically, or more broadly with
47 language such as “Trail connections to the
48 community, Sweeney Ridge and adjacent

49 public lands and the California Coastal Trail
50 would be improved in partnership with other
51 land managers” as is stated for Mori Point.

52 Language has been added to alternative 1 for
53 Sweeney Ridge to include trailhead
54 improvements at Fassler Avenue as suggested
55 by SFPUC and other commenters.

56
57 The reference to SFPUC parking resources in
58 the affected environment section has been
59 deleted. Other specific comments in the have
60 been addressed through responses to a
61 concern found within Response Topic 11:San
62 Francisco Peninsula Watershed Lands, titled
63 “Alternatives and Environmental
64 Consequences.”

65
66
67 **PUC Support for Trail Proposals**

68 **CONCERN STATEMENT:** SFPUC offered
69 support for trail connections in alternatives 1
70 through 3, provided that trail proposals are
71 consistent with the *Peninsula Watershed*
72 *Management Plan*.

73
74 **RESPONSE**

75 Alternative 1 text has been changed to clarify
76 that the National Park Service is offering
77 support, cooperation, and collaboration to
78 the trail proposals specifically identified in
79 the *Peninsula Watershed Management Plan*
80 and encouraging consideration of other trails
81 that, though not specifically identified in the
82 plan, seem consistent with the *Peninsula*
83 *Watershed Management Plan* policies. These
84 include to consider the addition of new trails
85 and connectors in zones of low vulnerability
86 and risk and to limit public trails to the
87 periphery of the watershed in order to
88 minimize adverse impacts (fire, the spread of
89 exotic weed species, direct impacts to
90 sensitive species, etc.) as noted in the SFPUC
91 comment.

92
93

1 **Correction of Trail Names in**
2 **Document**

3 **CONCERN STATEMENT:** San Mateo County
4 Department of Public Works stated that the
5 Draft GMP references the need for multiuse
6 trail improvements connecting Sawyer Camp
7 I Trail to Sneath Lane; however, the multiuse
8 trail improvements would actually be
9 connecting San Andreas Trail, the northern
10 segment of Crystal Springs Trail, to Sneath
11 Lane.

12
13 **RESPONSE**

14 Text in the alternative 1 description of
15 Sweeney Ridge has been changed to
16 reference San Andreas Trail, consistent with
17 alternative 1 description for the SFPUC NPS
18 easement description.

19

20

21 **Primitive Camping and Potential**
22 **Impacts**

23 **CONCERN STATEMENT:** SFPUC stated that
24 there is no explanation of “primitive
25 camping” in the Draft GMP, which makes it
26 difficult to adequately analyze potential
27 impacts, and further that there is no analysis
28 of potential fire hazard impacts associated
29 with primitive camping within the Sweeney
30 Ridge area. SFPUC suggests that prior to
31 closing roads at the watershed, they should
32 be evaluated for emergency access for
33 firefighting equipment and personnel and to
34 refer to the *Peninsula Watershed Management*
35 *Plan* policies.

36

37 **CONCERN STATEMENT:** SFPUC suggested
38 that more information is needed regarding
39 the type of hikers’ huts that are proposed for
40 Sweeney Ridge under alternative 1 and that
41 there could be a potential for fires or other
42 impacts to watershed resources.

43

44 **RESPONSE**

45 “Primitive camping” and “hikers’ hut” have
46 both been added to the GMP glossary. Both

47 are concepts that are described for potential
48 future consideration. Implementation would
49 depend on more detailed planning and
50 environmental analysis that would need to
51 confirm feasibility, define proposed locations
52 and project details, and address concerns
53 including fire. Consistent with our guiding
54 principles and NPS policy, park staff would
55 consult with adjacent land managers,
56 including SFPUC, in development of
57 proposals for lands adjacent to the Peninsula
58 watershed. Neither the hikers’ hut nor
59 primitive camping concept assumes use of
60 open or other fires.

61

62 The SFPUC *Peninsula Watershed*
63 *Management Plan* includes mitigation
64 measures that would be integrated into
65 implementation of new trails and uses to
66 reduce the risk of wildfire. These mitigations
67 would apply to GMP-suggested trails and
68 within the NPS easements. For NPS lands
69 (not easements), the watershed management
70 plan policies would not apply. However, the
71 National Park Service acknowledges the
72 importance of this habitat is in part related to
73 the connectivity to Peninsula watershed
74 lands.

75

76 The DGMP alternative 1 description for
77 Rancho Corral de Tierra and other areas
78 states that “unnecessary roads” or
79 “unnecessary management roads” could be
80 converted to trails or removed. As SFPUC
81 suggests, prior to closing roads, determining
82 whether they are necessary would include
83 evaluation related to emergency access for
84 firefighting equipment and personnel. Text
85 throughout the alternative description has
86 been changed to include “unnecessary”
87 consistently in the document where it is not
88 specified.

89

90 Reference to SFPUC watershed access has
91 been deleted from the significance
92 description for the proposed boundary
93 adjustment for the Gregerson property.

94

95

1 **NIKE Facilities on Sweeney Ridge**

2 **CONCERN STATEMENT:** Commenters
3 suggested removing the NIKE facilities on
4 Sweeney Ridge.

5
6 **RESPONSE**

7 Future actions for the NIKE Missile Site at
8 Sweeney Ridge might include removal of the
9 buildings or retaining the shell of the
10 buildings so visitors can understand the
11 historic context of the site. Under either
12 preservation treatment, the site's history
13 could be interpreted.

14

15

16 **Devil's Slide as Sensitive Resources**
17 **Zone**

18 **CONCERN STATEMENT:** The U.S. Fish and
19 Wildlife Service supports zoning the Devil's
20 Slide area west of State Route 1 as a sensitive
21 resources zone as identified in alternative 2.
22 Similarly, NOAA noted that the goals for
23 natural resources are different between
24 alternative 1 (the preferred alternative) and
25 alternative 2, and suggests that limiting access
26 will help to maintain the current diversity of
27 the common murre and Brandt's cormorant
28 colonies on Devil's Slide Rock.

29

30 **RESPONSE**

31 The preferred alternative identifies that if
32 acquired, this area would be managed to
33 protect nesting seabirds and historic sites and
34 then notes the importance of collaboration
35 with adjacent land managers. The existing
36 natural zone would provide for this level of
37 protection. The coastal bluffs west of State
38 Route 1 and the offshore area, if acquired,
39 would be zoned sensitive zone. This would be
40 consistent with the offshore area of
41 Fitzgerald Marine Reserve and would
42 provide an increased level of protection for
43 nesting seabird colonies on Devil's Slide
44 Rock and the adjacent mainland.

45

46

47 **Improving Recreational**
48 **Opportunities**

49 **CONCERN STATEMENT:** Commenters
50 provided suggestions for improving
51 recreational opportunities in San Mateo
52 County, such as trail and parking
53 improvements, directional signage,
54 interpretive displays, open access to the
55 Peninsula watershed at Montara Mountain,
56 and continuing existing uses on new park
57 lands.

58

59 **RESPONSE**

60 The goals for the preferred alternative for San
61 Mateo County include focusing on the
62 importance of providing access and engaging
63 the community in the newest park lands. Key
64 improvements would include a sustainable
65 system of trails that will connect with local
66 communities and contribute to an
67 exceptional regional trail network. In
68 addition, the need for more directional signs
69 and trailhead parking throughout these areas
70 was also emphasized. These goals would
71 allow for consideration of many of the
72 specific ideas provided by commenters.
73 Detailing specific trails and related parking
74 improvements in all areas of the park is
75 outside the scope of this plan. Regarding
76 continuing existing uses on newly acquired
77 park lands, these uses would be allowed as
78 long as they are consistent with NPS law and
79 policy.

80

81

82 **ALTERNATIVES – NEW ELEMENTS OF**
83 **THE ALTERNATIVES**

84 **Climate Change**

85 **CONCERN STATEMENT:** NOAA made
86 suggestions to address and clarify
87 information related to climate change.

88

89 **RESPONSE**

90 NOAA provided constructive suggestions to
91 clarify NPS policy on climate change, park

1 goals for CO2 reduction, and the strategy for
2 including climate change-related mitigation
3 measures during implementation of the
4 preferred alternative. Many of these changes
5 have been made in the final GMP/EIS.

6
7 In evaluating NOAA's comments, the park re-
8 examined the analysis of projected CO2
9 emissions and carbon footprint impacts
10 completed in 2009. In doing so, the park
11 noticed that a description of carbon footprint
12 impacts for the full preferred alternative
13 (alternative 1 for Marin, San Francisco, and
14 San Mateo Counties; including alternative 3
15 for Alcatraz and Muir Woods) had not been
16 included in the draft plan. A description of
17 CO2 emissions for the preferred alternative is
18 now included. The impact analysis concludes
19 that the preferred alternative would result in
20 a decrease in total emissions of 1% from the
21 no action alternative. This would result in
22 long-term, minor, beneficial impacts on the
23 NPS carbon footprint.

24 25 26 **New Alternative Suggestions** 27 **(Alternatives, New Elements of** 28 **Alternatives)**

29 **CONCERN STATEMENT:** Commenters
30 offered several new elements to the
31 alternatives. New elements included
32 installing public art in GGNRA, monitoring
33 and managing invasive species (not only
34 nonnative species), establishing an
35 interpretive center at Sanchez Adobe,
36 developing parking and signage for the
37 Fassler Trail, and that the Lower Redwood
38 Creek site could offer opportunities for
39 program development collaboration between
40 the GGNRA park partners and state parks.

41 42 **RESPONSE**

43 Although the GMP does not specifically
44 identify installations of public art in GGNRA,
45 GGNRA partners with Headlands Center for
46 the Arts on art related projects. Currently and
47 in the past the National Park Service has
48 exhibited public art projects on GGNRA
49 lands and anticipates continuing to do so in

50 the future. The National Park Service
51 recognizes art as a way to engage new
52 audiences and offer fresh perspectives on
53 park experience as addressed in NPS's *A Call*
54 *to Action* document, which GGNRA has
55 embraced.

56
57 For monitoring and managing invasive
58 species, the park currently conducts actions
59 to manage native pest species such as
60 raccoons and ravens such as by preventing
61 access to human food sources. Current
62 management also addresses preventing
63 introduction and spread of invasive species.
64 Language has been added to text of
65 alternative 1 for Sweeney Ridge to include
66 improved trailhead facilities at Fassler
67 Avenue.

68
69 Program development and collaboration
70 between the GGNRA park partners and state
71 parks at Lower Redwood Creek is consistent
72 with GGNRA's "Guiding Principles for Park
73 Management," found in the "Background"
74 section of the GMP. Partnerships will
75 continue to be an important way to
76 accomplish the park's mission and build a
77 community of stewardship. Comments on
78 the use of Sanchez Adobe as a visitor center
79 have been responded to elsewhere.

80 81 82 **Alternatives – Preferred Alternative** 83 **(General)**

84 **Suggested Elements for Alternatives**

85 **CONCERN STATEMENT:** Commenters had
86 several suggestions regarding alternative 1,
87 including: limited public access areas and
88 facilities should be preserved to allow park
89 partners to conduct their work; the plan
90 should directly reflect the intended
91 recreation that was envisioned in the
92 enabling legislation; alternative 1 does not
93 create a greater "connection" with the park
94 than the other alternatives; and that
95 recreation, the health and well-being of
96 people, and the impact on local communities
97 are topics that are not identified as goals
98 within alternative 1.

1 **RESPONSE**

2 Regarding the comment that the goals do not
3 include the concepts of recreation and health
4 and well-being, several aspects of alternative
5 1's concept description and goals embrace
6 these ideas. The concept description includes
7 a statement that "park management would
8 focus on ways to attract and welcome people,
9 connect with park resources, and promote
10 enjoyment, understanding, preservation and
11 health - all ways to reinvigorate the human
12 spirit." Also, several goal statements relate to
13 the concepts of encouraging a wide range of
14 visitor opportunities in a diversity of settings
15 that meet the interests of visitors. Regarding
16 the comment on preserving access for park
17 partners, the plan includes a guiding principle
18 on continuing the legacy of park
19 partnerships, along with guidance working
20 with partners in the common to all action
21 alternatives. Regarding the concern about the
22 naming of alternative 1 as "Connecting
23 People to Parks" and the application of this
24 alternative to Alcatraz Island, it's important
25 to clarify that alternative 3, "Focusing on
26 National Treasures," is the preferred
27 alternative for Alcatraz. The commenters'
28 suggestions for Alcatraz Island (e.g., GGNRA
29 should include opportunities to appreciate
30 the major values of the island, adequate
31 signage and other interpretative information,
32 and a diversity of attractive features that
33 showcase the island's natural, historic, and
34 ethnographic values) are all consistent with
35 the concept and goals of the preferred
36 alternative. Regarding the comment that
37 different zones should be developed for each
38 alternative concept, the process used during
39 the GGNRA GMP is consistent with NPS
40 planning standards. The management zone
41 descriptions represent the reasonable range
42 of desired conditions that are consistent with
43 the park's purpose and significance. The
44 management zones are then applied to the
45 park in different ways to reflect the concept
46 of each alternative.

47
48

49 **RESPONSE TOPIC 14: THE AFFECTED**
50 **ENVIRONMENT**

51 **Critical Habitat for Plovers**

52 **CONCERN STATEMENT:** One commenter
53 requested that the GMP clarify that there is
54 no critical habitat for plovers in the
55 recreation area, pointing to a specific passage
56 of text.

57 **RESPONSE**

59 The comment references a statement from
60 the GGNRA *Draft Dog Management Plan*
61 *Environmental Impact Statement*, not the
62 *Draft General Management Plan*
63 *Environmental Impact Statement*. While
64 designated critical habitat has not been
65 identified by the U.S. Fish and Wildlife
66 Service within the park boundaries, effective
67 habitat for the western snowy plover does
68 exist in the park and presence of the plover
69 has been documented in various areas (see
70 "Affected Environment"). Furthermore, the
71 *Recovery Plan for the Pacific Coast Population*
72 *of the Western Snowy Plover*, developed by
73 the USFWS in 2007, indicates that
74 monitoring and management of western
75 snowy plover breeding, wintering, and
76 migrating habitat (including reducing
77 disturbance to this species) continue to be
78 important steps for this species' recovery.
79 The Endangered Species Act obligates the
80 National Park Service to manage for this
81 listed species accordingly.

82
83

84 **Incorporation of the SFPUC**
85 **Watershed Plan**

86 **CONCERN STATEMENT:** SFPUC suggested
87 that including the SFPUC watershed
88 management plan with other plans such as
89 adjacent cities' general plans, bicycle plans,
90 etc., diminishes the importance of the SFPUC
91 plan and disregards the fact that the SFPUC
92 plan governs administration of the Peninsula
93 watershed with SFPUC as the fee owner,
94 much like the more detailed description of

1 the Presidio management plan. SFPUC
 2 suggested more detail should be provided
 3 regarding the SFPUC *Peninsula Watershed*
 4 *Management Plan*, and how it would relate to
 5 the GMP. SFPUC stated that the relationship
 6 between GGNRA and SFPUC is not well
 7 defined within the Draft GMP and SFPUC is
 8 not mentioned as a participant in shared
 9 facilities.

10

11 **RESPONSE**

12 Text has been added to sections of the
 13 document to clarify the relationship between
 14 the National Park Service and SFPUC, to
 15 expand the description of the watershed
 16 management plan, and clarify the distinction
 17 between NPS-managed park lands and
 18 Peninsula watershed lands on which the
 19 National Park Service administers easements.

20

21

22 **National Register of Historic Places** 23 **Listing**

24 **CONCERN STATEMENT:** SFPUC stated
 25 opposition to designating Mile Rock Tunnel
 26 as eligible for listing on the National Register
 27 of Historic Places because it is not visible or
 28 accessible to the public and therefore has
 29 little, if any, value as a historic place.
 30 Additionally, they stated that structural
 31 alterations have probably compromised the
 32 historical integrity. SFPUC requested that an
 33 assessment be done by qualified experts
 34 before it be designated in the national
 35 register.

36

37 **RESPONSE**

38 While important, public accessibility is not a
 39 factor for evaluating a property for eligibility
 40 to be listed in the National Register of
 41 Historic Places. If improvements are
 42 proposed for Mile Rock Tunnel, the park will
 43 work in collaboration with the SFPUC to
 44 ensure that appropriate treatment decisions
 45 are made. Also, the document has been
 46 corrected to remove Mile Rock Tunnel from
 47 the list of “eligible” sites in San Mateo
 48 County, instead placing it in the list of

49 “potentially eligible” sites. At the time of this
 50 document printing, a formal determination of
 51 eligibility for listing in the National Register
 52 of Historic Places has not yet been done for
 53 Mile Rock Tunnel.

54

55

56 **Management of Cultural Resources**

57 **CONCERN STATEMENT:** The Presidio Trust
 58 stated that the discussion on cultural
 59 resources regarding the museum
 60 management division overstates the
 61 resources that are overseen by the division,
 62 because cultural resources within the
 63 Presidio are managed by Presidio Trust staff.
 64 Further, the GMP should also disclose that
 65 the Crissy Field Ohlone district is not under
 66 the exclusive management jurisdiction of the
 67 National Park Service, as one of the two
 68 precontact archeological sites within the
 69 district is on land managed by the Presidio
 70 Trust. The Presidio Trust suggests that in
 71 order to avoid confusion and to be consistent
 72 with NEPA and Advisory Council on Historic
 73 Preservation guidance, it would be preferable
 74 if the GMP only address those resources in
 75 the relevant planning area and APE.

76

77 **RESPONSE**

78 The area of potential effect table in the GMP
 79 is meant to give the reader the context for the
 80 entire park, and the Presidio of San Francisco
 81 is listed as a historic property within the park
 82 boundary. The GMP clearly states that the
 83 area of potential effect encompasses both
 84 those areas where proposed actions might
 85 occur that would directly impact cultural
 86 resources, as well as adjacent areas that
 87 contain resources that might be indirectly
 88 affected.

89

90 The park manages a significant number of
 91 museum collections that were transferred
 92 from the U.S. Army, which include materials
 93 that have a Presidio of San Francisco theme.
 94 These materials, associated with the Presidio
 95 and the park’s other six forts are managed for
 96 their bearing on military history in the area.

97

1 **Information Concerning Birds**

2 **CONCERN STATEMENT:** U.S. Fish and
3 Wildlife Service and NOAA stated that
4 information about the birds using Bird Rock
5 (Marin County), Devil’s Slide, and San Pedro
6 Rock should be added into the Draft GMP
7 for a more comprehensive report.

8
9 **RESPONSE**

10 Changes have been made to the affected
11 environment and environmental
12 consequences sections to address these
13 comments.

14
15
16 **Fundamental Resources and Values**

17 **CONCERN STATEMENT:** NOAA
18 recommended including additional language
19 in the foundation statement for Alcatraz
20 Island to acknowledge the current NPS
21 management of the island for natural
22 resources.

23
24 **RESPONSE**

25 The fundamental resources and values are
26 those that directly contribute to the
27 significance for which the park was
28 established. Alcatraz Island is designated a
29 national historic landmark for its significance
30 as the site of pre-Civil War fortifications, the
31 nation’s first military prison, the maximum
32 security prison, and the American Indian
33 occupation. The island’s highly significant
34 natural resources are included under the
35 Coastal Corridor foundation statement
36 within the “Background” section of the
37 GMP. The Coastal Corridor statement is
38 general in nature because the park’s enabling
39 legislation does not mention specific natural
40 resources and the Alcatraz waterbird colonies
41 were not present when the park was
42 established.

43
44

45 **San Francisco Veterans**
46 **Administration Medical Center**

47 **CONCERN STATEMENT:** Protection of east
48 and west Fort Miley is important and its
49 description should be amplified in the GMP.

50
51 **CONCERN STATEMENT:** Commenters
52 suggested that Fort Miley is an ideal location
53 to interpret the origins of the park.

54
55 **RESPONSE**

56 Fort Miley was a part of the defense system of
57 the strategic harbor of San Francisco. Today,
58 the fort is managed in three parts: east and
59 west Fort Miley are managed by the National
60 Park Service, and a 29-acre site in between is
61 the San Francisco Veteran’s Administration
62 (VA) Medical Center. Text for east Fort
63 Miley has been clarified to better address the
64 history and potential public uses of the site.
65 The National Park Service will continue to
66 collaborate with the VA on the interface
67 between park and VA lands, and to promote
68 compatible development and use on the VA
69 campus, and this has also been noted in the
70 GMP preferred alternative.

71
72

73 **Clarification of Terms for Basins and**
74 **Terrace Aquifers**

75 **CONCERN STATEMENT:** SFPUC stated that
76 the discussion on San Mateo County
77 groundwater does not differentiate between
78 Santa Clara valley basin and small coastal
79 terrace aquifers, where most park units drain
80 to, nor does it acknowledge the southern
81 westside basin and differentiate between it
82 and the Santa Clara Valley basin.

83
84 **RESPONSE**

85 Text in “Affected Environment” has been be
86 revised to address this comment.

87
88

1 **RESPONSE TOPIC 15: POTENTIAL**
 2 **ENVIRONMENTAL CONSEQUENCES –**
 3 **CUMULATIVE IMPACT ANALYSIS**

4 **Discussion on Impacts on Birds**

5 **CONCERN STATEMENT:** One commenter felt
 6 that more discussion should be provided for
 7 cumulative impacts on birds, including the
 8 impact of the common raven and how the
 9 enhancement of visitor experiences could
 10 negatively impact birds.

11

12 **RESPONSE**

13 The National Park Service and U.S.
 14 Geological Survey observations and video
 15 monitoring of black-crowned night-heron
 16 nests indicate that their eggs and chicks are a
 17 primary food source for common ravens on
 18 Alcatraz Island. The presence of ravens may
 19 be more directly related to the presence of
 20 waterbird nesting colonies than to the high
 21 numbers of visitors on the island. The park
 22 maintains a depredation permit for common
 23 ravens from the U.S. Fish and Wildlife
 24 Service and would continue to manage
 25 common ravens under all alternatives. In
 26 addition, food service and picnicking, if
 27 implemented, would be highly managed
 28 under all alternatives, with refuse collection
 29 and removal from the island occurring daily.
 30 The park would also continue to monitor for
 31 nonnative pest species on the island to
 32 prevent their introduction and establishment.
 33 Human disturbance may also result in
 34 increased nest predation by ravens. The park
 35 would continue to manage visitation and
 36 park operations to minimize disturbance to
 37 nesting birds. The park would continue to
 38 protect nesting waterbirds through seasonal
 39 closure of breeding areas, a waterbird docent
 40 program, and outreach to user groups (e.g.,
 41 boaters) that are a source of disturbance to
 42 nesting birds. We would continue monitoring
 43 waterbirds and trying to reduce sources of
 44 disturbance. In addition, the 300-foot
 45 seasonal marine buffer surrounding the
 46 island would benefit the birds by reducing
 47 disturbance from marine vessels.

48 The impact assessment in several places
 49 discusses increased disturbance to nesting
 50 birds based on the preferred alternative.
 51 Overall, the impacts to waterbirds from this
 52 alternative were determined to be adverse
 53 and moderate.

54

55 Text has been added to the “Potential
 56 Environmental Consequences” section for
 57 alternative 3, the NPS preferred alternative
 58 for Alcatraz Island, to clarify that the park
 59 would continue to monitor and manage
 60 common ravens and nonnative pest species
 61 on the Island. In addition, visitation and park
 62 operations would continue to be managed to
 63 minimize disturbance. The “Implementation
 64 Planning” section of the GMP describes the
 65 subsequent studies, planning, and
 66 compliance that would be conducted prior to
 67 implementation of specific actions in the
 68 plan. These include fulfilling the
 69 requirements of the National Environmental
 70 Policy Act, National Historic Preservation
 71 Act, and other relevant laws and policies.

72

73

74 **Cumulative Impact Analysis**

75 **CONCERN STATEMENT:** The Presidio Trust
 76 stated that the National Park Service did not
 77 coordinate with other organizations, such as
 78 the Presidio Trust, when determining actions
 79 that could have cumulative impacts. They
 80 also suggested projects that should be
 81 considered in the cumulative impact analysis
 82 such as the *Presidio Trust Management Plan*
 83 (PTMP), the Main Post update to the PTMP,
 84 the Presidio vegetation management plan, the
 85 Presidio trails and bikeway plan, the
 86 Tennessee Hollow watershed restoration, the
 87 restoration of Quartermaster Reach, and the
 88 rehabilitation of Presidio buildings.

89

90 **RESPONSE**

91 Various plans and projects related to the
 92 Presidio Trust have been noted as examples
 93 in the section on cumulative impacts. The
 94 conclusions of the analysis have not changed.

95

1 **POTENTIAL ENVIRONMENTAL**
2 **CONSEQUENCES – GENERAL**
3 **METHODOLOGY**

4 **Localized Impacts**

5 **CONCERN STATEMENT:** One commenter
6 requested that the National Park Service give
7 more consideration to “localized” impacts,
8 stating that these impacts can create
9 significant cumulative impacts. The
10 commenter also questioned the cumulative
11 impact analysis considerations and
12 determinations.

13

14 **RESPONSE**

15 As discussed in the “Methodology”
16 subsection of the “Cumulative Impact
17 Analysis” section, cumulative impacts are the
18 collective effect that results from incremental
19 impacts of the proposed action (GMP) when
20 added to other past, present, and reasonably
21 foreseeable actions, regardless of what
22 agency (federal or nonfederal) or person
23 undertakes such other action. The
24 methodology description goes on to say that
25 the discussion of cumulative impacts is not
26 required to provide as much detail as the
27 discussion of the project’s individual impacts,
28 or the effects attributable to the GMP alone.
29 At a general level, the discussion on
30 cumulative impacts to habitat describes the
31 combined potential effects of implementing
32 the GMP and the many other plans and
33 projects in the region (as described in
34 appendix B). Considering that the GMP has a
35 broad scope and is a conceptual
36 programmatic planning document, this level
37 of analysis is sufficient. Future site-specific
38 implementation plans and actions would
39 provide further, more detailed analysis of
40 effects, both cumulative and individual.

41

42 The commenter also asserts that a localized
43 adverse effect to particular bird species on
44 GGNRA lands could have substantial
45 broader effects because the major part of the
46 world’s population of some species may be in
47 the San Francisco Bay area at a given time
48 (e.g., migrating or wintering). The National

49 Park Service acknowledges that various
50 natural features of GGNRA provide and
51 contribute high-quality San Francisco Bay
52 habitat for a wide variety of species.
53 However, in the regional context of the San
54 Francisco Bay and beyond, GGNRA lands
55 only comprise a small fraction of the overall
56 San Francisco Bay avian habitat. And
57 similarly, bird species (resident or migratory)
58 do not solely concentrate on GGNRA lands,
59 but instead occupy many habitat areas
60 throughout the bay region. Thus, localized
61 effects on GGNRA lands would probably not
62 substantially affect global populations of
63 species that rely heavily on San Francisco Bay
64 habitat during particular times of the year.

65

66 Lastly, the commenter concludes by implying
67 that the cumulative effect on avian species
68 from the proposed GMP actions and other
69 plans and projects in the region would be
70 major and adverse. Considering the above
71 regional context, the definition of cumulative
72 impacts, and the fact that many of the
73 external plans and projects in the region yield
74 beneficial effects (e.g., habitat restoration
75 plans), the National Park Service concludes
76 that the collective cumulative effect on avian
77 species would probably not be major and
78 adverse, as per the definitions outlined in the
79 GMP/EIS. However, to help clarify the NPS
80 determinations for cumulative effects on
81 birds from the proposed GMP actions and
82 other plans and projects, the cumulative
83 impact analysis section on habitat and special
84 status species has been modified.

85

86

87 **POTENTIAL ENVIRONMENTAL**
88 **CONSEQUENCES – PARKWIDE**

89 **Impacts to California Red-Legged**
90 **Frog**

91 **CONCERN STATEMENT:** SFPUC suggested
92 that the conclusion of the no-action
93 alternative should be compared with the
94 impacts to the California red-legged frog
95 from the other proposed alternatives.

96

1 RESPONSE

2 As stated in NPS Director’s Order 12, “the
3 no-action alternative should be described
4 first as all other alternatives are then
5 compared against changes in the
6 environment from conditions described
7 under the no-action alternative projected
8 into the future” (DO 12 handbook, page 50).

9
10 Because the impacts of the no-action
11 alternative serve as the baseline for all
12 alternatives, the impacts of the action
13 alternatives are compared to the impacts of
14 the no-action alternative in order to clearly
15 understand and present the context,
16 duration, and intensity of the new (proposed)
17 impacts. Following the guidance from
18 Director’s Order 12, all action alternatives in
19 the Draft GMP are compared against the no-
20 action alternative, including the impacts to
21 the California red-legged frog. These impact
22 analyses for all alternatives can be found in
23 the “Potential Environmental Consequences”
24 section (in the “Natural Resources–Biological
25 Resources” subsection).

26
27
28 **NEPA for Future Project**
29 **Implementation**

30 **CONCERN STATEMENT:** One commenter
31 requested that project-specific National
32 Environmental Policy Act compliance be
33 conducted for the projects suggested in the
34 Draft GMP.

36 RESPONSE

37 The “Implementation Planning” section of
38 the GMP describes the subsequent studies,
39 planning and compliance that would be
40 conducted prior to implementation of
41 specific actions in the plan. These include
42 fulfilling the requirements of the National
43 Environmental Policy Act, National Historic
44 Preservation Act, and other relevant laws and
45 policies. Other comment responses also
46 address environmental analysis and
47 compliance that would be part of

48 implementation planning for actions in the
49 GMP.

50

51

52 **Threatened and Endangered Species**
53 **Information**

54 **CONCERN STATEMENT:** One commenter
55 requested additional information for various
56 species throughout the park including coho
57 salmon and steelhead, red-legged frog,
58 northern spotted owl, mission blue butterfly,
59 and the tidewater goby. They also requested
60 that more information be provided on
61 restoration and mitigation measures,
62 migratory birds, and other bird species that
63 use the recreation area for nesting, foraging,
64 and migratory refueling.

65

66 RESPONSE

67 Considering that the GMP/EIS is a long-
68 range programmatic document and that
69 further threatened and endangered species
70 impact analysis would be done on the
71 subsequent implementation plans/projects,
72 the GMP/EIS includes the appropriate level
73 of detail for impact analysis. Furthermore, all
74 of the management zones in the GMP
75 provide for protection of threatened and
76 endangered species. Mitigative measures for
77 natural resources and threatened and
78 endangered species are identified in the
79 section “Implementation Planning and
80 Mitigative Measures,” including best
81 management practices and conservation
82 measures. More detailed conservation
83 measures would be developed in consultation
84 with the U.S. Fish and Wildlife Service and
85 NOAA-National Marine Fisheries Service
86 during implementation planning for actions
87 in the GMP.

88

89 The park received comments on the topic of
90 a lack of evaluation of impacts on habitats
91 and non-threatened and endangered species,
92 including migratory birds that may be
93 declining. The “Affected Environment
94 Section” of the environmental impact
95 statement describes the diversity of habitats
96 and migratory birds found within the park.

1 The “Potential Environmental
2 Consequences” section of the document
3 addresses potential impacts of the
4 alternatives to these habitats and associated
5 wildlife in the section entitled “Natural
6 Resources – Biological Resources,”
7 subsection “Habitat (Vegetation and
8 Wildlife).” As noted above, because of the
9 programmatic nature of the GMP and EIS,
10 analysis of potential impacts is also at a
11 programmatic level. Mitigative measures for
12 natural resources are identified in the section
13 “Implementation Planning and Mitigative
14 Measures” including best management
15 practices. More detailed environmental
16 analysis and mitigative measures (and
17 associated environmental compliance such as
18 NEPA and/or CEQA) would be developed
19 during implementation planning for actions
20 in the GMP.

23 Adequacy of Analysis

24 **CONCERN STATEMENT:** Commenters
25 questioned the impact analysis for vegetation
26 and wildlife habitat parkwide, stating that
27 there is no evidence that current recreational
28 use would impact habitat integrity and that
29 areas where new trails should be created
30 should clarify the impacts. Furthermore,
31 commenters suggested that the analysis of all
32 the alternatives should be redone, with
33 unsubstantiated claims about the impacts of
34 recreational use removed from consideration.

36 **CONCERN STATEMENT:** One commenter
37 stated that the Draft GMP inadequately
38 describes the no-action alternative, and
39 therefore the Draft GMP is unfairly biased
40 against the no-action alternative.

42 **CONCERN STATEMENT:** Commenters stated
43 that the GMP should be based on sound,
44 peer-reviewed science, long-term
45 monitoring, and site-specific evidence. Some
46 felt that the analysis in the Draft GMP
47 currently did not rely on scientific evidence
48 and was speculative. Most of these concerns
49 relate to dog use and the impacts of
50 recreation.

51 RESPONSE

52 The analysis of impacts to park resources
53 from the no-action alternatives and three
54 action alternatives is based on the
55 professional judgment of park staff, NPS
56 planners, and other subject matter experts.
57 The GMP is a broad programmatic document
58 and precedes more detailed implementation
59 planning. The impact analysis in the GMP is
60 intentionally conducted at a broad, regional
61 level. The subsequent implementation plans
62 will focus on more site-specific uses, trends,
63 and effects. In addition, the associated
64 environmental compliance (e.g., NEPA and
65 CEQA) for these plans will assess
66 implementation alternatives, resources, and
67 impacts at a more site-specific and resource-
68 specific level than the GMP.

70 Additional data may help to refine the
71 conclusions in the environmental impact
72 statement and reduce uncertainty regarding
73 the level of impact on the human
74 environment; however, all NEPA analysis is
75 based on a prediction of potential future
76 conditions and, as such, is always uncertain.
77 In lieu of site-specific data, research methods
78 generally accepted in the scientific
79 community and best professional judgment
80 have been used to draw conclusions
81 regarding expected impacts to resources,
82 consistent with CEQA and DOI
83 requirements. The data currently available
84 provide sufficient information to allow the
85 decision maker to make a reasoned choice
86 among alternatives.

88 Commenters’ suggestion that NPS managers
89 provide an unassailable level of scientific
90 evidence regarding the presence or absence
91 of impacts would both prevent the
92 consideration of new uses and the reasonable
93 regulation of current uses. *NPS Management
94 Policies 2006* makes clear that determinations
95 on use should err on the side of conservation,
96 may be based on best professional judgment,
97 and when practicable, on the results of study
98 or research. In this way, the National Park
99 Service is able to make informed decisions
100 regarding park uses that meet the NPS

1 mandate to “conserve the scenery and the
2 natural and historic objects therein and to
3 provide for the enjoyment of the same in
4 such manner and by such means as will leave
5 them unimpaired for the enjoyment of future
6 generations” (16 USC 1).

7 8 9 **Impact Analysis for Special-Status 10 Species**

11 **CONCERN STATEMENT:** Commenters
12 questioned the impact analysis for special-
13 status species parkwide. Questions included a
14 lack of evidence for the Endangered Species
15 Act finding for the snowy plover under the
16 no-action alternative, inconsistency of the
17 impacts to the snowy plover across
18 alternatives, and a suggestion that the
19 discussion of the San Francisco garter snake
20 should include impacts from new
21 recreational development. SFPUC stated that
22 the ESA determinations for alternatives 1, 2,
23 and 3 are not complete and should include a
24 statement of effect. SFPUC also felt that the
25 analysis should include the impacts to
26 marbled murrelets.

27 28 **RESPONSE**

29 The GMP is a programmatic document that
30 aims to provide broad guidance on future
31 management of the park. The potential site-
32 specific and species-specific impacts to
33 threatened and endangered species resulting
34 from proposed facility improvements,
35 construction, and other management actions
36 would be further analyzed and determined
37 during project proposal and review processes
38 for these subsequent implementation plans
39 and projects. Rather than providing this level
40 of detail and analysis in the GMP/EIS, these
41 implementation plan review processes will
42 include all applicable environmental
43 compliance through NEPA, CEQA, and ESA.

44
45 The NPS analyses and impact determinations
46 in this GMP/EIS for potential effects on
47 species listed under the ESA are based on
48 input from subject matter experts and
49 resource planners at the park (see “Natural

50 Resources” section of the “Environmental
51 Consequences” chapter). The scope and
52 detail of these sections of the GMP/EIS are
53 consistent with the conceptual nature of this
54 long-term programmatic planning document
55 and the fact that more site-specific or project-
56 specific ESA compliance would be conducted
57 in the future during implementation plan
58 review and approval. The analyses and
59 determinations have also been formatted in a
60 way that is adequate to facilitate the ESA
61 Section 7 compliance with the U.S. Fish and
62 Wildlife Service.

63
64 These analyses and determinations have been
65 submitted to the USFWS for review to fulfill
66 ESA consultation and compliance
67 requirements. The National Park Service is
68 committed to addressing any forthcoming
69 concerns or comments regarding the content,
70 detail, or accuracy of the analyses and
71 determinations raised by the USFWS during
72 their review. This is required to meet the ESA
73 compliance needs.

74
75 Furthermore, with any new facility, including
76 new or improved trails, the National Park
77 Service strives to avoid endangered species
78 habitat as much as possible in design. For
79 example, trail work occurring near marbled
80 murrelet habitat could occur during non-
81 breeding season when murrelets are at sea
82 rather than in the conifer forests. This
83 strategy would be similar to those
84 implemented for spotted owls. The section
85 “Implementation Planning and Mitigative
86 Measures” of the GMP addresses avoidance
87 of impacts and use of conservation measures
88 taken in consultation with the appropriate
89 resource agencies, for both operations and
90 for new facilities and management actions.

91 92 93 **Analysis of Human Health and Safety 94 Impacts**

95 **CONCERN STATEMENT:** One commenter
96 stated that the GMP should include an
97 analysis of the human health impacts of all
98 alternatives. The commenter further stated
99 that a more adequate analysis is needed

1 regarding how crime could increase if fewer
2 people are allowed in certain areas.

3
4 **CONCERN STATEMENT:** One commenter
5 stated that the analysis of public safety in the
6 San Francisco park units is not adequately
7 addressed in the Draft GMP. They suggested
8 that a reduction in use of these park units
9 could result in an increase in crime.

10
11 **RESPONSE**

12 The concerns raised by the commenters
13 center around implementation of the draft
14 dog management plan / environmental
15 impact statement, particularly the restrictions
16 that could be imposed on dog walking in
17 certain parts of the park. One commenter's
18 assertion that restrictions on dog walking will
19 prevent many people from enjoying or
20 exercising in the park, and lead to increased
21 crime because of reduced visitation, and
22 adverse impacts on human health, has no
23 basis in the GMP. The GMP describes a very
24 wide range of recreational activities that are
25 available to visitors in all management zones
26 and does not describe any limitations or
27 prohibitions on dog walking, which is the
28 exclusive province of the dog management
29 plan.

30
31 Notwithstanding, the descriptions of
32 recreational activities permitted in the
33 management zones have been clarified to
34 explicitly include certain popular activities,
35 like running, that some commenters noticed
36 were omitted in the draft.

37
38 In addition, the dismissal of public health and
39 safety as an impact topic has been reviewed
40 and validated. The impacts to visitor safety
41 are adequately evaluated under the heading
42 of "Visitor Use and Experience." Park use is
43 not expected to decrease as a result of the
44 plan, so there would be no measurable effect
45 on safety or the feeling of safety associated by
46 some visitors with higher visitor use areas.
47 The National Park Service protects human
48 health by managing pests, pesticides, exotic
49 species, diseases (under advice from the
50 Centers for Disease Control), air quality, and

51 in the offerings of its concessioners. These
52 are addressed in other management plans,
53 with little reference in the GMP.

54
55
56 **Impacts of New Visitor Activities**

57 **CONCERN STATEMENT:** SFPUC stated that
58 the Draft GMP does not adequately address
59 the impacts of new visitor activities, such as
60 the addition of new trails. The concern
61 specifically pointed to increased impacts at
62 Rancho Corral de Tierra and within the
63 SFPUC watershed. They also state that the
64 potential for fire danger and existing
65 conditions in the SFPUC watershed are not
66 adequately addressed.

67
68 **RESPONSE**

69 Existing trails and facilities at Rancho Corral
70 de Tierra have been enjoyed by the public
71 prior to NPS management, including on the
72 two existing county trails through the portion
73 of Rancho north of Montara that connects to
74 McNee Ranch State Park (Farallone Cutoff
75 Trail and Old Pedro Mountain Road).
76 Owners of the more than 200 horses boarded
77 at 4 facilities on the Rancho property, since
78 prior to both Peninsula Open Space Trust
79 (POST) and NPS management, have had the
80 use of trails throughout the property. Because
81 of the challenging terrain and the relatively
82 remote location of Rancho Corral de Tierra,
83 visitation at this site is not anticipated to
84 substantially increase. The concern of fire
85 management is addressed in the response to a
86 concern found in Response Topic 15:
87 Potential Environmental Consequences,
88 Potential Environmental Consequences – San
89 Mateo County, titled "Fire Management and
90 Fuels Reduction." Proposals for Peninsula
91 watershed lands have been clarified in
92 Response Topic 12. Please reference these
93 responses for further details on these topics.

94
95
96 **Removal of Vegetation**

97 **CONCERN STATEMENT:** Commenters
98 expressed concern about removal of

1 vegetation in the park, including removal of
2 exotic species. Commenters noted that
3 removal of exotic species could impact
4 scenic, cultural, recreational, wildlife, and
5 climate change values.

6
7 **RESPONSE**

8 Both the NPS *Management Policies 2006* and
9 Executive Order 13112 (1999) direct the
10 National Park Service to remove exotic plant
11 species. NPS policy describes a number of
12 situations where exotic plant species should
13 be managed up to and including eradication.
14 These include when exotic species interfere
15 with natural processes, native species and/or
16 native habitats, or when exotic species
17 damage cultural resources or landscapes.
18 When these or other conditions described in
19 NPS *Management Policies 2006* are not met or
20 when exotic plant species are considered part
21 of a cultural landscape or resource, they are
22 not removed. Impacts to scenic, recreational,
23 climate change, and other values are
24 considered when prioritizing different areas
25 and species for exotic plant removal.

26
27
28 **POTENTIAL ENVIRONMENTAL
29 CONSEQUENCES – ALCATRAZ ISLAND**

30 **Concerns of Increased Access**

31 **CONCERN STATEMENT:** Commenters
32 expressed concerns regarding access to
33 Alcatraz Island, including the potential
34 impacts of increased public access on
35 sensitive habitat, and ensuring that the U.S.
36 Coast Guard access to this site would remain.

37
38 **CONCERN STATEMENT:** The U.S. Coast
39 Guard stated concern related to the
40 expansion of restricted access around places
41 such as Alcatraz Island. They asked whether
42 the National Park Service would be
43 requesting Coast Guard assistance in
44 enforcing these zones.

45

46 **RESPONSE**

47 The management zoning and descriptions of
48 the alternatives in the GMP acknowledge the
49 potential for conflict between public access
50 and adjacent sensitive habitats throughout
51 the park, and were developed in a manner
52 that provides for abundant public access
53 while also protecting sensitive habitats.

54
55 U.S. Coast Guard boats and personnel would
56 continue to have access to restricted areas
57 within GGNRA in the performance of their
58 duties. GGNRA does not anticipate any
59 additional needs for Coast Guard
60 enforcement.

61
62
63 **POTENTIAL ENVIRONMENTAL
64 CONSEQUENCES – MARIN COUNTY**

65 **Impact Analysis Concerns**

66 **CONCERN STATEMENT:** One commenter
67 raised questions about the impact analysis on
68 vegetation and wildlife habitat in Marin
69 County for alternative 1, which is the
70 preferred alternative for Marin County.
71 Concerns included not enough information
72 about how the preferred alternative would
73 reduce habitat fragmentation and the
74 potential for exotic species, how the
75 preferred alternative would reduce erosion
76 through a sustainable trail system, and how it
77 would improve current impacts from
78 recreational use, trampling of plants,
79 spreading of exotic species, and increased
80 wildlife impacts.

81
82 **RESPONSE**

83 The National Park Service does not agree
84 with commenter's conclusions that the
85 information and analyses in the draft
86 environmental impact statement are vague
87 and insufficient to support the preferred
88 alternative. While the management zones
89 would allow for certain types of uses and
90 development within them, the description of
91 the alternatives limits the uses and
92 development to restricted areas within the

1 zones. The draft environmental impact
2 statement includes mitigative measures to
3 protect resources. The “Implementation
4 Planning” section commits the park to
5 additional planning and environmental
6 analysis before specific actions are
7 implemented. Other specific comments
8 provided the commenter about impact
9 analysis have been addressed in other
10 responses and through specific changes to
11 the document.

14 **Spotted Owl Management**

15 **CONCERN STATEMENT:** One commenter
16 suggested that an eradication program in
17 Marin County should be implemented for the
18 barred owl because it competes with the
19 federally threatened northern spotted owl.

21 **RESPONSE**

22 Spotted and barred owl monitoring and
23 management are part of the park’s ongoing
24 wildlife management program and are not
25 specifically addressed in the GMP.

28 **Recreational Development Impacts in 29 Alternatives 1 and 2**

30 **CONCERN STATEMENT:** One comment
31 asked the National Park Service to clarify
32 how recreational development impacts under
33 alternative 2 in Marin County would be the
34 same as alternative 1 if there is more
35 development proposed under alternative 1.

37 **RESPONSE**

38 The analysis of impacts to habitat for
39 vegetation and wildlife for alternative 1 and
40 alternative 2 have been changed to document
41 that alternative 2 has greater beneficial
42 impacts than alternative 1.

43
44

45 **Dune Restoration**

46 **CONCERN STATEMENT:** One commenter
47 suggested that the opening of a portion of the
48 north parking lot at Stinson Beach has
49 negatively impacted the dunes there and
50 requests that access to these dunes be
51 restricted and the dunes restored.

53 **RESPONSE**

54 The preferred alternative includes dune
55 enhancement at Stinson Beach. Detailed site
56 planning would occur in the future. The park
57 may take more immediate actions as needed
58 in the interim.

61 **Bird Island (Bird rock)**

62 **CONCERN STATEMENT:** One commenter
63 noted that Bird Island (Bird Rock) should be
64 evaluated under alternative 2.

66 **RESPONSE**

67 Bird Island is included in the sensitive
68 resources zone in alternative 2. See the map
69 of alternative 2 for Marin County. The text
70 for alternative 2 “Offshore Ocean and Bay
71 Environments” has been modified to add
72 reference to Bird Island.

73
74

75 **POTENTIAL ENVIRONMENTAL 76 CONSEQUENCES – SAN FRANCISCO**

77 **Inadvertent Visitor Impacts**

78 **CONCERN STATEMENT:** SFPUC stated
79 concern that increased visitor use of Fort
80 Funston could affect visitors to Lake Merced,
81 located to the east of Fort Funston, across
82 California State Route 35.

83
84

84 **RESPONSE**

85 The GMP concept for Fort Funston is not
86 expected to increase the number of visitors at
87 Fort Funston. The GMP preferred alternative
88 description states that NPS management

1 would “continue to support current
2 recreational activities.” Only modest site
3 improvements are proposed. No impacts to
4 Lake Merced are likely from proposed
5 management identified in the GMP. Text in
6 this alternative has been modified to include
7 cooperation with the City and County of San
8 Francisco and Caltrans to encourage safety
9 improvements to California State Route 35.

10
11

12 **POTENTIAL ENVIRONMENTAL** 13 **CONSEQUENCES – SAN MATEO** 14 **COUNTY**

15 **Clarification of Proposed** 16 **Recreational Development**

17 **CONCERN STATEMENT:** SFPUC asked for
18 clarification of the new recreational
19 development proposed, because the maps do
20 not include detail about trail locations.
21 Without this information, they stated that the
22 conclusion for impacts of new trails on
23 threatened and endangered species, such as
24 the California red-legged frog, which has an
25 extensive habitat, could not be supported.
26 Further, SFPUC expressed concern with the
27 impact of trails on federally listed species in
28 San Mateo County. They noted that the
29 proposed trails would probably have adverse
30 impacts similar to the Fifield Cahill Ridge
31 Trail and should consider similar mitigations
32 to those implemented for the Fifield Cahill
33 Ridge Trail if these trails were to move
34 forward. Other concerns included lack of
35 detailed analysis on how the trails would
36 affect the San Francisco garter snake and a
37 lack of discussion for the marbled murrelet.

38 39 **RESPONSE**

40 The purpose of the GMP document is to
41 provide broad guidance on future directions.
42 Detailed analysis of impacts to threatened
43 and endangered species, resulting from
44 specific facility improvements or new facility
45 construction, would be determined during
46 project proposal and review processes
47 (including the associated environmental

48 compliance through NEPA and/or CEQA)
49 rather than in this GMP document. The NPS
50 analyses and impact determinations in this
51 GMP/EIS for potential effects on species
52 listed under the ESA are based on input from
53 subject matter experts and resource staff at
54 the park. The scope and detail of these
55 sections of the GMP/EIS are consistent with
56 the conceptual nature of this long-term
57 programmatic planning document. The
58 analyses and determinations have also been
59 formatted in a way that is adequate to
60 facilitate the ESA Section 7 compliance with
61 the U.S. Fish and Wildlife Service. This
62 document has been submitted to the USFWS
63 for review to fulfill ESA consultation and
64 compliance requirements. The National Park
65 Service is committed to addressing any
66 forthcoming concerns or comments
67 regarding the content, detail, or accuracy of
68 the analyses and determinations raised by the
69 USFWS during their review. This is required
70 to meet the ESA compliance needs.

71
72 Also, with any new facility, including new or
73 improved trails, the National Park Service
74 strives to avoid endangered species habitat as
75 much as possible in design, and to minimize
76 impacts during construction. For example,
77 trail work occurring near marbled murrelet
78 habitat could occur during non-breeding
79 season when murrelets are at sea rather than
80 in the conifer forests. This strategy would be
81 similar to those implemented for spotted
82 owls. The section “Implementation Planning
83 and Mitigative Measures” of the GMP
84 addresses avoidance of impacts and use of
85 conservation measures taken in consultation
86 with the appropriate resource agencies, for
87 both operations and for new facilities and
88 management actions.

89

90 Commenters were specifically concerned
91 about some threatened and endangered
92 species not being sufficiently included in this
93 document. Marbled murrelets, California
94 red-legged frogs and San Francisco garter
95 snakes have been addressed in this
96 document. While they may not be referred to
97 by name in every instance, these species fall
98 within the threatened and endangered

1 species and species of concern section within
2 the section “Implementation Planning and
3 Mitigative Measures.” Potential impacts to
4 threatened and endangered species, when
5 unavoidable, are listed by species in the
6 “Potential Environmental Consequences”
7 section of this document. Please refer to
8 these sections for more information.
9
10

11 **Economic Analysis of Repairs to** 12 **Existing Roads**

13 **CONCERN STATEMENT:** SFPUC stated that
14 the Draft GMP should include an economic
15 analysis of the repair and rebuilding needed
16 to the existing main road through McNee
17 Ranch State Park.
18

19 **RESPONSE**

20 The text referred to in this comment is in the
21 “Potential Future Boundary Adjustments”
22 section of “Elements Common to All Action
23 Alternatives” and addresses the significance
24 criteria for inclusion of McNee Ranch State
25 Park in the park’s boundary. The text in this
26 section states “this is not a proposal for
27 acquisition,” and it does not propose a
28 specific trail or repair and rebuilding of any
29 facilities in this park. Text has been modified
30 to change “planned” to “potential” in
31 reference to the east-west trail connection.
32
33

34 **Traffic Analysis of Visitors in Remote** 35 **Areas**

36 **CONCERN STATEMENT:** SFPUC stated that
37 the Draft GMP does not provide a
38 meaningful traffic analysis of impacts caused
39 by bringing new visitors to remote areas of
40 the SFPUC watershed. Further, prior to
41 closing any roads, they should be evaluated
42 for emergency access for firefighting
43 equipment and personnel. They also state
44 that more information is needed as to the
45 possible access routes and the purpose of the
46 limited public vehicle access for Sweeney
47 Ridge (under the preferred alternative).
48

49 **RESPONSE**

50 Limited vehicle access to Sweeney Ridge is
51 currently accommodated over Sneath Lane
52 by permit that takes into account safety and
53 fire considerations. This special access is
54 intended to accommodate organized groups
55 and people with disabilities. According to our
56 records, this road is owned in fee by the
57 National Park Service, not SFPUC as stated in
58 the comment.
59

60 The GMP preferred alternative suggests
61 exploring a potential trail connection in the
62 Peninsula watershed over an existing
63 management road on Whiting Ridge. If
64 pursued, this action would be an action of
65 SFPUC potentially in cooperation with the
66 National Park Service and other agencies.
67 This proposal, if carried forward, would be
68 subject to separate environmental review and
69 analysis of all impacts, with detailed
70 mitigation identified at that time. Because of
71 the remote nature of the segment of trail
72 referenced in the comment, and because it
73 would be an extension of existing trails,
74 accessed from trailheads near both State
75 Route 1 and State Route 35/I-280, traffic
76 associated with this new trail segment would
77 be negligible.
78

79 Evaluation of unnecessary management
80 roads is addressed in a concern found in
81 Response Topic 13: The Alternatives,
82 Alternatives –San Mateo County, titled
83 “Primitive Camping and Potential Impacts.”
84 Please see the corresponding response for
85 details on this topic.
86
87

88 **Fire Management and Fuels** 89 **Reduction**

90 **CONCERN STATEMENT:** One commenter
91 noted that additional discussion and analysis
92 should be included in the Draft GMP for fire
93 hazard management and fuels reduction.
94

1 **RESPONSE**

2 Fire suppression on all NPS-managed lands
3 in San Mateo County is conducted by
4 California Department of Forestry and Fire
5 Protection (Cal Fire) under a Reciprocal Fire
6 Protection Agreement. Under this agreement,
7 fire hazard and risk mitigation at Sweeney
8 Ridge and Rancho Corral de
9 Tierra/Gregerson are addressed.

10
11 Fire management for NPS-managed lands,
12 including Sweeney Ridge, is addressed in the
13 GGNRA Fire Management Plan (FMP). The
14 GGNRA FMP Update, scheduled for 2013,
15 will address GGNRA-managed lands in San
16 Mateo County that were not included in the
17 2008 FMP, including Rancho Corral de
18 Tierra. Owned by the Peninsula Open Space
19 Trust, the Gregerson property would not be
20 included in the FMP Update at that time, but
21 could be added a later update, following a
22 boundary change and acquisition, if
23 approved and funded.

24
25 Although new or increased public uses have
26 the potential to increase risk of wildfire
27 during high fire hazard conditions, this risk
28 can be addressed in several ways. The FMP is
29 the document that would address fire risk,
30 prevention and management on NPS-
31 managed lands, including:

- 32
- 33 ▪ analysis of existing fire hazard
- 34 conditions
- 35 ▪ fuels management projects
- 36 ▪ fire preparedness and suppression
- 37 ▪ fire danger and visitor use restrictions
- 38 (such as restricted activities or access
- 39 on fire danger days)
- 40 ▪ strategies to reduce risk and prevent
- 41 wildfires, including maintenance
- 42 activities such as mowing and
- 43 vegetation management as well as
- 44 monitoring, communications, and
- 45 protocols (patrols and enforcement)
- 46 during periods of high fire danger
- 47 ▪ detailed mitigation measures for
- 48 potential fire impacts, including
- 49 current best practices

- 50 ▪ a “Step-Up Plan” that provides more
- 51 detailed protocols to address use
- 52 restrictions during high fire danger
- 53 periods
- 54

55 The concern over increased or new use and
56 any resulting fire risk potential have been
57 heard. GGNRA-managed lands in San Mateo
58 County referenced in the SFPUC letter, such
59 as Sweeney Ridge and Rancho Corral de
60 Tierra, would be managed in the future much
61 like they are managed today, with few
62 changes. These areas are expected to see only
63 a modest increase in visitor use. Although
64 Rancho Corral de Tierra came under NPS
65 management in December 2011, it has a long
66 history of public use and access with existing
67 equestrian facilities for more than 200 horses
68 and public use of the existing trail system
69 prior to NPS management. NPS presence and
70 management activities at Rancho Corral de
71 Tierra, including strategies to eliminate illegal
72 vehicle access, would be expected to further
73 reduce fire risk. New uses of concern to
74 SFPUC, such as primitive camping or a
75 hikers’ hut at Rancho Corral de Tierra and
76 Sweeney Ridge, are GMP concepts that
77 would be explored cautiously and, if pursued,
78 would require additional planning to define
79 the program and facility details, validate the
80 concepts, and identify compatible locations
81 for such facilities. Factors such as wildfire
82 risk would be addressed at that time and
83 facilities would be located to maximize
84 compatibility with adjacent lands and protect
85 resources.

86
87 Limited public vehicle access at Sweeney
88 Ridge is a long-standing practice that has
89 permitted small organized group events and
90 individuals by special request to have vehicle
91 access over Sneath Lane to the ridge.
92 Permission for such access also takes into
93 account fire conditions and wildfire
94 prevention.

95
96 Visitor use on additional trails within the
97 Peninsula watershed, encouraged or
98 promoted by the National Park Service,
99 would be subject to the willingness of SFPUC
100 as the land manager to consider, review, and

1 approve such proposals. Environmental
2 review and detailed planning at that time
3 would identify use restrictions and specific
4 mitigation measures to address SFPUC fire
5 management and other concerns. Related
6 concerns and their corresponding responses
7 can be found in two other locations:
8 Response Topic 6: Transportation titled
9 “Transportation on Sweeney Ridge”
10 and Response Topic 13: Potential
11 Environmental Consequences, Potential
12 Environmental Consequences- San Mateo
13 County, titled “Traffic Analysis of Visitors in
14 Remote Areas.”
15

16 Collaboration and communication are
17 essential for fire management within
18 GGNRA. The National Park Service will
19 continue to communicate with Cal Fire,
20 Coastside Fire Protection District, San Mateo
21 Fire Safe Council, and local communities to
22 understand, prioritize, and address fire
23 management concerns related to our lands, in
24 coordination with others in this area. NPS
25 fire management staff will also continue to
26 participate in fire management coordination
27 meetings with SFPUC/Peninsula watershed
28 staff, also attended by Cal Fire and
29 representatives of the San Mateo Fire Safe
30 Council and Midpeninsula Regional Open
31 Space District.

AGENCIES, ORGANIZATIONS, AND INDIVIDUALS RECEIVING A COPY OF THIS DOCUMENT

1 A copy of this final general management
2 plan / environmental impact statement has
3 been provided to the following agencies and
4 organizations.

5 6 7 **ELECTED OFFICIALS** 8 **AND COMMITTEES**

- 9 ▪ Office of Senator Barbara Boxer
- 10 ▪ Office of Senator Dianne Feinstein
- 11 ▪ Office of Representative Nancy Pelosi
12 (12th Congressional District)
- 13 ▪ Office of Representative Jackie Speier
14 (14th Congressional District)
- 15 ▪ Office of Representative Jared
16 Huffman (2nd Congressional District
17 [replaced Woolsey])
- 18 ▪ Office of California State Senator
19 Mark Leno (11th District)
- 20 ▪ Office of California State Senator
21 Leland Y. Yee (8th District)
- 22 ▪ Office of California State Senator
23 Jerry Hill (13th District)
- 24 ▪ Office of California State Senator
25 Noreen Evans (2nd District)

26 27 28 **FEDERAL AGENCIES**

- 29 ▪ Federal Emergency Management
30 Agency, Region 9
- 31 ▪ National Trust for Historic
32 Preservation
- 33 ▪ National Oceanic and Atmospheric
34 Administration: National Marine
35 Fisheries Service and the Gulf of the
36 Farallones National Marine Sanctuary
- 37 ▪ Presidio Trust
- 38 ▪ U.S. Army Corps of Engineers

- 39 ▪ U.S. Environmental Protection
40 Agency: Region 9 and the Washington
41 Office
- 42 ▪ U.S. Fish and Wildlife Service,
43 Sector 7
- 44 ▪ U.S. Geological Survey

45 46 47 **CALIFORNIA STATE AGENCIES**

- 48 ▪ California Coastal Commission
- 49 ▪ California Coastal Conservancy
- 50 ▪ California Department of Fish and
51 Game
- 52 ▪ California Department of Forestry
- 53 ▪ California Department of Water
54 Resources
- 55 ▪ California Environmental Protection
56 Agency
- 57 ▪ California Native American Heritage
58 Commission
- 59 ▪ California State Clearinghouse
- 60 ▪ California State Parks: Angel Island
61 State Park, Mount Tamalpais State
62 Park, and the Office of Historic
63 Preservation
- 64 ▪ State of California: Water Resources
65 Control Board

66 67 68 **REGIONAL AND LOCAL AGENCIES**

- 69 ▪ Bay Area Air Quality Management
70 District
- 71 ▪ Bolinas Public Utility District
- 72 ▪ City and County of San Francisco
- 73 ▪ East Bay Regional Park District

<p>1 ▪ Golden Gate Bridge Highway and 2 Transportation District</p> <p>3 ▪ Marin County Parks and Recreation</p> <p>4 ▪ Marin County Community 5 Development Agency</p> <p>6 ▪ Marin Municipal Water District – Sly 7 Oaks Headquarters</p> <p>8 ▪ Midpeninsula Regional Open Space 9 District</p> <p>10 ▪ Montara Sanitary District</p> <p>11 ▪ Muir Beach Community Services 12 District</p> <p>13 ▪ San Francisco Bay Conservation and 14 Development Commission</p> <p>15 ▪ San Francisco Bay Regional Water 16 Quality Control Board</p> <p>17 ▪ San Francisco Parks and Recreation</p> <p>18 ▪ San Francisco Public Utilities 19 Commission</p> <p>20 ▪ San Mateo County Resource 21 Conservation District</p> <p>22 ▪ San Mateo County Parks</p> <p>23 ▪ San Mateo County Planning and 24 Building Department</p> <p>25 ▪ San Mateo County Transit District</p> <p>26 ▪ Santa Clara County</p> <p>27 ▪ Sausalito/Marin City Sanitary District</p> <p>28 ▪ Stinson Beach County Water District</p> <p>29 ▪ Tamalpais Community Services 30 District</p> <p>31</p> <p>32</p> <p>33 CITIES</p> <p>34 ▪ City of Belmont</p> <p>35 ▪ City of Belvedere</p> <p>36 ▪ City of Burlingame</p> <p>37 ▪ City of Foster City</p> <p>38 ▪ City of Half Moon Bay</p> <p>39 ▪ City of Larkspur</p> <p>40 ▪ City of Mill Valley</p>	<p>41 ▪ City of Millbrae</p> <p>42 ▪ City of Novato</p> <p>43 ▪ City of Pacifica</p> <p>44 ▪ City of San Bruno</p> <p>45 ▪ City and County of San Francisco</p> <p>46 ▪ City of San Rafael</p> <p>47 ▪ City of Sausalito</p> <p>48 ▪ City of South San Francisco</p> <p>49 ▪ Daly City</p> <p>50 ▪ Marin County Board of Supervisors</p> <p>51 ▪ San Francisco County Board of 52 Supervisors</p> <p>53 ▪ San Mateo County Board of 54 Supervisors</p> <p>55</p> <p>56</p> <p>57 ORGANIZATIONS</p> <p>58 ▪ Bay Area Open Space Council</p> <p>59 ▪ California League of Conservation 60 Voters</p> <p>61 ▪ California Native Plant Society</p> <p>62 ▪ Center for Biological Diversity</p> <p>63 ▪ City College of San Francisco</p> <p>64 ▪ Coleman Advocates for Youth</p> <p>65 ▪ Committee for Green Foothills</p> <p>66 ▪ Farallones Marine Sanctuary 67 Association</p> <p>68 ▪ Golden Gate National Parks 69 Conservancy</p> <p>70 ▪ Peninsula Open Space Trust</p> <p>71 ▪ San Mateo County Historical 72 Association</p> <p>73</p> <p>74</p> <p>75 AMERICAN INDIAN TRIBES 76 AND ORGANIZATIONS</p> <p>77 ▪ Amah Mutsun Band of Ohlone 78 Costanoan Indians</p> <p>79 ▪ Amah Mutsun Tribal Band</p>
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- 1 ▪ California Native American Heritage
- 2 Commission
- 3 ▪ Costanoan Ohlone Rumsen-Mutsun
- 4 Tribe
- 5 ▪ Costanoan-Rumsen Carmel Tribe
- 6 ▪ Federated Indians of Graton
- 7 Rancheria
- 8 ▪ Indian Canyon Mutsun Band of
- 9 Costanoan
- 10 ▪ Muwekma Ohlone Tribe
- 11 ▪ Ohlone/Costanoan-Esselen Nation

- 12 ▪ The Ohlone Indian Tribe
- 13 ▪ Trina Marine Ruano Family
- 14 ▪ and other American Indian
- 15 representatives

16

17

18 **INDIVIDUALS**

19 There is an extensive list of individuals; these
20 individuals will be notified of the availability
21 of the plan.

PREPARERS AND CONSULTANTS

1	The GMP planning team included a steering	45	National Heritage Corridor; Masters
2	committee made up of managers who guided	46	in Public Administration
3	the entire planning process. When	47	
4	developing and reviewing the issues and	48	Abby Sue Fisher, Chief of Cultural Resources,
5	alternatives, the planning team included more	49	Golden Gate National Recreation
6	than 50 managers and resource/technical	50	Area; 20 years with the National Park
7	specialists from the National Park Service	51	Service; 7 years at Keweenaw
8	and Golden Gate Parks Conservancy. In	52	National Historical Park; Ph.D. in
9	addition, the planning team included staff of	53	Textiles and Clothing, M.A. in
10	the California State Parks, experts from	54	Anthropology and Latin American
11	academia, and members of consulting firms.	55	Studies, B.A. in Art History,
12	Most of these planning team members also	56	Anthropology, and Home Economics
13	participated in various working groups that	57	
14	focused on individual issues and identified	58	Michele Gee, Chief of Interpretation and
15	solutions that were incorporated into the	59	Education, Golden Gate National
16	GMP alternatives. Working groups were	60	Recreation Area; 1 year with the
17	formed to address the following topics:	61	National Park Service, 11 years with
18	Alcatraz Vision, Asset Management, Climate	62	Golden Gate National Parks
19	Change, Operational Facilities, Marine	63	Conservancy as Crissy Field Center
20	Resources, American Indians, Park	64	Deputy Director; B.A. Environmental
21	Boundaries, Partnerships, Trails, and	65	Studies
22	Transportation.	66	
23		67	Daphne Hatch, Chief of Natural Resource
24		68	Management and Science, Golden
25	STEERING COMMITTEE	69	Gate National Recreation Area; 25
26	Brian Aviles, Senior Planner, Golden Gate	70	years with the National Park Service,
27	National Recreation Area; 13 years	71	8 years as Natural Resource
28	with the National Park Service, 16	72	Specialist, Golden Gate National
29	years academic and private practice;	73	Recreation Area, 5 years seasonal on
30	M.A. and B.A. in Landscape	74	trail crew, in interpretation, and as
31	Architecture	75	naturalist; B.S. in Botany, M.S. in
32		76	Range Management
33	Mai-Liis Bartling, Deputy Superintendent,	77	
34	Golden Gate National Recreation	78	Nancy Hornor, Chief of Planning and
35	Area (retired)	79	Compliance, Golden Gate National
36		80	Recreation Area; 35 years with the
37	Frank Dean, General Superintendent,	81	National Park Service, 13 years as
38	Golden Gate National Recreation	82	Environmental Specialist with
39	Area; 36 years with the National Park	83	Golden Gate National Recreation
40	Service, Chief of the Centennial	84	Area, 20 years as Park Planner with
41	Coordination and Planning Office in	85	Golden Gate National Recreation
42	Washington D.C., Superintendent of	86	Area; B.S. in Conservation of Natural
43	Saratoga National Historical Park,	87	Resource
44	Executive Director of Erie Canalway	88	

1 Susan Hurst, Administrative Officer, Golden
 2 Gate National Recreation Area
 3 (retired)
 4
 5 Craig Kenkel, Superintendent, San Francisco
 6 Maritime National Historical Park; 29
 7 years with the National Park Service,
 8 1 year acting Deputy Superintendent
 9 at Golden Gate National Recreation
 10 Area, 4 years Chief of Cultural
 11 Resources at Golden Gate National
 12 Recreation Area, 9 years with the NPS
 13 Midwest Regional Office; B.A. in
 14 Architecture
 15
 16 Howard Levitt, Chief of Communications
 17 and Partnerships, Golden Gate
 18 National Recreation Area; 30 years
 19 with the National Park Service: 5
 20 years as Outdoor Recreation Planner,
 21 5 years as Management Assistant, 18
 22 years as Chief of Interpretation and
 23 Education; B.A. in Political Science
 24
 25 Brian O'Neill, General Superintendent,
 26 Golden Gate National Recreation
 27 Area, 1986 – 2009 (deceased)
 28
 29 Chris Powell, Legislative Specialist, NPS
 30 Office of Legislative and
 31 Congressional Affairs; 20 years with
 32 the National Park Service, 17 years as
 33 Public Affairs Specialist; two B.A.
 34 Degrees, A.A. in Nursing
 35
 36 Aaron Roth, Deputy Superintendent, Golden
 37 Gate National Recreation Area; 8
 38 years with the National Park Service:
 39 3 years as Chief of Business
 40 Management, Golden Gate National
 41 Recreation Area, 6 months as
 42 Management Assistant, Grand
 43 Canyon National Park, 3 years as
 44 Business Management Specialist in
 45 the NPS Intermountain Regional
 46 Office; MBA in Entrepreneurship,
 47 B.S. in Systems Engineering
 48
 49

50 **TEAM MEMBERS – CALIFORNIA**

51 (In addition to the members of the GMP
 52 Steering Committee)
 53
 54 Cathie Barner, Director, Park Projects,
 55 Golden Gate National Parks
 56 Conservancy; 15 years with the
 57 Golden Gate National Parks
 58 Conservancy, M.A. in Architecture
 59
 60 Paul Batlan, Realty Specialist with Land
 61 Resource Division, NPS Washington
 62 Office; 12 years with the National
 63 Park Service, 11 years with Presidio
 64 Project Office and Fort Baker Team
 65 with Golden Gate National
 66 Recreation Area; B.A. and M.A. in
 67 Architecture, J.D. in Law
 68
 69 Kim Coast, acting Chief Park Ranger, Golden
 70 Gate National Recreation Area; 26
 71 years with the National Park Service,
 72 Operations Branch Supervisor/
 73 Visitor and Resource Protection
 74 Golden Gate National Recreation
 75 Area, 1 year with the U.S. Forest
 76 Service; B.A. in Recreational
 77 Resource Management, A. A. in Park
 78 and Grounds Maintenance
 79 Management, BLM Training Program
 80
 81 Martha Crusius, Chief of Planning and
 82 Compliance, Pacific West Region; 29
 83 years with the National Park Service;
 84 B.A. in Biology, M.R.P. in Regional
 85 Planning, M.S. in Energy
 86 Management and Policy
 87
 88 Jay Eickenhorst, Partner Liaison; 35 years
 89 with the National Park Service, 25
 90 years as NPS Park Ranger, 2 years as
 91 NPS Safety Officer, 2 years with U.S.
 92 Forest Service; B.S. in Marine
 93 Biology, A.A. and A.S. in Biology
 94
 95 Sharon Farrell, Associate Director Park
 96 Projects, Resource Conservation, and
 97 Project Implementation, Golden Gate
 98 National Parks Conservancy; 6 years
 99 with Golden Gate National Parks

1	Conservancy, 4 years as NPS Natural	52	Tom Lindberg, Superintendent Marin Sector
2	Resource Specialist, 7 years as NPS	53	California State Parks (retired)
3	Plant Ecologist, 2 years as Natural	54	
4	Resources Planner with Presidio	55	Don Mannel, Chief of Maintenance, Golden
5	Trust; M.S. in Park Management and	56	Gate National Recreation Area
6	Recreation, B.S. in Chemistry	57	
7		58	Bill Merkle, Supervisory Wildlife Ecologist,
8	Carey Feierabend, Lead Project Manager,	59	Golden Gate National Recreation
9	Golden Gate National Recreation	60	Area; 9 years with the National Park
10	Area; 16 years with the National Park	61	Service, 15 years wildlife management
11	Service, 4 years as Planning Manager	62	and research experience; Ph.D. in
12	with Presidio Trust, 5 years as	63	Biology
13	Planner/Historic Architecture	64	
14	Consultant, Golden Gate National	65	Mia Monroe, Interpretive/Site Supervisor at
15	Recreation Area; M.A. and B.A. in	66	Muir Woods, Golden Gate National
16	Architecture	67	Recreation Area; 36 years with the
17		68	National Park Service
18	Darren Fong, Aquatic Ecologist, Golden Gate	69	
19	National Recreation Area; 18 years	70	Yvette Ruan, Chief of Fire and Emergency
20	with the National Park Service; M.S.	71	Services, Golden Gate National
21	in Wildland Resource Science	72	Recreation Area; 30 years with the
22		73	National Park Service: 8 Years as
23	Sue Fritzke, Deputy Superintendent, Rosie	74	Chief Ranger, 7 years as Law
24	the Riveter WWII Home Front	75	Enforcement Ranger, 3 years as EEO
25	National Historical Park; 25 years	76	Specialist; B.S Criminal Justice
26	with the National Park Service, 2	77	Administration
27	years with Peace Corps Ecuador; M.S.	78	
28	in Plant Ecology and Physical	79	Michael Savidge, Director, Strategic
29	Geography, B.A. in Physical	80	Planning/Partnership Development,
30	Geography and Environmental	81	Golden Gate National Recreation
31	Studies,	82	Area; 23 years with the National Park
32		83	Service, 6 years as Transition
33	Stephen Haller, Park Historian and Branch	84	Manager for Presidio, 10 years with
34	Chief for Cultural Resources, Golden	85	Department of Defense Armed
35	Gate National Recreation Area; 37	86	Forces Recreation Center, Germany;
36	years with the National Park Service,	87	Masters of Social Work in
37	Ranger with Fort Point National	88	Community Administration, B.A. in
38	Historic Site, San Francisco Maritime	89	Psychology, Fulbright Fellow
39	National Historical Park, and Golden	90	Stockholm Sweden, Executive
40	Gate National Recreation Area; B.A.	91	Development Programs with
41	American History	92	Department of Defense and
42		93	Department of the Interior, Kennedy
43	Jim Kren, Historical Architect, Golden Gate	94	School of Government/Executive
44	National Recreation Area; 22 years	95	Public Policy
45	with the National Park Service: 12	96	
46	years with Golden Gate National	97	Jerry Scheumann, Maintenance Division
47	Recreation Area, 4 years with	98	Supervisor, Golden Gate National
48	Presidio Project Office, 4 years with	99	Recreation Area
49	NPS Denver Service Center; B.A.	100	
50	Environmental Design, B.A. in		
51	Architecture		

1	Paul Scolari, Historian and American Indian	49	Kerri Cahill, Visitor Use Management Team
2	Liaison, Golden Gate National	50	Lead and Planning Branch Chief; 10
3	Recreation Area; 18 years with the	51	years with National Park Service;
4	National Park Service; Ph.D in	52	Ph.D in Recreation Ecology
5	History of American Art and	53	
6	Architecture	54	Tom Gibney, Project Manager/Landscape
7		55	Architect. 3 years experience with the
8	Craig Scott, GIS Coordinator, Golden Gate	56	National Park Service, 9 years of
9	National Recreation Area; 13 years	57	experience in public lands planning
10	with the National Park Service; B.A.	58	and design. M.L.A. in landscape
11	in Geography	59	architecture and B.A. in classical
12		60	civilizations. Registered Landscape
13	Emilyn Sheffield, Professor of Recreation and	61	Architect (RLA), Project
14	Parks Management, California State	62	Management Professional (PMP),
15	University, Chico; 26 years of applied	63	Leadership in Energy and
16	research and consulting with	64	Environmental Design Accredited
17	government agencies, businesses, and	65	Professional (LEED AP)
18	nonprofit organizations; Ph.D. in	66	
19	Recreation and Parks Management	67	Patrick Malone, former Project Manager; 5
20		68	years with the National Park Service,
21	Ed Ueber, National Oceanic and	69	9 years with state and local
22	Atmospheric Administration (retired)	70	government, and 2 years with a
23		71	nonprofit land trust; M.P.A. in
24	Tamara Williams, Hydrologist/Physical	72	Environmental Policy and Public
25	Scientist, Golden Gate National	73	Management, B.S. in Natural
26	Recreation Area; 15 years with the	74	Resources and Environmental
27	National Park Service; B.S. in	75	Management
28	Geology	76	
29		77	Ray McPadden, Community Planner, 1 year
30		78	with NPS, five years experience- US
31	TEAM MEMBERS – NPS	79	army, Master of Community and
32	DENVER SERVICE CENTER	80	Regional Planning, B.S. in Sociology
33	Planning Team	81	
34	Tracy Atkins, Project Manager; 4 years	82	Susan McPartland, Visitor Use Specialist; 4
35	experience with the National Park	83	years experience with the National
36	Service, 22 years of industry	84	Park Service, experience in
37	experience in project management,	85	Geographic Information Systems
38	construction management, planning	86	(GIS), visitor use management; M.S.
39	and community outreach; M.S. in	87	in Social Science, Certificate in GIS,
40	Civil Engineering, M.S. in	88	B.A. in Environmental Studies, Art
41	Community and Regional Planning,	89	
42	B.S. in Architectural Engineering	90	Stephan Nofield, Outdoor Recreation
43		91	Planner and former GMP Project
44	Sarah Bodo, Community Planner; 5 years	92	Manager; 9 years with the National
45	with the National Park Service;	93	Park Service, 8 years Denver Service
46	Master of Urban and Regional	94	Center, 1 year NPS Washington
47	Planning, B.S. in Finance	95	Office
48		96	
		97	Harlan Unrau, Cultural Resource Specialist
		98	(retired)
		99	

1 Don Wojcik, Natural Resource Specialist; 4
 2 years with the National Park Service,
 3 11 years as natural resource planner
 4 with county government open space
 5 programs, 5 years as environmental
 6 policy analyst with nonprofit and
 7 academic organizations, and 2 years
 8 as civil engineer with municipal
 9 government; M.P.A. in
 10 Environmental Policy and Natural
 11 Resource Management; B.S. in Civil
 12 and Environmental Engineering

15 **Production Services**

16 Jim Corbett, Publications Chief; 9 years with
 17 the National Park Service

18
 19 Wanda Gray Lafferty, Editor, 13 years of
 20 experience editing NPS documents, 2
 21 years of experience with the National
 22 Park Service, , overall 30 years of
 23 related experience: 2 years related
 24 undergraduate course work in
 25 communications and management

26
 27 Lisa Padgett, Visual Information Specialist
 28 (Student Intern); Studying
 29 Communication Design at
 30 Metropolitan State University, A.A. in
 31 Graphic Design/Print Production,
 32 B.S. in Civil Engineering Technology;
 33 6 months with the National Park
 34 Service

37 **PLANNING SUPPORT**
 38 **AND SPECIALISTS**

39 Kristen Appel, Senior District Ranger,
 40 Northern Territory Government,
 41 Australia

42
 43 Laura Castellini, Sustainability Coordinator,
 44 Golden Gate National Recreation
 45 Area; 15 years with the National Park
 46 Service; M.A. in Biology, B.S. in
 47 Zoology

48

49 Lee Ann Ciancetti, Administrative Assistant,
 50 Planning and Compliance, Golden
 51 Gate National Recreation Area

52
 53 Allison Cryns, Environmental Protection
 54 Assistant, Golden Gate National
 55 Recreation Area; 3 years with the
 56 National Park Service, B.S. in
 57 Environmental and Natural
 58 Resources

59
 60 Steve Griswold, Landscape Architect, Golden
 61 Gate National Recreation Area; 36
 62 years with the National Park Service;
 63 M.A. in Landscape Architecture

64
 65 Mark Grupe, GIS Specialist, NPS; 12 years
 66 with the National Park Service, 2
 67 years with the U. S. Forest Service;
 68 M.A. in Geography, B.A. in
 69 Communication

70
 71 Jan Harris, Planning Branch Chief, Denver
 72 Service Center; 30 years with the
 73 National Park Service, 2 years public
 74 involvement consulting, 4 years with
 75 Missouri Department Natural
 76 Resources; B.S. in Recreation and
 77 Park Administration (retired)

78
 79 Marcus Koenen, Alcatraz Site Supervisor
 80 (acting), Golden Gate National
 81 Recreation Area; 10 years with the
 82 National Park Service: 5 years as
 83 inventory and monitoring program
 84 manager for San Francisco Bay Area
 85 network, 5 years as monitoring
 86 coordinator in Capital Region, NPS
 87 Washington Office; M.S. in Wildlife
 88 Ecology, B.A. in Cultural
 89 Anthropology

90
 91 Sarah Koenen, Park Ranger, Golden Gate
 92 National Recreation Area; 11 years
 93 with the National Park Service, 2
 94 years Compliance Coordinator,
 95 Golden Gate National Recreation
 96 Area; M.S. in Resource Interpretation

97 Robert Lieber, Director Retail and Product
 98 Development, Golden Gate National
 99 Parks Conservancy; 15 years with the

1	Golden Gate National Parks	51	M.A. in Architecture, B.A. in
2	Conservancy, 5 years as director for	52	Economics
3	park retail operations, visitor center	53	
4	retail store design, product	54	Carolyn Shoulders, Project Manager,
5	development, and park publishing, 10	55	Redwood Creek, Golden Gate
6	years as associate director overseeing	56	National Recreation Area; 12 years
7	visitor center store design and	57	with the National Park Service; M.S.
8	product development; B.F.A. in	58	in Restoration Ecology, B.A. in
9	Design	59	History and Literature
10		60	
11	Andrea Lucas, Landscape Architect, Golden	61	Brian Ullensvang, Chief of Environmental
12	Gate National Recreation Area; 13	62	and Safety Programs, Golden Gate
13	years with the National Park Service;	63	National Recreation Area; 15 years
14	M.A. in Environmental Planning , B.S.	64	with the National Park Service, 12
15	in Landscape Architecture	65	years with Environmental Protection
16		66	Agency, M.S. in Environmental
17	Roy McNamee, Staff and Park Recreation	67	Engineering, B.S. in Civil Engineering
18	Specialist with California State Parks	68	and Biology
19	(CSP); 34 years with the state parks, 2	69	
20	years as Superintendent, Angel Island	70	Rich Weideman, Chief, Office for
21	State Park, 5 years as Special Projects	71	Partnerships and Philanthropic
22	Manager for CSP Marin District, 27	72	Support, NPS Washington Office; 29
23	years in CSP Facility Management;	73	years with the National Park Service:
24	B.A. Recreation Administration and	74	18 years with Interpretation, 11 years
25	Parks Management	75	with Public Affairs; B.S. in Resource
26		76	Conservation
27	Ricardo Perez, Supervisory Park Ranger,	77	
28	Rock Creek Park; 30 years with the	78	Betty Young, Program Director of Nurseries
29	National Park Service: Laborer and	79	and Park Academy, Golden Gate
30	Maintenance Worker, Park Ranger	80	National Parks Conservancy; 14 years
31	Generalist, Interpretive Specialist,	81	with Golden Gate National Parks
32	Wildland Firefighter, Incident	82	Conservancy, 13 years as director
33	Medical Specialist, Senior Law	83	with other nurseries; B.S. in Plant
34	Enforcement Official, Supervisory	84	Science and Nursery Management
35	Park Ranger, Acting Superintendent;	85	
36	Type I Commission, Federal Law	86	
37	Enforcement Training Center	87	CONSULTANTS
38			
39	Bruce Philips, Manager of Horse Patrol,	88	Jim Bacon, Superintendent, National Park of
40	Golden Gate National Recreation	89	American Samoa; former Planner and
41	Area; 21 years with the National Park	90	Visitor Use Specialist, Yosemite
42	Service, 10 years with Golden Gate	91	National Park and NPS Denver
43	National Recreation Area, 8 years	92	Service Center; 5 years with the
44	Horse Patrol, Golden Gate National	93	National Park Service: 2 years with
45	Recreation Area; B.A. in Criminal	94	Resource Management, 3 years with
46	Justice	95	Park Planning, returned Peace Corps
47		96	Volunteer; M.S. in Natural Resource
48	Michelle Rios, Historical Architect Golden	97	Planning
49	Gate National Recreation Area; 19	98	
50	years with the National Park Service;	99	Linda Dahl, Director of Parks and Open
		100	Space in Marin County; 18 years with

1	the National Park Service, Chief of	40	National Park Service, 16 years as
2	Planning Division, Yosemite National	41	Chief of Museum Management,
3	Park	42	Golden Gate National Recreation
4		43	Area; M.A. in Museum Science, B.S.
5	Robert Manning, Professor at Rubenstein	44	in History
6	School of Environment and Natural	45	
7	Resources, University of Vermont;	46	Nina Roberts, Associate Professor, San
8	Ph.D. in Resource Conservation, M.S.	47	Francisco State University
9	in Parks and Outdoor Recreation,	48	Department of Recreation, Parks, and
10	B.S. in Biology	49	Tourism; 4 years with the National
11		50	Park Service (consultant since 2005),
12	Jeff Marion, Research Biologist, Eastern	51	4 years as Education and Outreach
13	Region United States Geologic	52	Specialist with NPS Natural Resource
14	Survey; Ph.D. and M.S. in Recreation	53	Program Center; Ph.D. Natural
15	Resources Management, B.S. in	54	Resource Management and Outdoor
16	Biology	55	Recreation, Fulbright Scholar, India
17		56	2006
18	Vicki McCusker, National Park Service	57	
19	Natural Resource Specialist; 7 years	58	Cliff Riebe, Assistant Professor of Geology
20	with the NPS Natural Sounds and	59	and Geophysics, University of
21	Night Skies Division; B.S. in	60	Wyoming; Ph.D. in Geology, B.S. in
22	Ornamental Horticulture, M.S. in	61	Civil Engineering
23	Agronomy	62	
24		63	Alexa Viets, Program Manager for Civil War
25	Bonnie Nelson, Senior Principal for Transit	64	Defenses NPS Washington Office; 10
26	Operations Management	65	years with the National Park Service,
27	Consultants, Nelson/Nygaard; B.S. in	66	1 year as Transportation Planner with
28	Civil Engineering and Transportation	67	Golden Gate National Recreation
29		68	Area; M.A. in City Planning
30	Peter Newman, Associate Dean of	69	
31	Economics for Warner College of	70	Don Weeks, Hydrologist, NPS Natural
32	Natural Resources; Natural Sounds	71	Resources Program Center; 22 years
33	Programs expert with the National	72	with the National Park Service, 5
34	Park Service; Ph.D. in Natural	73	years with Woodward-Clyde
35	Resources, M.S. in Forest Resource	74	Consultants; B.S. and M.S. in Geology
36	Management, B.A. in Political Science	75	(emphasis on Hydrogeology)
37		76	
38	Diane Nicholson, Regional Curator for NPS		
39	Pacific West Region; 33 years with the		



APPENDIX A: LEGISLATION

National Park Service

In 1916, the National Park Service was established through the passage of the National Park Service Organic Act. The mission of the agency is contained in the following words of that act:

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.

Congress supplemented and clarified these provisions through enactment of the General Authorities Act in 1970, and again through enactment of a 1978 amendment to that act (the “Redwood amendment,” contained in a bill expanding Redwood National Park), which added the last two sentences in the following provision. The key part of that act, as amended, is as follows:

Congress declares that the national park system, which began with establishment of Yellowstone National Park in 1872, has since grown to include superlative natural, historic, and recreation areas in every major region of the United States, its territories and island possessions; that these areas, though distinct in character, are united through their inter-related purposes and resources into one national park system as cumulative expressions of a single national heritage; that, individually and collectively, these areas derive increased national dignity and recognition of their superlative environmental quality through their inclusion jointly with each other in one national park system preserved and managed for the benefit and inspiration of all the people of the United States; and that it is the purpose of this Act to include all such areas in the System and to clarify the authorities applicable to the system. Congress further reaffirms, declares, and directs that the promotion and regulation of the various areas of the National Park System, as defined in section 1c of this title, shall be consistent with and founded in the purpose established by section 1 of this title [the Organic Act provision quoted above], to the common benefit of all the people of the United States. The authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress.

GOLDEN GATE NATIONAL RECREATION AREA

Public Law 92-589

An Act

To establish the Golden Gate National Recreation Area in the State of California, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

ESTABLISHMENT

Section 1. In order to preserve for the public use and enjoyment certain areas of Marin and San Francisco counties, California, possessing outstanding natural, historic, scenic, and recreational values, and in order to provide for the maintenance of needed recreational open space necessary to urban environment and planning, the Golden Gate National Recreation Area (hereinafter referred to as the "recreation area") is hereby established. In the management of the recreation area, the Secretary of the Interior (hereinafter referred to as the "Secretary") shall utilize the resources in a manner which will provide for recreation and educational opportunities consistent with sound principles of land use planning and management. In carrying out the provisions of this Act, the Secretary shall preserve the recreation area, as far as possible, in its natural setting, and protect it from development and uses which would destroy the scenic beauty and natural character of the area.

COMPOSITION AND BOUNDARIES

Sec. 2 (a) the recreation area shall comprise the lands, waters, and submerged lands generally depicted on the map entitled "Boundary Map, Golden Gate National Recreation Area", numbered NRA-GG-80,003A, sheets 1 through 3, and dated July, 1972.

(b) The map referred to in this section shall be on file and available for public inspection in the Offices of the National Park Service, Department of the Interior, Washington, District of Columbia. After advising the Committees on Interior and Insular Affairs of the United States House of Representatives and the United States Senate (hereinafter referred to as the "committees") in writing, the Secretary may make minor revisions of the boundaries of the recreation area when necessary by publication of a revised drawing or other boundary description in the Federal Register.

ACQUISITION POLICY

Sec. 3 (a) within the boundaries of the recreation area, the Secretary may acquire lands, improvements, waters, or interests therein, by donation, purchase, exchange or transfer. Any lands, or interests therein, owned by the State of California or any political subdivision thereof, may be acquired only by donation. When any tract of land is only partly within such boundaries, the Secretary may acquire all or any portion of the land outside of such boundaries in order to minimize the payment of severance costs. Lands so acquired outside of the boundaries may be exchanged by the Secretary for non-Federal lands within the boundaries. Any portion of land acquired outside of the boundaries and not utilized for exchange shall be reported to the General Services Administrative for disposal under the Federal Property and Administrative Services Act of 1949 (63 Stat. 377), as amended: *Provided*, That no disposal shall be for less than fair market value. Except as herein after

provided, Federal property within the boundaries of the recreation area is hereby transferred without consideration to the administrative jurisdiction of the Secretary for the purpose of this Act, subject to the continuation of such existing uses as may be agreed on between the Secretary and the head of the agency formerly having jurisdiction over the property. Notwithstanding any other provisions of law, the Secretary may develop and administer for the purposes of this Act structures or other improvements and facilities on lands for which he receives a permit of use and occupancy from the Secretary of the Army.

(b) Fort Cronkhite, Fort Barry, and the westerly one-half of Fort Baker, in Marin County, California, as depicted on the map entitled "Golden Gate Military Properties" numbered NRAGG-20,002 and dated January 1972, which shall be on file and available for public inspection in the offices of the National Park Service, are hereby transferred to the jurisdiction of the Secretary for purposes of this Act, subject to continued use and occupancy by the Secretary of the Army of those lands needed for existing air defense missions, reserve activities and family housing, until he determines that such requirements no longer exist. The Coast Guard Radio Receiver Station, shall remain under the jurisdiction of the Secretary of the Department in which the Coast Guard is operating. When this station is determined to be excess to the needs of the Coast Guard, it shall be transferred to the jurisdiction of the Secretary for purposes of this Act.

(c) The easterly one-half of Fort Baker in Marin County, California, shall remain under the jurisdiction of the Department of the Army. When this property is determined by the Department of Defense to be excess to its needs, it shall be transferred to the jurisdiction of the Secretary for purposes of this Act. The Secretary of the Army shall grant to the Secretary reasonable public access through such property to Horseshoe Bay, together with the right to construct and maintain such public service facilities as are necessary for the purposes of this Act. The precise facilities and location thereof shall be determined between the Secretary and the Secretary of the Army.

(d) Upon enactment, the Secretary of the Army shall grant to the Secretary of the Army shall grant to the Secretary the irrevocable use and occupancy of one hundred acres of the Baker Beach area of the Presidio of San Francisco, as depicted on the map referred to in subsection (b).

(e) The Secretary of the Army shall grant to the Secretary within a reasonable time, the irrevocable use and occupancy of forty-five acres of the Crissy Army Airfield of the Presidio as depicted on the map referred to in subsection (b)

(f) When all or any substantial portion of the remainder of the Presidio is determined by the Department of Defense to be excess to its needs, such lands shall be transferred to the jurisdiction of the Secretary for purposes of this Act. The Secretary shall grant a permit for continued use and occupancy for that portion of said Fort Point Coast Guard Station necessary for activities of the Coast Guard.

(g) Point Bonita, Point Diablo, and Lime Point shall remain under the jurisdiction of the Secretary of the Department in which the Coast Guard is operating. When this property is determined to be excess to the needs of the Coast Guard, it shall be transferred to the jurisdiction of the Secretary for purposes of this Act. The Coast Guard may continue to maintain and operate existing navigational aids: *Provided*, That access to such navigational aids and the installation of necessary new navigational aids within the recreation area shall be undertaken in accordance with plans which are mutually acceptable to the Secretary and the Secretary of the Department in which the Coast Guard is operating and which are consistent with both the purpose of this Act and the purpose of existing statutes dealing with establishment, maintenance, and operation of navigational aids.

(h) That portion of Fort Miley comprising approximately one and seven-tenths acres of land presently used and required by the Secretary of the Navy for its inshore, undersea warfare installations shall remain under the administrative jurisdiction of the Department of the Navy until such time as all or any portion thereof is determined by the Department of Defense to be excess to its needs, at which time such excess portion shall be transferred to the administrative jurisdiction of the Secretary for purposes of this Act.

(i) New construction and development within the recreation area on property remaining under the administrative jurisdiction of the Department of the Army and not subject to the provisions of subsection (d) or (e) hereof shall be limited to that which is required to accommodate facilities being relocated from property being transferred under this Act to the administrative jurisdiction of the Secretary or which is directly related to the essential missions of the Sixth United States Army: *Provided, however*, That any construction on presently undeveloped open space may be undertaken only after prior consultation with the Secretary. The foregoing limitation on construction and development shall not apply to expansion of those facilities known as Letterman General Hospital or the Western Medical Institute of Research.

(j) The owner of improved property on the date of its acquisition by the Secretary under the Act may, as a condition of such acquisition, retain for himself and his heirs and assigns a right of use and occupancy of the improved property for noncommercial residential purposes for a definite term of not more than twenty-five years, or, in lieu thereof, for a term ending at the death of the owner or the death of his spouse, whichever is later. The owner shall elect the term to be reserved. Unless the property is wholly or partially donated to the United States, the Secretary shall pay to the owner the fair market value of the property on the date of acquisition minus the fair market value on that date of the right retained by the owner. A right retained pursuant to this section shall be subject to termination by the Secretary on his determination that it is being exercised in a manner inconsistent with the purpose of this Act, and it shall terminate by operation of law on the Secretary's notifying the holder of the right of such determination and tendering to him an amount equal to the fair market value of that portion of the right which remains unexpired.

(k) The term "improved property", as used in subsection (j), means a detached, noncommercial residential dwelling, the construction of which was begun before June 1, 1971, together with so much of the land on which the dwelling is situated, the said land being in the same ownership as the dwelling, as the Secretary shall designate to be reasonably necessary for the enjoyment of the dwelling for the sole purpose of noncommercial residential use, together with any structures accessory to the dwelling which are situated on the land so designated.

(l) Whenever an owner of property elects to retain a right of use and occupancy as provided for in the Act, such owner shall be deemed to have waived any benefits or rights accruing under sections 203, 204, 205, and 206 of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (84 Stat. 1894), and for the purposes of those sections such owner shall not be considered a displaced person as defined in section 101 (6) of that Act.

(m) Notwithstanding any other provisions of law, the Secretary shall have the same authority with respect to contracts for the acquisition of land and interests in land for the purposes of this Act as was given the Secretary of the Treasury for other land acquisitions by section 34 of the Act of May 30, 1908, relating to purchase of sites for public buildings (35 Stat. 545), and the Secretary and the owner of land to be acquired under this Act may agree that the purchase price will be paid in periodic installments over a period that does not exceed 10 years, with interest on the unpaid balance thereof at a rate which is not in excess of the current average market yield on outstanding marketable obligations of the United States with remaining periods to maturity comparable to the average

maturities on the installments. Judgments against the United States for amounts in excess of the deposit in court made in condemnation actions shall be subject to the provisions of the Act of July 27, 1956 (70 Stat. 624) and sections 2414 and 2517 of title 28, United States Code.

ADMINISTRATION

Sec.4. (a) The Secretary shall administer the lands, waters and interests therein acquired for the recreation area in accordance with the provisions of the Act of August 25, 1916 (39 Stat. 535; 16 U.S.C. 1, 2–4), as amended and supplemented, and the Secretary may utilize such statutory authority available to him for the conservation and management of wildlife and natural resources as he deems appropriate to carry out the purposes of this Act. Notwithstanding their inclusion within the boundaries of the recreation area, the Muir Woods National Monument and Fort Point National Historic Site shall continue to be administered as distinct and identifiable units of the national park system in accordance with the law applicable to such monument and historic site.

(b) The Secretary may enter into cooperative agreements with any Federal agency, the State of California, or any political subdivision thereof, for the rendering, on a reimbursable basis, of rescue, firefighting, and law enforcement and fire preventive assistance.

(c) The authority of the Army to undertake or contribute to water resource developments, including shore erosion control, beach protection, and navigation improvements on land and/or water within the recreation area shall be exercised in accordance with plans which are mutually acceptable to the Secretary and the Secretary of the Army and which are consistent with both the purpose of this Act and the purpose of existing statutes dealing with water and related resource developments.

(d) The Secretary, in cooperation with the State of California and affected political subdivisions thereof, local and regional transit agencies, and the Secretaries of Transportation and of the Army, shall make a study for a coordinated public and private transportation system to and within the recreation area and other units of the national park system in Marin and San Francisco counties.

ADVISORY COMMISSION

Sec.5. (a) There is hereby established the Golden Gate National Recreation Area Advisory Commission (hereinafter referred to as the “Commission”).

(b) The Commission shall be composed of fifteen members appointed by the Secretary for terms of three years each.

(c) Any vacancy in the Commission shall be filled in the same manner in which the original appointment was made.

(d) Members of the Commissions shall serve without compensation, as such, but the Secretary may pay, upon vouchers signed by the Chairman, the expenses reasonably incurred by the Commission and its members in carrying out their responsibilities under this Act.

(e) The Secretary, or his designee, shall from time to time, but at least annually, meet and consult with the Commission on general policies and specific matters related to planning, administration and development affecting the recreation area and other units of the national park system in Marin and San Francisco counties.

(f) The Commission shall act and advise by affirmative vote of a majority of the members thereof.

(g) The Commission shall cease to exist 10 years after the enactments of this Act.

APPROPRIATION LIMITATION

Sec.6. There are hereby authorized to be appropriated such sums as may be necessary to carry out the provisions of this of this Act, but not more than \$61,610,000 shall be appropriated for the acquisition of lands and interests in lands. There are authorized to be appropriated not more than \$58,000,000 (May 1971 prices) for the development of the recreation area, plus or minus such amounts, if any, as may be justified by reason of ordinary fluctuations in construction costs as indicted by engineering cost indices applicable to the type of construction involved herein.

Approved October 27, 1972.

Legislation Summary, Golden Gate National Recreation Area

Public Law No.	Title	Summary	Date
92-589	Golden Gate National Recreation Area, Calif.	This act establishes the purpose of Golden Gate National Recreation Area, delineates the composition and boundaries, describes the acquisition policy and administration, creates an advisory committee, and discusses appropriations.	10/27/1972
93-544	Golden Gate National Recreation Area, Calif., additional land	Amended the act of 10/27/72 to include the acquisition of contiguous lands in southern Marin, Muir, and Stinson Beaches. (Oakwood Valley, Tennessee Valley, Wolfback Ridge, and Haslett Warehouse).	12/26/1974
95-625	National Parks and Recreation Act of 1978	Expanded boundaries in Marin and San Francisco (Lagunitas Creek watershed, Devils Gulch, Cheda, McIsaac, Zanardi, and Rogers ranches). Strengthened continued use and occupancy provisions for agriculture, and limited new construction. It also established the ability to obtain proceeds from rental space in the warehouse, Cliffhouse, and Louis' restaurant. It increased the park's advisory commission from 15 to 17.	11/10/1978
96-344	Historic Sites, Buildings and Antiquities Act, administration improvement	Added the acreage of the McFadden, Genazzi, and Martinelli ranches. Extended the terms of the advisory committee from 3 to 5 years. Recommended Sweeney Ridge for addition to Golden Gate National Recreation Area.	9/8/1980
96-607	National Park System, amendment	Adds Sweeney Ridge and increased membership of the advisory committee from 17 to 18. Transfer administration of Scenic and Recreational easements on Peninsula watershed lands to the NPS. Authorizes the NPS to seek appropriate agreement needed to establish a trail within this property and connecting with a suitable beach unit.	12/28/1980
98-28	Golden Gate National Recreation Area, dedication to Congressman Phillip Burton	Dedicates Golden Gate National Recreation Area to Congressman Burton.	5/10/1983
102-299	Golden Gate National Recreation Area Addition Act of 1992	Addition of the Phleger Estate.	6/9/1992
106-113	Consolidated Appropriations for Fiscal Year ending 9/30/2000	Exemption of all taxes and special assessments, except sales tax. Such areas as Fort Baker shall remain under exclusive Federal jurisdiction.	11/29/1999
106-291	Department of the Interior appropriation	Authority for fee-based education, interpretive and visitor service functions within the Crissy Field and Fort Point areas of the Presidio.	10/11/2000
106-350	Golden Gate National Recreation Area Boundary Adjustment Act of 2000	Additions as depicted on map "numbered NPS-80,076, and dated July 2000/PWR-PLRPC."	10/24/2000
109-131	Rancho Corral de Tierra Golden Gate National Recreation Area Boundary Adjustment Act	Amends PL 92-589 to add Rancho Corral de Tierra lands, with limitation to acquire this land only from a willing seller.	12/20/2005

MUIR WOODS NATIONAL MONUMENT

January 9, 1908

By The President of The United States of America

A PROCLAMATION

WHEREAS. William Kent and his wife, Elizabeth Thatcher Kent, of the City of Chicago, in County of Cook in the State of Illinois, did, on December 26, 1907, pursuant to the Act of Congress entitled, "An Act for the preservation of American Antiquities," approved June 8, 1906, by their certain deed of relinquishment and conveyance, properly executed in writing and acknowledged, relinquish, remise, convey and forever quitclaim to the United States of America the following mentioned lands at that time held by them in private ownership and lying and being in township One North, of Range Six West, Mount Diablo Meridian, in the County of Marin, in the State of California, and bounded and particularly described as follows, to-wit:

Beginning at a stake "A.7" driven in the center of the road in Redwood Canon and located by the following courses and distances from the point of commencement of the tract of land, which was conveyed by the Tamalpais Land and Water Company to William Kent by a deed dated August 29th, 1905, and recorded in the office of the County Recorder of Marin County, California, Book 95 of Deeds at page 58, to-wit: North eighteen degrees thirty-two minutes East two hundred thirty two and sixty-four hundredths feet, North sixty-six degrees thirty minutes West one hundred sixty-seven and thirty-four hundredths feet, North eighty-six degrees twenty-five minutes West ninety-eight and sixty-two hundredths feet, North seventy degrees no minutes, West two hundred forty-one and seven hundredths feet, North fifty-seven degrees twenty-nine minutes West one hundred seventy-eight and three hundredths feet; North forty-six degrees twenty-two minutes West two hundred thirty-five and thirty-nine hundredths feet and North twenty-four degrees twenty-five minutes West two hundred twenty-five and fifty-six hundredths feet; thence from said stake "A.7", the point of beginning, South fifty-four degrees nineteen minutes West fourteen hundred eighty-two and seven tenths feet to Station A.8 from which Station 4 of the survey of the tract of land conveyed to William Kent as aforesaid bears south fifty-four degrees nineteen minutes west three hundred ten feet distant; thence from said Station A.8 North forty-seven degrees thirty minutes West twenty-six hundred eighty feet; thence due West six hundred fifty and eight tenths feet; thence North fifty-two degrees thirty minutes West eleven hundred feet; thence North nine-teen degrees forty-five minutes West ten hundred fifty-eight and four tenths feet to Station A.12. from which Station 16 of the Survey of the tract of land conveyed to William Kent as aforesaid bears South eighty-three degrees forty-two minutes West three hundred ten feet distant; thence North eighty-three degrees forty-two minutes East thirty-one hundred nine and two tenths feet; thence north fifty-five degrees twenty-eight minutes East fifteen hundred fifty feet to an iron bolt, three-quarters of an inch in diameter and thirty inches long, Station 14; thence South seventeen degrees eighteen minutes East twenty-eight hundred twenty and nine tenths feet; thence South four degrees ten minutes East nine hundred thirty feet to a stake "A.16" driven in the center of a graded road; and thence South forty-five degrees seventeen minutes West two hundred ninety-eight and five tenths feet to said stake A.7. the place of beginning. Containing an area of two hundred ninety-five acres a little more or less, and,

WHEREAS, said relinquishment and conveyance has been accepted by the Secretary of the Interior in the manner and for the purposes prescribed in said Act of Congress, and

WHEREAS, and extensive growth of redwood trees (*Sequoia sempervirens*) embraced in said land is of extraordinary scientific interest and importance because of the primeval character of the forest in which it is located, and if the character, age and size of the trees,

Now, therefore, I, Theodore Roosevelt, President of United States of America, by virtue of the power and authority in me vested by Section 2 of said Act of Congress, do hereby declare and proclaim that said grove and all of the land hereinbefore described and fully delineated in the diagram hereto attached and made a part hereof, are hereby reserved from appropriation and use of all kinds under all the public land laws of the United States and set apart as a National Monument, to be known and recognized as the Muir Woods National Monument.

Warning is hereby expressly given to all unauthorized persons not to appropriate, cut, injure, destroy or take away any trees on said land and not to locate or settle upon any of said land.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the City of Washington this 9th day of January in the year of our Lord one thousand nine hundred and eight, and of the Independence of the United States the one hundred and thirty-second.

THEODORE ROOSEVELT

By the President:

ELIHU ROOT

Secretary of State

APPENDIX B: DESCRIPTION OF MANAGEMENT PLANS RELATED TO THIS PLAN

1 Appendix B provides an overall description
2 of management plans from federal, state,
3 regional and local government agencies along
4 with their relationship to this management
5 plan.

6
7 In addition to the overall vision and
8 management plans described in the text of
9 the general management plan, the National
10 Park Service develops detailed project and
11 program implementation plans in order to
12 implement the goals and objectives of those
13 broader plans. These implementation plans
14 cover topics such as natural and cultural
15 resource restoration and preservation, visitor
16 use, transportation, and park operations.

17 18 19 **FEDERAL PLANS**

20 **National Park Service Plans** 21 **Currently Being Prepared**

22 ***Alcatraz Ferry Embarkation*** 23 ***Environmental Impact Statement***

24 Study objectives are to direct the
25 establishment of the primary embarkation
26 site in San Francisco that will provide for a
27 safe, consistent, and stable visitor departure
28 site for access to Alcatraz Island. The site will
29 meet the following criteria:

- 30
31 ▪ Allow for development of an
32 identifiable, distinct, first-class NPS
33 visitor welcome area with a clearly
34 defined sense of arrival, the setting of
35 which is in keeping with a National
36 Park site and an authentic Alcatraz
37 experience.
- 38 ▪ Provide a portal to the park that
39 begins to connect visitors to the
40 Alcatraz story, Golden Gate National
41 Recreation Area, National Park

42 Service, and the natural and cultural
43 history of the San Francisco Bay Area.

- 44 ▪ Establish a long-term location for
45 optimizing ferry berths, critical
46 operational facilities, and logistical
47 support requirements, available for a
48 full and open competition of
49 contracts.
- 50 ▪ Ensure NPS ability to define all
51 aspects of the visitor experience, from
52 pre-arrival to departure, with
53 flexibility to modify and to define
54 interpretive materials, indoor and
55 outdoor space, signage and other
56 features of the site, while
57 accommodating emerging
58 technologies, growth, visitor needs,
59 etc.
- 60 ▪ Provide adequate visitor support
61 space and facilities that offer a
62 comfortable, fully accessible, and
63 welcoming experience while waiting
64 for a ferry and learning about Alcatraz
65 and the park, accommodating the
66 visitor flow to and through the site
67 without confusion.
- 68 ▪ Ensure convenient alternative access
69 to the site through a variety of
70 transportation modes, while
71 providing for the opportunity to
72 connect to other parklands.
- 73 ▪ Avoid disruption of service when the
74 current contract expires in 2016.

75 76 ***Dog Management Plan for Golden*** 77 ***Gate National Recreation Area (draft)***

78 Golden Gate National Recreation Area is
79 involved a planning and public involvement
80 process to decide how best to manage dog
81 walking in the park. This process will result in
82 a *Dog Management Plan / Environmental*
83 *Impact Statement*. This planning process will

1 develop a range of alternatives with clear,
2 enforceable guidelines for the manner and
3 extent of dog walking in appropriate areas of
4 the park. The alternatives will specify which
5 of the lands managed by Golden Gate
6 National Recreation Area would be open to
7 on-leash dog walking and off-leash dog
8 walking, and which are closed to dog
9 walking. The goal of the process is to allow
10 dog walking while

- 11
- 12 ▪ protecting park resources
- 13 ▪ providing a variety of visitor
14 experiences
- 15 ▪ reducing visitor use conflicts
- 16 ▪ ensuring that park resources and
17 values are available for future
18 generations
- 19 ▪ increasing the safety of staff and
20 visitors

21

22 The park will evaluate the impacts of the
23 range of alternatives and identify a preferred
24 alternative for the draft *Dog Management
25 Plan / Environmental Impact Statement*. The
26 actions of the general management plan
27 alternatives have been continuously reviewed
28 as the *Dog Management Plan* evolves in order
29 to ensure consistency between the two
30 planning efforts.

31

32 **Golden Gate National Recreation** 33 **Area – Long Range Transportation** 34 **Plan**

35 The *Long Range Transportation Plan* is being
36 developed to guide the park's transportation
37 program. The plan tiers to the general
38 management plan's vision for transportation
39 and outlines the strategies for implementing
40 the park's transportation goals for the next 20
41 years. This plan will reflect the vision as
42 described in the general management plan.

43 *Visitor Facility at Lands End*

44

45 The Lands End project has proceeded in
46 several key phases, restoring native plant
47 habitat, improving forest health, expanding

48 scenic vistas, creating new overlooks,
49 enhancing trail experiences, and building a
50 new visitor facility, the Lands End Lookout.
51 The Lands End Lookout opened in April
52 2012. Lands End project highlights also
53 include the Lands End Trailhead, the USS
54 San Francisco Memorial Overlook, and
55 continued volunteer park stewardship of
56 natural and cultural resources.

57

58

59 **National Park Service Trails and** 60 **Transportation Plans and Programs**

61 ***South Access to the Golden Gate*** 62 ***Bridge – Doyle Drive Final*** 63 ***Environmental Impact*** 64 ***Statement/Report***

65 Doyle Drive is a portion of Highway 101 that
66 winds 1.5 miles along the northern edge of
67 San Francisco and connects the San
68 Francisco peninsula to the Golden Gate
69 Bridge and the North Bay. It is within the
70 Presidio of San Francisco and provides access
71 to historic and cultural landmarks including
72 Golden Gate National Recreation Area, the
73 Presidio, the Golden Gate Bridge and the
74 Palace of Fine Arts. Originally constructed in
75 1936 with narrow lanes, no median, and no
76 shoulders, Doyle Drive is approaching the
77 end of its useful life.

78

79 The purpose of the proposed project is to
80 improve the seismic, structural, and traffic
81 safety of Doyle Drive within the setting and
82 context of the Presidio of San Francisco and
83 its purpose as a National Park. Specific
84 objectives of the Doyle Drive Project are to

- 85
- 86 ▪ improve the seismic, structural, and
87 traffic safety on Doyle Drive
- 88 ▪ maintain the functions that the Doyle
89 Drive corridor serves as part of the
90 regional and city transportation
91 network
- 92 ▪ improve the functionality of Doyle
93 Drive as an approach to the Golden
94 Gate Bridge

- 1 ▪ preserve the natural, cultural, scenic
2 and recreational values of affected
3 portions of the Presidio, a national
4 historic landmark district
- 5 ▪ be consistent with the *San Francisco*
6 *General Plan* and the *General*
7 *Management Plan Amendment Final*
8 *Environmental Impact Statement*,
9 Presidio of San Francisco, Golden
10 Gate National Recreation Area (NPS
11 1994a and 1994b) for Area A of the
12 Presidio and the *Presidio Trust*
13 *Management Plan: Land Use Policies*
14 *for Area B of the Presidio of San*
15 *Francisco* (Presidio Trust 2002)
- 16 ▪ minimize the effects of noise and
17 other pollution from the Doyle Drive
18 corridor on natural areas and
19 recreational qualities at Crissy Field
20 and other areas adjacent to the project
21 area
- 22 ▪ minimize the traffic impacts of Doyle
23 Drive on the Presidio and local
24 roadways
- 25 ▪ improve intermodal and vehicular
26 access to the Presidio
- 27 ▪ redesign the Doyle Drive corridor
28 using the parkway concept described
29 within the *Doyle Drive Intermodal*
30 *Study* (1996)

31
32 The alternatives of the general management
33 plan are consistent with this plan.

34
35 ***Marin Headlands and Fort Baker***
36 ***Transportation Infrastructure and***
37 ***Management Plan Final***
38 ***Environmental Impact Statement***
39 ***(2009)***

40 The purpose of the plan is to provide
41 improved access to and within the Marin
42 Headlands and Fort Baker for a variety of
43 users, and to initiate these improvements in a
44 way that minimizes impacts on the rich
45 natural and cultural resources of the Marin
46 Headlands and Fort Baker study area. The
47 Marin Headlands and Fort Baker are in the

48 San Francisco Bay area at the north end of
49 the Golden Gate Bridge, across the bay from
50 San Francisco. The Marin Headlands span
51 the southern tip of the Marin Peninsula, from
52 U.S. Highway 101 to the western coastline, a
53 2,500-acre area. Fort Baker is a 335-acre site
54 directly adjacent to the Headlands on the east
55 side of Highway 101.

56
57 Implementation of this plan would provide
58 infrastructure and access improvements in
59 the park to meet the following plan goals:

- 60
61 ▪ Promote public transit, pedestrian,
62 and bicycle travel to and within the
63 park to improve visitor experience
64 and enhance environmental quality.
- 65 ▪ Rehabilitate the Marin Headlands and
66 Fort Baker road and trail
67 infrastructure in a manner that
68 protects resources and improves
69 safety and circulation.
- 70 ▪ Reduce traffic congestion and
71 improve safety at key park locations
72 and connecting roads.

73
74 To accomplish these goals the roadways
75 would be rehabilitated or reconstructed/
76 widened without altering their character
77 defining features, and parking facilities would
78 be improved. A greater number of transit
79 options would be provided to and within the
80 study area. Parking fees would be collected to
81 fund improved transit services. Extensive
82 pedestrian facility enhancements would be
83 implemented, including closing and rerouting
84 existing trails and constructing new trails.
85 Bicycle facilities would be improved with a
86 few new paths and bike lanes. Car-free days
87 would be implemented on a trial basis for a
88 maximum of seven days per year.

89
90 The goals and actions of the *Marin Headlands*
91 *and Fort Baker Transportation Infrastructure*
92 *and Management Plan Final Environmental*
93 *Impact Statement* are appropriate for all
94 general management plan alternatives.

95
96 **Trails Forever.** The mission of Trails Forever
97 is to improve the quality of trails in Golden

1 Gate National Recreation Area, enhance the
 2 experiences of park users, support resources
 3 preservation, and engage the community in
 4 sustaining the parks trail system in perpetuity.
 5 Trails Forever is an initiative of the Golden
 6 Gate National Parks Conservancy in
 7 partnership with the National Park Service
 8 and Presidio Trust. The signature project is to
 9 complete the California Coastal Trail
 10 corridor within Golden Gate National
 11 Recreation with trail connections to
 12 communities in Marin, San Francisco, and
 13 San Mateo. The actions of the general
 14 management plan alternatives are consistent
 15 with the goals and projects of Trails Forever.

16

17

18 **National Park Service** 19 **Restoration Plans**

20 ***Alcatraz Island Historic Preservation*** 21 ***and Safety Construction Program*** 22 ***Environmental Impact Statement*** 23 ***(2001)***

24 The implementation of this plan works to
 25 protect human health and safety, stabilize
 26 deteriorating historic structures to protect
 27 the national historic landmark, and
 28 implement needed repairs in a manner that
 29 minimizes adverse biological effects. The
 30 repairs include replacement of badly
 31 deteriorated poles underneath the dock,
 32 seismic retrofit of the cell house, and repair
 33 and stabilization of other historic structures
 34 to provide for public safety and historic
 35 preservation. The project is a construction
 36 program addressing critically needed repairs
 37 on Alcatraz Island. The actions in the general
 38 management plan alternatives are consistent
 39 with the direction of this environmental
 40 impact statement.

41

42 ***Easkoot Creek Restoration at Stinson*** 43 ***Beach Environmental Assessment*** 44 ***(2003)***

45 The Easkoot Creek restoration addressed
 46 two important limiting factors for salmonid
 47 fish production: (1) the absence of pool
 48 habitats with associated large woody debris;
 49 and (2) the lack of natural riparian habitat.
 50 This project contributes to the other
 51 restoration effort upstream and downstream
 52 of Golden Gate National Recreation Area
 53 lands, will yield long-term beneficial effects
 54 on the steelhead trout and coho salmon
 55 habitat of Easkoot Creek. The actions in the
 56 general management plan alternatives are
 57 consistent with the goals and projects
 58 associated with Easkoot Creek restoration.

59

60 ***Lower Redwood Creek Floodplain*** 61 ***and Salmonid Habitat Restoration,*** 62 ***Banducci Site Environmental*** 63 ***Assessment (2007)***

64 The purpose of this project is to substantially
 65 restore natural floodplain and creek
 66 processes on lower Redwood Creek for the
 67 benefit of aquatic and terrestrial fauna and
 68 long-term natural resources conditions in the
 69 Redwood Creek watershed. The environ-
 70 mental assessment guided the implementa-
 71 tion of restoration projects such as levee
 72 removal, floodplain enhancements, and
 73 protection areas for threatened and
 74 endangered species. The plan contributes to
 75 the implementation of the Redwood Creek
 76 Watershed Vision. The actions in the general
 77 management plan alternatives are consistent
 78 with the goals and projects associated with
 79 the lower Redwood Creek floodplain and
 80 salmonid habitat restoration.

81

82 This project takes place at two locations in
 83 lower Redwood Creek near Muir Beach. The
 84 purpose of the project is to improve
 85 hydrologic and geomorphic functions at the
 86 Pacific Way site and thus reduce the
 87 magnitude, frequency, and duration of
 88 flooding on Pacific Way and to reduce the
 89 risk of channel avulsion at the Pacific Way

1 site. The project also reconnects lower
 2 Redwood Creek to its floodplain and
 3 expands riparian vegetation at the Banducci
 4 site. In addition, the project increases in-
 5 channel habitat complexity and reestablishes
 6 geomorphic processes at the Banducci site.
 7 These actions work to improve habitat for
 8 coho salmon and steelhead. The actions in
 9 the general management plan alternatives are
 10 consistent with the goals and projects
 11 associated with the lower Redwood Creek
 12 flood reduction measures and
 13 floodplain/channel restoration.

14
 15 **Lower Redwood Creek Interim Flood**
 16 **Reduction Measures and Floodplain /**
 17 **Channel Restoration Environmental**
 18 **Assessment**

19 This environmental assessment presents and
 20 analyzes actions proposed by the National
 21 Park Service at two locations in lower
 22 Redwood Creek near Muir Beach, in the
 23 Golden Gate National Recreation Area.
 24 Actions are proposed in two locations:

- 25
 26 1. Along Pacific Way, the access road to
 27 Muir Beach and to several residences
 28 in the adjacent community, interim
 29 measures are proposed in a 2,300-
 30 foot-long reach of Redwood Creek to
 31 reduce flooding that closes the road
 32 and to prevent loss of the stream
 33 channel for fish passage.
- 34 2. In a 1,800-foot-long reach of
 35 Redwood Creek adjacent to the
 36 former Banducci flower farm, actions
 37 are proposed to restore in-stream and
 38 floodplain habitat.

39
 40 The purpose of the project is to:

- 41
 42 1. Improve hydrologic and geomorphic
 43 functions at the Pacific Way site and
 44 thus reduce the magnitude,
 45 frequency, and duration of flooding
 46 on Pacific Way and reduce the risk of
 47 channel avulsion at the Pacific Way
 48 site.

- 49 2. Reconnect the creek to its floodplain
 50 and expand riparian vegetation at the
 51 Banducci site, thus improving habitat
 52 for coho salmon.
- 53 3. Increase in-channel habitat
 54 complexity and reestablish
 55 geomorphic processes at the
 56 Banducci site, thus improving habitat
 57 for coho salmon and steelhead.

58
 59 The actions of the general management plan
 60 alternatives are consistent with the goals and
 61 project work associated with this plan.

62
 63 **Mori Point Restoration and Trail**
 64 **Plan / Environmental Assessment**
 65 **(2006)**

66 The staff of Golden Gate National Recreation
 67 Area and the Golden Gate Parks
 68 Conservancy are working to restore habitat
 69 and to develop a safe and sustainable trail
 70 system at Mori Point. The goals of this
 71 project are to:

- 72
 73 ▪ protect and enhance habitat for the
 74 federally endangered San Francisco
 75 garter snake and the federally
 76 threatened California red-legged frog
 77 at Mori Point
- 78 ▪ preserve and restore the ecological
 79 integrity of Mori Point habitats by
 80 reducing threats to native plant
 81 communities and natural processes
- 82 ▪ develop a safe and sustainable trail
 83 system, incorporating the California
 84 Coastal Trail that improves
 85 recreational experiences and reduces
 86 impacts on park resources

87
 88 Restoration activities include actions such as:

- 89
 90 ▪ improving hydrologic and habitat
 91 connectivity between upland and
 92 wetland areas
- 93 ▪ creation of San Francisco garter snake
 94 foraging habitat
- 95 ▪ reduction and repair of coastal
 96 erosion

- 1 ▪ restoration of native plant
- 2 communities
- 3 ▪ removal of trash, and debris
- 4
- 5 The project develops a variety of trail
- 6 experiences for different user groups and
- 7 meets management objectives to protect and
- 8 enhance natural resource values and provide
- 9 public access. Hiker-only designations will be
- 10 in effect on all segments through, or leading
- 11 to, steep and erosion-prone areas. Multiuse
- 12 opportunities (hiking, bicycling, and
- 13 equestrian uses) were identified on the
- 14 California Coastal Trail and its main
- 15 connector routes. The actions of the general
- 16 management plan alternatives are consistent
- 17 with the goals and project work associated
- 18 with this plan.

19

20 ***Ocean Park Stewardship Action Plan***

21 ***(2007–2008)***

22 The National Park Service developed a

23 strategy to increase its emphasis on ocean

24 resource management and conservation. The

25 *Ocean Park Stewardship Action Plan* identifies

26 critical issues and ways to address them

27 cooperatively with federal, state, tribal, and

28 private partners. The National Park Service

29 will work with partners under existing

30 funding levels to implement this plan. In

31 doing so, the Park Service has developed

32 specific actions relating to the following

33 major topics:

- 34
- 35 ▪ create a seamless network of ocean
- 36 national parks, national marine
- 37 sanctuaries, national wildlife refuges,
- 38 and national estuarine research
- 39 reserves
- 40 ▪ discover, map, and protect ocean
- 41 parks
- 42 ▪ engage visitors in ocean park
- 43 stewardship
- 44 ▪ increase NPS technical capacity for
- 45 ocean exploration and stewardship

46

47 The general management plan provides

48 specific management guidance and objectives

49 for addressing these topics.

50

51 ***Pacific Ocean Park Strategic Plan***

52 The concerns regarding the dramatic declines

53 in the health of the marine ecosystems has the

54 National Park Service focusing more

55 attention on stewardship and protection of

56 ocean resources in the national park system.

57 The *Pacific Ocean Park Strategic Plan* serves

58 to lead the NPS Pacific West and Alaska

59 Region's coastal national parks toward

60 implementation and achievement of the

61 overall goal of the *Ocean Park Stewardship*

62 *Action Plan* (previously described). The plan

63 provides action items specific to the

64 following goals:

65

66 **Strategy 1: Establish a Seamless Network**

67 **of Ocean Parks, Sanctuaries, Refuges, and**

68 **Reserves**

69

- 70 ▪ Facilitate partnership opportunities
- 71 among federal, state, and local
- 72 agencies and nongovernment
- 73 organizations toward enhanced
- 74 marine resource conservation and
- 75 education.
- 76 ▪ Facilitate partnership opportunities
- 77 with neighboring countries
- 78 (specifically Canada, Mexico, and
- 79 neighboring Pacific Islands), and
- 80 build sister park relationships
- 81 throughout the Pacific and Arctic
- 82 Oceans to enhance marine resource
- 83 conservation and education.
- 84 ▪ Explore means to facilitate
- 85 international travel to other countries
- 86 in order to communicate and
- 87 cooperate on an informal and routine
- 88 basis.

89

90 **Strategy 2: Inventory, Map, and Protect**

91 **Ocean Parks**

92

- 93 ▪ Inventory and map natural and
- 94 cultural resources within the

1	submerged (includes the intertidal	48	sustainable operations and practices
2	zone) boundaries of ocean parks.	49	at ocean parks.
3	▪ Expand the natural resource vital	50	▪ Demonstrate a commitment to ocean
4	signs monitoring program to more	51	stewardship through adoption of
5	fully address ocean and estuarine	52	sustainable tourism and recreational
6	resources.	53	opportunities, operations, and
7	▪ Understand and quantify threats to	54	practices at ocean parks.
8	natural, cultural, and subsistence	55	▪ Maximize the existing capacity of the
9	resources, including those associated	56	Pacific West and Alaska regions and
10	with climate change and land- and	57	ocean park units to engage in
11	water-based activities and develop	58	stewardship activities.
12	mitigation or restoration strategies.	59	
13	▪ Expand understanding of ocean park	60	Strategy 4: Increase Technical Capacity for
14	boundaries, jurisdictions, and	61	Ocean Exploration and Stewardship
15	authorities.	62	
16	▪ Increase the ocean and marine	63	▪ Increase the technical capacity for
17	presence of the National Park Service	64	ocean exploration and stewardship.
18	and other agencies.	65	▪ Evaluate the effectiveness of the
19	▪ Proactively inform park management	66	Pacific West and Alaska Region
20	and the public of emerging issues that	67	Ocean Park Stewardship Strategy in
21	could impact the status and function	68	conserving coastal and marine
22	of marine resources. Identify	69	resources.
23	strategies to address these issues.	70	▪ Generate awareness among park
24	▪ Ensure that park-specific ocean	71	managers of the significance of marine
25	stewardship issues and knowledge	72	resources and protection
26	(both natural and cultural resources)	73	responsibilities.
27	are available and synthesized for	74	▪ Understand and anticipate the role of
28	planning teams.	75	ocean park stewardship within the
29		76	urban corridor, given changing
30	Strategy 3: Engage Visitors and the Public	77	demography, development patterns,
31	in Ocean Park Stewardship	78	economies, and societal preferences.
32		79	▪ Pursue funding opportunities to
33	▪ Create a communication strategy for	80	increase the technical capacity for
34	the Pacific West and Alaska regions’	81	ocean exploration and stewardship.
35	ocean parks to better inform the	82	
36	public on topics of ocean stewardship.	83	The general management plan provides
37	▪ Enhance awareness and	84	specific management guidance and objectives
38	understanding of ocean stewardship	85	for addressing the four major strategies
39	issues through the development of	86	identified in the <i>Ocean Park Stewardship</i>
40	interpretive materials and recreational	87	<i>Action Plan</i> .
41	opportunities.	88	
42	▪ Explore approaches to engage	89	Redwood Creek Watershed: Vision
43	visitors, teachers, and students in the	90	for the Future (2003)
44	practice of ocean stewardship	91	The <i>Redwood Creek Watershed: Vision for the</i>
45	through experiential learning.	92	<i>Future</i> , while not a binding document, was
46	▪ Demonstrate a commitment to ocean	93	jointly prepared and agreed to in 2003 by
47	stewardship through adoption of	94	public agencies and stakeholders in the

1 Redwood Creek watershed. The Vision
 2 document provides guiding principles and
 3 desired future conditions to serve as
 4 guidelines for planning and projects in the
 5 watershed; identifies desired future
 6 conditions for natural resources, cultural
 7 resources, visitor experience, resident
 8 community, and infrastructure and facilities.
 9 The goals of this project help achieve
 10 numerous desired future conditions for
 11 intact watershed health, protection of natural
 12 processes such as flooding, native plant
 13 communities, a full range of hydraulic and
 14 geomorphic functions, habitat for special
 15 status species, reduction of human-caused
 16 erosion that could impact fish or aquatic
 17 habitat, and reduction of invasion by
 18 nonnative plant species. The Vision
 19 document does not alter or override existing
 20 policies of the participating agencies. Rather,
 21 it provides guidelines to support future
 22 planning and projects in the watershed,
 23 ensuring that planning and projects within
 24 the scope of this vision strive to meet the
 25 common shared goals. The vision and goals
 26 for Redwood Creek watershed were
 27 incorporated into the alternatives for the
 28 general management plan.

29
 30 ***Wetland and Creek Restoration at***
 31 ***Big Lagoon, Muir Beach Final***
 32 ***Environmental Impact Statement***
 33 ***(2008)***

34 The focus of this project is the restoration of
 35 the lower Redwood Creek watershed at Muir
 36 Beach in Marin County. The Big Lagoon site
 37 includes the wetlands, floodplain, and lagoon
 38 at the mouth of Redwood Creek at Muir
 39 Beach. The project works to restore/enhance
 40 ecological conditions and processes,
 41 reducing flooding of local infrastructure, and
 42 providing public access to the beach and
 43 restored wetland and creek. Key issues that
 44 were addressed include habitat for fish and
 45 wildlife, ecosystem conditions and processes,
 46 effects on special status plant and animal
 47 species, hydrology, flood hazards, traffic,
 48 visitor access, and visitor experience. The
 49 actions of the general management plan

50 alternatives are consistent with the goals and
 51 project work associated with this plan.

52
 53

54 **National Park Service Program**
 55 **Implementation Plans**

56 ***Alcatraz Development Concept Plan***
 57 ***and Environmental Assessment***
 58 ***(1993)***

59 The development concept plan provides
 60 direction in management of the entire island,
 61 works to balance expansion of visitor access
 62 with habitat enhancement, wildlife
 63 protection and cultural resource protection,
 64 and hazard remediation. The development
 65 concept plan will need to be revised or
 66 amended to incorporate the changes
 67 proposed by the selected alternative in the
 68 general management plan.

69
 70

71 ***Bay Area Museum Resource***
 72 ***Center Plan (2010)***

73 The eight San Francisco Bay Area national
 74 parks have considerable long- and short-term
 75 needs for park collection storage. These
 76 parks do not have sufficient space to store
 77 their collections and for the most part, the
 78 collection storage facilities do not meet NPS
 79 standards. Many occupy substandard
 80 facilities, which result in deficiencies on the
 81 NPS Checklist for the Preservation and
 82 Protection of Museum Collections. These
 83 conditions diminish the ability of limited
 84 numbers of staff to provide basic
 85 preservation and protection service to NPS
 86 collections. Furthermore, the location and
 87 condition of current facilities places many of
 88 the parks' collections at risk due to climate
 89 change and rising sea levels. Wide geographic
 90 distribution of these multiple collection
 91 management facilities greatly hampers, if not
 92 precludes, visitor access to the collections for
 93 research and interpretation. Finally, existing
 94 facilities do not have the capacity to
 95 accommodate the NPS standard growth rate
 96 of 20% over the next 25 years.

1 The proposal of a Bay Area Museum
 2 Resource Center seeks to establish a
 3 combined collection storage and
 4 research facility for the national parks
 5 in the San Francisco Bay Area. This
 6 partnership offers the opportunity to
 7 provide greater preservation and
 8 accessibility to NPS collections. It
 9 seeks to share a collections
 10 management facility (with a primary
 11 focus on artifacts) that would
 12 improve collection storage and
 13 maximize operational efficiency by
 14 sharing resources.

15
 16 **Comprehensive Interpretive Plan for**
 17 **Golden Gate National Recreation**
 18 **Area (2011)**

19 Composed of three components, a Long
 20 Range Interpretive Plan, an Annual
 21 Implementation Plan, and Interpretive
 22 Database, this plan serves to guide the park’s
 23 interpretation and education programs. This
 24 plan is considered a “living document” that is
 25 reviewed often and adjusted accordingly. It is
 26 the goal of Golden Gate National Recreation
 27 Area to reach out to a diverse urban
 28 community, promote the richness and
 29 breadth of the national park system to many
 30 who are experiencing a national park for the
 31 first time and foster broad-based public
 32 stewardship through various volunteer and
 33 partnership programs.

34
 35 **Fire Management Plan / Final**
 36 **Environmental Impact Statement for**
 37 **Golden Gate National Recreation**
 38 **Area (2006)**

39 An update to the 1993 Fire Management
 40 Plan, this plan reflects the importance of a
 41 more concerted effort to effectively reduce
 42 wildfire risk to park resources and to private
 43 property along the wildland urban interface.
 44 The plan examines the feasibility of
 45 facilitating the role of fire where it is safe to
 46 do so and more fully addresses cultural
 47 resource concerns. The plan includes all
 48 lands within Golden Gate National

49 Recreation Area, Muir Woods National
 50 Monument, and Fort Point National Historic
 51 Site. The plan is a strategic, operational plan
 52 intended to guide the fire management
 53 program and was prepared to meet the
 54 requirements of NPS Director’s Order 18.
 55 The plan includes procedures for managing
 56 the full range of fire management activities,
 57 including wildland fire suppression and fuel
 58 reduction projects. The plan identifies areas
 59 of the park where fuel reduction actions will
 60 occur during the first five years of implemen-
 61 tation; the five-year program will be reviewed
 62 and updated annually to reflect areas that
 63 have been treated and add other areas where
 64 treatment is needed. As park managers
 65 implement the actions of the general
 66 management plan selected alternative, the
 67 fire management plan will require a review
 68 and possible refinement as resource and
 69 public issues change.

70
 71 **Golden Gate National Recreation**
 72 **Area – Park Asset Management Plan**

73 The major goal of the *Park Asset Management*
 74 *Plan* is to articulate how the park currently
 75 maintains its assets and intends to in the
 76 future. This is accomplished through a review
 77 of how the park prioritizes its assets, bundles
 78 work orders into logical projects, estimates
 79 operating and maintenance requirements,
 80 demonstrates funding gaps, and identifies
 81 techniques to manage these funding gaps.
 82 The plan was used to help guide the
 83 development of the alternatives in the general
 84 management plan. Once the general
 85 management plan is approved, the *Park Asset*
 86 *Management Plan* will be updated to reflect
 87 the new management direction.

88
 89 **Marin Equestrian Stables Plan and**
 90 **Environmental Assessment**

91 Golden Gate National Recreation Area is in
 92 the process of developing the *Marin*
 93 *Equestrian Plan*. The plan is focused on
 94 options for the future use of three Marin
 95 County stables within the park and will
 96 address site and facility needs, improvements,

1 and protection of important resources at and
 2 surrounding these facilities. The plan will also
 3 identify and enhance the public outreach and
 4 equestrian program, identify best manage-
 5 ment practices and sustainable programs,
 6 increase protection of natural resources, and
 7 preserve the cultural resources that surround
 8 the stables. The actions of the general
 9 management plan alternatives have been
 10 continuously reviewed as the *Marin*
 11 *Equestrian Plan* evolves in order to ensure
 12 consistency between the two planning
 13 efforts.

15 **Point Reyes National Seashore** 16 **General Management Plan**

17 A general management plan for the national
 18 seashore is being developed to put forth a
 19 strategy to meet several goals that promote
 20 leadership and innovation in facility
 21 management, research, protection and
 22 restoration of natural and cultural resources,
 23 sustainable resource use, wilderness
 24 awareness, and public outreach-partnerships.

27 **Current Plans for Other Park Areas** 28 **not Included in the General** 29 **Management Plan**

30 **Presidio General Management Plan** 31 **Amendment and Environmental** 32 **Impact Statement (1994)**

33 The general management plan amendment
 34 guidance for Area A, managed by the
 35 National Park Service, provides for natural
 36 resource restoration, education, and outdoor
 37 recreation along the coastal areas of San
 38 Francisco Bay and the Pacific Ocean. Major
 39 sites within Area A include Crissy Field, Fort
 40 Point National Historic Site, Baker Beach,
 41 and Lobos Creek and dunes.

42
 43 For Area A, the actions proposed in this
 44 general management plan are consistent with
 45 the amendment that covers management of
 46 the lands within the Presidio of San
 47 Francisco. For Area B, this plan is superseded

48 by the *Presidio Trust Management Plan: Land*
 49 *Use Policies for Area B of the Presidio of San*
 50 *Francisco* (2002).

52 **Sutro Historic District Comprehensive** 53 **Design and Environmental** 54 **Assessment (1993)**

55 The *Sutro Historic District Comprehensive*
 56 *Design and Environmental Assessment*
 57 provides management guidance for the
 58 landscape rehabilitation of the Adolph Sutro
 59 Historic District. The plan retains the historic
 60 character while making changes to the
 61 property for new uses and interpretation for
 62 park visitors. The National Park Service
 63 continues to manage the Sutro Historic
 64 District structures, landscape, and
 65 archeological sites, including Cliff House,
 66 Sutro Baths, and Sutro Heights Park. The
 67 landscape adjacent to the historic district
 68 includes the Lands End Lookout visitor
 69 center, trails, and parking, and the extended
 70 area is managed for natural and scenic values.
 71 The actions proposed in this general
 72 management plan recognize that the natural
 73 attributes and biotic systems of the larger
 74 surrounding park landscape contribute to the
 75 historical significance of the historic district.
 76 The alternatives are consistent with the
 77 environmental assessment.

80 **Current Plans for Other Park Areas** 81 **not Managed by the National Park** 82 **Service Presidio Trust Management** 83 **Plan: Land Use Policies for Area B of** 84 **the Presidio of San Francisco (2002)**

85 The *Presidio Trust Management Plan (PTMP)*
 86 is an update of the 1994 General
 87 Management Plan Amendment for the
 88 portion of the Presidio transferred to the
 89 jurisdiction of the trust in 1998. The Trust
 90 Act directs the trust to manage Area B in
 91 accordance with the park purposes identified
 92 in the enabling legislation for Golden Gate
 93 National Recreation Area and the “general
 94 objectives” of the amendment. The latter
 95 were defined in Trust Board Resolution 99-

1 11 (“General Objectives”). The *Presidio Trust*
 2 *Management Plan* provides an updated land
 3 use policy framework for Area B of the
 4 Presidio wholly consistent with the
 5 amendment’s general objectives, and which
 6 retains and builds on the amendment’s
 7 policies and principles. Since the time the
 8 amendment was adopted and the Presidio
 9 Trust Act was enacted, key land use and
 10 financial conditions have changed. The
 11 *Presidio Trust Management Plan* took into
 12 account the new Trust Act requirements,
 13 conditions that had changed since the
 14 amendment was adopted, new policies and
 15 management approaches, and provide a level
 16 of flexibility not contemplated in the
 17 amendment. The *Presidio Trust Management*
 18 *Plan* describes the planning principles that
 19 help the trust realize its goals of preserving
 20 and enhancing park resources, bringing
 21 people to the park, and making the lands
 22 under trust jurisdiction financially self
 23 sufficient. The *Presidio Trust Management*
 24 *Plan* sets forth land-use preferences and
 25 development guidelines for each of its seven
 26 planning districts. The *Presidio Trust*
 27 *Management Plan* is the plan that the trust
 28 looks to in making management and
 29 implementation decisions in Area B that are
 30 consistent with the purposes of Golden Gate
 31 National Recreation Area enabling legislation
 32 and the general objectives of the amendment.

34
 35 **National Park Service**
 36 **Park Partner Plans**

37 ***Headlands Center for the***
 38 ***Arts Master Plan (1990)***

39 The plan provides guidance for the
 40 rehabilitation and use of the historic Fort
 41 Barry for an art center. The alternatives in the
 42 general management plan are consistent with
 43 this plan.
 44

45 ***Marine Mammal Center Site and***
 46 ***Facilities Improvements Project***
 47 ***Environmental Assessment and***
 48 ***Finding of No Significant Impact***
 49 ***(2004)***

50 The environmental assessment presents and
 51 analyzes alternatives for the upgrade and
 52 expansion of the Marine Mammal Center’s
 53 facilities. These improvements will better
 54 serve the center’s existing programs for the
 55 treatment and rehabilitation of injured, ill, or
 56 orphaned marine mammals.

57
 58 Based on the analysis provided in the
 59 environmental assessment, the implementa-
 60 tion of mitigation measures, and with due
 61 consideration of the nature of public and
 62 agency comments, the National Park Service
 63 has determined that the selected alternative
 64 would not have the potential to significantly
 65 adversely affect the quality of the environ-
 66 ment. A Finding of No Significant Impact was
 67 issued in October 2004. The actions of the
 68 general management plan alternatives are
 69 consistent with the decisions and actions of
 70 the Marine Mammal Center Site and
 71 Facilities Improvements Project.

72
 73 ***Slide Ranch Master Plan and***
 74 ***Environmental Assessment (1996)***

75 A Master Plan and Environmental
 76 Assessment for the continuing use of Slide
 77 Ranch were approved and published in
 78 December, 1996. In the years since that
 79 approval, the design development process
 80 included extensive planning, engineering and
 81 review among the Slide Ranch project team,
 82 the National Park Service, the California
 83 Coastal Commission, and County of Marin.

84
 85 Schematic designs were completed for all
 86 buildings in the master plan and
 87 infrastructure drawings were prepared for
 88 fire suppression, wastewater management,
 89 landscape and other aspects related to the
 90 development. A Design Development
 91 Submittal to the National Park Service
 92 prepared by Slide Ranch and its architects in

1 July 2003, included technical reports for
2 Phase One of the originally approved master
3 plan.

4
5 Phase One includes construction of a 2,400
6 square foot teaching barn in a place that is
7 most favorable with respect to geotechnical
8 and septic system implementation. The
9 planned Green Barn includes an ADA-
10 accessible restroom and program facilities.

11
12 The actions of the general management plan
13 are consistent with the decisions and actions
14 of the Slide Ranch Master Plan and
15 Environmental Assessment.

16

17

18 **Other Federal Plans**

19 ***San Francisco Maritime National*** 20 ***Historical Park General Management*** 21 ***Plan (1997)***

22 The *General Management Plan for San*
23 *Francisco Maritime National Historical Park*
24 guides the management of resources, visitor
25 use, and general development at the park
26 over the next 15 to 20 years. The national
27 historical park shares a boundary with
28 Golden Gate National Recreation Area and
29 the actions of one park will influence the
30 visitor and management activities of the
31 other. In preparing the alternatives for this
32 general management plan, the planning team
33 coordinated with the staff of the national
34 historical park to ensure consistencies with
35 current management direction.

36

37 ***National Oceanic and Atmospheric*** 38 ***Administration – Joint Management*** 39 ***Plan for Cordell Bank, Gulf of the*** 40 ***Farallones, and Monterey Bay*** 41 ***National Marine Sanctuaries (2008)***

42 The Office of National Marine Sanctuaries
43 released final revised management plans,
44 regulations, and a joint final environmental
45 impact statement for the Cordell Bank, Gulf
46 of the Farallones, and Monterey Bay national
47 marine sanctuaries. These plans are the result

48 of seven years of study, planning, and
49 extensive public input. The management
50 plans offer a vision and course for protecting
51 the rich marine ecosystems of three California
52 national marine sanctuaries while continuing
53 to allow compatible, sustainable human uses.
54 The plans include a review of resource
55 protection, education and research programs,
56 the program's resource and staffing needs,
57 regulatory goals, and sanctuary boundaries.

58

59 The three sanctuaries include Pacific Ocean
60 waters that extend from Bodega Bay in the
61 north to Cambria in the south and thus could
62 impact or be affected by the *Golden Gate*
63 *National Recreation Area General Manage-*
64 *ment Plan*. The three management plans were
65 prepared jointly because the sanctuaries are
66 adjacent to one another, managed by the
67 same program, and share many of the same
68 resources and issues as well as many
69 overlapping interest and user groups. The
70 alternatives in the general management plan
71 are consistent with these plans and articulate
72 additional NPS actions that strengthen ocean
73 stewardship within the area of influence.

74

75 ***Natural Resource Trustee Agencies –*** 76 ***Cosco Busan Oil Spill Final Damage*** 77 ***Assessment and Restoration Plan*** 78 ***(2012)***

79 This interagency damage assessment and
80 habitat restoration plan was developed by a
81 group of state and federal agencies in
82 response to the Cosco Busan oil spill that
83 occurred in San Francisco Bay on
84 November 7, 2007. The *Natural Resource*
85 *Trustee Agencies* included the California
86 Department of Fish and Game, the California
87 State Lands Commission, the National
88 Oceanic and Atmospheric Administration,
89 the U.S. Fish and Wildlife Service, the
90 National Park Service, and the Bureau of
91 Land Management. In the document, the
92 trustee agencies identified the effects of the
93 spill and the habitat restoration projects that
94 will be necessary to compensate for these
95 impacts. The spill affected wildlife individuals
96 (mainly birds and fish), aquatic and terrestrial

1 habitat (intertidal, salt marsh, tidal flats,
2 sandy beach, and eelgrass beds), and
3 recreational activities. The identified projects
4 include:

- 5
- 6 ▪ creation of grebe nesting habitat at
7 Tule Lake National Wildlife Refuge
- 8 ▪ creation of over-wintering duck and
9 grebe habitat at the South Bay Salt
10 Ponds
- 11 ▪ creation of nesting and roosting
12 habitat for cormorants, pelicans, and
13 shorebirds at the Berkeley Pier
- 14 ▪ creation of nesting habitat for seabirds
15 at the Farallon Islands
- 16 ▪ creation of a grant project to benefit
17 Surf Scoters
- 18 ▪ restoration of Marbled Murrelets in
19 California
- 20 ▪ restoration of eelgrass at several sites
21 inside the Bay, to benefit both eelgrass
22 and herring
- 23 ▪ restoration of sandy beach habitats at
24 Muir Beach and Albany Beach
- 25 ▪ restoration of salt marsh and mudflat
26 habitats at Aramburu Island
- 27 ▪ restoration of native oysters and
28 rockweed at several sites inside the
29 Bay, to benefit rocky intertidal
30 communities
- 31 ▪ creation of a process to fund a wide
32 variety of human recreational use
33 projects at impacted sites across the
34 spill zone

37 **State and Regional Plans**

38 ***Association of Bay Area*** 39 ***Governments: Bay Trail Plan***

40 The Association of Bay Area Governments
41 developed the *Bay Trail Plan* pursuant to
42 California Senate Bill 100. The Bay Trail is to
43 be a regional hiking and bicycling trail around
44 the perimeter of the San Francisco and San
45 Pablo bays. Senate Bill 100 mandates that the

46 Bay Trail provide connections to existing
47 park and recreation facilities, create links to
48 existing and proposed transportation
49 facilities, and avoid adverse effects on
50 environmentally sensitive areas. All the
51 alternatives in this general management plan
52 are consistent with the purposes and
53 objectives of the Bay Trail.

54 55 ***California Department of Parks and*** 56 ***Recreation – Angel Island State Park*** 57 ***Resource Management Plan / General*** 58 ***Development Plan / Environmental*** 59 ***Impact Report (1979)***

60 This plan guides the responsible use and
61 management of resources at Angel Island
62 State Park. It outlines recommended actions
63 to improve opportunities for passive
64 recreation, boating experiences, and other
65 appropriate forms of recreation. The
66 alternatives in the general management plan
67 are consistent with this plan.

68 69 ***California Department of Parks and*** 70 ***Recreation – California Outdoor*** 71 ***Recreation Plan (2002)***

72 The *California Outdoor Recreation Plan* is the
73 statewide master plan for parks, outdoor
74 recreation, and open space for all recreation
75 providers. The *California Outdoor Recreation*
76 *Plan* provides policy guidance to all public
77 agencies (federal, state, local, and special
78 districts) engaged in providing outdoor
79 recreational lands, facilities and services
80 throughout the state. The plan includes five
81 major goals: to provide a source of
82 information; serve as an action guide; provide
83 leadership; maintain funding eligibility for the
84 Land and Water Conservation Fund; and
85 provide project selection criteria for
86 administering the Land and Water
87 Conservation Fund grant program. A
88 separate report, titled *Public Opinions and*
89 *Attitudes on Outdoor Recreation in California*
90 *2002*, which is considered part of the
91 *California Outdoor Recreation Plan*,
92 establishes baseline information on outdoor
93 recreation supply and demand. The

1 alternatives in the general management plan
2 are consistent with this plan.

3

4 **California Department of Parks and**
5 **Recreation – Gray Whale Cove State**
6 **Beach General Plan Amendment**
7 **(1984)**

8 This amendment to the *San Mateo Coast Area*
9 *General Plan* was approved to change the
10 location of the proposed 200-car parking area
11 for public beach access to Gray Whale Cove.
12 The alternatives in the general management
13 plan are consistent with this plan.

14

15 **California Department of Parks and**
16 **Recreation – Pacifica State Beach**
17 **General Plan (1990)**

18 This plan provides long-range development,
19 management, and operational guidelines for
20 Pacifica State Beach. The plan is comprised of
21 seven elements: resource, land use, facilities,
22 interpretive, operations, concessions, and
23 environmental impact. The alternatives in the
24 general management plan are consistent with
25 this plan.

26

27 **California Department of Parks and**
28 **Recreation – Mount Tamalpais State**
29 **Park General Plan (1980)**

30 The purpose of this general plan is to provide
31 general guidelines for the park’s management
32 and development in accordance with the
33 unit’s classification as a state park. Because
34 the natural resources of Mount Tamalpais
35 State Park make it unique, development and
36 management should focus on the
37 preservation, interpretation, and public use
38 of its natural and scenic values. The specific
39 goals of the plan are as follows:

40

- 41 ▪ Identify the park’s natural, cultural,
42 and recreational resources.
- 43 ▪ Establish policies for the
44 management, protection, use, and
45 interpretation of these resources.

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- Identify existing and future problems and provide solutions.
- Determine visitor activities and land uses that are compatible with the purpose of the park, the preservation of resources, and the surrounding land uses.
- Determine the potential environmental impact of visitor activities, land use, and related development.
- Establish guidelines for the sequence of park development.
- Provide an informational document for the public, the legislature, park personnel, and other government agencies.

64 **Caltrans District 4 Devil’s**
65 **Slide Project**

66 Carved out of the steep cliff sides, Route 1
67 hugs the coastline for much of the distance
68 between Pacifica and Montara. In one part,
69 the road crosses the aptly named Devil’s Slide
70 region, a steep, unstable geological formation.
71 This section of road has a long history of
72 closure due to rockslides and land slippage.
73 Following many years of public input and
74 careful evaluation of alternatives, Devil’s
75 Slide will be bypassed by two inland tunnels,
76 providing a safe, dependable highway
77 between Pacifica and Montara. This is
78 Caltrans’ Devil’s Slide Tunnel project. The
79 bypassed section of Route 1, together with 70
80 acres of State right-of-way, will be closed to
81 motor vehicles and made available as a
82 multiuse Coastal Trail segment for public
83 access and recreational use following the
84 planned tunnel opening in 2011, with small
85 trailhead parking lots at the north and south
86 ends. This land was included in the 2005
87 boundary expansion, but is not anticipated to
88 be acquired by the National Park Service at
89 this time. Acquisition and management of this
90 site has not been determined but has been
91 integrated into the planning process for the
92 general management plan.

1 **Coastal Conservancy – Completing**
2 **the California Coastal Trail (2003)**

3 Senate Bill 908, passed in 2001 by the
4 California State Legislature, directed the
5 Coastal Conservancy to report on a proposed
6 trail that would stretch 1,300 miles along the
7 entire California coast. The report,
8 completed in January 2003, analyzes the
9 costs/benefits and opportunities and
10 constraints of completing the trail, discusses
11 signage and graphics standards, and outlines
12 recommendations for statewide policy
13 initiatives and local implementation projects.

14
15 The California Coastal Trail is a network of
16 public trails for walkers, bikers, equestrians,
17 wheelchair riders, and others along the entire
18 California coastline. It is currently more than
19 half complete. Coastwalk is a volunteer
20 organization that advocates for completion of
21 the trail. The California Coastal Trail is
22 intended to provide “a continuous public
23 right-of-way along the California coastline
24 designed to foster appreciation and
25 stewardship of the scenic and natural
26 resources of the coast through hiking and
27 other complementary modes of
28 nonmotorized transportation.” The Coastal
29 Trail runs through parts of Golden Gate
30 National Recreation Area and provides
31 opportunities for connections to other trails
32 within the study area. It is focused on
33 enhancing public access to the coastal region
34 and providing education to visitors. These
35 goals are completely compatible with those of
36 Golden Gate National Recreation Area, so
37 there may be opportunities for efficiencies in
38 providing access to national park lands along
39 the coastline. The alternatives in the general
40 management plan are consistent with this
41 plan.

42

43 **Greenbelt Alliance, Bay Area Open**
44 **Space Council, Association of Bay**
45 **Area Governments – Golden Lands,**
46 **Golden Opportunity: Preserving Vital**
47 **Bay Area Lands for all Californians**
48 **(2008)**

49 This initiative provides a statement of
50 regional principles to ensure a healthy future
51 for vital Bay Area lands and residents. The
52 initiative identifies unprotected landscapes
53 with significant value to the Bay Area and the
54 state. It works to coordinate priorities among
55 a variety of organizations working together.
56 The park staff at Golden Gate National
57 Recreation Area participated in the
58 identification of unprotected landscapes. The
59 alternatives in the general management plan
60 incorporate potential actions that contribute
61 to this regional effort and are consistent with
62 this initiative.

63

64 **San Francisco Bay Conservation and**
65 **Development Commission.** The San
66 Francisco Bay Conservation and Develop-
67 ment Commission is the regional planning
68 authority in the San Francisco Bay area. The
69 commission is authorized to control Bay
70 filling and dredging and Bay-related shoreline
71 development. Areas within the commission’s
72 jurisdiction include the San Francisco Bay, a
73 shoreline band 100 feet inland of the Bay, and
74 several other distinct features in the Bay area
75 such as salt ponds and managed wetlands.
76 Several commission plans affect development
77 efforts along the Golden Gate National
78 Recreation Area shoreline. The commission
79 is the agency responsible for reviewing and
80 approving Coastal Consistency
81 Determinations under the Coastal Zone
82 Management Act in the San Francisco Bay
83 area.

84

85 **San Francisco Bay Plan (2003)**

86 This plan quantifies how the Bay
87 Conservation and Development Commission
88 proposes to reach its primary goal of
89 developing the Bay and associated shoreline
90 to its highest potential. The plan identifies

1 priority use areas in the Bay, including ports,
2 water-related industry, water-oriented
3 recreation, airports, and wildlife refuges. The
4 plan outlines the permitting policies and
5 procedures for activities within priority and
6 non-priority use areas and how they will be
7 granted.

8
9 ***San Francisco Bay Area Seaport Plan***
10 ***(2003)***

11 The *Seaport Plan* is a second-tier document
12 to Bay Conservation Development
13 Commission's *San Francisco Bay Plan*. It
14 provides specific details about facilities
15 identified as port priority use areas in the *Bay*
16 *Plan*. The data includes exact boundaries of
17 port priority use area, cargo forecasts,
18 policies, and planned improvements, and the
19 plan recommends changes/upgrades at
20 specific ports and their terminals.

21
22 The alternatives are consistent with the above
23 plans.

24
25 ***San Francisco Bay Area Water Transit***
26 ***Authority—Final Program***
27 ***Environmental Impact Report:***
28 ***Expansion of Ferry Transit Service in***
29 ***the San Francisco Bay Area (2003)***

30 This document outlines a comprehensive
31 strategy for expanding water transportation
32 services in San Francisco Bay. The San
33 Francisco Bay Area Water Transit Authority
34 (Water Transit Authority) is a regional agency
35 authorized by the state of California to
36 operate a comprehensive San Francisco Bay
37 Area public water transit system. The Water
38 Transit Authority's goal over the next 20
39 years is to develop a reliable, convenient,
40 flexible, and cost-effective water-transit
41 system that will help reduce vehicle
42 congestion and pollution in the Bay Area. In
43 2003 the Water Transit Authority plan was
44 approved, and when fully implemented the
45 Water Transit Authority estimates that by
46 2025 commuter-based ferry ridership will
47 triple existing ridership and grow to
48 approximately 12 million riders annually. The

49 primary objectives of the Water Transit
50 Authority plan include the following:

- 51
52 ▪ Establish eight new ferry routes plus
53 improved service on the existing ferry
54 systems.
55 ▪ Add an additional 31 new passenger
56 ferries over the next 10 years.
57 ▪ Acquire clean emission vessels.
58 ▪ Provide convenient landside
59 connections to terminals.
60 ▪ Expand facilities at the San Francisco
61 Ferry Building.
62 ▪ Construct two spare vessels.
63 ▪ Partner with Redwood City, Treasure
64 Island, Antioch, Martinez, Hercules,
65 and Moffett Field to continue
66 planning their respective waterfronts.
67 ▪ Pursue funding from federal and local
68 sources.

69
70 ***Statewide Historic Preservation Plan***
71 ***for California, 2006–2010***

72 The current *California Statewide Historic*
73 *Preservation Plan for California, 2006–2010*
74 was developed by the Office of Historic
75 Preservation (OHP). That office notes that it
76 benefits from partnerships with stakeholders
77 at federal, state, and local government levels
78 and with numerous nonprofit and for-profit
79 organizations who are working together to
80 promote historic preservation. The plan
81 highlights various areas that are relevant to
82 the Golden Gate National Recreation Area
83 and Muir Woods National Monument
84 general management plan, including cultural
85 landscapes, cultural diversity, heritage
86 tourism, information management, outreach
87 and education, and preservation archaeology.
88 The National Park Service coordinates with
89 the Office of Historic Preservation in a
90 variety of ways, including participation in the
91 California Cultural and Heritage Tourism
92 Council. The existing plan is currently under
93 revision and a new plan is anticipated in 2012.

94

1 **Natural Resource Trustee Agencies –**
2 **Cosco Busan Oil Spill Final Damage**
3 **Assessment and Restoration Plan**
4 **(2012)**

5 See “Other Federal Plans” section above for a
6 description of this interagency state and
7 federal effort.

8
9
10 **County and Local Plans**

11 **Central Marin Ferry**
12 **Connection Project (2004)**

13 The Central Marin Ferry Connection project
14 calls for a new bicycle and pedestrian
15 connection between East Sir Francis Drake
16 Boulevard to the north and to the Redwood
17 Highway and access roads in Corte Madera
18 at Wornum Street and Redwood Highway to
19 the south, thus connecting a gap in bicycle
20 and pedestrian access in Central Marin
21 County. Such a bike and pedestrian crossing
22 would strengthen the interconnected bike
23 network in Marin County, much of which
24 leads to Golden Gate National Recreation
25 Area sites. With such a connection, other
26 weak points could be strengthened. With
27 more bicycle access opportunities to Golden
28 Gate National Recreation Area sites, more
29 bicyclists will have an opportunity to visit.
30 Increased bike access could also reduce
31 vehicle traffic trying to access national
32 recreation area sites.

33
34 **Extension of San Francisco Municipal**
35 **Railway’s Historic Streetcar**
36 **Environmental Impact Statement**
37 **(Draft)**

38 The Municipal Railway (Muni) currently
39 operates historic streetcar service on Market
40 Street and along the San Francisco waterfront
41 (F-Line) to the line’s existing terminus at
42 Jones Street and Beach (in the Fisherman’s
43 Wharf area). The proposed extension (E-
44 Line) would begin at the terminus of the F-
45 line and extend west to San Francisco

46 Maritime National Historical Park and on to
47 Fort Mason. The exact route has yet to be
48 determined but would utilize either existing
49 rail right-of-way routes confined to city
50 streets or pass through San Francisco
51 Maritime National Historical Park’s Aquatic
52 Park (at the core of the national historic
53 landmark district) in order to reach the Fort
54 Mason tunnel. It is anticipated that under all
55 alternatives the railway line would extend
56 through the tunnel and end in the area of
57 Lower Fort Mason.

58
59 **Fitzgerald Marine Reserve**
60 **Master Plan (2002)**

61 The James V. Fitzgerald Marine Reserve is a
62 402-acre natural resource area on the north
63 coast of San Mateo County. The Reserve is
64 under joint custodianship of the County of
65 San Mateo Parks and Recreation Division
66 and the California Department of Fish and
67 Game. The Reserve extends 3 miles south
68 from Point Montara to the south end of Pillar
69 Point and 1,000 feet west into the ocean from
70 the mean high tide line. Part of the Monterey
71 Bay National Marine Sanctuary, the Reserve
72 includes 370 acres of intertidal and subtidal
73 marine habitat below the high tide line and 32
74 acres of upland coastal bluffs with elevations
75 up to 100 feet. The intertidal zone, which
76 contains rocky reefs at sea level and pocket
77 beaches, is one of the most biodiverse
78 intertidal regions in the state, renowned for
79 its richness and diversity. Accessible at low
80 tide, the reefs receive high levels of use
81 because of their close proximity to the San
82 Francisco Bay Area’s dense population
83 centers. The reefs within the reserve form 10
84 distinct areas, but are generally referred to as
85 Moss Beach Reef to the north and
86 Frenchman’s Reef to the south.

87
88 The reserve is designated a Marine Life
89 Refuge and an Area of Special Biological
90 Significance by the State of California. The
91 concept of “special biological significance”
92 recognizes that certain biological
93 communities, because of their value or
94 fragility, deserve very special protection,
95 consisting of preservation and maintenance

1 of natural water quality conditions to the
 2 extent practicable.
 3
 4 The master plan has three main components:
 5 (1) Natural Resource Management Program,
 6 (2) Visitor Management Program, (3) Uses
 7 and Facilities Program. The following goals
 8 provide the foundation for the master plan
 9 concept:
 10
 11 ▪ Preserve and enhance natural
 12 resources.
 13 ▪ Provide educational and interpretive
 14 opportunities.
 15 ▪ Ensure adequate and well-trained
 16 staff.
 17 ▪ Improve baseline information.
 18 ▪ Improve visitor management.
 19 ▪ Improve visitor facilities.
 20 ▪ Minimize impacts on neighbors.
 21 ▪ Protect cultural resources.
 22 ▪ Provide recreation opportunities.
 23 ▪ Seek funding opportunities.
 24
 25 The alternatives in the general management
 26 plan are consistent with the Fitzgerald
 27 Marine Reserve Master Plan.
 28
 29 ***Huddart and Wunderlich Parks***
 30 ***Master Plan (2006)***
 31
 32 This master plan presents a 20-year vision for
 33 the development, operation, and
 34 maintenance of Huddart and Wunderlich
 35 parks. More specifically, the master plan is
 36 intended to achieve the following goals:
 37
 38 ▪ Continue to provide multiple
 39 recreational opportunities that are
 40 consistent with the regional nature of
 41 the parks and with protection of the
 42 environmental, cultural, and historic
 43 resources of the land.
 44 ▪ Concentrate development of new
 45 facilities in the previously developed
 portions of the parks. Protect the wild

46 character of the undeveloped
 47 portions of the parks.
 48 ▪ Increase the revenue generation
 49 capability of each park.
 50 ▪ Identify physical improvements that
 51 will decrease ongoing operation and
 52 maintenance costs.
 53 ▪ Make public safety a top priority in
 54 ongoing park operations and
 55 maintenance, and in new
 56 improvement projects.
 57 ▪ Ensure the continued equestrian use
 58 of the parks.
 59 ▪ Improve vehicular and pedestrian
 60 circulation within each park.
 61
 62 The alternatives in the general management
 63 plan are consistent with the Huddart and
 64 Wunderlich Parks Master Plan.
 65
 66 ***Marin County Bicycle and***
 67 ***Pedestrian Master Plan (2003)***
 68
 69 The Marin County Congestion Management
 70 Agency commissioned a bicycle and
 71 pedestrian master plan to embrace both
 72 incorporated and unincorporated
 73 jurisdictions within the county. Key
 74 recommendations of this plan include a
 75 north-south bikeway, an east-west bikeway,
 76 potential use of abandoned railroad tunnels
 77 and rights-of-way, and positioning vital
 78 infrastructure improvements to promote and
 79 encourage increased bicycle and pedestrian
 80 activity.
 81
 82 ***Marin County Local Coastal***
 83 ***Program Unit 1 (1979)***
 84
 85 This document was prepared pursuant to the
 86 Coastal Act of 1976, which required all
 87 coastal jurisdictions to prepare a Local
 88 Coastal Program. A Local Coastal Program is
 89 “a local government’s land use plans, zoning
 90 ordinances, zoning district maps, and
 implementing actions which, when taken
 together, meet the requirement of, and

1 implement the provisions and policies” of the
2 Coastal Act at the local level.

3
4 **Marin Countywide Plan (2007)**
5 **and Amended (2009)**

6 The *Marin Countywide Plan* guides the
7 conservation and development of Marin
8 County. The countywide goals reflect core
9 community values and identify what
10 fundamental outcomes are desired.

- 11
- 12 ▪ **A Preserved and Restored Natural**
13 **Environment.** Marin watersheds,
14 natural habitats, wildlife corridors,
15 and open space will be protected,
16 restored, and enhanced.
- 17 ▪ **A Sustainable Agricultural**
18 **Community.** Marin’s working
19 agricultural landscapes will be
20 protected, and the agricultural
21 community will remain viable and
22 successfully produce and market a
23 variety of healthy foods and products.
- 24 ▪ **A High-Quality Built Environment.**
25 Marin’s community character, the
26 architectural heritage of its
27 downtowns and residential
28 neighborhoods, and the vibrancy of
29 its business and commercial centers
30 will be preserved and enhanced.
- 31 ▪ **More Affordable Housing.** Marin’s
32 members of the workforce, the
33 elderly, and special needs groups will
34 have increased opportunities to live in
35 well-designed, socially and
36 economically diverse affordable
37 housing strategically located in
38 mixed-use sites near employment or
39 public transportation.
- 40 ▪ **Less Traffic Congestion.** Marin
41 community members will have access
42 to flexible work schedules, carpools,
43 and additional transportation choices
44 for pedestrians, bicyclists, and transit
45 users that reduce traffic congestion.
- 46 ▪ **A Vibrant Economy.** Marin’s
47 targeted businesses will be clean, be
48 prosperous, meet local residents’ and

49 regional needs, and provide equal
50 access to meaningful employment, fair
51 compensation, and a safe, decent
52 workplace.

- 53 ▪ **A Reduced Ecological Footprint.**
54 Marin residents and businesses will
55 increasingly use renewable energy,
56 fuel efficient transportation choices,
57 and green building and business
58 practices similar to the level of
59 Western Europe.
- 60 ▪ **Collaboration and Partnerships.**
61 Marin public agencies, private
62 organizations, and regional partners
63 will reach across jurisdictional
64 boundaries to collaboratively plan for
65 and meet community needs.
- 66 ▪ **A Healthy and Safe Lifestyle.** Marin
67 residents will have access to a proper
68 diet, health care, and opportunities to
69 exercise, and the community will
70 maintain very low tobacco, alcohol,
71 drug abuse, and crime rates.

72
73 The alternatives in this general management
74 plan work to address many of the goals listed
75 above including preserved natural
76 environments, less traffic congestion, vibrant
77 economy, reduced ecological footprint,
78 collaboration, and healthy and safe lifestyles.

79
80 **Midcoast Action Plan for Parks and**
81 **Recreation: Planning Team Report**
82 **(2007)**

83 This plan, prepared by the Midcoast
84 Recreation Planning Team, is an action plan
85 for providing neighborhood and community
86 recreation services and facilities on the
87 Midcoast. The action plan outlines near and
88 long-term objectives and a strategy for
89 implementation. This plan focuses on actions
90 that finally implement recommendations
91 from three assessments conducted over the
92 past 30 years beginning with the adopted
93 *Midcoast Community Plan* from 1978.
94 Preparation of this plan for a Midcoast park
95 and recreation system also meets the *Shared*
96 *Vision 2010 The Promise of the Peninsula*

1 prepared by the County Board of
2 Supervisors. Six commitments and 11 goals
3 outlined in the county's shared vision are
4 directly applicable to implementing a
5 Midcoast park system. The alternatives in the
6 general management plan are consistent with
7 the planning team report.

8
9 **City of Pacifica Point San Pedro**
10 **Headlands Coastal Trail Connection**

11 The City of Pacifica proposes to construct a
12 multiuse Coastal Trail connection west of
13 State Route 1 through this site prior to its
14 transfer to Golden Gate National Recreation
15 Area. This trail segment would connect with
16 the future north trailhead and Coastal Trail
17 on the abandoned State Route 1 segment that
18 will become a multiuse trail when the Devil's
19 Slide Tunnel Project is complete. The City of
20 Pacifica has constructed paved multiuse
21 paths along State Route 1, connecting, or
22 with potential to expand and connect, to
23 national recreation area sites.

24
25 **San Francisco Public Utilities**
26 **Commission (SFPUC) – Peninsula**
27 **Watershed Management Plan (2001)**

28 The Peninsula Watershed Management Plan
29 provides a planning policy framework for the
30 SFPUC for making future decisions about
31 watershed land uses. The plan provides a
32 comprehensive set of goals, policies, and
33 management actions which integrate all
34 watershed resources and reflect the unique
35 qualities of the watersheds. In addition to
36 serving as a long-term regulatory framework
37 for decision making by the San Francisco
38 Public Utilities Commission, the plan is also
39 intended to be used as an implementation
40 guide by the commission's Land and
41 Resource Management Section staff. The
42 plan provides the Land and Resource
43 Management Section manager and staff with
44 management actions designed to implement
45 the established goals and policies for water
46 quality, water supply, ecological and cultural
47 resource protection, fire and safety
48 management, watershed activities, public

49 awareness, and revenue enhancement. The
50 completion of the Fifield Cahill Ridge Trail,
51 the highest trail priorities as set forth in the
52 *Peninsula Watershed Management Plan* are:
53 (1) to complete a connector trail from Sneath
54 Lane to the North San Andreas Trail, (2) to
55 build the southern extension of the Ridge
56 Trail from Highway 92 south to the Kings
57 Mountain Trail, and (3) to improve trails and
58 connectors so that there is a continuous
59 north-south public trail along the eastern
60 edge of the watershed. While the *Peninsula*
61 *Watershed Management Plan* includes
62 policies to consider the addition of new trails
63 and connectors in zones of less vulnerability
64 and risk, the plan also includes policies to
65 limit public trails to the periphery of the
66 watershed to minimize adverse impacts
67 (sensitive habitat and species, fire, spread of
68 nonnative weed species, etc.) and a
69 prohibition on the construction of new trails
70 and unsupervised access to existing roads
71 and trails not addressed in the plan.

72
73 **PG&E Jefferson-Martin 230kV**
74 **Transmission Line Proposed**
75 **Settlement and Environmental**
76 **Assessment (2004)**

77 The project includes an assessment of
78 construction of 24 miles of new 230 kV
79 transmission line in San Mateo County
80 (Jefferson-Martin 230kV Line). The project
81 includes both overhead (3.3 miles) and
82 underground segments (20 miles) within the
83 Golden Gate National Recreation Area
84 boundary and within easements managed by
85 the National Park Service to protect the
86 natural and scenic values. The approximately
87 24-mile route selected by the California
88 Public Utilities Commission includes
89 replacement of the existing double circuit
90 60kV line with a double circuit 60kV/230kV
91 line along the same right-of-way, with minor
92 modifications to reduce visibility of the
93 rebuilt line. A final route for the line was
94 approved by the California Public Utilities
95 Commission in August 2004, which the
96 National Park Service appealed. Pacific Gas
97 and Electric has proposed a settlement to the

1 National Park Service, which is the subject of
 2 the environmental assessment. The
 3 alternatives in the general management plan
 4 are consistent with this plan.

5
 6 **Regional Bicycle Plan for the San**
 7 **Francisco Bay Area (2001)**

8 The Metropolitan Transportation
 9 Commission’s *2001 Regional Bicycle Plan* is a
 10 component of the *2001 Regional*
 11 *Transportation Plan for the San Francisco Bay*
 12 *Area*, which establishes the region’s 25-year
 13 transportation investment plan. The
 14 commission sought to develop a regional
 15 bicycle plan with the following five main
 16 objectives:

- 17
- 18 ▪ Define a network of regionally
 19 significant bicycle routes, facilities,
 20 and necessary support programs and
 21 facilities.
- 22 ▪ Identify gaps in the network and
 23 recommend specific improvements
 24 needed to fill these gaps in the system.
- 25 ▪ Develop cost estimates for build-out
 26 of the entire regional network.
- 27 ▪ Develop a funding strategy to
 28 implement the regional bike network.
- 29 ▪ Identify programs to help local
 30 jurisdictions become more bicycle-
 31 friendly.

32 The goal of the plan is to “ensure that
 33 bicycling is a convenient, safe, and practical
 34 means of transportation throughout the Bay
 35 Area for all Bay Area residents.” The
 36 alternatives in the general management plan
 37 are consistent with this plan.

38
 39
 40 **San Francisco General Plan (2004)**

41 The city’s general plan guides change and
 42 growth within the city to ensure that the
 43 qualities that make San Francisco unique are
 44 preserved and enhanced. The plan is the
 45 embodiment of the community’s vision for
 46 the future of San Francisco.

47

48 The general plan is designed as a guide to the
 49 attainment of the following general goals:

- 50
- 51 ▪ Protection, preservation, and
 52 enhancement of the economic, social,
 53 cultural, and aesthetic values that
 54 establish the desirable quality and
 55 unique character of the city.
- 56 ▪ Help make the city more healthful,
 57 safe, pleasant, and satisfying, with
 58 housing representing good standards
 59 for all residents and adequate open
 60 spaces and appropriate community
 61 facilities.
- 62 ▪ Improvement of the city as a place for
 63 commerce and industry by making it
 64 more efficient, orderly, and
 65 satisfactory for the production,
 66 exchange, and distribution of goods
 67 and services, with adequate space for
 68 each type of economic activity and
 69 improved facilities for the loading and
 70 movement of goods.
- 71 ▪ Coordination of the varied pattern of
 72 land use with public and semipublic
 73 service facilities required for efficient
 74 functioning of the city, and for the
 75 convenience and well-being of its
 76 residents, workers, and visitors.
- 77 ▪ Coordination of the varied pattern of
 78 land use with circulation routes and
 79 facilities required for the efficient
 80 movement of people and goods
 81 within the city and to and from the
 82 city.
- 83 ▪ Coordination of the growth and
 84 development of the city with the
 85 growth and development of adjoining
 86 cities and counties and of the San
 87 Francisco Bay Region.

88
 89 In addition, the *SUBAREA 3: Bay Street To*
 90 *The Municipal Pier* identifies Objective 3 to
 91 transform the area into an attractive gateway
 92 to the residential boulevard and a transition
 93 from Fisherman’s Wharf and Golden Gate
 94 National Recreation Area. The following are
 95 the policies associated with this objective:

96

1 POLICY 3.1: Create a tree-lined and
 2 landscaped median strip within the Van Ness
 3 street space and plant rows of trees in the
 4 sidewalk space. This greenspace element,
 5 which would realign some existing parking
 6 spaces, should be designed to “announce”
 7 the area’s attractive shoreline open space
 8 resources and visually direct the visitor to
 9 them.

10
 11 POLICY 3.2: Support National Park Service
 12 plans for improvements of the area within the
 13 boundaries of the Golden Gate National
 14 Recreation Area boundaries. The *Golden*
 15 *Gate National Recreation Area General*
 16 *Management Plan* calls for the following
 17 improvements:

18
 19 *All of the Van Ness Avenue (asphalt*
 20 *paving) inside the park boundary will*
 21 *be removed and replaced with*
 22 *landscaping. The Sea Scout clubhouse*
 23 *and maintenance docks will also be*
 24 *removed. The Sea Scouts’ boats will*
 25 *be moved to the east side of the*
 26 *lagoon, and their programs and*
 27 *meetings will be held in the aquatic*
 28 *center. The food concession at the foot*
 29 *of Van Ness will receive a good*
 30 *sprucing-up. The Municipal Pier will*
 31 *also get a substantial cleanup and*
 32 *minor improvements such as fish-*
 33 *cleaning stations and restrooms. (It*
 34 *may also require structural*
 35 *renovation). Night lighting*
 36 *throughout the area will be upgraded.*

37
 38 **San Mateo County Comprehensive**
 39 **Bicycle Route Plan (2000)**

40 The plan addresses issues of safety, access,
 41 quality of life, and the effective
 42 implementation of bikeways. Outlined in the
 43 plan are a detailed set of policies, goals, and
 44 objectives designed to be in concert with the
 45 county’s and cities’ general plans, the cities’
 46 bicycle plans, as well as other relevant
 47 regional plans. These policies address
 48 important issues related to San Mateo
 49 County’s bikeways, such as planning,
 50 community involvement, use of existing

51 resources, facility design, multimodal
 52 integration, safety and education, support
 53 facilities and programs, funding,
 54 implementation, and maintenance.

55
 56 The short- to mid-term priority projects in
 57 the plan include the North-South Bikeway,
 58 the Colma-Millbrae Bikeway, the Ralston
 59 Bikeway, the North-South Bikeway (southern
 60 segment), the San Mateo County Bay Trail,
 61 the Recreational Route improvements, the
 62 North Coast Bikeway, the North-South
 63 Bikeway (Old County Road section), the
 64 Coastside Bicycle Projects, the Highway101 /
 65 Willow Road Interchange, the North-South
 66 Bikeway (Bayshore section), the Highway
 67 101 / Broadway Interchange, the North-
 68 South Bikeway (Delaware / California
 69 section), the Crystal Springs / 3rd / 4th
 70 Avenue Bikeway, and the SFIA Bay Trail /
 71 Commuter Bikeway. The alternatives in the
 72 general management plan are consistent with
 73 this plan.

74
 75 **San Mateo County Trails Plan (2001)**

76 This document is the 2001 update of the *San*
 77 *Mateo County Trails Plan*. Trails planning on
 78 a countywide level dates back nearly 25 years.
 79 The 2001 update is the third iteration of the
 80 *Trails Plan*. The *Trails Plan* is intended to
 81 fulfill the following objectives:

- 82
 83 ▪ Provide an updated *Trails Plan* with
 84 the latest desired alignments.
 85 ▪ Link trails among existing and
 86 proposed trails in San Mateo County
 87 cities and parks, and to adjacent
 88 counties.
 89 ▪ Develop a set of policies and
 90 guidelines that can be used during
 91 detailed trail planning to ensure that
 92 adequate trails are constructed within
 93 constraints presented by the
 94 environment.
 95 ▪ Provide a plan for access for
 96 recreational and educational purposes
 97 to portions of the county where no
 98 access currently is available.

- 1 ▪ Improve access to and along the coast.
- 2 ▪ Provide recreational opportunities to
- 3 area residents.
- 4 ▪ Provide commuter routes for
- 5 alternative types of transportation
- 6 (e.g., bicycles).

7
8 Some of the projected trails, such as the Bay
9 Area Ridge Trail, could pass through or
10 connect with trails in Golden Gate National
11 Recreation Area. The alternatives in the
12 general management plan are consistent with
13 this plan.

14
15 **San Mateo Countywide**
16 **Transportation 2010 Plan (2001)**

17 This transportation plan serves as a plan

- 18 ▪ for all modes (roads, Caltrain,
- 19 SamTrans, BART, bicycles) and that
- 20 looks at all modes as systems
- 21 ▪ that advocates policy, not projects; it
- 22 is not a capital improvement program
- 23 ▪ whose policy is derived from
- 24 understanding the relational
- 25 interaction between the modes
- 26 ▪ that strives for synergy among the
- 27 parts of the transportation system—
- 28 the whole is greater than the sum of
- 29 the parts
- 30 ▪ that seeks to develop the parts of the
- 31 system to the optimal size, rather than
- 32 the maximum
- 33 ▪ that provides critical information to
- 34 help make informed decisions
- 35 ▪ that recognizes the decentralized,
- 36 fragmented, and complex decision-
- 37 making structures of transportation
- 38 planning in the county
- 39 ▪ that seeks to coordinate decision
- 40 making, relying on cooperation and
- 41 not enforcement
- 42

43
44 The goals of this plan are to reduce traffic
45 congestion in San Mateo County, improve
46 mobility, reduce congestion, increase access,

47 improve air quality, increase economic
48 vitality, improve the coordination of land use
49 and transportation planning, increase
50 reliability, and increase safety. The objectives
51 are to increase capacity and performance
52 (safety, reliability, convenience) of all
53 transportation systems, increase demand for
54 transit travel, and decrease demand for
55 automobile travel, especially single-occupant.

56
57 The strategy is to alleviate congestion via the
58 following:

- 59 ▪ Roads – increase the efficiency of the
- 60 existing highway system.
- 61 ▪ Transit – increase capacity, service
- 62 levels, and safety of transit systems.
- 63 ▪ Land Use – increase supply and
- 64 density of housing and employment in
- 65 transit corridors.
- 66 ▪ Transportation Systems Management
- 67 – increase programs to reduce the
- 68 demand for single-occupant
- 69 automobile travel.
- 70 ▪ Pricing – initiate modest pricing
- 71 programs that cause a shift from
- 72 automobile to transit travel.
- 73

74
75 The alternatives in the general management
76 plan are mindful of the goals and objectives
77 of this plan. As more specific implementation
78 plans are developed for park sites in San
79 Mateo, the park staff will coordinate with the
80 county to help achieve the transportation
81 plan’s goals and objectives.

82
83
84 **San Pedro Valley County Park**

85 **Sausalito General Plan (1995)**

86 The following 10 broad goals serve as the
87 basis for more specific policies and
88 implementation strategies. The overriding
89 theme of the *Sausalito General Plan* is to
90 protect the existing character, unique
91 features, and quality of life in Sausalito.
92 Goals of the plan are as follows:

APPENDIXES

- | | | | | | |
|----|---|---|----|---|---|
| 1 | ▪ | Protect and enhance Sausalito as a residential community. | 18 | ▪ | Protect the scenic qualities and the natural environment of the city. |
| 2 | | | 19 | | |
| 3 | ▪ | Protect the present character of Sausalito's residential neighborhoods. | 20 | ▪ | Protect residents from natural and manmade hazards and avoid exposure to unnecessary risks to community safety. |
| 4 | | | 21 | | |
| 5 | ▪ | Encourage commercial services that serve city residents. | 22 | | |
| 6 | | | 23 | | |
| 7 | ▪ | Recognize the importance of the downtown commercial district to the economic viability of the community and provide amenities for Sausalito's visitors. | 24 | ▪ | Preserve and provide a variety of housing opportunities in keeping with Sausalito's tradition of diversity. |
| 8 | | | 25 | | |
| 9 | | | 26 | | |
| 10 | | | 27 | ▪ | Maintain an appropriate level of public services. |
| 11 | | | 28 | | |
| 12 | ▪ | Preserve the open waterfront as a natural resource and promote maritime uses in the Marinship. | 29 | | |
| 13 | | | 30 | | The alternatives in the general management plan are consistent with this plan |
| 14 | | | 31 | | |
| 15 | ▪ | Preserve the historical character of Sausalito and its architectural and cultural diversity. | | | |
| 16 | | | | | |
| 17 | | | | | |

APPENDIX C: RELEVANT NPS POLICIES

1 This section describes the National Park
2 Service management policies most relevant to
3 Golden Gate National Recreation Area and
4 Muir Woods National Monument. They
5 guided development of this general
6 management plan; these policies will
7 continue to guide management of the park
8 into the future, regardless of the alternative
9 that is selected. They guide actions taken by
10 the National Park Service on such topics as
11 natural and cultural resource management,
12 park facilities, and visitor use management.
13 This section includes descriptions of the
14 broad management goals consistent with all
15 alternatives and a set of strategies that may be
16 used by park managers to achieve those goals.
17 This is not an exhaustive list of strategies. As
18 new ideas, technologies, and opportunities
19 arise, they will be considered if they further
20 support the desired condition.

21 22 23 **FOUNDATION**

24 Beginning with Yellowstone, the idea of a
25 national park was an American invention of
26 historic consequences. The areas that now
27 make up the national park system, and those
28 that will be added in years to come, are
29 cumulative expressions of a single national
30 heritage. The National Park Service must
31 manage park resources and values in such
32 manner and by such means as will leave them
33 unimpaired for the enjoyment of future
34 generations

35 36 37 **RELATIONS WITH AMERICAN 38 INDIAN TRIBES**

39 The park works to ensure that traditional
40 American Indian ties to the park are
41 recognized; the National Park Service also
42 strives to maintain positive, productive,
43 government-to-government relationships

44 with tribes culturally affiliated with the park.
45 The rights, viewpoints, and needs of tribes
46 are respected, and issues that arise are
47 promptly addressed. American Indian values
48 are considered in the management and
49 operation of the park.

50 51 *Strategies*

- 52
- 53 ▪ To ensure productive, collaborative
54 working relationships, consult
55 regularly and maintain government-
56 to-government relations with
57 federally recognized tribes that have
58 traditional ties to resources in the
59 park.
- 60 ▪ Continue to identify and deepen the
61 understanding of the significance of
62 the park's resources and landscapes to
63 American Indian people through
64 collaborative research.
- 65 ▪ Protect and preserve sites and
66 resources that are significant to
67 federally recognized tribes.
- 68 ▪ Create opportunities for and invite
69 the participation of tribes in
70 protecting natural and cultural
71 resources of interest within the park.
- 72 ▪ Support the continuation of
73 traditional American Indian activities
74 in the park to the extent allowed by
75 law and policy.
- 76 ▪ Work with tribes to conduct
77 ethnographic studies that identify
78 culturally significant resources.
- 79 ▪ Seek input from tribes during
80 development of interpretive programs
81 that relate to American Indians.
- 82 ▪ Consult with American Indians under
83 the Native American Graves
84 Protection and Repatriation Act of
85 1990 for actions that affect or have the

1 potential to affect burial remains or
 2 items of sacred or ceremonial
 3 significance.

4
 5

6 **Park System Planning**

7 *Park planning helps define the set of*
 8 *resource conditions, visitor*
 9 *experiences, and management*
 10 *actions that, taken as a whole, will*
 11 *best achieve the mandate to*
 12 *preserve resources unimpaired for*
 13 *the enjoyment of present and future*
 14 *generations. NPS planning*
 15 *processes will flow from broad-scale*
 16 *general management planning*
 17 *through progressively more specific*
 18 *strategic planning, implementation*
 19 *planning, and annual performance*
 20 *planning and reporting, all of which*
 21 *will be grounded in foundation*
 22 *statements.*

23
 24

25 **RELATIONSHIPS WITH PRIVATE AND**
 26 **PUBLIC ORGANIZATIONS, ADJACENT**
 27 **LANDOWNERS, AND GOVERNMENT**
 28 **AGENCIES**

29 The park is managed holistically, as part of a
 30 greater ecological, social, economic, and
 31 cultural system. Positive relations are
 32 maintained with inholders (those owning
 33 property within the park boundary), adjacent
 34 landowners, surrounding communities, and
 35 private and public groups that affect, and are
 36 affected by the park. The park is managed
 37 proactively to ensure that NPS values are
 38 effectively communicated and understood.

39
 40

40 **Strategies**

41

- 42 ▪ Continue to establish and foster
 43 partnerships with public and private
 44 landowners.
- 45 ▪ Foster a spirit of cooperation with
 46 neighbors, and encourage compatible
 47 uses of adjacent lands. Keep

48 landowners, land managers, tribes,
 49 local governments, nongovernmental
 50 organizations, and the public
 51 informed about park management
 52 activities and issues. Consult
 53 periodically with landowners and
 54 communities that are affected by or
 55 potentially affected by park visitors
 56 and management actions.

- 57 ▪ Work closely with local, state, and
 58 federal agencies and tribal
 59 governments whose programs affect
 60 or are affected by activities in the
 61 park.
- 62 ▪ Continue to support and encourage
 63 volunteers who contribute to park
 64 programs.

65
 66

67 **RESEARCH**

68 The National Park Service works with
 69 partners to learn about natural and cultural
 70 resources and associated values. Research
 71 priorities for the national recreation area are
 72 aligned with its purpose, significance, and
 73 fundamental resources and values.

74
 75

75 **Strategies**

76
 77

- 77 ▪ Encourage and support basic and
 78 applied research through various
 79 partnerships and agreements to
 80 enhance understanding of resources
 81 and processes or to answer specific
 82 management questions.
- 83 ▪ Mitigate impacts of research
 84 conducted on natural and cultural
 85 resources, as needed to preserve those
 86 resources for future generations to
 87 enjoy and study.
- 88 ▪ Develop and implement criteria to
 89 determine whether requested
 90 research supports park purpose and
 91 significance, or other park goals.
- 92 ▪ Develop and update lists of research
 93 issues that are important to the park.

94

1 LAND PROTECTION

2 *The National Park Service will use all*
 3 *available authorities to protect lands*
 4 *and resources within units of the*
 5 *national park system, and the*
 6 *National Park Service will seek to*
 7 *acquire nonfederal lands and*
 8 *interests in land that have been*
 9 *identified for acquisition as promptly*
 10 *as possible. For lands not in federal*
 11 *ownership, both those that have been*
 12 *identified for acquisition and other*
 13 *nonfederally owned lands within a*
 14 *park unit’s authorized boundaries,*
 15 *the Park Service will cooperate with*
 16 *federal agencies; tribal, state, and*
 17 *local governments; nonprofit*
 18 *organizations; and property owners*
 19 *to provide appropriate protection*
 20 *measures. Cooperation with these*
 21 *entities will also be pursued, and*
 22 *other available land protection tools*
 23 *will be employed when threats to*
 24 *resources originate outside*
 25 *boundaries.*

26
 27 Park staff will work with government
 28 agencies and nongovernmental organizations
 29 to support efforts to protect adjacent lands
 30 that are important to preserving the
 31 resources within the park.

32
 33 **Strategies**

- 34
- 35 ■ Use various techniques to protect
- 36 park values, including general
- 37 agreements, acquisition of
- 38 conservation and access easements,
- 39 land exchanges, donations, and fee-
- 40 simple acquisition.
- 41 ■ Carefully site any new
- 42 telecommunication structures so as to
- 43 not jeopardize the park’s purpose,
- 44 significance, and fundamental
- 45 resources and values; also consider
- 46 the park’s management zones. Permit
- 47 new rights-of-way only with specific
- 48 statutory authority and approval by
- 49 NPS managers, and only if there is no

50 practicable alternative to such use of
 51 national park system lands.

- 52 ■ Continue to support the efforts of
- 53 others to protect adjacent lands that
- 54 are important to preserving park
- 55 resources through appropriate
- 56 planning, zoning, and other
- 57 protection methods.

58
 59
 60 **NATURAL RESOURCE MANAGEMENT**

61 *The National Park Service will*
 62 *preserve the natural resources,*
 63 *processes, systems, and values of units*
 64 *of the national park system in an*
 65 *unimpaired condition, to perpetuate*
 66 *their inherent integrity and to provide*
 67 *present and future generations with*
 68 *the opportunity to enjoy them.*

69
 70 The resources and processes of the park
 71 retain a significant degree of ecological
 72 integrity. Natural wind and water processes
 73 function as unimpeded as possible.
 74 Management decisions about natural
 75 resources are based on scholarly and
 76 scientific information and on the park’s
 77 identified fundamental resources and values.
 78 Park resources and values are protected
 79 through collaborative efforts with neighbors
 80 and partners. Visitors and employees
 81 recognize and understand the value of the
 82 park’s natural resources. Human impacts on
 83 resources are monitored, and harmful effects
 84 are minimized, mitigated, or eliminated.

85
 86 Biologically diverse native communities are
 87 protected and restored when possible.
 88 Particularly sensitive communities are closely
 89 monitored and protected. Endemic species
 90 and habitats are fully protected; nonnative
 91 species are controlled, and native species are
 92 reintroduced when conditions allow. Genetic
 93 integrity of native species is protected.
 94 Threatened and endangered species are
 95 protected to the greatest extent possible and
 96 are generally stable or improving. Natural fire
 97 regimes are investigated and supported
 98 where possible.

1 *Strategies*

- 2
- 3 ▪ Continue to inventory biotic and
- 4 abiotic resources in the park and
- 5 assess their status and trends.
- 6 ▪ Continue long-term systematic
- 7 monitoring of resources and
- 8 processes to detect natural and
- 9 human-caused trends, document
- 10 changes in species or communities,
- 11 evaluate the effectiveness of
- 12 management plans and restoration
- 13 projects, and mitigate impacts where
- 14 possible.
- 15 ▪ Implement and keep current a
- 16 cooperative wildland fire
- 17 management plan that includes
- 18 interagency participation to maintain
- 19 conditions within the natural range as
- 20 much as possible.
- 21 ▪ Work in consultation with American
- 22 Indian tribes to identify, evaluate, and
- 23 determine appropriate treatment for
- 24 natural resources used by American
- 25 Indians in park lands.
- 26 ▪ Provide information to adjacent
- 27 homeowners and private landowners
- 28 on natural processes, wildlife, critical
- 29 habitats, and threats to resources.
- 30 ▪ Conserve and restore habitats for
- 31 threatened and endangered species
- 32 and species of special concern.
- 33 ▪ In conjunction with other NPS
- 34 offices, continue to expand the park's
- 35 data management systems for
- 36 analyzing, modeling, predicting, and
- 37 testing trends in resource conditions.
- 38 ▪ Continue to regularly update the
- 39 park's resource stewardship strategy.
- 40 ▪ Apply mitigation techniques to
- 41 minimize impacts of construction and
- 42 other activities on park resources.
- 43 ▪ Continue to educate staff, visitors,
- 44 and the public about the significance
- 45 of natural resources and major threats
- 46 to these resources.
- 47

48 **ECOSYSTEM MANAGEMENT**

49 Park management demonstrates leadership in

50 resource stewardship and conservation of

51 ecosystem values. The marine, forests, and

52 aquatic systems are managed from an

53 ecosystem perspective, considering both

54 internal and external factors affecting visitor

55 use, environmental quality, and resource

56 stewardship. Management decisions about

57 ecosystems are based on scholarly and

58 scientific information. Resources and

59 visitation are managed in consideration of the

60 ecological and social conditions of the park

61 and surrounding area. The National Park

62 Service adapts management strategies to

63 changing ecological and social conditions

64 and are partners in regional land planning

65 and management.

66 *Strategies*

- 67
- 68
- 69 ▪ Continue to participate in and
- 70 encourage ongoing partnerships with
- 71 local, state, and federal agencies, and
- 72 nongovernmental organizations in
- 73 programs that have importance within
- 74 and beyond park boundaries.
- 75 Partnerships important to the long-
- 76 term viability of critical natural
- 77 resources include the following:
- 78 – monitoring water quality of local
- 79 water bodies
- 80 – managing wildlife across human-
- 81 created boundaries (such as
- 82 jurisdictions, property lines, and
- 83 fences)
- 84 – managing nonnative invasive
- 85 species
- 86 – managing wildland fire
- 87 ▪ Central to ecosystem management is
- 88 long-term monitoring of changes in
- 89 the condition of cultural and natural
- 90 resources and related human
- 91 influences. Improvement or
- 92 degradation of resources and visitor
- 93 experience cannot be determined
- 94 with any certainty without a
- 95 monitoring program. To protect,
- 96 restore, and enhance park resources

1 and to sustain visitor use and
 2 enjoyment within and around the
 3 park, NPS staff would do the
 4 following:

- 5 – Initiate or continue long-term
 6 monitoring of resources and
 7 visitor use, including use of the
 8 visitor experience and resource
 9 protection framework or other
 10 user capacity process, as
 11 appropriate.
- 12 – Promote research to increase
 13 understanding of park resources,
 14 natural processes, and human
 15 interactions with the
 16 environment, with emphasis on
 17 fundamental resources and
 18 values.
- 19 – Practice science-based decision
 20 making and adaptive
 21 management, incorporating the
 22 results of resource monitoring
 23 and research into NPS
 24 operations.
- 25 – Identify lands/waters outside the
 26 park where ecological processes
 27 and human use affect park
 28 resources or are closely related to
 29 park resource management
 30 considerations; initiate joint
 31 research, monitoring,
 32 management actions, agreements,
 33 or partnerships to promote
 34 resource conservation.
- 35 – Provide education and outreach
 36 programs to highlight
 37 conservation and management
 38 issues facing the park and related
 39 lands and encourage partners
 40 who are able to assist with
 41 ecosystem stewardship.
- 42 ■ Continue the disturbed site
 43 restoration program.
- 44 ■ Strive to control invasive nonnative
 45 species in coordination with adjacent
 46 landowners, other agencies, and NPS
 47 staff specialists; consider control of
 48 native species that threaten ecosystem
 49 health.

51 **BIOLOGICAL RESOURCES**
 52 **MANAGEMENT**

53 **Wildlife**

54 Natural wildlife populations and systems are
 55 understood and perpetuated. Natural
 56 fluctuations in populations are permitted to
 57 occur to the greatest extent possible. Natural
 58 influences are mimicked if necessary. The
 59 park staff would work with neighbors and
 60 partners to achieve mutually beneficial goals
 61 related to wildlife.

62
 63 *Strategies*

- 64
- 65 ■ Continue cooperative management of
 66 threatened or endangered species
 67 within the park to stabilize or improve
 68 the status of these species.
- 69 ■ Strive to identify species that have
 70 occupied the park in the past, and
 71 evaluate the feasibility and advisability
 72 of reintroducing extirpated species.
- 73 ■ Continue to cooperate with the
 74 federal and state agencies to better
 75 understand populations and
 76 determine appropriate management
 77 actions for wildlife species.

78
 79
 80 **Water Resources**

81 Water quality is a key resource at the park.
 82 The need for adequate freshwater flows and
 83 high water quality are important in the
 84 preservation of the numerous rare and
 85 endangered species. The water resources
 86 have many beneficial uses including water
 87 contact and non-water contact recreation,
 88 fish migration and spawning, and municipal
 89 water supply. Groundwater is important for
 90 recharge of surface water systems, including
 91 wetlands, supporting rare and endangered
 92 species habitat and as a source for municipal
 93 and agricultural water supplies. Wetlands
 94 protect water quality, mitigate flood and
 95 drought, help control erosion, and facilitate
 96 groundwater recharge. Wetlands support

1 complex food webs, housing a rich
 2 biodiversity of wetland-endemic species,
 3 providing habitat functions for many aquatic
 4 and terrestrial species. The intertidal and
 5 subtidal zone of the park’s littoral
 6 environments are some of the most diverse
 7 and productive ecosystems in the world.
 8 Coastal habitats are important for the
 9 preservation of several rare and endangered
 10 species.

11
 12 **Strategies**

- 13
- 14 ▪ Continue to monitor water quality
 15 and quantity within a local and
 16 regional context, and expand
 17 monitoring as needed to more fully
 18 understand the status and trends of
 19 ground and surface water.
- 20 ▪ Participate in local, state, and national
 21 water quality remediation and water-
 22 shed planning programs.
- 23 ▪ Update strategies for water resources
 24 management as needed to reflect
 25 changing resources and management
 26 issues.
- 27 ▪ Continue to inventory wetlands so
 28 that important wetland communities
 29 can be identified and protected.
- 30 ▪ Continue to identify and address
 31 threats to wetlands, such as purple
 32 loosestrife and other nonnative
 33 species.
- 34 ▪ Continue to assess human-related
 35 threats to water quality and quantity.
 36 Continue to monitor E. coli at
 37 designated recreational beaches.

38
 39 **Air Quality:** The park is in a class II air quality
 40 area under the Clean Air Act. This
 41 designation allows for limited amounts of
 42 new air emissions. The air quality of the park
 43 is enhanced as the National Park Service
 44 continues to pursue actions that provide for
 45 reduction of emissions caused by park
 46 operations and visitation.

47

48 **Strategies**

49

- 50 ▪ Continue to monitor and record air
 51 pollution levels and analyze changes
 52 over time.
- 53 ▪ Monitor and reduce emissions, when
 54 possible, from activities within the
 55 park’s boundaries.
- 56 ▪ Continue to participate in regional air
 57 quality planning, research, and
 58 implementation of air quality
 59 standards.

60

61

62 **Soundscape Management**

63 Natural soundscapes are preserved, and
 64 sounds of modern society are minimized.
 65 Visitors have opportunities in most parts of
 66 the park to hear natural sounds.

67

68 **Strategies**

69

- 70 ▪ Strive to collect baseline data on park
 71 soundscapes to understand
 72 characteristics and trends in natural
 73 soundscapes.
- 74 ▪ Continue to control existing and
 75 potential land-based noise sources.
- 76 ▪ Enforce existing noise regulations.
- 77 ▪ Require bus tour companies to
 78 comply with regulations that reduce
 79 noise levels (e.g., turning off engines
 80 when buses are parked).
- 81 ▪ Limit use of generators.
- 82 ▪ Work with the Federal Aviation
 83 Administration, commercial
 84 businesses, and general aviation
 85 entities to minimize noise and visual
 86 impacts of aircraft on the park.
 87 Continue to discourage pilots of
 88 conventional aircraft from flying low
 89 along the park. If demand for
 90 commercial air tours develops,
 91 develop a commercial air tour
 92 management plan to address tours
 93 and their effects on the park.

- 1 ▪ Minimize noise generated by the NPS
- 2 use of noise-producing machinery
- 3 such as motorized equipment.
- 4 Consider noise potential when
- 5 procuring and using park equipment.

6
7
8 **Lightscape Management**

9 The naturally dark night sky is preserved.
10 Artificial light sources in and outside the park
11 do not hinder opportunities to see the moon,
12 stars, planets, and other celestial features.
13 Park staff and partners continue to work with
14 local communities to encourage protection of
15 the night sky. To the greatest extent possible,
16 the National Park Service works within a
17 regional context to protect the quality of the
18 night sky and the experience thereof.

19
20 **Strategies**

- 21
- 22 ▪ Establish baseline data for the dark
- 23 night sky through NPS programs.
- 24 ▪ Determine if light sources in the park
- 25 exceed appropriate levels. Study and
- 26 implement ways to reduce or
- 27 minimize artificial and unnecessary
- 28 light.

29
30
31 **CULTURAL RESOURCES**
32 **MANAGEMENT**

33 *The NPS will preserve and foster*
34 *appreciation of the cultural resources*
35 *in its custody, and will demonstrate*
36 *its respect for the peoples traditionally*
37 *associated with those resources,*
38 *through appropriate programs of*
39 *research, planning, and stewardship.*

40
41
42 **General**

43 Cultural resources are identified, evaluated,
44 managed, and protected within their broader
45 context. Management decisions about
46 cultural resources are based on scholarly

47 research and scientific information,
48 fundamental resources and values, and
49 consultation with the California state historic
50 preservation officer and with American
51 Indian tribes, as appropriate. The historic
52 integrity of properties listed in (or eligible for
53 listing in) the National Register of Historic
54 Places is protected. Visitors and employees
55 recognize and understand the value of the
56 park’s cultural resources. Human and natural
57 impacts on cultural resources are monitored,
58 and adverse effects are minimized or
59 eliminated.

60
61 **Strategies**

- 62
- 63 ▪ Continue to collect information to fill
- 64 gaps in the knowledge and under-
- 65 standing of the park’s cultural
- 66 resources, to assess status and trends,
- 67 and to effectively protect and manage
- 68 cultural resources.
- 69 ▪ In accordance with the National
- 70 Historic Preservation Act of 1966, as
- 71 amended, continue to locate, identify,
- 72 and evaluate cultural resources to
- 73 determine if they are eligible for
- 74 listing in the National Register of
- 75 Historic Places (national register).
- 76 ▪ Prepare and update national register
- 77 nominations as appropriate.
- 78 ▪ Update and keep current the park’s
- 79 Cultural Landscape Inventory and
- 80 List of Classified Structures (the NPS
- 81 inventory of evaluated historic and
- 82 precontact structures that have
- 83 historical, architectural, and/or
- 84 engineering significance).
- 85 ▪ Work in consultation with the
- 86 California state historic preservation
- 87 officer, American Indian tribes as
- 88 appropriate, and other interested
- 89 parties to identify, evaluate, and
- 90 determine appropriate treatment for
- 91 archeological resources, historic
- 92 structures, and cultural landscapes
- 93 throughout the park.
- 94 ▪ Conduct scholarly research and use
- 95 the best available scientific

- 1 information and technology for
2 making decisions about management
3 of the park's cultural resources.
- 4 ■ Build a partnership program that
5 considers appropriate adaptive use to
6 assist in maintaining historic buildings
7 and cultural landscapes throughout
8 the park.
- 9 ■ Continue to initiate and regularly
10 update plans and prioritize actions
11 needed to protect cultural resources.
- 12 ■ Continue to research, document,
13 catalogue, exhibit, and store the
14 park's museum collection according
15 to NPS standards.
- 16 ■ Continue to educate staff, visitors,
17 and the public about cultural and
18 historic issues relating to the park.
- 19 ■ Treat all cultural resources as eligible
20 for the national register pending
21 formal determination.
- 22
- 23 **Archeological Resources:** Archeological
24 resources in the park are identified and
25 preserved. Archeological resources are the
26 remains of past human activity and records
27 documenting the scientific analysis of these
28 remains. Archeological features are typically
29 buried, but may extend aboveground.
30 Although archeological resources are
31 commonly associated with precontact
32 peoples, they may be products of more
33 contemporary society.
- 34
- 35 **Strategies**
- 36
- 37 ■ Conduct sufficient research to
38 identify and evaluate park
39 archeological resources and assess
40 condition and potential threats.
- 41 ■ Continue long-term monitoring of
42 archeological sites to measure
43 deterioration from natural and human
44 sources and to evaluate the
45 effectiveness of management actions
46 to protect resources and mitigate
47 impacts.
- 48 ■ Preserve and protect archeological
49 resources by eliminating and avoiding
50 natural and human impacts,
51 stabilizing sites and structures,
52 monitoring conditions, and enforcing
53 protective laws and regulations.
- 54 ■ Carry out required consultation and
55 legal compliance, and consider
56 concerns raised.
- 57 ■ Include information about
58 archeological resources, as
59 appropriate, in interpretive and
60 educational programs for the public.
- 61
- 62 **Cultural Landscapes:** The park's cultural
63 landscapes are preserved in good condition
64 to retain a high degree of integrity. Cultural
65 landscapes reflect human adaptation and use
66 of natural resources and are often expressed
67 in the way land is organized and divided,
68 patterns of settlement, land use, systems of
69 circulation, and the types of structures that
70 are built.
- 71
- 72 **Strategies**
- 73
- 74 ■ Prepare cultural landscape inventories
75 and reports, and amend existing
76 reports as needed.
- 77 ■ Monitor, inspect, and manage
78 identified and evaluated cultural
79 landscapes to enable long-term
80 preservation of historic features,
81 qualities, and materials.
- 82 ■ Implement actions identified in
83 cultural landscape reports, and add a
84 record of treatment to the reports.
- 85 ■ Create design guidelines and/or
86 cultural landscape reports for specific
87 developed areas in the park to
88 preserve landscape-defining features.
89 Include provisions in the guidelines
90 for design review to ensure the
91 compatibility of new planning, design,
92 and construction.
- 93 ■ Have cultural landscape specialists
94 (e.g., historical landscape architects)
95 prepare plans and specifications for

1 preservation, rehabilitation, and
2 restoration, in consultation with the
3 park's Natural Resources Division
4 staff.

5
6 **Ethnographic Resources:** Ethnographic
7 resources, the cultural and natural features of
8 a park that are of traditional significance to
9 traditionally associated peoples, are
10 identified and protected to the fullest extent
11 possible. These resources may be objects,
12 beliefs, or places, and may have attributes
13 that are of great importance to the group but
14 not necessarily associated with the reason the
15 park was established or appropriate as a topic
16 of park interpretation.

17 *Strategies*

- 19
20 ▪ Identify and document, through
21 studies and consultations,
22 ethnographic resources, traditionally
23 associated people and other affected
24 groups, and such groups' cultural
25 affiliations to park resources.
- 26 ▪ Recognize the sensitivity of
27 ethnographic resources and
28 associated data and provide
29 confidentiality to the extent possible
30 under the law.
- 31 ▪ Have researchers formally collaborate
32 with traditional cultural experts to
33 develop a park strategy for dealing
34 with ethnographic resources
- 35 ▪ Monitor effects of use on
36 ethnographic resources and effects of
37 park plans on authorized uses and
38 traditional users.

39
40 **Historic Structures:** The character of
41 historic structures is preserved in good
42 condition to retain a high degree of integrity.
43 Whenever possible, adaptive use of historic
44 structures for park needs is considered
45 before building new infrastructure.

46

47 *Strategies*

48

- 49 ▪ Prepare historic structure inventories
50 and reports, and amend them as
51 needed. Implement actions identified
52 in historic structure reports and add a
53 record of treatment to the reports.
- 54 ▪ Prepare and update national register
55 nominations as appropriate.
- 56 ▪ Monitor, inspect, and manage
57 identified and evaluated historic
58 structures to enable long-term
59 preservation of historic features,
60 qualities, and materials.
- 61 ▪ Use historic structures as they were
62 historically used, or adaptively use
63 them in ways that are compatible with
64 park purpose and that maximize
65 retention of historic materials,
66 features, spaces, and spatial
67 relationships.
- 68 ▪ Consider historic buildings for
69 appropriate adaptive use by other
70 public and private entities to assist in
71 preservation of the structures.
- 72 ▪ Create design guidelines and/or
73 historic structure reports for specific
74 areas in the park to preserve
75 architectural and character-defining
76 features. Include provisions for design
77 review to ensure the compatibility of
78 new planning, design, and
79 construction.
- 80 ▪ Aggressively pursue basic
81 preservation maintenance activities to
82 maintain historic materials in good
83 condition.
- 84 ▪ Monitor and regulate use impacts on
85 minimize both immediate and long-
86 term damage to structures.
- 87 ▪ Involve historical architects and other
88 professionals in work that could affect
89 historic structures.

90

1 USE OF THE PARK

2 *National parks belong to all*
 3 *Americans, and the National Park*
 4 *Service will welcome all Americans to*
 5 *experience their parks. The Service*
 6 *will focus special attention on visitor*
 7 *enjoyment of the parks while*
 8 *recognizing that the NPS mission is to*
 9 *conserve unimpaired each park's*
 10 *natural and cultural resources and*
 11 *values for the enjoyment, education,*
 12 *and inspiration of present and future*
 13 *generations. The Service will also*
 14 *welcome international visitors, in*
 15 *keeping with its commitment to*
 16 *extend the benefits of natural and*
 17 *cultural resource conservation and*
 18 *outdoor recreation throughout the*
 19 *world.*

20

21 Visitors from diverse backgrounds can
 22 experience a range of opportunities
 23 consistent with the purpose, significance, and
 24 fundamental resources and values of the
 25 park. Most visitors understand and
 26 appreciate the purpose and significance of
 27 the park and value their stewardship role in
 28 preserving natural and cultural features. They
 29 actively contribute to the park's preservation
 30 through appropriate use and behavior. Park
 31 programs and services are accessible to all,
 32 and conflicts between different user groups
 33 are minimized.

34

35 Visitor use levels and activities are consistent
 36 with preserving park purpose, significance,
 37 and fundamental resources and values, and
 38 with providing opportunities for recreation,
 39 education, and inspiration. Management
 40 decisions are based on scholarly and
 41 scientific information. When such
 42 information is lacking, managers make
 43 decisions based on the best available
 44 information, adapting as new information
 45 becomes available. Regional recreational
 46 opportunities continue to be coordinated
 47 among agencies for public benefit and ease of
 48 use.
 49

50 *Strategies*

- 51
- 52 ■ Work toward providing programs and
 53 facilities that are effective in reaching
 54 and serving diverse communities.
- 55 ■ Collect data over time to monitor
 56 visitor experiences as part of an
 57 overall effort to protect desired
 58 resource conditions and visitor
 59 experiences.
- 60 ■ Address threats to resources and
 61 visitor experience by means other
 62 than limiting or restricting use (e.g.,
 63 through education programs). If
 64 necessary, however, implement more
 65 restrictive methods.
- 66 ■ Base restrictions on visitor use on a
 67 determination by the park
 68 superintendent that such measures
 69 are consistent with the park's enabling
 70 legislation and NPS policies, are
 71 necessary to prevent degradation of
 72 the purposes and values for which the
 73 park was established, will minimize
 74 visitor use conflicts, or will provide
 75 opportunities for quality visitor
 76 experiences.

79 INTERPRETATION AND EDUCATION

80

81 *Through interpretive and*
 82 *educational programs, the NPS will*
 83 *instill in park visitors an*
 84 *understanding, appreciation, and*
 85 *enjoyment of the significance of parks*
 86 *and their resources. Interpretive and*
 87 *educational programs will encourage*
 88 *the development of a personal*
 89 *stewardship ethic, and broaden*
 90 *public support for preserving park*
 91 *resources.*

92

93 Interpretive and educational
 94 services/programs at the park facilitate
 95 intellectual and emotional connections
 96 between visitors and park resources, foster
 97 understanding of park resources and
 98 resource stewardship, and build a local and

1 national constituency. Outreach programs
 2 through schools, organizations, and
 3 partnerships build connections to the park.
 4 Curriculum and place-based education
 5 inspire student understanding and resource
 6 stewardship. Visitors receive adequate
 7 information to orient themselves to the park
 8 and possible opportunities for a safe and
 9 enjoyable visit.

10
 11 **Strategies**

- 12
 13 ▪ Develop and implement a
 14 comprehensive interpretive plan, with
 15 emphasis on providing information,
 16 orientation, and interpretive services
 17 in the most effective manner possible.
 18 Use both personal services (involving
 19 authorized staff) and nonpersonal
 20 services (including state-of-the-art
 21 technologies) as appropriate.
- 22 ▪ Stay informed of changing visitor
 23 demographics and preferences to
 24 effectively tailor programs for visitors.
 25 Develop interpretive media
 26 supportive of park purpose,
 27 significance, interpretive themes, and
 28 fundamental resources and values.
- 29 ▪ Continue to promote improved pre-
 30 trip planning information and
 31 orientation for park visitors through
 32 the park’s website and other media.
 33 Work with local communities and
 34 other entities to provide services
 35 outside park boundaries, where
 36 appropriate.
- 37 ▪ Cooperate with partners, other
 38 governmental agencies, educational
 39 institutions, and other organizations
 40 to enrich interpretive and educational
 41 opportunities locally, regionally, and
 42 nationally.
- 43 ▪ Create and implement an education
 44 strategy plan, which outlines goals
 45 and actions for providing curriculum
 46 and place-based education programs.
- 47 ▪ Continue to regularly update plans
 48 and prioritize actions needed to serve

- 49 visitors and provide effective
 50 interpretation.
- 51 ▪ Continue to educate staff, visitors,
 52 and the public about park
 53 interpretation/education programs.

54
 55
 56 **PARK FACILITIES**

57
 58 *The National Park Service will*
 59 *provide visitor and administrative*
 60 *facilities that are necessary,*
 61 *appropriate, and consistent with the*
 62 *conservation of park resources and*
 63 *values. Facilities will be harmonious*
 64 *with park resources, compatible with*
 65 *natural processes, esthetically*
 66 *pleasing, functional, energy- and*
 67 *water-efficient, cost-effective,*
 68 *universally designed, and as*
 69 *welcoming as possible to all segments*
 70 *of the population. NPS facilities and*
 71 *operations will demonstrate*
 72 *environmental leadership by*
 73 *incorporating sustainable practices to*
 74 *the maximum extent practicable in*
 75 *planning, design, siting, construction,*
 76 *and maintenance.*

77
 78 **General:** Park facilities and related
 79 development are the minimum necessary to
 80 serve visitor needs and protect park
 81 resources. Visitor and administrative facilities
 82 are as compatible as possible with natural
 83 processes and surrounding landscapes,
 84 aesthetically pleasing, and functional.
 85 Historic structures and properties are
 86 adaptively used when practicable and
 87 appropriate. Staff housing is sufficient to
 88 ensure an adequate level of protection for
 89 park resources, visitors, employees, and
 90 government property, and to provide
 91 necessary services. Adequate response
 92 (equipment and people) for visitor, resource,
 93 and facility protection; search-and-rescue;
 94 fire management; and safety is available.
 95 Decisions regarding park operations,
 96 facilities management, and development at
 97 the park from initial concept through design

1 and construction reflect principles of
2 resource conservation and sustainability.

4 *Strategies*

- 6 ▪ Build, locate, and/or modify facilities
7 according to the *Guiding Principles of*
8 *Sustainable Design* (NPS 1993) or
9 similar guidelines. Establish
10 architectural guidelines to ensure
11 sustainability and compatibility with
12 the natural and cultural environment.
13 Properly maintain and upgrade
14 existing facilities using sustainability
15 principles, where possible, to serve
16 the park mission.
- 17 ▪ Consider the availability of existing or
18 planned facilities in nearby
19 communities and on adjacent lands,
20 as well as the possibility of joint
21 facilities with other agencies, when
22 deciding whether to pursue new
23 developments in the park. This will
24 ensure that any additional facilities in
25 the park are necessary, appropriate,
26 and cost-effective.
- 27 ▪ Integrate NPS asset management
28 practices into decision making and
29 planning. Build, modify, and/or
30 maintain facilities according to
31 projected funding levels and defined
32 park priorities. Consider removal of
33 facilities that do not meet minimum
34 NPS criteria or are not cost-effective
35 to maintain.
- 36 ▪ Continue to strive to provide
37 affordable housing within the park for
38 emergency response staff, seasonal
39 and entry-level employees,
40 volunteers, and to support other park
41 needs (housing for researchers, etc.)
- 42 ▪ Provide commercial visitor services
43 (for example services provided
44 through concessioners) that are
45 necessary and appropriate for visitor
46 use and enjoyment through the use of
47 concession contracts and commercial
48 use authorizations. Ensure that

49 concession operations are consistent
50 with the protection of park resources
51 and values and demonstrate sound
52 environmental management and
53 stewardship.

56 **ACCESSIBILITY**

57 New and renovated facilities are designed
58 and constructed to be universally accessible
59 in accordance with section 504 of the
60 Rehabilitation Act of 1973 as amended,
61 section 508 of the Rehabilitation Act, and the
62 Architectural Barriers Act Accessibility
63 Standards (2006). The National Park Service
64 also has Director's Order 42: *Accessibility for*
65 *Visitors with Disabilities in National Park*
66 *Service Programs and Services* and Director's
67 Order 16A: *Reasonable Accommodation for*
68 *Applicants and Employees with Disabilities*.
69 Visitors with disabilities have opportunities
70 to experience the park open spaces, waters,
71 historic structures, and cultural landscapes,
72 and to enjoy representative portions of the
73 backcountry.

75 *Strategies*

- 76 ▪ Identify and modify existing facilities
77 to meet accessibility standards as
78 funding permits, or as facilities are
79 replaced or rehabilitated. Design new
80 facilities to meet current Architectural
81 Barriers Act Accessibility standards.
- 82 ▪ Provide public information about ease
83 or difficulty of access for various
84 facilities and trails.
- 85 ▪ Periodically consult with public
86 interests groups and people with
87 disabilities or their representatives to
88 increase awareness of the needs of
89 people with disabilities and to
90 determine how to make the park
91 more accessible for everyone.
- 92 ▪ Develop park interpretive programs
93 per accessibility standards and the
94 needs of people with disabilities.

**APPENDIX D:
TABLE OF SPECIAL STATUS SPECIES
(INCLUDING THREATENED AND ENDANGERED SPECIES AND
CANDIDATE SPECIES)**

Common Name of Listed Species	Scientific Name	Retained for Impact Analysis	Designated Status ^a		Counties with Habitat in Planning Area ^b
			Federal	State	
Invertebrates					
bay checkerspot butterfly	<i>Euphydryas editha bayensis</i>		T, X	-	SM
black abalone	<i>Haliotes cracherodii</i>		E	-	M, SF, SM
mission blue butterfly	<i>Icaricia icarioides missionensis</i>		E	-	M, SM
San Bruno elfin butterfly	<i>Incisalia mossii bayensis</i>		E	-	SM
Myrtle's silverspot butterfly	<i>Speyeria zerene myrtleas</i>		E	-	M*, SM
California freshwater shrimp	<i>Syncaria pacifica</i>		E	E	M*
Fish					
green sturgeon	<i>Acipenser medirostris</i>		T, X	-	M, SF
tidewater goby	<i>Eucyclogobius newberryi</i>		E, X	-	M, SM
coho salmon (central California coast ESU)	<i>Oncorhynchus kisutch</i>		E, X	E	M, SM
steelhead trout (central California coast ESU)	<i>Oncorhynchus mykiss</i>		T, X	-	M, SF, SM
steelhead trout (central valley ESU)	<i>Oncorhynchus mykiss</i>		T, X	-	M, SF
Chinook salmon (California coastal ESU)	<i>Oncorhynchus tshawytscha</i>		T, X	-	M
Chinook salmon (central valley spring run)	<i>Oncorhynchus tshawytscha</i>		T, X	T	M, SF
Chinook salmon (Sacramento River winter run)	<i>Oncorhynchus tshawytscha</i>		E, X	E	M, SF
Amphibians					
California tiger salamander (Sonoma)	<i>Ambystoma californiense</i>		E	T	M, SM
California red-legged frog	<i>Rana draytonii</i>		T,X	-	M, SF, SM

Common Name of Listed Species	Scientific Name	Retained for Impact Analysis	Designated Status ^a		Counties with Habitat in Planning Area ^b
			Federal	State	
Reptiles					
loggerhead turtle	<i>Caretta caretta</i>		T	-	M, SF, SM
green turtle	<i>Chelonia mydas</i>		T	-	M, SF, SM
leatherback turtle	<i>Dermochelys coriacea</i>		E, PX	-	M, SF, SM
olive ridley sea turtle	<i>Lepidochelys olivacea</i>		T	-	M, SF, SM
San Francisco garter snake	<i>Thamnophis sirtalis tetrataenia</i>		E	E	SM
Birds					
marbled murrelet	<i>Brachyramphus marmoratus</i>		T,X	E	M, SF, SM
western snowy plover	<i>Charadrius alexandrinus nivosus</i>		T	-	M, SF, SM
little willow flycatcher	<i>Empidonax trailii brewsteri</i>		SC	E	M, SF, SM
peregrine falcon	<i>Falco peregrinus anatum</i>		Delisted; monitored until 2015		M, SF, SM
bald eagle	<i>Haliaeetus leucocephalus</i>		Delisted; monitored until 2028	E	M, SF, SM
California black rail	<i>Laterallus jamaicensis coturniculus</i>		SC	T	M, SM
California clapper rail	<i>Rallus longirostris obsoletus</i>		E	E	M, SF, SM
bank swallow	<i>Riparia riparia</i>		-	T	SF
California least tern	<i>Sternula antillarum</i>		E	E	M, SF, SM
northern spotted owl	<i>Strix occidentalis caurina</i>		T	-	M
Mammals					
southern sea otter	<i>Enhydra lutris nereis</i>		T	-	SM
Steller sea lion	<i>Eumetopias jubatus</i>		T, X	-	M, SF, SM
humpback whale	<i>Megaptera novaeangliae</i>		E	-	M, SF, SM
salt marsh harvest mouse	<i>Reithrodontomys raviventris</i>		E	E	M, SF, SM

Common Name of Listed Species	Scientific Name	Retained for Impact Analysis	Designated Status ^a		Counties with Habitat in Planning Area ^b
			Federal	State	
Plants					
San Mateo thornmint	<i>Acanthomintha duttonii</i>		E	E	SM
Franciscan manzanita	<i>Arctostaphylos franciscana</i>		Under Review	-	SF
Presidio manzanita	<i>Arctostaphylos hookeri ssp. ravenii</i>		E	E	SF
Tiburon paintbrush	<i>Castilleja affinis ssp. neglecta</i>		E	T	M
fountain thistle	<i>Cirsium fontinale var. fontinale</i>		E	E	SM
Gowen cypress	<i>Cupressus goveniana ssp. goveniana</i>		T		SM
Presidio clarkia	<i>Clarkia franciscana</i>		E	E	SF
yellow larkspur	<i>Delphinium luteum</i>		E, X	Rare	M*
San Mateo wooly sunflower	<i>Eriophyllum latilobum</i>		E	E	SM
Marin dwarf-flax	<i>Hesperolinon congestum</i>		T	T	M, SF, SM
San Francisco lessingia	<i>Lessingia germanorum</i>		E	E	SF, SM
white-rayed pentachaeta	<i>Pentachaeta bellidiflora</i>		E	E	SM
San Francisco popcornflower	<i>Plagiobothrys diffuses</i>		-	E	SF
Hickman's potentilla	<i>Potentilla hickmanii</i>		E	E	SM
California seablite	<i>Suaeda californica</i>		E	-	SF
showy Indian clover	<i>Trifolium amoenum</i>		E	-	M

(a) Key for Designated Status columns:

- (E) Endangered - Listed as being in danger of extinction
- (T) Threatened - Listed as likely to become endangered within the foreseeable future
- (X) Critical Habitat designated for this species [Critical Habitat - Area essential to the conservation of a species.]
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it
- (SC) Species of Concern

(b) Key for Counties Column:

- (M) Marin County
- (M*) In Golden Gate National Recreation Area within Marin County, but in area managed by Point Reyes National Seashore
- (SF) San Francisco County
- (SM) San Mateo County

APPENDIX E: DESCRIPTIONS OF LOCAL TRANSIT SERVICE

1 **MARIN COUNTY**

2 **West Marin Stagecoach**

3 Administered by Marin Transit and operated
4 under contract with MV Transportation, the
5 Stagecoach provides the only public
6 transportation service to West Marin County.

7
8 Two of the three Stagecoach fixed routes
9 serve a popular Golden Gate National
10 Recreation Area site, Stinson Beach: Route 61
11 (South Route), between Marin City and
12 Bolinas via Panoramic and Shoreline
13 highways; and Route 62 (Coastal Route),
14 between Stinson Beach, Bolinas and Point
15 Reyes Station via Shoreline Highway. Route
16 61 operates seven days a week, while Route
17 62 operates on Tuesdays, Thursdays and
18 Saturdays only. Service is generally provided
19 every few hours, although on weekends from
20 March to December, Route 61 operates on
21 headways of as little as 80 minutes.

22 Connections may be made between Route 61
23 and Golden Gate Transit routes serving
24 urbanized areas of Marin County, Sonoma
25 County and San Francisco at Marin City.

26
27 West Marin Stagecoach vehicles are
28 equipped with exterior racks accommodating
29 up to two bicycles. Adult cash fares for both
30 fixed-route and dial-a-ride service are \$2.

33 **Golden Gate Transit**

34 The Golden Gate Bridge District provides
35 bus service in eastern Marin County, Sonoma
36 County, and San Francisco as Golden Gate
37 Transit. Marin County park sites are served
38 only tangentially by Golden Gate Transit,
39 although Golden Gate Transit routes connect
40 to the West Marin Stagecoach and Muir
41 Woods Shuttle, expanding the reach of both.

42

43 Gerbode and Rodeo Valley trails can be
44 accessed from the Spencer Avenue bus pad
45 along Highway 101. The stop is served by
46 routes, 4, 8, 18, 70 and 80; the first three
47 operate only during commute hours in the
48 peak direction (south in the morning, north
49 in the afternoon), but Routes 70 and 80
50 operate all day, seven days a week, serve the
51 Highway 101 corridor as far north as Santa
52 Rosa, and extend well into San Francisco,
53 connecting to the Civic Center / UN Plaza
54 BART station and terminating at the
55 Transbay Terminal, a hub for regional buses
56 including AC Transit Transbay buses from
57 the East Bay.

58
59 The only other park site served by Golden
60 Gate Transit is Fort Baker. Fort Baker is only
61 a few hundred feet, as the crow flies, from a
62 stop along Alexander Avenue at Bunker
63 Road. However, the stop is about 200 feet
64 above the site, and access requires a walk
65 alongside Alexander Avenue, then a steep
66 hike down to the site (alternately, bus riders
67 may use a more distant stop, along Alexander
68 Avenue at East Road, which descends gently
69 into the site). Moreover, while routes 2, 4, 10,
70 70, and 80 all serve the stop, only Route 10
71 makes more than a few early morning or
72 evening stops, operating on roughly 60-
73 minute headways seven days a week. (The
74 *Marin Headlands / Fort Baker Plan* proposes
75 to realign Route 10 through the site.)

76
77 Multiple Golden Gate Transit routes provide
78 regional connections to West Marin
79 Stagecoach and Muir Woods Shuttle service
80 at the San Rafael Transit Center, Manzanita
81 Park and Ride, Marin City and Sausalito
82 Ferry Terminal. Golden Gate Ferry service
83 from San Francisco also serves the latter,
84 making timed connections to Muir Woods
85 Shuttles when that service is in operation.

86

- 1 Golden Gate Transit buses are equipped with
2 exterior bike racks, and fares vary according
3 to distance traveled.
- 4 **San Francisco Muni**
- 5 The San Francisco Municipal Railway
6 (Muni), a division of the San Francisco
7 Municipal Transportation Agency (SFMTA),
8 provides limited bus service to the Marin
9 Headlands via Route 76. Route 76 operates
10 on hourly headways on Sundays and holidays
11 between the San Francisco Caltrain terminus
12 and Fort Cronkite. Within San Francisco, it
13 operates via the Montgomery BART station,
14 Union Square district (with its many hotels),
15 Van Ness Avenue and Lombard Street,
16 connecting to multiple local Muni routes.
17 Within the Headlands, it operates via
18 Conzelman, McCullough, Bunker and Field
19 roads to Battery Alexander, then via Field,
20 Bunker and Mitchell roads to Fort Cronkite
21 and Rodeo Cove, serving numerous sites
22 within the Headlands. Most Muni buses are
23 equipped with dual exterior bike racks. Adult
24 cash fare is \$1.50.
- 25
26 Among the recommendations made in 2008
27 by the SFMTA Transit Effectiveness Project
28 (TEP), a major proposed revision of Muni
29 service, was a significant increase in Route 76
30 service. While the route would no longer
31 terminate at the Caltrain station, ending
32 instead at Montgomery BART, service would
33 be provided every 30 minutes on both
34 Saturdays and Sundays. TEP
35 recommendations are currently undergoing
36 environmental review, with no firm date set
37 yet for implementation.
- 38 **SAN FRANCISCO**
- 39 Muni service is described in general terms in
40 the main body of this document. Following
41 are details of routes serving Golden Gate
42 National Recreation Area sites. Moving from
43 east to west, and then north to south, park
44 sites and the Muni routes serving them are
45 the following:
- 46 ■ Aquatic Park and the east side of Fort
47 Mason are served by bus routes 10,
48 19, 20, 30, 47, and 49. The Powell and
49 Hyde cable car line terminates a few
50 hundred feet to the east, and the F-
51 Market and Wharves historic
52 streetcar line terminates a few blocks
53 to the east of that.
 - 54 ■ The west side of Fort Mason is served
55 directly by Route 28, and Routes 22
56 and 30 stop a short walk away.
 - 57 ■ The Presidio Main Post is served by
58 routes 29 and 43. Routes 28, 30, 41
59 and 45 stop just outside the park's
60 eastern entrance, the Lombard Gate.
 - 61 ■ Crissy Field is served by Route 29.
 - 62 ■ There is no direct Muni bus service to
63 Fort Point, although routes 28, 29 and
64 76 (on Sundays only) stop above it, at
65 the Golden Gate Bridge. Fort Point
66 can be accessed by hiking a few
67 hundred feet downhill.
 - 68 ■ Baker and China beaches are
69 indirectly served by Route 29, which
70 stops a few hundred feet away.
 - 71 ■ Lands End is served by Route 18,
72 which terminates at the Palace of the
73 Legion of Honor.
 - 74 ■ Fort Miley is served during the day by
75 a branch of Route 38. Evenings, the
76 route's main branch stops one block
77 away.
 - 78 ■ Sutro Heights, Sutro Bath, and the
79 Cliff House are served by the busy
80 routes 38 and 38L, which terminate at
81 48th Avenue, adjacent to Sutro
82 Heights and a short walk from the
83 other two sites. The Cliff House is
84 served directly by Route 18.
 - 85 ■ Ocean Beach encompasses much of
86 San Francisco's coastline, and as such
87 is served by multiple Muni routes,
88 including the N-Judah (near its
89 northern end, just south of Golden
90 Gate Park) and L-Taraval (near its
91 southern end, north of the San
92 Francisco Zoo) Muni Metro light rail
93 lines. Bus routes 5, 23, 31, 38

1 (southern branch), 48, 71 and 71L also
 2 terminate a short walk away from
 3 Ocean Beach. Route 18 parallels the
 4 entire beach, running a few blocks
 5 away along 45th Avenue for much of
 6 its length, and alongside the Great
 7 Highway immediately adjacent to
 8 Ocean Beach for part of it.

- 9 ■ Fort Funston is served, indirectly, by
 10 Route 18, which operates along
 11 Skyline Boulevard to its east. The
 12 peak-only Route 88 also terminates a
 13 short distance away.

14
 15 The Powell and Mason and F-Market and
 16 Wharves lines, as well as routes L, N, 5, 10,
 17 19, 20, 22, 23, 28, 28L, 30, 31, 38, 38L, 41, 45,
 18 48, 49, 71 and 71L, all connect to BART
 19 stations. Routes N, 10, 30, 45, 47 and 48
 20 connect to Caltrain stations. Routes L, N, 10,
 21 20, 31, 41, 71 and 71L stop a short walk from
 22 the city’s main Ferry Building, and routes 10
 23 and 47 stop a short walk from ferry landings
 24 at Piers 33 and 41 at Fisherman’s Wharf.

25
 26 In 2008, an audit of Muni services, the Transit
 27 Effectiveness Project, or TEP, recommended
 28 changes to Muni routes that would
 29 alternately improve or reduce service to park
 30 sites. These recommendations, now
 31 undergoing environmental review, include
 32 the following:

- 33
 34 ■ elimination of Route 10, replacement
 35 of Route 20 with a more frequent
 36 Route 11, and increased capacity on
 37 Route 30, using larger buses
- 38 ■ realignment of Route 43 through the
 39 Presidio Main Post (it now serves the
 40 Main Post's southeastern corner)
- 41 ■ termination of Route 29 near Baker
 42 Beach, eliminating service to the
 43 Golden Gate Bridge (service to the
 44 bridge would continue to be provided
 45 by Route 28)
- 46 ■ realignment of Route 18 so that it
 47 would no longer serve the Cliff
 48 House / Sutro Heights area

- 49 ■ increased service on Routes L, N, 38L,
 50 48 and 71L
- 51 ■ replacement of Route 18 service on
 52 Skyline Boulevard with realigned
 53 Route 17 service
- 54 ■ a new 29L “super-limited” route
 55 operating between Van Ness and
 56 North Point, near Aquatic Park, and
 57 southern San Francisco via Lombard
 58 Street, Doyle Drive, Park Presidio
 59 Boulevard and 19th Avenue—this
 60 route was developed partly in
 61 response to endemic traffic
 62 congestion on 19th Avenue.

63 SAN MATEO COUNTY

64 SamTrans service is generally described in
 65 the main body of this document. All 100-
 66 series routes listed below connect to BART
 67 stations, 200-series routes connect to Caltrain
 68 stations, and 300-series routes connect to
 69 both. SamTrans buses are equipped with dual
 70 bike racks, and adult cash fares are \$1.75.

- 71
 72 ■ Routes 14, 16, 17, 110, 112, 121, 123,
 73 140, 294, CX and DX stop near
 74 Golden Gate National Recreation
 75 Area sites adjacent to Pacifica and
 76 Montara. Seven of those routes, most
 77 of them serving suburban areas to the
 78 north, converge at a “park and ride”
 79 lot at the Linda Mar Shopping Center
 80 near Point San Pedro. Mori Point is
 81 well-served by the relatively frequent
 82 routes 110 and 112, which connect to
 83 BART stations to the north. Because
 84 of its proximity to Skyline College,
 85 approximately a half-mile away,
 86 Milagra Ridge may be the San Mateo
 87 County park site best-served by
 88 transit, as routes 121, 123 and 140, all
 89 of which connect to the BART
 90 stations, all operate relatively
 91 frequently seven days a week.
- 92 ■ In the SFPUC watershed, Route 342
 93 provides access to the Sawyer Camp
 94 and San Andreas trails, and Route 294

APPENDIXES

1 stops near the north trailhead of
2 Crystal Springs Trail. However,
3 neither of these routes operates on
4 weekends.

5 ■ The Phleger Estate is inaccessible via
6 public transit.

7

APPENDIX F: DESCRIPTION OF SAN MATEO COUNTY TRAILS

- 1 Pedestrian conditions at Golden Gate
2 National Recreation Area sites in San Mateo
3 County are described in general terms in the
4 main body of this document. Following are
5 details of major trails, moving from north to
6 south:
- 7
 - 8 ▪ Milagra Ridge features two well-
9 maintained multiuse trails, one of
10 which is paved and relatively level,
11 while the other is unpaved and steep.
12 While these trails do not connect to
13 other NPS sites, Sweeney Ridge is
14 about one mile to the south, and
15 pedestrians can access it from Milagra
16 Ridge via the Skyline College campus.
17 The Bay Area Ridge Trail runs
18 through both Milagra Ridge and
19 Sweeney Ridge.
 - 20 ▪ Sweeney Ridge includes several
21 ridgeline trails with excellent
22 connectivity to nearby trails including
23 Baquiano and Mori Ridge. While its
24 trails are scenic, they are typically
25 steep and unpaved. Golden Gate
26 National Recreation Area and the City
27 of Pacifica recently collaborated on
28 improved access to Cattle Hill /
29 Sweeney Ridge at the top of Fassler
30 Avenue.
 - 31 ▪ Mori Point provides excellent
32 connectivity to the adjacent beaches
33 via a grade-separated path.
34 Improvements to the Coastal Trail
35 segment through Mori Point were
36 recently completed.
 - 37 ▪ Point San Pedro trails are not well
38 developed, although a Coastal Trail
39 connection through the eastern
40 portion of the site is planned to
41 connect Pacifica with the future
42 trailhead at Devil's Slide.
 - 43 ▪ Rancho Corral de Tierra access is
44 currently on county trails north of
45 Montara connecting to McNee Ranch
46 State Park. In the Moss Beach area of
47 the site, trails primarily connect to the
48 equestrian facilities or provide
49 trailhead access from State Route 1.
50 The site is popular with horseback
51 riders due to three equestrian facilities
52 nearby. There is evidence of illegal
53 motorcycle and four-wheel drive
54 truck use.
 - 55 ▪ The trails in the SFPUC watershed,
56 along the eastern shores of San
57 Andreas Lake and Upper and Lower
58 Crystal Springs Reservoir, are among
59 the most popular on the Peninsula.
60 Six miles of the San Andreas and
61 Sawyer Creek trails are paved, and
62 feature a striped median, mile
63 markers, restrooms and a lush tree
64 canopy. The 10-mile Fifield-Cahill
65 Ridge Trail is managed by the San
66 Francisco Public Utilities Commission
67 and is open only by reservation to
68 docent-led tour groups of no more
69 than 18 people.
 - 70 ▪ Phleger Estate's steep trails are
71 prohibited to bicyclists and dogs and
72 are popular with horseback riders.
73 They are well-marked, well-
74 maintained, and connect to about a
75 dozen trails in the area. However, the
76 site is remote relative to other park
77 sites in San Mateo County.
 - 78
 - 79 A number of improvements to the San Mateo
80 County trails network, including trails
81 through Golden Gate National Recreation
82 Area sites, are planned or have been
83 proposed. These include the following:
 - 84
 - 85 ▪ Three new multiuse trails are
86 proposed linking San Bruno

1 Mountain to existing trails including
2 the Ridge Trail at Milagra Ridge.
3 ■ At Sweeney Ridge, San Mateo County
4 plans to connect the Valley View Trail
5 to the Ridge Trail and extend the San
6 Andreas Trail to the Sneath Lane
7 Trail.
8 ■ The Devil's Slide project will replace
9 the existing Route 1 roadway along a
10 segment of coastline plagued by
11 landslides with a multiuse trail
12 extending north through Point San
13 Pedro to Pacifica State Beach and
14 south to McNee Ranch State Park,
15 closing a gap in the California Coastal
16 Trail. This project is under
17 construction and is anticipated to be
18 complete by 2011.

19 ■ Connection and extension of the San
20 Andreas, Sawyer Creek and Crystal
21 Springs trails is planned in order to
22 create an uninterrupted,
23 nonmotorized, multiuse route from
24 the City of San Bruno to the Town of
25 Woodside. Along segments, a parallel
26 route for equestrians and hikers
27 would be developed. Multiple
28 projects would also improve
29 connectivity from surrounding areas
30 to the SFPUC watershed lands.
31
32 Finally, multiple new trails are proposed
33 around Phleger Estate, including new access
34 trails requiring bridges over West Union
35 Creek.

**APPENDIX G:
CONSULTATION AGENCY LETTERS**

US Fish and Wildlife Service

PLACE HOLDER FOR OFFICIAL LETTER



Making San Francisco Bay Better

RECEIVED
DEC -9 2011
SUPERINTENDENT'S OFFICE

December 8, 2011

Superintendent
Golden Gate National Recreation Area
Attn: Draft GMP/EIS
Building 201, Fort Mason
San Francisco, CA 94123

SUBJECT: Golden Gate National Recreation Area (GGNRA)/Muir Woods National Monument Draft General Management Plan/Draft Environmental Impact Statement (DEIS); BCDC Inquiry File No.: MCMC.7603.1

Dear Superintendent:

The San Francisco Bay Conservation and Development Commission (BCDC) staff appreciates the opportunity to review and comment on the Draft General Management Plan/DEIS for the GGNRA/Muir Woods National Monument dated September 2011. Although our Commission has not had the opportunity to review the draft document, the staff comments are based on BCDC's law, the McAteer-Petris Act and the policies of the *San Francisco Bay Plan* (Bay Plan).

Commission Jurisdiction and Authority. As a regulatory authority for the San Francisco Bay and shoreline, BCDC is responsible for granting or denying permits for any proposed fill (earth or any other substance or material, including pilings or structures placed on pilings, and floating structures moored for extended periods), extraction of materials or change in use of any water, land or structure within the its jurisdiction. Generally, BCDC's jurisdiction over the Bay extends from the Golden Gate (Point Bonita to Point Lobos) to the Sacramento River and includes tidal areas up to the mean high tide level, including all sloughs, and marshlands up to five feet above mean sea level; the shoreline band consisting of territory located between the Bay shoreline and 100 feet landward and salt ponds; managed wetlands (areas diked from the Bay and managed as duck clubs); and "certain waterways" leading to the Bay.

The Commission grants permits for projects if it finds that they are either (1) necessary to the health, safety or welfare of the public in the entire Bay Area, or (2) consistent with the provisions of the McAteer-Petris Act and the Bay Plan. The McAteer-Petris Act states that fill in the Bay must serve a water-oriented use and, among other things, must have no upland alternative, be the minimum to achieve the project purpose, and not cause adverse impacts to Bay resources. The McAteer-Petris Act and the Bay Plan also require that proposed projects provide the maximum feasible public access consistent with the project.

The Commission's Bay Plan also includes priority land use designations sites along the shoreline to ensure that sufficient area is reserved for important water-oriented uses, such as ports, airports, water-related industry, parks, and wildlife areas. Much of the Golden Gate National Recreation Area is located within an area designated for Waterfront Park and Beach priority use. Projects within such areas which are inconsistent with the designated uses require an amendment to the Bay Plan. The Muir Woods National Monument is not located within the Commission's jurisdiction.

Finally, BCDC—along with the California Coastal Commission—are the California state agencies whose coastal management programs are consistent with the Coastal Zone Management Act. This should be noted on page 70 of Volume III under the Section “Coastal Zone Management Act Consistency”. We understand that the GGNRA/Muir Woods National Monument Draft General Management Plan/DEIS is a programmatic document and does not address or propose for implementation site specific federal activities. Please note that a consistency determination will be required prior to implementation of any such activities.

Public Access. Section 66602 of the McAteer-Petris Act states, in part, that “existing public access to the shoreline and waters of the San Francisco Bay is inadequate and that maximum feasible public access, consistent with a proposed project, should be provided.” Furthermore, the McAteer-Petris Act allows for the placement of fill in the Bay for water-oriented uses or for improving shoreline appearance or public access.

The GGNRA provides tremendous opportunities to recreate on and near the shoreline of the Bay at numerous locations, including Fort Mason, Crissy Field and Fort Baker. Any project identified in the Draft General Management Plan/EIS which requires Bay fill or new shoreline facilities, such as the development of a water shuttle at Fort Mason and improvements to the historic Alcatraz pier (Pier 4), should address public access improvements and how they would provide “maximum feasible access to and along the waterfront.” In addition, various alternatives in the Draft General Management Plan/EIS anticipate expansion of visitor use and access, which will likely further improve the visitor experience within the park and along the shoreline. The Final General Management Plan should recognize the potential for conflict between public access and adjacent sensitive habitat that exists at various locations, including Alcatraz and Crissy Field.

Transportation. Alternative 1 of the Draft General Management Plan anticipates improved access to the park by a water shuttle at Lower Fort Mason, expansion of the F line and development of bus rapid transit on Van Ness Avenue. It is foreseeable that some of these improvements could potentially occur within BCDC’s jurisdiction. Due to the vulnerability of the Bay to filling for transportation projects the Commission encourages alternative methods of transportation and land use planning efforts that support transit and that do not require fill.

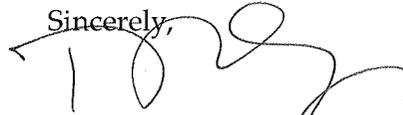
Recreation. The GGNRA provides a vast array of recreational opportunities for park users and the Final General Management Plan will likely lead to future improvements to the park’s recreational opportunities. Bay Plan policies state that “Diverse and accessible water-oriented recreational facilities, such as marinas, launch ramps, beaches, and fishing piers, should be provided to meet the needs of a growing and diversifying population, and should be well distributed around the Bay and improved to accommodate a broad range of water-oriented recreational activities for people of all races, cultures, ages and income levels.” Bay Plan Recreation policies also state in part “Ferry terminals may be allowed in waterfront park priority use areas and near fishing piers and launching lanes provided the development and operations of the ferry facilities do not interfere with current or future park and recreational uses, and navigational safety can be assured.”

Fish, Other Aquatic Organisms and Wildlife. The Golden Gate National Recreation Area provides a diverse array of habitat for species in coastal, marine and terrestrial environments. The Draft General Plan more than adequately identifies the potential for impacts upon habitats and species within the park. However, any project identified in the Final General Plan would need to be consistent with the Bay Plan policies on fish, aquatic organisms and wildlife. For example, Policy 1 states “To assure the benefits of fish, other aquatic organisms and wildlife for future generations, to the greatest extent feasible, the Bay’s tidal marshes, tidal flats, and subtidal habitat should be conserved, restored and increased.”

Sea Level Rise. Considering the potential impacts from climate change, such as sea level rise, it is appropriate that the General Management Plan addresses climate change impacts. Specifically, the Management Strategies identified in Volume I, Part 3, Page 118-120 are appropriate strategies to effectively respond and adapt to climate change impacts. BCDC has recently amended the Bay Plan to include a new "Climate Change" section and to amend the existing "Public Access, Safety of Fills, Shoreline Protection and Tidal Marsh/Tidal Flats" sections to allow the Commission to respond to climate change related impacts such as sea level rise. Upon adoption by the Office of Administrative Law the new and existing sections of the Bay Plan will be available at www.bcdc.ca.gov.

Thank you again for the opportunity to review and comment on the GGNRA Draft Management Plan/DEIS. If you have any questions please contact me directly at (415) 352-3667 or at timd@bcdc.ca.gov

Sincerely,



TIMOTHY DOHERTY
Coastal Planner

TM/gg

NOAA

PLACE HOLDER FOR OFFICIAL LETTER

California State Parks Office of Historic Preservation

PLACE HOLDER FOR OFFICIAL LETTER

CALIFORNIA COASTAL COMMISSION

45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE (415) 904-5200
FAX (415) 904-5400
TDD (415) 597-5885



December 14, 2012

Nancy Hornor
Chief of Planning
National Park Service
Golden Gate National Recreation Area
Fort Mason
San Francisco, CA 94123

Subject: Negative Determination ND-049-12 (General Management Plan for the Golden Gate National Recreation Area and Muir Woods National Monument, San Francisco, Marin and San Mateo Counties)

Dear Ms. Hornor:

The Coastal Commission staff has reviewed the above-referenced negative determination. The National Park Service (“NPS”) proposes to implement the General Management Plan (“Plan”) for the Golden Gate National Recreation Area and Muir Woods National Monument (“Park”). The Plan provides the goals, objectives, and strategies that are proposed to manage the Park into the future. The main purpose of the Plan is to “offer national park experiences to a large and diverse urban population while preserving and interpreting the park’s outstanding natural, historic, scenic and recreational values.”

The previous general management plan for the Golden Gate National Recreation Area was adopted in 1980. Since then the Park has significantly expanded in size, climate change has become a management reality and changing demographics have resulted in shifts in public demand, uses and trends at the Park, thus necessitating a Plan update. The proposed Plan addresses these changes through the following key elements: boundary adjustments, climate change planning, a Park facilities plan, Native American engagement strategies, ocean stewardship policies, maintenance and expansion of the Park’s trails and collections, and strategies to improve sustainable, multimodal access to Park sites. In addition to these overarching elements, the Plan presents three alternatives that propose different visions for managing the many areas included in the Park. The NPS preferred management alternative for park lands in Marin, San Francisco and San Mateo Counties is Alternative 1, “Connecting People with Parks,” with the goal of engaging the community in the “enjoyment, understanding and stewardship of park resources and values.” The NPS preferred management alternative for Muir Woods National Monument and Alcatraz Island is Alternative 3, “Focusing on National Treasures,” which seeks to preserve and encourage appreciation and enjoyment of these sites.

The Plan includes programmatic-level descriptions of projects proposed for implementation at the Park. For example, the Plan provides for continuing public access and recreation at various locations throughout the Park, including expanding regional park ferry access and the Muir Woods shuttle service, and improving non-motorized access to park lands. The Plan also provides for the improvement of existing facilities and the construction of new facilities, including trailheads, parking lots, campsites, picnic areas and restrooms that facilitate public access to coastal resources. Water-oriented recreational activities such as surfing, swimming, hiking, kayaking, fishing, boating and crabbing will continue to be supported at several locations within the Park.

In addition, the Plan seeks to protect and strengthen coastal ecosystems. The Ocean Stewardship section of the Plan contains several strategies that achieve this goal, including identifying and quantifying threats to marine resources, establishing sensitive resource zones and special closure areas to protect biological resources, reducing point and nonpoint source pollution within and adjacent to park lands, and developing strategies to respond to climate change. Furthermore, the Plan aims to preserve the scenic and visual qualities of park lands and coastal resources. Specific strategies, including vegetative screening, design of park facilities to avoid or minimize impacts to visual resources and maintenance of existing scenic viewpoints will be implemented as appropriate on a project-specific basis.

The subject negative determination for the Plan includes a commitment by the NPS to coordinate with the Commission to determine which future Plan projects will require individual consistency or negative determinations. While proposed Plan projects may affect coastal resources, the extent of these effects, if any, cannot be fully determined until subsequent, more detailed project planning is completed. As individual project planning is completed, the NPS will contact the Commission staff to determine the need for federal consistency review.

The Commission staff **agrees** that with the commitment for additional consistency review of future development projects, implementation of the General Management Plan for the Golden Gate National Recreation Area and Muir Woods National Monument will not adversely affect coastal resources. We therefore **concur** with your negative determination made pursuant to 15 CFR 930.35 of the NOAA implementing regulations. Please contact Kate Huckelbridge at (415) 396-9708 should you have any questions regarding this matter.

Sincerely,



(fjn)

CHARLES M. LESTER
Executive Director

cc: CCC – North Central Coast District

**APPENDIX H:
COORDINATION AGENCY LETTERS**



United States Department of the Interior



FISH AND WILDLIFE SERVICE
San Francisco Bay National Wildlife Refuge Complex
1 Marshlands Road, Fremont, California 94555

RECEIVED
DEC 16 2011
SUPERINTENDENT'S OFFICE

December 8, 2011

Superintendent Frank Dean
Golden Gate National Recreational Area
Building 201, Fort Mason
San Francisco, CA 94123

ATTN: DRAFT DGMP/EIS

RE: Comments on the Draft General Management Plan and Environmental Impact Statement

Dear Superintendent Dean,

We would like to take this opportunity to submit comments for the Draft General Management Plan (DGMP) and Environmental Impact Statement (EIS) for the Golden Gate National Recreational Area (GGNRA). The U.S. Fish and Wildlife Service, San Francisco Bay National Wildlife Refuge Complex manages a seabird restoration program known as the Common Murre Restoration Project. Our efforts are aimed at restoring depleted seabird populations along the central California coast, specifically those of the Common Murre (*Uria aalge*). As part of this project, we conduct a variety of studies examining breeding population sizes, reproductive performance, and impacts of human and natural disturbances to breeding seabirds. Study or survey sites within your planning area include Bird Island (or, Bird Rock) near Point Bonita, Alcatraz Island, San Pedro Rock, and Devil's Slide. Therefore, the comments provided focus on strengthening the preferred alternative within the coastal zone adjacent to sensitive seabird breeding or roosting areas.

Comments are divided into three parts and address the topic questions from the planning team: 1) What proposals or aspects do you like about the preferred alternative in this Draft General Management Plan/Environmental Impact Statement (DGMP/EIS); 2) Do you have any suggestions for improving the preferred alternative in this DGMP/EIS? If so, what are they; and 3) Do you have any other comments related to this DGMP/EIS?

1) Supported proposals or aspects of the preferred alternative in the Draft General Management Plan/Environmental Impact Statement:

The DGMP does an excellent job of recognizing important seabird nesting areas at Bird Rock (also called Bird Island; Marin County) and Alcatraz Island. We support the designation of the offshore areas at Point Bonita Cove and Bird Rock as a Sensitive Resources Zone. Bird Rock is an important roosting area for Brown Pelicans, Brandt's Cormorants, and other seabirds. The rock has also supported breeding Brandt's and Pelagic Cormorants, Western Gulls, and more

TAKE PRIDE
IN AMERICA 

recently, Common Murres. Murres were first observed attending Bird Rock in 2007 and breeding was verified in 2008, 2010, and 2011. Additionally, the high level of recreational use in this area may make the seabirds nesting and roosting in the area susceptible to impacts from human disturbance. Thus, additional protections will benefit seabirds there.

In addition, you should re-examine the nomenclature for Bird Rock/Bird Island. On the USGS topographic map and the U.S. Fish and Wildlife Service Catalog of California Seabird Colonies, it is referred to as Bird Island.

2) Suggestions for improving the preferred alternative in this DGMP/EIS:

There are several instances where the currently identified preferred alternative can be strengthened by adding elements of alternative 2.

Pedro Point, Devil's Slide, and San Pedro Mountain

We support zoning the Devil's Slide Area west of Highway 1 as a Sensitive Resources Zone as identified in alternative 2. Since 1996, we have been working to restore a Common Murre colony at Devil's Slide as well as conducting breeding studies on various seabird species. The designation of this area as a Sensitive Resources Zone will help protect this sensitive seabird colony. In particular, several bird species that nest on the mainland cliffs would benefit from this designation, including Pelagic Cormorants, Brandt's Cormorants, Common Murres, Black Oystercatchers, Peregrine Falcons, Great Horned Owls, and Western Gulls. Managing this area as a Sensitive Resources Zone will be beneficial especially since the planned closing of the Devil's Slide section of Highway 1 and opening of the pedestrian/bike trail will result in a large increase in recreational use of the area, with potentially large impacts to breeding seabirds from human disturbance.

Alcatraz Island – Offshore Bay Environment

We support extending the Sensitive Resources Zone to 300 feet from the island's shore as well as demarcation buoys as outlined in alternative 3. Our monitoring at several seabird colonies in central California has shown that keeping boats and kayaks at this distance is effective for reducing disturbance to seabirds. Given the high volume of boat traffic off Alcatraz, buoys will be nearly essential for effectiveness.

3) Other comments:

San Pedro Rock on the San Mateo coast is a seabird breeding and roosting area as well as a haul out site for harbor seals. Although the rock is located outside of the GMP area, at low tide it is accessible from the mainland of the future park addition of San Pedro Point, which is part of the GMP. Therefore, we recommend considering these resources when planning management for this area.

More information about seabird colonies should be included in the Birds section of the draft EIS (Vol II, p 58). Information about the birds using Bird Rock (Marin County), Devil's Slide and San Pedro Rock should be added for a more comprehensive report. We can provide recent information on the status of seabird breeding populations within the GMP, upon request.

Thank you for the opportunity to provide comments. If you have any questions, please contact me at 510-792-0222, x222.

Sincerely,

A handwritten signature in black ink, appearing to read "Gerry McChesney", written in a cursive style.

Gerry McChesney
Manager, Common Murre Restoration Project

**U.S. Department of
Homeland Security**

**United States
Coast Guard**



Commander
Eleventh Coast Guard District

Coast Guard Island Bldg 50-8
Alameda, CA 94501
Staff Symbol: (dx)
Phone: (510) 437-3980
Fax: (510) 437-3223

16100

General Superintendent, Golden Gate National Recreation Area
Attn: Draft GMP/EIS
Fort Mason, Building 201
San Francisco, CA 94123-0022

Dear Superintendent,

Thank you for accepting comments to your General Management Plan/Environmental Impact Statement (Draft GMP/EIS) for Golden Gate National Recreation Area and Muir Woods National Monument. The United States Coast Guard has a number of operational assets within the boundaries of the properties that you manage, or very near to the properties that you manage. It will be to our mutual benefit to review these sites with you.

The Coast Guard's statutory authorities are listed in enclosure (1). It is worth emphasizing that our missions include: Law Enforcement, Safety of Life and Property at Sea, Waterways Management (including Aids to Navigation and Vessel Traffic Service), and serving as part of the Navy in wartime.

I refer you to Nautical Chart 18649 published by the National Oceanographic and Atmospheric Administration (NOAA), which portrays the locations of the many Aids to Navigation owned and maintained by the United States Coast Guard in the vicinity of the GGNRA, as well as any Private Aids to Navigation owned and operated by others.

The Coast Guard is in the process of transferring 5 Coast Guard owned lighthouse properties in the GGNRA to the National Park Service: Point Bonita, Lime Point, Alcatraz, Point Diablo, and Point Montara. The Coast Guard will continue to maintain a number of operational assets these lighthouse properties even after transfer to GGNRA. In addition to hosting the aid to navigation signals, lighthouse properties are often host to communication antennas or Vessel Traffic Service (VTS) equipment. One example is the Vessel Traffic Service (VTS) radar at Point Bonita.

Coast Guard Station Golden Gate may be the most prominent Coast Guard presence within the GGNRA. USCG Station Golden Gate missions include Search and Rescue, Law Enforcement and protection of critical infrastructure. We have a Special Use Permit from GGNRA for a 50 year term (enclosure (2)) for the property the Coast Guard refers to as Station Golden Gate.

A less obvious Coast Guard presence includes a number of antennas, cameras, radars and microwave sites associated with the Vessel traffic Service San Francisco, or with Coast Guard communications in general. Two proposed VTS camera sites (Point Blunt and Lime Point) have been in the planning stages for some time. Approval of those sites will enhance the Coast Guard's service to the maritime community by VTS San Francisco. See enclosure (3) - PT

Bonita: RADAR, VHF-FM, AIS, Microwave PT Bonita Lighthouse: HF, Microwave Station
Golden Gate: VHF-FM Low Site San Francisco Presidio: R-21 RFF (VHF-FM, UHF High Site)
Lime Point: Proposed VTS Camera Angel Island, PT Blunt: Proposed VTS Camera MT
Tamalpais: VHF-FM, AIS, Microwave. Enclosure (3) is not inclusive of all Coast Guard sites.

The Coast Guard requires uninterrupted access to Coast Guard assets. We are equally concerned about security and force protection of Coast Guard assets. As an example, protection of Coast Guard assets may have to include continued restrictions on access to the lantern room of Alcatraz Lighthouse. Alcatraz Light continues to be an important Aid to Navigation supporting all manner of maritime traffic in San Francisco Bay. Public access and development at lighthouse properties should be coordinated with USCG in order to protect the Coast Guard's access for operating Aids to Navigation.

At the core of our presence within the GGNRA, we are concerned about service to community, whether from our Coast Guard Station, or through various other sites relating to our operations.

Several parts of the Management Plan call for increased restricted areas around places like Alcatraz. It is not clear what impact this might have on demand for Coast Guard services. Is the Park Service going to be requesting any CG assets to assist with enforcement of these zones? We are concerned that you may be creating a demand for increased Coast Guard services outside of a legislative process that brings sufficient resources to the Coast Guard. We assume that Coast Guard boats and personnel would continue have access through restricted areas in the performance of our duties – this might be made more explicit in the Management Plan.

These comments are not intended to have listed every single Coast Guard property or asset. These comments do provide you with highlights of those things we are most concerned about in the context of your Management Plan. My point of contact is Mr. Bill Meyn, Coast Guard District Eleven Resource Planner, at tel: 510-437-3980 or William.F.Meyn@USCG.MIL.

Sincerely,

L. D. Johnson, CDR, USCG
Chief of Contingency Planning
Eleventh Coast Guard District

Encl: (1) Coast Guard Statutory Authorities
(2) Coast Guard Station Golden Gate 50 year special use permit
(3) Coast Guard antenna and camera sites

Copy: USCG Sector San Francisco, CA
USCG Legal Service Command (LSC) West, Alameda, CA
USCG SILC Product Line Division – Portfolio Management Branch, Oakland, CA
USCG Civil Engineering Unit (CEU), Oakland, CA
USCG TISCOM (TIS-414), Oakland, CA
USCG C3CEN Remote Mission Systems Product Line (PL-R)
USCG C3CEN Command Centers Product Line (PL-C)



Planning & Building Department Historic Resources Advisory Board

Mitch Postel
John Edmonds
Deke Sonnichsen
Robert Schoeppner

Elizabeth Bogel
Nancy Oliver
William Howland
Mike Bursak

Robert Crow
Greg Timm
Gael Erickson

County Office Building
455 County Center
Redwood City, California 94063
(650) 363-1837

November 1, 2011

Frank Dean, Superintendent
Golden Gate National Recreational Area
Building 201, Fort Mason
San Francisco, CA 94123

RECEIVED

Nov 2 2011

PLANNING & BUILDING DEPARTMENT'S OFFICE

Dear Superintendent Dean:

SUBJECT: Comment Deadline for Draft GMP/EIS

I am the Chairperson for the San Mateo County Historic Resources Advisory Board (HRAB). Our existence is mandated in the San Mateo County General Plan (adopted in 1986) and the County's Historic Preservation Ordinance (adopted in 1984). Our purpose is to review all projects that may have any impact on historic or archaeological resources within unincorporated San Mateo County. The GGNRA Plan's references to interpretive and facilities needs at Sweeney Ridge and Milagra Ridge encompass unincorporated areas that we are duly charged to review.

In your list of "Consultation with Other Agencies, Officials, and Organizations," the HRAB is omitted. We are also aware that the list omitted the San Mateo County Historical Association (pursuant to that organization's letter from Peggy Jones (its Chairwoman) to you, dated October 10, 2011).

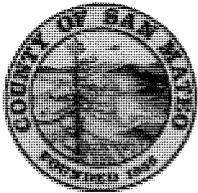
This is critical due to the document's notice that November 7, 2011, is the last day to submit comments on the plan. We formally request extending that deadline, since we only became aware of this document in mid-October. A reasonable extension will allow us time to review and consider the plan at our upcoming meeting in late November, with enough time to provide you our written comment. Thank you for your consideration.

Sincerely,

Nancy Oliver
Chairwoman, HRAB

NO:DJH:fc - DJH0854_WFN.DOC

cc: U.S. Representative Jackie Speier
David Holland, Assistant County Manager
Peggy Jenson, Deputy County Manager
Jim Eggemeyer, Community Development Director
Mitch Postel, Director, County Historical Association



COUNTY OF SAN MATEO

555 COUNTY CENTER, 5TH FLOOR • REDWOOD CITY • CALIFORNIA 94063-1665 • PHONE (650) 363-4100 • FAX (650) 361-8220

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DIRECTOR OF PUBLIC WORKS

November 4, 2011

Mr. Frank Dean, Superintendent
Golden Gate National Recreation Area (GGNRA)
Building 201, Fort Mason
San Francisco, CA 94123

Dear Mr. Dean:

Subject: Draft General Management Plan (GMP)/Environmental Impact Statement (EIS)

Thank you for allowing San Mateo County to provide comments on the GGNRA/Muir Woods National Monument Draft GMP/EIS. We note that throughout the document there is consistent reference to the need for working with other agencies. As you know, we are interested in being considered as potential partner in a variety of ways. We'd like to offer the following comments on the Draft GMP/EIS.

1) **San Mateo County Historical Association**

In completing the historic resource study for your parklands in San Mateo County, the documents did not mention the San Mateo County Historical Association (Historical Association) who is eager to work with GGNRA to interpret the historic and cultural resources on your lands.

2) **Sanchez Adobe**

This historic property is owned and managed by the San Mateo County Parks Division and jointly managed and interpreted in coordination with the San Mateo County Historical Association. There have been discussions between GGNRA, San Mateo County Parks, and the Historic Association about a potential joint partnership; however this is not mentioned in the Draft GMP/EIS.

Since 1978, the Historic Association has been a valuable partner with San Mateo County Parks. Their education programs are extremely popular, serving some 7,000 3rd and 4th graders and their escorts each year. They additionally operate the site for us and have done an outstanding job. We highly recommend the Historic Association as a valuable partner.

Unfortunately, the County has not had the ability to fund any significant capital improvements at the Sanchez Adobe site since its opening in the 1950s. The Sanchez Adobe Historical Site Master Plan, completed by County Parks in 2007 with the cooperation of the Historical Association, could be leveraged to allow for a mutually beneficial project that would include a three way partnership between the GGNRA, San Mateo County Parks and the Historical Association. The Sanchez Adobe Master Plan can be viewed at www.eparks.net, under Park Planning; Master Plans.

3) Devils Slide

The GMP discusses the need for interagency cooperation to facilitate connections between Pedro Point, Devils Slide (to be acquired by San Mateo County Parks), and San Pedro Mountain. However, there is no detailed discussion about where trailheads, signage, and visitor serving facilities will be located, or a budget to fund those improvements. The County of San Mateo welcomes GGNRA's support to develop the connections to access Devils Slide CA Coastal Trail from GGNRA lands at either end.

4) Access to Sweeney Ridge

Trailhead improvements and better parking accommodations should be studied at the Fassler trailhead, where public access to Sweeney Ridge is far easier and less expensive than the Sheldance Nursery.

5) Corral de Tierra

There is a lack of definition about where proposed trailhead improvements would go, or how many would be provided. The \$980,000 cost estimate for potential trailhead and parking improvements should enable a more detailed definition about how many access improvements will be made, what they will be, and where they will be located.

6) Montara Lighthouse

A multi-agency center is suggested at the Montara Lighthouse Station. We agree with this proposal; however, it will be important to improve access in and out of that location, which is currently very busy on nice weather weekends. San Mateo County Parks is currently working with the Midcoast Park and Recreation Action Plan Committee on a Conceptual Plan for CA Coastal Trail improvements from Princeton-By-The-Sea to Devils Slide. County Planning is also currently completing Phase II of the Highway 1 Safety and Mobility Improvement Project, which covers the Princeton to Devils Slide area. GGNRA has actively participated in the development of both of these sets of plans. The current recommendation for both planning efforts is that the California Coastal Trail will align from

the south via Vallemar to the Montara lighthouse and then cross to the east side of Highway 1 to access Carlos in Moss Beach and Farralones to access Montara. CA Coastal Trail improvements and a safe crossing of Highway 1 should be anticipated at the Montara Lighthouse location.

7) **Phleger Estate**

Richards Road serves as the primary access to the Phleger Estate. It closely parallels West Union Creek, Steelhead trout habitat, and is in need of improvement for fire and service vehicle access and to reduce sedimentation. San Mateo County Parks is interested in working with GGNRA to fund and perform improvements to this road which provides access to both the Phleger Estate and Huddart County Park.

8) **Woodside Store**

There is mention made in the GMP about a possible partnership at the Woodside Store with San Mateo County Parks (the property owner), and the San Mateo County Historical Association. While we are open to discussion about what a partnership might look like there may be limitations to what is possible because parking availability is minimal and the community is not favorably inclined to increases in visitation.

9) **Sawyer Camp Trail to Sneath Lane**

The GMP references the need for multi-use trail improvements connecting Sawyer Camp Trail to Sneath Lane. Actually, the multi-use trail improvements would be connecting San Andreas Trail, the northern segment of Crystal Springs Trail, to Sneath Lane. Our understanding is that GGNRA received a considerable amount of mitigation funding from PG&E as part of the Jefferson Martin project through the SFPUC Watershed lands for construction of this trail segment, but the budget for the preferred alternative lacked mention of these important trail improvements.

10) **Funding Priorities**

The County questions the \$3 Million of priority funds to be set aside for the equestrian center at Rancho Corral de Tierra, considering so little capital is to be spent in other GGNRA parklands in San Mateo County to improve the connections between our respective lands. That the entire \$4.6 Million in priority funding for San Mateo County is reserved for Rancho Corral de Tierra seems narrow in focus. Other possibilities in Pacifica as discussed above, and at the Phleger Estate should be considered as well.

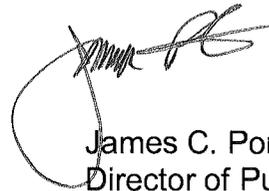
Mr. Frank Dean, Superintendent, Golden Gate National Recreation Area (GGNRA)
Subject: Draft General Management Plan (GMP)/Environmental Impact Statement (EIS)
November 4, 2011

Page 4

Overall, the capital budget is concerning to us. GGNRA proposes \$93,630,000 in priority projects of which GGNRA parklands in San Mateo County receive just \$4,660,000, or only 5%. The combined high and low priority budget is \$154,820,000 of which San Mateo County lands would get \$10,110,000, or just 6.5%.

In summary, we feel further consideration for projects in San Mateo County should be included in your planning. Our residents have been very engaged in your planning process and have high expectations for improved recreational opportunities in the near future. Your consideration in this matter is greatly appreciated

Very truly yours,

A handwritten signature in black ink, appearing to read 'James C. Porter', is written over a large, faint circular stamp or watermark.

James C. Porter
Director of Public Works

JCP:sdd

F:\users\admin\Parks Division\2011\GGNRA Letter Draft Mgmt Plan.doc

cc: Dave Holland, Deputy County Manager
Peggy Jensen, Deputy County Manager
Gary Lockman, Superintendent, Parks
Scott Lombardi, Superintendent, Parks
Sam Herzberg, Senior Planner, Parks
Mitch Postel, San Mateo County Historical Association

DON HORSLEY

Board of Supervisors
County of San Mateo

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NOV 24 2011
SUPERINTENDENT'S OFFICE

Superintendent Frank Dean
Building 201, Fort Mason
San Francisco, CA 94123

Dear Superintendent Dean,

I would like to commend you on all of the work you have put into the release of your Draft Management Plan. I know that your public outreach process, with the acquisition of Rancho Corral de Tierra, has been thorough and extensive.

While reviewing the Draft Management Plan, I was pleased to see that you plan to place special emphasis on engaging the community, enhancing visitors' experience, and protecting the cultural and natural resources of the lands. It also gives me great pleasure to know that your managers will make the preservation and restoration of the unique park land we have in San Mateo County a priority.

With regards to your acquisition of Rancho Corral de Tierra, I am in full support of you establishing safe trailheads near Highway 1. This will provide greater accessibility for all visitors and allow the trailheads and park land to blend with the local communities.

Although it is not addressed in the Draft Management Plan, I would like to comment on the future Dog Management Policy that will be in effect at Rancho Corral de Tierra. I was informed that when the acquisition of Rancho is complete, leashed-dogs will be granted access on specified trails. As stated in the past, I think this is critical and am pleased to know that it will be implemented. Once again, I would like to thank you for all of your hard work on your Draft Management Plan.

Sincerely,



Don Horsley, Supervisor
San Mateo County





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 SUPERINTENDENT'S OFFICE

November 28, 2011

Superintendent Frank Dean
 Golden Gate National Recreation Area
 Attention: Draft GMP/EIS
 Fort Mason, Building 201
 San Francisco, CA 94123

Dear Superintendent Dean:

Thank you for this opportunity to comment on the programmatic Draft General Management Plan / Environmental Impact Statement (GMP / EIS) for the Golden Gate National Recreation Area (GGNRA) and congratulations on achieving this significant milestone. On behalf of the San Francisco Public Utilities Commission (SFPUC), I am providing the following general comments on the GMP / EIS and specific comments referencing page numbers and/or sections are provided in the attached table.

This letter is organized into three major sections:

- **Background** information is provided on the SFPUC facilities and lands that could be affected by the proposals contained in the draft GMP / EIS, as well as applicable SFPUC plans and policies.
- **General Comments** are provided to articulate the SFPUC's concerns about the proposals contained in the draft GMP / EIS.
- **Adequacy of the Draft GMP / EIS** is discussed and our recommendations are provided to improve this EIS in keeping with the requirements of the National Environmental Policy Act (NEPA). Mitigation measures are proposed to avoid or minimize adverse environmental effects.

Background

The SFPUC provides sewer services to San Francisco residents and water to residents of four Bay Area counties. Providing our customers with high quality, efficient and reliable water and sewer services in a manner that is inclusive of environmental and community interests is our highest priority.

Edwin M. Lee
 Mayor

Anson Moran
 President

Art Torres
 Vice President

Ann Moller Caen
 Commissioner

Francesca Vietor
 Commissioner

Vince Courtney
 Commissioner

Ed Harrington
 General Manager



Wastewater Treatment System

Most of San Francisco is served by a combined storm sewer system, where stormwater, along with residential and commercial sewage, is directed to treatment plants prior to being released to the San Francisco Bay or Pacific Ocean. San Francisco's wastewater and stormwater that flow naturally towards the Pacific Ocean are collected and treated through the Oceanside Water Pollution Control Plant located in the Outer Sunset District adjacent to The Great Highway.

Lake Merced

Located in the southwest corner of San Francisco near Skyline and Lake Merced Boulevards, Lake Merced consists of four inter-connected freshwater lakes. The San Francisco Recreation and Park Department manages the recreational areas of the Lake under a 1950 agreement with the SFPUC. The SFPUC manages the water aspects of the lake. Lake Merced is an emergency source of water for the City of San Francisco to be used for fire fighting or sanitation purposes if no other sources of water are available.

Water Collection and Storage – Peninsula Watershed

The 23,000 acre Peninsula Watershed located in San Mateo County is used for water collection and storage in its three reservoirs. In contrast to the predominantly urbanized region surrounding it, the Watershed has been protected and managed to conserve natural resources, resulting in a unique setting with a variety of habitats that support the highest concentration of rare, threatened and endangered species in the nine-county Bay Area.

The Peninsula Watershed is a State Fish and Game Refuge under the control and enforcement of the California Department of Fish and Game. In addition, critical habitat in the Watershed was designated for the marbled murrelet (a California endangered and federal threatened species) in August 1995 under the Endangered Species Act. The attached map shows that the Peninsula Watershed is also designated as critical habitat for the California red-legged frog (Critical Habitat Unit SNM-1). The California Department of Forestry and Fire Protection (CAL FIRE) has identified the Watershed as a hazardous fire area.

Recreation activities are permitted on the Watershed east of the Crystal Springs and San Andreas Reservoirs near I-280. Over 200,000 people visit the Peninsula Watershed each year; hiking, biking, walking and running are popular activities along the six-mile Sawyer Camp Trail as well as golfing at the public Crystal Springs Golf Course. Additional public trails on the eastern side of the Watershed include Crystal Springs, San Andreas, Sheep Camp, Ralston and Edgewood. In addition, the Fifield-Cahill Ridge Trail traverses 10 miles of the Peninsula Watershed from Sweeney Ridge to Highway 92. Access on the Fifield-Cahill Ridge Trail is by reservation for scheduled walks or rides guided by trained trail leaders.

Scenic Easement and Recreation Easement

In 1969 the City of San Francisco granted two easements to the Department of the Interior that, in combination, cover approximately 23,000 acres of the Peninsula Watershed. One is a Scenic Easement, and the other is a Scenic and Recreation Easement. The easements were established with approval of the State of California and San Mateo County in order to provide for the increased federal share of costs for the construction of I-280 that was required to change the planned route of I-280 to a less environmentally damaging location further east of Crystal Springs Reservoir. The approximately 19,000-acre Scenic Easement applies to the lands west of Crystal Springs and San Andreas Reservoirs. The approximately 4,000-acre Scenic and Recreation Easement applies to lands in the vicinity of I-280. Both easements place restrictive covenants on land-uses not related to the SFPUC's overall management of the land for utility purposes. The two easements contain largely identical terms. One difference is that the Scenic Easement, which is the easement covering the lands west of Crystal Springs and San Andreas Reservoirs, expressly provides that it shall not be construed to permit public access.

In 1980 Congress transferred responsibility for administration of the easements from the Department of Interior to the National Park Service (GGNRA). The legislation provides that the easements are to be administered according to the terms of the National Park Service. The Peninsula Watershed is not part of a national park or recreation area per se, as the SFPUC retains fee ownership of the land and the National Park Services has only a limited interest, in that it can object to land-uses not related to utility management or to the other land-uses that are not specifically permitted by the terms of the easements. The City is not bound by National Park Service planning mandates or procedures that GGNRA must follow, including planning mandates of the GGNRA General Management Plans.

Peninsula Watershed Management Plan

On June 26, 2001, the SFPUC adopted the Peninsula Watershed Management Plan to provide a framework for making future decisions about watershed land and water resources while protecting the water quality of the City's watersheds and reservoirs. The primary goal of the Peninsula Watershed Management Plan is to maintain and improve source water quality to protect public health and safety. Secondary goals include the preservation and enhancement of watershed ecological and cultural resources, the protection of the watershed (and adjacent urban areas and the public) from fire and other hazards, and the use of the Watershed for both ongoing and potentially new compatible uses including educational, recreational, and scientific uses.

The Scenic Easement by its terms does not provide for public access to the lands west of Crystal Springs Reservoir. San Francisco as the fee owner, however, has retained the right to allow such access as it did in 2002 with the approval of the Fifield-Cahill Ridge Trail. After studying several trail alternatives, the SFPUC amended the Peninsula Watershed Management Plan by selecting a Fifield-Cahill Ridge Trail alternative with

low environmental impacts due primarily to its limited access and capacity (via a reservation system) and supervised use (by trained trail leaders). Such a properly mitigated trail is consistent with the terms of the easement and compatible with the goals and objectives of the Peninsula Watershed Management Plan. In their resolution (No. 02-0265 dated December 18, 2002), the SFPUC stated it was their intention to *...enact the highest level of environmental protection feasible and necessary to protect the resources of the Peninsula Watershed from the impacts of public access to the interior of the Watershed (particularly trespass and the construction of unauthorized trails)....*

Stewardship Policy

On June 27, 2006, the SFPUC adopted an Environmental Stewardship Policy for the long-term management direction of lands and natural resources affected by operation of the water system by its Water Enterprise (a utility organizational unit of the SFPUC). This policy represents a commitment by the SFPUC and its employees for responsible natural resource management that protects and restores viable populations of native species and maintains the integrity of the ecosystems that support them for current and future generations.

To the maximum extent practicable, the SFPUC's stewardship policy ensures that all operations of the water system (including water diversion, storage and transport), construction and maintenance of infrastructure, land management policies and practices, purchase and sale of watershed lands, and lease agreements for watershed lands protect and restore native species and the ecosystems that support them.

General Comments

The SFPUC has the following concerns that we request be addressed in the EIS regarding the potential effects of the proposed update to the GGNRA General Management Plan on the SFPUC's Wastewater Treatment System, Lake Merced, and the Peninsula Watershed.

Boundary Adjustments: McNee Ranch in San Mateo County

In the discussion of inclusion of McNee Ranch State Park within the GGNRA's park boundary, the GMP / EIS states that the network of trails and roads within this park unit "... are important to the planned east-west connection that will enable hikers to cross from San Francisco Bay to the Pacific Ocean." More information is needed on this proposed (and apparently "planned") east-west connection trail. Additional trails through SFPUC watershed lands are limited to those set forth in the Peninsula Watershed Management Plan (see comments below for Alternatives 1 through 3 and No-Action Alternative: *Park Lands in San Mateo County, SFPUC Peninsula Watershed -- Sweeney Ridge (Including Cattle Hill and Picardo Ranch)*). In addition, the existing main road through McNee Ranch State Park is significantly degraded and needs extensive repair and rebuilding. As required by NEPA, this economic impact should be included in the EIS.

Alternatives 1 through 3: Ocean Beach

Alternatives 1, 2 and 3 for Ocean Beach include statements supporting the relocation of facilities out of vulnerable locations and restoring natural processes in order to address coastal erosion. Other statements describe a need to redesign the Ocean Beach Corridor for sea level rise and allowing natural shoreline processes to continue unimpeded.

The EIS has presented an insufficient range of alternatives for analysis. Alternatives 1, 2, and 3 differ only slightly from each other and contain virtually the same language with regard to the proposed approach for existing infrastructure (e.g., the approach of relocating facilities out of vulnerable locations). This lack of a meaningful alternative to provide for the continued operation, maintenance and upgrade of existing infrastructure fails to meet the minimum requirements of NEPA.

As stated above (see "Background), the SFPUC owns and operates the Oceanside Water Pollution Control Plant located adjacent to The Great Highway. Other related infrastructure includes the Westside Transport Box that extends approximately 1.5 miles under The Great Highway and the Lake Merced Transport Tunnel extending approximately from Sloat Boulevard and The Great Highway to John Muir Drive. In addition, the Southwest Ocean Outfall is located south of Sloat Boulevard and permitted discharge points are located from Lincoln to Vicente in the Sunset District. These facilities and structures are critical to the treatment and transport of wastewater and stormwater and the control of pollutants entering the coastal waters of the Pacific Ocean. In addition, a restroom facility at Sloat Boulevard and The Great Highway was constructed as mitigation for the wastewater facility construction in the area. San Francisco ratepayers have invested hundreds of millions of dollars to construct these facilities to safely and efficiently deal with sewage and stormwater runoff in an environmentally responsible manner in compliance with state and federal regulations.

The SFPUC will continue to operate and maintain its critical infrastructure. Maintenance includes, for example, the prevention of damage to outfall structures by utilizing appropriate measures to protect the facilities from beach erosion. The stability of the Oceanside Water Pollution Control Plant, the Westside Transport Box and the Lake Merced Tunnel depend on the continued implementation of beach erosion control measures and the maintenance of structures that protect The Great Highway.

SFPUC objects to the EIS for failing to examine an alternative that accommodates the continued operation, maintenance, and upgrading of existing infrastructure, instead of only anticipating "relocation" of facilities. SFPUC strongly urges NPS to either amend the existing alternatives to specifically provide for the option of continued operation, maintenance, and upgrade of existing infrastructure, or to create a new alternative which provides this option.

In addition, the EIS fails to discuss or analyze the impact of an inter-agency visioning process underway with the City, GGNRA, San Francisco Planning and Urban Research

Association (SPUR) and other interested parties, regarding future actions on Ocean Beach. Determination of a Preferred Alternative in advance of consideration of the outcomes of this planning process, in which GGNRA participates, is not appropriate.

Relocation of major infrastructure (e.g., force mains and facilities) is not a feasible option in this case. The Alternatives need to consider protection and preservation options for such circumstances.

Mile Rock Tunnel: Proposed Designation of Eligibility for the National Register of Historic Places

Mile Rock Tunnel is an active part of San Francisco's wastewater infrastructure. As such, structural alterations have been performed over the years (e.g., Mile Rock Tunnel has been connected to the Richmond Tunnel) which have likely compromised the historic integrity of the structure. The SFPUC objects to the designation of this tunnel as eligible for listing in the National Register of Historic Places (as described on page II:104 of the GMP / EIS) and respectfully requests that an assessment is done by qualified experts before such a designation is made. SFPUC further notes that the tunnel is not visible or accessible to the public and therefore has little, if any, value as a historic place.

Lands End area: Alternatives 1 and 2

The EIS proposes two Alternatives for the Lands End area. Alternative 1 would make the Lands End area into an "Evolved Cultural Landscape Zone and Alternative 2 would make the Lands End area into a Natural Area.

SFPUC has existing infrastructure in the Lands End area, including Mile Rock Tunnel, Mile Rock outfall, and an air relief vent in the northeast corner of the Lands End parking lot (which includes wireless report level equipment). We require frequent access to these structures and equipment to maintain and ensure their proper operation, including occasional night-time access.

SFPUC respectfully requests that the Alternatives be modified to ensure that this necessary and on-going use of the area is preserved.

Alternative 1: Fort Funston

This alternative calls for the addition of a new visitor center and expansion of park operations in the southwest corner (including a stewardship center, nursery and housing for staff and volunteers).

Since the purpose of Alternative 1 is to improve visitor access and enhance the visitor experience, it is reasonable to expect a significant increase in the number of visitors to Fort Funston. As noted above (see "Background"), the SFPUC shares management responsibility for Lake Merced with the San Francisco Recreation and Park Department. The SFPUC is concerned that traffic impacts from increased visitor use of Fort Funston

could affect visitors to Lake Merced (located to the east of Fort Funston directly across Highway 35 - Skyline Boulevard).

Alternatives 1 through 3 and No-Action Alternative: Fort Funston

The SFPUC owns and operates two assets at Fort Funston related to wastewater treatment: 1) An outfall pipe and discharge structure at Lake Merced; and 2) An outfall pipe used by Daly City for stormwater and wastewater conveyance. The SFPUC will continue to operate and maintain these structures, including maintenance activities to prevent damage from beach erosion. The GMP / EIS should be amended to include a description of these wastewater facilities and to include their maintenance and operation as part of the proposed alternatives.

Alternatives 1 through 3 and No-Action Alternative: Park Lands in San Mateo County

SFPUC Peninsula Watershed -- Sweeney Ridge (Including Cattle Hill and Picardo Ranch)

Alternatives 1 through 3 for Sweeney Ridge (Natural Zone) call for trail connections "...to the regional trail network and the surrounding public lands (San Francisco Public Utilities Commission lands, San Pedro Valley County Park, McNee Ranch, and Rancho Corral de Tierra)..." We are generally in support of this concept, provided that trail proposals are consistent with the Peninsula Watershed Management Plan. As described above (see "Background") the Peninsula Watershed Management Plan provides a planning policy framework for the SFPUC for making future decisions about watershed land uses. With the Fifield Cahill Ridge Trail now complete, the highest trail priorities as set forth in the Peninsula Watershed Management Plan are: 1) to complete a connector trail from Sneath Lane to the North San Andreas Trail; 2) to build the southern extension of the Ridge Trail from Highway 92 south to the Kings Mountain Trail; and 3) to improve trails and connectors so that there is a continuous north-south public trail along the eastern edge of the Watershed. In addition, although the Peninsula Watershed Management Plan includes policies to consider the addition of new trails and connectors in zones of low vulnerability and risk and to limit public trails to the periphery of the Watershed in order to minimize adverse impacts (fire, the spread of exotic weed species, direct impacts to sensitive species, etc.), the Plan also includes policies that prohibit the construction of trails not addressed in the plan. In addition, the Plan includes policies that prohibit unsupervised access to existing trails and roads not addressed in the Plan.

Alternatives 1 through 3 for Sweeney Ridge (Natural Zone) also call for primitive camping sites. Please see *SFPUC Peninsula Watershed – Potential Fire Impacts from Proposed Uses for Rancho Corral de Tierra and the Gregerson Properties* below for a discussion of concerns related to primitive camping.

Alternative 1 for Sweeney Ridge (Scenic Corridor Zone) includes a proposal for limited vehicular access to the Bay Discovery Site. More information is needed as to the

possible access routes and the purpose of the access. This is particularly important if the proposed access route is over Army Road, most of which is owned in fee by the SFPUC. The SFPUC generally does not permit private vehicles unrelated to utility purposes on Watershed roads. Since Army Road is used as a public trail, there is also a safety concern for trail users sharing this relatively narrow access road with private vehicles. Private vehicles without spark arrestors and other fire suppression equipment could potentially create a fire hazard, particularly if the vehicle pulls onto the unpaved shoulder and the catalytic converter comes into contact with vegetation, igniting a fire. In addition, the portion of the access road on GGNRA property is unpaved and in very poor condition, creating a hazard for vehicles.

Alternative 1 for Sweeney Ridge (Scenic Corridor Zone) also includes a proposal for hikers' huts, but includes no description of what this facility is (or a range of options or existing examples). Our concern would be the potential for fire and other impacts to Watershed resources. (Please see *SFPUC Peninsula Watershed – Potential Fire Impacts from Proposed Uses for Rancho Corral de Tierra and the Gregerson Properties* below for a discussion of concerns related to primitive camping.) While not understanding exactly what is meant by a "hikers' hut", presumably it could be a potential ignition source especially if open fires or stoves for heating or cooking are allowed.)

SFPUC Peninsula Watershed – GGNRA Scenic Easement and Recreation and Scenic Easement

Throughout the GMP / EIS (including the description of the "Planning Area" on page I:9) the SFPUC's Peninsula Watershed is repeatedly described as park lands that would receive park management guidance under the new general management plan. This description conflates the GGNRA's limited responsibility to administer the Scenic Easement and Recreation and Scenic Easements (see "Background" above) with its management responsibilities for its own park properties (owned in fee or leased). This description does not serve the public well because it is confusing and thus needs clarification.

It should also be noted that the figures in the GMP / EIS depicting the boundaries of these easements are inaccurate. The Recreation and Scenic Easement does not include the area of the SFPUC's Peninsula Watershed known as Polhemus and the San Mateo Creek area below Crystal Springs Dam (see attached map).

SFPUC Peninsula Watershed – Potential Fire Impacts from Proposed Uses for Rancho Corral de Tierra and the Gregerson Properties

As described above (see "Background"), the Peninsula Watershed is located within a CAL FIRE State Responsibility Area. There has not been a major fire on the Watershed since 1946. As a result, there is a large accumulation of fuel material creating a high fire hazard area (as designated by CAL FIRE). Small fires that have occurred since 1946 have generally been characterized as suspicious and frequently related to illegal camping. In addition numerous ignitions have occurred off Sawyer Camp Trail and

Army Road, and recently off I-280. Lightning is relatively rare on the Peninsula Watershed, leaving human actions as the most prominent source of fire ignition. For more information, please see the Peninsula Watershed Management Plan Final EIR (January 11, 2001) available on our website sfwater.org.

As set forth in the Peninsula Watershed Management Plan, the SFPUC has undertaken many improvements and management actions to reduce fire hazard on the Peninsula Watershed, thus protecting source water, water supply, utility infrastructure, habitat and species, and other watershed resources, as well as the visiting public, SFPUC employees, and surrounding properties and residents. These fire defense improvements include fuelbreaks, fire access roads with sufficient turnouts for emergency equipment, emergency water sources, gates and fencing, and helispots. In addition, the SFPUC has implemented management actions to reduce fire hazard such as requiring that all vehicles and equipment on the Watershed must comply with CAL FIRE fire prevention regulations (e.g., installation of spark arrestors, carrying fire suppression equipment). Most important, restricted access and security measures reduce fire ignition sources in the most vulnerable areas of the Watershed.

Even with the tremendous progress that has been made to reduce fire hazard on the Watershed, there is still much work to be done. In particular, the Pilarcitos Watershed and the western flanks of the Watershed from Montara Mountain to Sweeney Ridge are densely vegetated, have limited access for fire-fighting equipment and personnel, and have few developed water sources for fire suppression.

Alternatives 1, 2 and 3 for Rancho Corral de Tierra (and the boundary adjustment proposed for the Gregerson property to be included in the larger Rancho Corral de Tierra unit) include measures to increase public access, including primitive camping and multi-use trails within these park lands and connecting to a proposed new trail onto the Peninsula Watershed via Whiting Ridge. The GMP / EIS lacks even general information about the size, type, location or restrictions on primitive camping. More important, there is no analysis of existing fire conditions and the potential fire impacts to these lands or surrounding properties from the introduction of new sources of fire ignition. The GMP / EIS also proposes to close certain roads on park lands but does not contain an analysis of how this might impact access for fire fighting equipment and personnel. The text of the GMP / EIS notes that there are "...significant constraints on the availability of water...." at Rancho Corral de Tierra, but does not include mitigation measures to address the lack of developed water sources for fire suppression.

At a recent Roundtable Agency Meeting, the staff of the GGNRA suggested that the GGNRA's Fire Management Plan could be updated at a later date to address this issue. We feel this is insufficient given the gravity of the potential adverse effects to Watershed resources and human life and the requirements of NEPA. A large wildfire could cause large-scale impacts to the numerous special status plants and wildlife that occur on SFPUC lands. In addition, water quality and supply would be altered by a large wildfire. Ash fallout during a fire can directly damage water quality. The sedimentation caused by loss of vegetation that has been burned off of watershed slopes, however, is a more significant cause of water quality degradation.

For example, the Denver Water Department experienced two catastrophic fires on watershed lands southwest of Denver Colorado in 1996 with the Buffalo Creek Fire near Strontia Reservoir and the 2002 Hayman Fire near Cheesman Reservoir. The Buffalo Creek Fire, which was caused accidentally by Boy Scouts, burned 11,900 acres within the hydrologic boundary of the Strontia Reservoir. The Hayman Fire, which was caused by arson, burned 137,000 acres in the greater watershed including 7,500 acres of Denver Water property. These fires and subsequent rains created sedimentation and erosion problems that continue to plague the Denver Water Department. The water utility spent approximately \$11 million on the implementation of a reclamation plan to remove debris, replace culverts, build sediment dams, and re-seed slopes. Currently, a \$30 million project is underway to remove an estimated 1 million cubic yards of fire-related debris (from both fires) from Strontia Springs Reservoir downstream of the Cheesman Reservoir.

SFPUC Peninsula Watershed – Potential Impacts to Habitat and Species from Proposed Uses for Rancho Corral de Tierra and the Gregerson Properties and Proposed Trails on SFPUC Watershed Lands

As described above, the SFPUC's Peninsula Watershed contains a unique assemblage of habitat that supports the highest concentration of special status species in the Bay Area. It is a State Fish and Game Refuge and includes critical habitat designated by the USFWS for the marbled murrelet and California red-legged frog (special status species). There is much information on the existing conditions of the Watershed, including biological assessments and monitoring reports of special status species and habitat, as well as publicly available programmatic final EIRs for the Peninsula Watershed Management Plan and the Water System Improvement Program. In addition, the GGNRA produced the *Plant Community Classification and Mapping Project Final Report* in 2003 which includes GGNRA lands and surrounding wild lands on the San Francisco Peninsula. And yet in the discussion of proposed new trails adjacent to, or connected with, or through the Watershed (including Sweeney Ridge, the proposed Whiting Ridge Trail and Skyline to Canada connector trail), existing conditions and potential impacts are not analyzed.

In March 2000, the United States Fish and Wildlife Service (USFWS) reviewed the draft Peninsula Watershed Management Plan EIR and provided comments on the alternatives for the proposed Fifield Cahill Ridge Trail. USFWS agreed with the characterization of the proposed trail route as running through "...one of the largest and most pristine expanses of natural habitats in the northern San Francisco Peninsula" and emphasized the scarcity of these habitats and the increasingly important role they play in the survival of federally listed species. A letter from the California Department of Fish and Game (CDFG) in February 2000 expressed a similar view and both agencies described unrestricted public access along the proposed Fifield Cahill Ridge Trail as having serious impacts to listed species that may not be possible to mitigate and recommended an alternative that allowed only restricted access using a docent led program with strict limits on the number and frequency of trail users. The SFPUC subsequently selected the most environmentally protective alternative consistent with

recommendations of these state and federal agencies. For the same reasons cited above in the discussion of proposed trails for Sweeney Ridge (including Cattle Hill and Picardo Ranch), the proposed Whiting Ridge and Canada Road to Skyline (north of the Phleger Estate) trail alignments are not a high priority for the SFPUC based on the policies set forth in the Peninsula Watershed Management Plan. If these proposals were to be considered at a later date, they would be subject to environmental review under the California Environmental Quality Act (CEQA). Like the Fifield Cahill Ridge Trail, these trail proposals would also include environmental mitigation measures necessary to protect watershed resources from public access (including impacts to special status species and sensitive habitat such as the San Bruno elfin butterfly habitat on the proposed Whiting Ridge trail alignment). More than likely, a restricted public access program similar to the one for the Fifield Cahill Ridge Trail would be required to avoid or minimize significant adverse environmental impacts or the SFPUC may reject these trail proposals altogether because of insurmountable environmental impacts, conflicts with adopted policies (including the Stewardship Policy), the additional financial burden to water ratepayers, or other reasons.

The GMP/EIS should describe and evaluate the potential impacts of increased public access to areas adjacent to SFPUC lands. Proposed trails and public access can introduce or exacerbate the dispersal of invasive exotic plant species into sensitive habitat areas of the Watershed. Another concern is that without effective mitigation, additional public access to Rancho Corral de Tierra will facilitate trespass resulting in degraded habitat. In spite of continuous patrols and other security measures, trespass continues to be a serious problem on the SFPUC's Peninsula Watershed, including motorcycle trespass, which has degraded sensitive butterfly habitat on Fifield Ridge. Evidence suggests that this illegal trespass is coming from Montara Mountain.

It is not clear why potential impacts to the marbled murrelet are not described in the Special Status Species section of the description of potential environmental consequences (Volume II, pages 245-261), especially since the statement in Volume II (page 62) "to evaluate the effects on special status species, a set of species considered likely or possible to experience impacts from GMP actions was selected for assessment based on the presence of suitable habitat within the project area and discussions with NPS biologists" is followed by a section devoted to a general description of the habitat requirements of the marbled murrelet in San Mateo County (Volume II, page 66). This is a good example of how the GMP / EIS misses an opportunity to evaluate the environmental effects of fire hazard from ignition sources from existing and proposed public access to large swaths of land near the designated marbled murrelet critical habitat. Given the regional topography and climate, it is not difficult to understand that a large fire could sweep up the slopes of Rancho Corral de Tierra onto the SFPUC's Peninsula Watershed and spread to the designated marbled murrelet critical habitat.

Similarly there is no evaluation of the potential impact to marbled murrelets due to an increase of corvids attracted to the area by trash from the proposed public picnic areas or food refuse left by trail users on authorized trails as well as trespassers taking advantage of new access. There have been no observations of crows, ravens or other corvids in the upper Pilarcitos drainage and monitoring of marbled murrelets shows a

stable or increasing nesting population in this area. Beyond the borders of the SFPUC Peninsula Watershed, however, studies have shown sharp declines of nesting murrelets in their southern range in the Santa Cruz Mountains, due in part to the increase in corvids from campgrounds and other human activities, which underscores the need to protect the murrelet habitat on the Peninsula Watershed from damaging human behavior, i.e. littering (Citations are included in the attached Table of Specific Comments).

Adequacy of the GMP / EIS

We agree that a programmatic EIS is the appropriate level of review under NEPA for the proposed update to the GGNRA's General Management Plan because it is a regional land use plan that crosses multiple jurisdictions, covers numerous ecosystems, and many of the specific details of the federal action are unknown. An important purpose of the EIS is to focus the scope of alternatives and analyze the potential environmental impacts and mitigation (with an emphasis on cumulative effects of multiple future activities) to better inform the subsequent project-level environmental review. We look forward to collaborating with the GGNRA on future project-level environmental review as specific park projects are developed.

The GGNRA will be relying on the programmatic GMP / EIS to analyze the alternatives in a broad-based fashion. Since specific details are not known at this time, the environmental effects analysis and mitigation should also be broad, general and include only that which is reasonably foreseeable. But where existing conditions are known (or knowable), then NEPA requires an analysis of potential environmental impacts and appropriate mitigation measures.

In its current form, the GMP / EIS seems to include a very ambitious program for GGNRA park expansion, including new park land and new activities, particularly under the preferred alternative. Relatively scant attention, however, is paid to an analysis of existing conditions to determine potential environmental effects. Entire areas of impact analysis have been overlooked, such as hazardous fire conditions on Rancho Corral de Tierra and the Gregerson Property, existing conditions on the SFPUC's Peninsula Watershed including special status species and their habitat, and the apparent conflict between certain aspects of the proposed federal action and local agency plans and policies. As a result, potential impacts have not been addressed and mitigated. The current approach frustrates the effort to provide cumulative effects analysis as required under NEPA.

We believe that the GMP / EIS is deficient in its descriptions of the various alternatives as required by 40 CFR Part 1502.14 (affected Environment). In addition the GMP / EIS does not adequately describe the environmental consequences and their significance, both direct and indirect, as required by 40 CFR Part 1502.16. Finally, the GMP / EIS does not adequately address possible conflicts between the proposed action and the objectives of local land use plans, policies and controls for the area concerned as required by 40 CFR Part 1508.8.

We strongly recommend that the draft GMP / EIS be revised by incorporating the following:

Boundary Adjustments: McNee Ranch in San Mateo County

- Provide a complete description of the proposed east-west trail alignment and its connection to McNee Ranch State Park. Develop east-west trail alignment alternatives that do not cross through the SFPUC Peninsula Watershed, particularly sensitive habitat areas.
- Provide an analysis of existing conditions and potential impacts from increased public use of trails.
- Provide an economic analysis of the potential cost to federal tax payers for reconstruction of the main road and other trail improvements in McNee Ranch State Park.

Ocean Beach, Alternatives 1 through 3:

- Provide a more complete description of the existing conditions including the location of areas vulnerable to “natural processes” and what is specifically meant by “natural processes.”
- Provide a complete description of the proposal appropriate for a programmatic EIS. As described in the GMP / EIS, the scope of the relocation proposal is unclear.
- The proposed redesign of the Ocean Beach Corridor contemplated in the GMP / EIS should be supported by a conceptual plan, and at a minimum, a complete description.
- The alternatives should address the existing policies and plans of the SFPUC for the operation of its Oceanside Pollution Control Plan and related infrastructure.
- The EIS should provide an alternative for continued operation, maintenance, and upgrade of existing infrastructure.
- The EIS should analyze the inter-agency planning process currently underway which includes participation of both the SFPUC and GGNRA and its potential impact on the alternatives

Mile Rock Tunnel: Proposed Designation of Eligibility for the National Register of Historic Places

- Do not propose historical designation for Mile Rock Tunnel, since the designation is likely inappropriate for a facility that has been substantially altered over the years and is not visible or accessible to the public.
- Before further contemplation of such a designation, have qualified experts perform an assessment of eligibility.

Lands End Area: Alternatives 1 and 2

- Modify the alternatives to ensure that SFPUC has access to maintain and ensure proper operation of its structures and equipment in the area, including night-time work.

Fort Funston, Alternative 1:

- The design of the Fort Funston Visitor Center (and other facilities that generate public use) should include a parking plan developed in coordination with the San Francisco County Transportation Authority to provide sufficient parking spaces to avoid unacceptable vehicle/pedestrian hazards. The parking demand would be estimated during project-level environmental review of the proposed facilities.
- To the extent feasible, include the use of congestion management tools at Fort Funston such as improving and promoting transit options, and if warranted by parking demand, implementing a reservation system, shifting employee work hours, and employing congestion fees (such as parking fees).
- Collaborate and coordinate on transportation planning opportunities regarding GGNRA's proposed plans for Fort Funston with the City's proposed plans for Lake Merced, Harding Park and the San Francisco Zoo.
- Monitor the surrounding area streets and take appropriate enforcement action.

Fort Funston, Alternatives 1 through 3 and No-Action Alternative

- The GMP / EIS should include a description of the SFPUC's two wastewater assets at Fort Funston (the first being an outfall pipe and discharge structure at Lake Merced and the second being an outfall pipe used by Daly City to convey stormwater and wastewater) and include their maintenance, operation and possible upgrade as part of the proposed alternatives.

Park Lands in San Mateo County, Alternatives 1 through 3 and No-Action Alternative:

SFPUC Peninsula Watershed -- Sweeney Ridge (Including Cattle Hill and Picardo Ranch)

- Provide a more complete project description appropriate for a programmatic EIS for limited vehicle access to the Bay Discovery Site. Describe the purpose of vehicle access and the proposed route or possible alternative routes.
- If the proposed route for limited vehicle access is on the SFPUC's property (via Army Road), private vehicles not related to utility purpose will not be allowed due to safety concerns (traffic and fire). Provide a GGNRA van or other suitable vehicle properly outfitted with fire suppression equipment and

driven by GGNRA personnel. A properly trained and equipped concessionaire could also provide this service. Assuming that the purpose of access is for persons with disabilities, the vehicle should meet accessibility standards. Coordinate with the SFPUC regarding the frequency of vehicle travel on Army Road.

- Consider an alternative route for persons with disabilities to access the Bay Discovery Site without the use of a vehicle. For example, the existing trail from Skyline College via Sweeney Ridge connecting to the upper Mori Point Trail to the Bay Discovery Site could possibly be improved to meet ADA guidelines, or at least improved sufficiently to allow more disabled access. Conduct a biological assessment, particularly for Mission Blue butterfly and its habitat near the area with a series of steps south of Skyline College (see attached Sweeney Ridge Trail map) and provide appropriate avoidance and/or mitigation measures.
- Include mitigation measures outlined below (see "Rancho Corral de Tierra and the Gregerson Properties") to address potential impacts from fire hazard from new ignition sources (hikers' huts, primitive camping).

SFPUC Peninsula Watershed -- GGNRA Scenic Easement and Recreation and Scenic Easement:

- Cite the authorizing statute for the easements.
- The relationship between the GGNRA and the SFPUC should be well defined, beginning with the following clarification: The SFPUC's Peninsula Watershed is not park land as such because the Scenic Easement and Recreation and Scenic Easement do not convey GGNRA management authority over the SFPUC's Peninsula Watershed. The SFPUC is not bound by National Park Service planning mandates or procedures that GGNRA must follow, including planning mandates of the proposed updated GGNRA General Management Plan.
- Maps depicting the easement boundaries should be corrected to show that the Recreation and Scenic Easement does not include Polhemus and the area around San Mateo Creek below Crystal Springs Dam (see attached map).

Rancho Corral de Tierra and the Gregerson Properties and Proposed Trail Alignments Connecting To, or Crossing Over SFPUC Watershed Lands:

- The existing fire hazard conditions for Rancho Corral de Tierra and the Gregerson property should be analyzed in greater detail. This analysis should include fire history, CAL FIRE status (in terms of State Responsibility Area), location of nearest CAL FIRE station or other fire fighting response unit, potential ignition sources, fire spread and growth potential (fire severity), fuel type distribution, resources at risk, likely fire behavior (based on characteristics such as slope, surface fire fuel loading and arrangement, presence of stands of tall trees that could act as "fuel ladders"), and the

existing fire protection system (including developed emergency water sources and access).

- The potential fire impacts from proposed uses should be analyzed and mitigated to the extent possible. The economic impact analysis required under NEPA should include the costs of fire hazard reduction. While the specific details of the proposed primitive camping may not be known, a range of options could be discussed. Reasonable mitigation measures should include locating primitive camp sites to areas of low fire hazard, providing emergency water and adequate access for fire fighting, on-site supervision (park service ranger or concessionaire) and emergency communication since cell phone reception in this area is poor.
- The GMP / EIS should include mitigation measures to address the proposed new uses that create potential ignition sources, such as public trails and picnic areas. Mitigation measures should include fuel breaks to separate potential ignition sources from high fire hazard areas, fuel load reduction, developing emergency water sources, restricting public access to high fire hazard areas with fences, gates and a permit or reservation system, and installing helispots. Park service personnel who are designated as “First Responders” in an emergency should be trained in fire response and fire prevention. All vehicles entering high fire hazard areas should be properly outfitted for high fire hazard areas per CAL FIRE regulations (spark arrestors, fire suppression equipment including emergency water).
- Evaluate existing roads for fire access and improve as necessary and/or provide new access roads (or fuel breaks that could serve as a fire road) to high fire hazard areas when feasible to accommodate emergency fire fighting equipment and personnel. When considering road closures for habitat improvement or other purposes, evaluate the need for emergency access for fire fighting equipment and personnel.
- Develop an evacuation and safety plan for public use areas near high fire hazard areas.
- Evaluate potential impacts to marbled murrelets and their habitat including:
a) the potential increased risk of fire from new ignition sources (primitive camping sites and hikers’ huts); b) the increased risk of marbled murrelet displacement due to an increase of corvids caused by trash build-up from picnickers, hikers, bicyclists, horseback riders that use the trails in Sweeney Ridge and Rancho Corral de Tierra—as well as those who might trespass onto SFPUC lands; and c) analyze the increase in the potential for marbled murrelet disturbance during construction activities (roads, trails, huts, fencing, etc). Provide appropriate mitigation measures.
- Evaluate the potential for the introduction and spread of invasive exotic plant species into sensitive habitat areas of the Watershed and provide appropriate mitigation measures.
- Conduct biological surveys for special status species on Rancho Corral de Tierra, the Gregerson Property, Picardo Ranch, McNee Ranch and San Pedro Valley County Park prior to increased public access development.

- Given the presence of sensitive natural resources on the SFPUC Watershed that could be impacted by new public uses and the high fire hazard in the area, consider a special zone of restricted public access for Rancho Corral de Tierra and the Gregerson Property so that there is a sufficient buffer area (possibly within one-half mile of the SFPUC property line). This buffer zone would have no public access or highly restricted public access and remain undeveloped except for improvements needed for resource protection.
- Provide specific cost analysis by park unit including adequate staffing levels in high fire hazard areas and new public use areas that may require staffing to minimize potential impacts to listed species, sensitive habitat and to minimize potential fire hazard from new ignition sources.

If you have any questions or need further information, please contact Joanne Wilson, Land and Resources Planner in the SFPUC's Natural Resources and Lands Management Division at (650) 652-3205.

Sincerely,



Michael Carlin
Deputy General Manager and Chief Operating Officer

Enclosures: Table of Specific Comments
Sweeney Ridge Trail Map
California Red-Legged Frog Critical Habitat Units SNM-1 and SNM-2 Map
Peninsula Watershed Map – Scenic Easement and Recreation and Scenic Easement

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Volume & Page No.	GGNRA Draft GMP / EIS Text <i>(Italics are for emphasis by commenter)</i>	Comment
I.vi	<p>Executive summary: This general management plan addresses NPS-administered lands within the legislative boundaries of Golden Gate National Recreation Area and Muir Woods National Monument. The new general management plan will provide park management guidance for the following park sites: 1) <i>those park lands that are not covered by recent land use management plans and agreements</i>;... 3) lands and waters that are leased to the National Park Service or are under other management arrangements or easements, such as the San Francisco Public Utilities Commission Peninsula Watershed... Specifically these areas include the following:....park lands in San Mateo County, including the coastal area bluffs extending south from Fort Funston to Mussel Rock; Milagra Ridge; Sheldance Nursery Area; Sweeney Ridge, including Cattle Hill and Picardo Ranch; Mori Point; San Pedro Point; Devil's Slide coastal area; Rancho Corral de Tierra; Montara Lighthouse; Phleger Estate; <i>San Francisco Public Utilities Commission Watershed Easements</i>; and the offshore ocean environment.</p> <p>No-action Alternative Park Lands in San Mateo County The park would also continue to consult with other agencies to achieve fundamental park goals regarding the San Francisco Public Utilities Commission Peninsula Watershed, where the park holds scenic and recreational easements. Alternative 1: Connecting People with the Parks Alternative 1 is the National Park Service's preferred alternative for park lands in Marin, San Francisco, and San Mateo counties. Park Lands in San Mateo County (Preferred Alternative)</p>	<p>Conveys impression that watershed lands are park lands and that there is not a management plan for the City's Peninsula watershed.</p>
I.vii I.ix	<p>No-action Alternative Park Lands in San Mateo County The park would also continue to consult with other agencies to achieve fundamental park goals regarding the San Francisco Public Utilities Commission Peninsula Watershed, where the park holds scenic and recreational easements. Alternative 1: Connecting People with the Parks Alternative 1 is the National Park Service's preferred alternative for park lands in Marin, San Francisco, and San Mateo counties. Park Lands in San Mateo County (Preferred Alternative)</p>	<p>Conveys impression that GGNRA will be managing the Peninsula Watershed. Later text discusses possible watershed visitor center, but there is no mention of the SFPUC in the last sentence above as a participant in shared facilities.</p>

<p>I.xv-xvi</p>	<p>Park lands and ocean environments in San Mateo County <i>would be managed</i> as part of a vast network of protected lands and waters, some recognized as part of the UNESCO Golden Gate Biosphere Reserve. Park managers would emphasize connectivity, preservation, and restoration of the area's vital ecosystems through collaborative partnerships with other land management agencies. Strategic adjustments to the park's boundary would enhance the long-term preservation of ecological values... <i>There could be additional facilities that welcome visitors to the park.</i> This alternative would promote visitor information and orientation centers in Pacifica and in coastside communities. These facilities could be shared with San Mateo County Department of Parks, California State Parks, Monterey Bay National Marine Sanctuary, local governments, and other organizations.</p>	
<p>I.xvi</p>	<p>Alternative 2: Preserving and Enjoying Coastal Ecosystems Concept The emphasis of this alternative is to preserve, enhance, and promote dynamic and interconnected coastal ecosystems in which marine resources are valued and prominently featured. Recreational and educational opportunities would allow visitors to learn about and enjoy the ocean and bay environments, and gain a better understanding of the region's international significance and history. <i>Facilities and other built infrastructure could be removed to reconnect fragmented habitats and to achieve other ecosystem goals...</i></p> <p>Park Lands in San Mateo County As in the other alternatives, park lands and ocean environments in San Mateo County would be managed as part of a vast network of protected lands and waters. In this alternative, however, park managers would emphasize work to preserve and restore these interconnected coastal ecosystems through collaborative partnerships with other land management agencies in the region. Together these groups would work to sustain the area's native</p>	<p>While existing parks may require facility removal, the environmental analysis is heavily skewed towards the environmental (specifically hydrological and biological resource) benefits of such removals, and short shrift is given to the effects of proposed new facilities, which would be the case in the Peninsula Watershed.</p>
<p>I.xix</p>		

	<p>biodiversity, reconnect fragmented habitats and migration corridors, minimize the impact of invasive species, manage for changing fire regimes, and restore naturally functioning ecosystems. Proactive management would build into the environment greater resiliency to climate change.</p> <p>Chapter 1 REGIONAL COLLABORATION</p> <p>In working to preserve our park's resources unimpaired for future generations, we will <i>establish and maintain cooperative relationships with managers of adjacent public lands and watersheds</i>; tribal, state, and local governments; community organizations; and private landowners. We will collaborate with others to ensure that watersheds, ecosystems, viewsheds, and trail and transportation systems that extend beyond park boundaries are considered holistically, in order to best preserve important park resources, provide equitable and sustainable access, and advance the goal of creating a seamless network of protected lands.</p>	<p>The SFPUC, as the fee owner of the Peninsula Watershed, is not specifically called out nor is the relationship between GGNRA and SFPUC defined very well.</p>
<p>I.9</p>	<p>THE PLANNING AREA</p> <p>This new general management plan addresses the lands administered by the National Park Service within the legislative boundaries of Golden Gate National Recreation Area and Muir Woods National Monument. Over the last 15 years, the park staff has completed numerous land use and site plans for areas in Golden Gate National Recreation Area. These plans and associated environmental impact documents are current and therefore these areas are not included in the planning area for this updated general management plan. <i>The new general management plan will provide park management guidance for the following park sites:</i> 1) those park lands that are not covered by recent land use management plans and agreements; 2) those lands that are newly acquired or in the process of acquisition; 3) <i>lands and waters that are leased to the National Park Service or are under</i></p>	<p>Text repeatedly calls watershed lands "park" lands when the NPS only has a limited easement interest that conveys no management authority. As discussed below, it is not clear what projects are proposed for the watershed, and the environmental analysis in many cases includes no information on possible impacts of new facilities in a closed area even if the projects were clearly identified.</p>

	<p><i>other management arrangements or easements (such as the San Francisco Public Utilities Commission Peninsula Watershed). The total area of land and water addressed in this plan is approximately 50,000 acres.</i></p> <p>park lands in San Mateo County, including... San Francisco Public Utilities Commission Peninsula Watershed easements;</p>	
<p>I.25</p>	<p>SPECIAL MANDATES AND ADMINISTRATIVE COMMITMENTS RELATED TO GOLDEN GATE NATIONAL RECREATION AREA</p> <p><i>Special mandates are park-specific requirements that expand on the park's legislated purpose. These mandates generally require the National Park Service to perform some particular action as directed through congressional legislation. Administrative commitments are agreements that have been reached through formal, documented processes, and include agreements such as a conservation easement. The ongoing mandates and commitments for Golden Gate National Recreation Area are described in this section.</i></p> <p>MANAGEMENT AND ADMINISTRATION</p>	<p>While terming the watershed to be "park lands", and acknowledging that federal legislation controls management activities, there is no mention of the legislation that transferred the easements to the administration of the Park Service. Congress has mandated that the scenic easements shall be administered in accordance with their terms. 16 USC §460bb(p) is set forth below. The NPS management plan should reflect the limitations that the federal government can only "manage" the land in terms of administering the easements, and in terms of trails can only seek construction of "a trail" "connecting with a suitable beach unit" under their jurisdiction, along with trails that may be allowed under the Scenic and Recreation Easement.</p> <p>(p) San Francisco water department property; scenic and recreational easement</p> <p>With reference to those lands known as the San Francisco water department property shown on map numbered NRA GG-80,000-A, the Secretary shall administer such land in accordance with the provisions of the documents entitled "Grant of Scenic Easement", and "Grant of Scenic and Recreational Easement", both executed on January 15, 1969, between the city and county of San Francisco and the United States, including such amendments to the subject document as may be agreed to by the affected parties subsequent to December</p>

	<p>PENINSULA WATERSHED CONSERVATION EASEMENT The San Francisco Public Utilities Commission's Peninsula watershed is home to three drinking water reservoirs. Located in San Mateo County, 13 miles south of San Francisco, the Peninsula watershed consists of 23,000 acres of forested hills, coastal scrub, and grasslands. On January 15, 1969, the United States of America was granted conservation easements on 23,000 acres of watershed lands owned by the City/County of San Francisco. Two separate easements, a scenic easement and a scenic and recreation easement, were granted by San Francisco and accepted by the Secretary of the Interior. In 1972, Golden Gate National Recreation Area was charged with the responsibility of ensuring that the conditions of the easements are upheld. The scenic easement generally includes the area within the watershed west of the Crystal Springs and San Andreas reservoirs. The primary purpose of this easement is to preserve the property in its natural state while permitting "the collection, storage, and transmission of water and protection of water quality for human consumption." The scenic and recreation easement generally includes the area within the watershed east of the Crystal Springs and San Andreas reservoirs. The primary purpose of this easement is to preserve the property in its natural state while permitting "the collection, storage, and transmission of water and protection of water quality for human consumption; outdoor recreation; and other [compatible] uses." Both easements contain numerous restrictions on use or modifications of the property. The scenic and recreation easement also grants the public "the right, subject to rules and regulations as may be imposed and published by [the Public Utilities Commission], to enter the premises for recreational</p>	<p>28, 1980. <i>The Secretary is authorized to seek appropriate agreements needed to establish a trail within this property and connecting with a suitable beach unit under the jurisdiction of the Secretary.</i></p>
<p>I.26</p>		<p>Text is generally accurate but should acknowledge SFPUC watershed management plan and compare to alternatives. There is no mention of the fact that the Scenic Easement expressly says that it shall not be construed to require public access to the western 19,000 acres of the watershed. Legislation giving GGNRA management authority (16 USC 460 bb(p)) should be cited here as the congressional directive- easements to be managed in accordance with their terms, and also that NPS authorized to seek beach trail corridor.</p>

	<p>purposes." Golden Gate National Recreation Area has the right and obligation to monitor use of the land for consistency with the terms of the two easements.</p>	
<p>I.35</p>	<p>RELATIONSHIP OF THIS PLAN TO OTHER PLANS Golden Gate National Recreation Area and Muir Woods National Monument are located in the midst of a variety of public and private open spaces. These lands and waters combine to form a large and comprehensive natural open space corridor. Within Golden Gate National Recreation Area, there are sites that are being managed with guidance from recently completed land use or site management plans. The complex physical and political landscape of the San Francisco Bay Area has produced an environment where a multitude of planning takes place regarding transportation, conservation, recreation, growth and development, and coastal and ocean resources. Most of these public and private land and marine areas are covered by approved plans prepared by a host of federal, state, regional, and local agencies. Management of these lands and waters could influence or be influenced by actions presented in this general management plan / environmental impact statement. The following narrative briefly describes the various planning efforts and projects at the federal, park, state, and county levels, and how they may be influenced by the general management plan.</p> <p>CURRENT PLANS FOR OTHER PARK AREAS NOT MANAGED BY THE NATIONAL PARK SERVICE</p> <p>COUNTY AND LOCAL PLANS Peninsula Watershed Management Plan – San Francisco Public Utilities Commission</p>	<p>Including the watershed management plan with plans like adjacent cities' general plans, bicycle plans etc. diminishes the importance of the plan and disregards the fact that the plan governs administration of the watershed by the SFPUUC as the fee owner, much like the more detailed description of the Presidio Management Plan discussed on p. 39 as a "CURRENT PLANS FOR OTHER PARK AREAS NOT MANAGED BY THE NATIONAL PARK SERVICE".</p>
<p>I.42</p>		
<p>I.43</p>	<p>RELATED LAWS AND NATIONAL PARK SERVICE</p>	<p>If this is the case, then the management of the scenic easements is</p>

	<p>POLICIES... <i>Many park management directives are specified in laws and policies guiding the National Park Service and are not subject to alternative approaches...</i> In other words, a general management plan is not needed to decide that it is appropriate to protect endangered species, control exotic species, protect historic and archeological sites, conserve artifacts, or provide for access for disabled persons. Laws and policies have already addressed those and many other issues.</p>	<p>also not subject to alternative approaches as the federal legislation requires that the easements be administered in accordance with their terms. The most that the NPS can do in its plan is to promote the trail connection to a beach unit under NPS jurisdiction as authorized by 16 USC §460bb(p), and to suggest other uses consistent with the easements, with public access allowed only in the Scenic and Recreation Easement area.</p>
<p>I.103</p>	<p>PROPOSED BOUNDARY ADJUSTMENTS</p> <p>Gregerson Property, San Mateo County</p> <p>The property also possesses scenic vistas to the southeastern coast, and has high potential for recreation, <i>including a trail along the ridge connecting to a future Bay Area Ridge Trail segment through the extensive SFPUC watershed lands.</i> 2) Operational Issues: The access road would be beneficial for park management purposes. It runs along a low ridge, connecting the park's access road with the upper reaches of Rancho Corral de Tierra and the adjacent SFPUC watershed lands. In addition to improving access for managers, the property would simplify and reduce the length of the park's perimeter.</p>	<p>Per the comment above (I.25), the NPS management plan should reflect the limitations that the federal government can only "manage" the land in terms of administering the easements, and in terms of trails can only seek construction of "a trail" connecting with a suitable beach unit" under their jurisdiction, along with trails that may be allowed under the Scenic and Recreation Easement. Rather than blaze a new trail through sensitive areas in the interior of the Peninsula Watershed, NPS should improve and provide better interpretation of existing connector trails from Sweeney Ridge to coastal areas in Pacifica. For example, Milagra Ridge to the Shelldance Nursery (with better access / interpretation for crossing Highway 1 to Mori Point) and the trail that descends from near the Bay Discovery Site to Fassler Avenue in Pacifica and continues via sidewalks to Rockaway Beach and Pacifica State Beach (Linda Mar). In the discussion of new Bay to Ocean trails through the Peninsula Watershed, existing conditions and potential impacts are not analyzed. In March 2000, the United States Fish and Wildlife Service (USFWS) reviewed the draft Peninsula Watershed Management Plan EIR and provided comments on the alternatives for the proposed Fifield Cahill Ridge Trail. USFWS agreed with the characterization of the proposed trail route as running through "... one of the largest and most pristine expanses of natural habitats in the northern San Francisco Peninsula" and emphasized the scarcity of these habitats and the</p>
<p>I.108</p>	<p>McNee Ranch, San Mateo County</p> <p>It connects to ecosystems and landscapes under NPS management, In addition, visitors enjoy sweeping vistas of the Pacific Coast and rugged coastal hills from a network of multiuse trails and unpaved roads. These routes connect Pacifica with the coastline communities of Montara and Moss Beach, and lead to the highest points on Montara Mountain. <i>These trails are important to the planned east-west connection that will enable hikers to cross from San Francisco Bay to the Pacific Ocean...</i></p>	

	<p>McNee Ranch is the only state park land adjacent to Golden Gate National Recreation Area that is not also within the federal authorized boundary. The park seeks to include the property within its authorized boundary to facilitate cooperative management, provide consistency, and enhance recognition of this property as part of the larger area of protected lands. This is not a proposal for acquisition. This proposal corrects a technical error that omitted McNee Ranch from the park when Montara State Beach was included in the park boundary in 1980. Montara State Beach was expanded to include McNee Ranch sometime afterwards. As is the case with the other California state parks in the boundary, administration (cooperative management) would not be an additional burden.</p> <p>POTENTIAL FUTURE BOUNDARY ADJUSTMENTS</p> <p>The National Park Service does not manage all the lands within the legislative boundaries of Golden Gate National Recreation Area; there are public lands within the boundaries that are managed by other agencies. Golden Gate National Recreation Area staff will continue to monitor these lands and coordinate with these land managers in a way that maintains and enhances the values that contributed to the lands being included in the boundary. Some of these efforts could lead to eventual acquisition by the National Park Service.</p>	<p>increasingly important role they play in the survival of federally listed species. A letter from the California Department of Fish and Game (CDFG) in February 2000 expressed a similar view. The Peninsula Watershed Management Plan provides a planning policy framework for the SFPUC for making future decisions about watershed land uses. With the completion of the Fifield Cahill Ridge Trail, the highest trail priorities as set forth in the Peninsula Watershed Management Plan are: 1) to complete a connector trail from Sneath Lane to the North San Andreas Trail; 2) to build the southern extension of the Ridge Trail from Highway 92 south to the Kings Mountain Trail; and 3) to improve trails and connectors so that there is a continuous north-south public trail along the eastern edge of the Watershed. While the Peninsula Watershed Management Plan includes policies to consider the addition of new trails and connectors in zones of less vulnerability and risk, the Plan also includes policies to limit public trails to the periphery of the Watershed to minimize adverse impacts (sensitive habitat and species, fire, spread of exotic weed species, etc.) and a prohibition on the construction of new trails and unsupervised access to existing roads and trails not addressed in the Plan.</p>
<p>I.110</p>	<p>Undeveloped Land Adjacent to Sweeney Ridge and County of San Francisco Jail Property</p> <p>The property is adjacent to park land, sharing two sides with Sweeney Ridge. It contains county jails #3 and #7, along with a plant nursery and cultivated fields. A large portion of the 145-acre property, roughly 50 acres, is undeveloped and relatively undisturbed. This undeveloped area is contiguous with the extensive coastal ecosystems that the National Park Service manages on Sweeney Ridge. It has similar scenic qualities and habitat</p>	<p>The San Francisco Administrative Code outlines the procedure for disposal of surplus City property. Jail property declared surplus would first be offered to other City departments at fair market value. The SFPUC has expressed an interest in this jail property in the past because it is within the hydrologic boundary of the Peninsula Watershed.</p>

	<p>values, including potential habitat for threatened and endangered species. Inclusion of the undeveloped area in the park's boundary would enable the National Park Service to receive it, should the county government declare the property excess.</p> <p>Gateway to San Mateo County Comprising a large area of land between Rancho Corral de Tierra and Highway 92, this area could contribute substantially to natural resource protection, <i>the regional trails network</i>, and preservation of scenic and rural character.</p>	<p>The figure that follows showing this priority conservation area does not provide any detail regarding potential boundary adjustments, which could adversely effect (surround) the SFPUC Peninsula Watershed.</p>
<p>I.110</p>	<p>TRAILS INTRODUCTION Much of the trail system still requires upgrading to improve conditions, provide more sustainable alignments, and to fill gaps in the system. In new areas where the park is expanding, such as Rancho Corral de Tierra, a thorough evaluation and plan would be required following this general management plan to guide needed improvements.</p> <p>San Mateo County Trails In established areas of the park (Mori Point, Milagra Ridge, Sweeney Ridge) future efforts would focus on continuing to improve existing trails, including sustainable alignments and design, improved connectivity and accessibility, and provision of wayfinding signs. Safe trailheads, appropriate for both local and regional visitors, would be provided. Where appropriate, former management roads would be converted to trails. A more comprehensive approach to trail planning would be required for new areas coming into park management (Pedro Point, Rancho Corral de Tierra) and areas where trail deficiencies have not been addressed (Phleger Estate).</p> <p>No action alternative:</p>	<p>See above comments for pages I.103 - 110.</p> <p>Not clear if first italicized portion of text includes watershed; text does not reference limitation in federal legislation regarding administration of easements in accordance with their terms or SFPUC watershed management plan, nor compare SFPUC plan with alternatives. What does it mean "to achieve fundamental park goals" when legislation mandates administration in accordance with the terms of the easements?</p> <p>See above comments for pages I.103 - 110.</p>
<p>I.137</p>	<p>TRAILS INTRODUCTION Much of the trail system still requires upgrading to improve conditions, provide more sustainable alignments, and to fill gaps in the system. In new areas where the park is expanding, such as Rancho Corral de Tierra, a thorough evaluation and plan would be required following this general management plan to guide needed improvements.</p> <p>San Mateo County Trails In established areas of the park (Mori Point, Milagra Ridge, Sweeney Ridge) future efforts would focus on continuing to improve existing trails, including sustainable alignments and design, improved connectivity and accessibility, and provision of wayfinding signs. Safe trailheads, appropriate for both local and regional visitors, would be provided. Where appropriate, former management roads would be converted to trails. A more comprehensive approach to trail planning would be required for new areas coming into park management (Pedro Point, Rancho Corral de Tierra) and areas where trail deficiencies have not been addressed (Phleger Estate).</p> <p>No action alternative:</p>	<p>See above comments for pages I.103 - 110.</p> <p>Not clear if first italicized portion of text includes watershed; text does not reference limitation in federal legislation regarding administration of easements in accordance with their terms or SFPUC watershed management plan, nor compare SFPUC plan with alternatives. What does it mean "to achieve fundamental park goals" when legislation mandates administration in accordance with the terms of the easements?</p> <p>See above comments for pages I.103 - 110.</p>
<p>I.193</p>	<p>No action alternative:</p>	<p>See above comments for pages I.103 - 110.</p>

PARK LANDS IN SAN MATEO COUNTY

Overview

At the time the 1980 general management plan was developed, Golden Gate National Recreation Area did not manage any land in San Mateo County. Since that time, *NPS managed land within the designated park boundary* has grown to include almost 30,000 acres in San Mateo County. Stretching along the San Mateo coast to Rancho Corral de Tierra and inland to the Phleger Estate, the southern park lands feature a remarkable wealth of natural and historic resources. From rugged coastal bluffs and windswept ridgelines to a redwood forest, wetlands, and streams, these lands support an abundance of plants and wildlife and tell the story of the people who have shaped this peninsula over generations. Golden Gate National Recreation Area park lands in San Mateo County serve a large and diverse local population, offering many opportunities for recreation and enjoyment. Whether enjoying the trails, strolling the beaches, or taking in panoramic views up and down the Pacific coast, there are unlimited ways to explore and appreciate these park lands. Currently the National Park Service's presence in San Mateo County is limited, sites are not well identified, and there are few basic facilities to support access. *Management of park lands in San Mateo County is guided by the park's authorizing legislation and the management policies common to units of the national park system.* This management approach would continue under the no-action alternative, with the exception of Sweeney Ridge, for which a general management plan amendment was approved in 1985 to provide specific management guidance. Site planning for the enhancement of visitor facilities, such as the planning recently completed for Mori Point, would continue. *The park management would also continue to consult with other agencies to achieve fundamental park goals regarding the San Francisco Public Utilities Commission Peninsula Watershed, where the park holds scenic and recreational easements.*

<p>I.195-196</p>	<p>San Francisco Public Utilities Commission Peninsula Watershed Easements These 23,000 acres are managed by San Francisco Public Utilities Commission to protect San Francisco's water supply and the scenic, ecological, and cultural resources of the watershed. The management is guided by the commission's <i>Peninsula Watershed Management Plan</i>. Golden Gate National Recreation Area manages two easements over the Peninsula watershed: a scenic easement and a scenic and recreation easement that provide for preservation of natural values and limited recreational use. Compatible recreational, educational, and scientific uses are highly controlled. Primary public access is on trails along the eastern edge of the watershed where the trails are easily accessible from adjacent communities. Access on the 10-mile Cahill Ridge alignment of the Bay Area Ridge Trail is provided by guided tours. <i>The San Francisco Public Utilities Commission and National Park Service cooperate to ensure that ongoing water operations and other allowable uses are compatible with the preservation and access components of the easements.</i> The Peninsula watershed forms the core of the UNESCO Golden Gate Biosphere Reserve, an area rich in native plant and animal life.</p>	<p>Water operations and all utility functions are expressly excluded from NPS management or restrictions under the terms of the easements. There is no mention of the fact that the Scenic Easement does not require public recreational access.</p>
<p>I.213 (Alt. 1)</p>	<p>Alternative 1: Ocean Beach In Both the Diverse Opportunities Zone and the Natural Zone In this alternative, the National Park Service would participate in multiagency efforts to knit the unique assets and experiences of the Ocean Beach corridor into a seamless and welcoming public landscape, planning for environmental conservation, sustainable infrastructure, and long-term stewardship. The Park Service would continue to work with the City of San Francisco, California Coastal Commission, and the U.S. Army Corps of Engineers to address coastal erosion by <i>relocating facilities out of vulnerable locations and restoring</i></p>	<p>"Managed retreat" would compromise the stability of the Oceanside WWTP. SFPUC has critical infrastructure in this area including the Westside Transport Box (1.5 miles long under the Great Highway). Ratepayers have spent hundreds of millions of dollars on the Oceanside Plant and associated structures, including a restroom located at Sloat & Great Highway that was paid for by ratepayers to mitigation construction of the Oceanside Plant. Mile Rock Tunnel is still operational and needed for combined system discharges.</p>

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	<p><i>natural processes to maximize protection of the beach for its natural and recreational values.</i></p> <p>Natural Zone (south of the O’Shaughnessey seawall) The area would be managed to protect shorebirds and allow natural coastal and marine processes to occur while providing for a variety of compatible recreational activities that allow visitors to enjoy and view nature. This zone would extend to create approximately 5 miles of beach, dunes, and cliffs from central Ocean Beach south to Mussel Rock in San Mateo County. Park managers would protect shorebird habitat, <i>allow natural shoreline processes to continue unimpeded</i>, and provide visitors opportunities for self discovery while enjoying and viewing nature.</p> <p>In Both Zones This alternative supports the City of San Francisco’s interest in a broad approach to redesigning the Ocean Beach corridor and exploring sustainable approaches to sea level rise. The park would continue to work with the City of San Francisco and the U.S. Army Corps of Engineers to address coastal erosion by relocating facilities out of vulnerable locations and restoring natural processes.</p>	
	<p>Ocean Beach In Both the Diverse Opportunities Zone and the Natural Zone In this alternative, the National Park Service would participate in multiagency efforts to knit the unique assets and experiences of the Ocean Beach corridor into a seamless and welcoming public landscape, planning for environmental conservation, sustainable infrastructure, and long-term stewardship. The park would continue to work with the City of San Francisco and the U.S. Army Corps of Engineers to address coastal erosion by relocating facilities out of vulnerable locations</p>	<p>I.240-1 (Alt. 2)</p>

<p>I.260 (Alt. 3)</p>	<p>and restoring natural processes. Diverse Opportunities Zone (along the O'Shaughnessey seawall) The northern end of Ocean Beach would be managed to provide opportunities for visitors to engage in a variety of beach-related recreational activities. As in alternative 1, the park would collaborate with the City of San Francisco to provide an enhanced oceanfront landscape in the Ocean Beach corridor with improved amenities to support enjoyment of the beach, including the coastal promenade, parking, and restrooms. Natural Zone (south of the O'Shaughnessey seawall) The area would be managed to protect shorebirds and allow natural coastal and marine processes to occur while providing for a variety of compatible recreational activities that allow visitors to enjoy and view nature. This zone would extend to create approximately 5 miles of beach, dunes, and cliffs from central Ocean Beach south to Mussel Rock in San Mateo County. Park managers would protect shorebird habitat, allow natural shoreline processes to continue unimpeded, and provide visitors opportunities for self discovery while enjoying and viewing nature. In Both Zones This alternative supports the City of San Francisco's interest in a broad approach to redesigning the Ocean Beach corridor and exploring sustainable approaches to sea level rise. The park would continue to work with the City of San Francisco and the U.S. Army Corps of Engineers to address coastal erosion by relocating facilities out of vulnerable locations and restoring natural processes. Ocean Beach In Both the Diverse Opportunities Zone and the Natural Zone In this alternative, the National Park Service would participate in</p>	
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	<p>multiagency efforts to knit the unique assets and experiences of the Ocean Beach corridor into a seamless and welcoming public landscape, planning for environmental conservation, sustainable infrastructure, and long-term stewardship.</p> <p>The park would continue to work with the City of San Francisco and the U.S. Army Corps of Engineers to address coastal erosion by relocating facilities out of vulnerable locations and restoring natural processes.</p> <p>Diverse Opportunities Zone (along the O’Shaughnessey seawall) Management of this zone would be the same as that described under alternative 2.</p> <p>Natural Zone (south of the O’Shaughnessey seawall) Management of this zone would be the same as that described under alternative 2.</p>	
I.216	<p>PARK LANDS IN SAN MATEO COUNTY</p> <p>Overview</p> <p>Under this alternative and others, park lands and ocean environments in San Mateo County <i>would be managed</i> as part of a vast network of protected lands and waters, some recognized as part of the UNESCO Golden Gate Biosphere Reserve. This network includes San Francisco Public Utilities Commission Peninsula Watershed lands, California state parks, the Monterey Bay National Marine Sanctuary, county parks, and other land held by regional land trusts.</p>	<p>How is it that NPS purports to "manage" lands owned by other public entities?</p>
I.217	<p>Sweeney Ridge (including Cattle Hill and Picardo Ranch) Natural Zone (majority of the area)</p> <p>The area would be managed to protect endangered species and the large contiguous natural landscape extending into the San Francisco Public Utilities Commission Peninsula Watershed. Visitors could experience the area through stewardship activities, improved trails, and <i>primitive camping</i>. <i>Connections to the</i></p>	<p>Should reference plans and policies in Peninsula Watershed Management plan re: camping and trail access, and also fact that Scenic Easement does not require public access.</p> <p>There is no explanation of "primitive camping" making it virtually impossible to adequately analyze potential impacts. There is no analysis of potential fire hazard impacts associated with "primitive</p>

	<p><i>regional trail network and the surrounding public lands (San Francisco Public Utilities Commission lands, San Pedro Valley County Park, McNee Ranch, and Rancho Corral de Tierra) would be developed in coordination with other land managers.</i></p> <p>Scenic Corridor Zone (Sneath Lane and part of Sweeney Ridge) Trail amenities would be developed, and connections would be enhanced to the Bay Area Ridge Trail and the Sawyer Camp Trail in San Francisco Public Utilities Commission Peninsula Watershed. The San Francisco Bay Discovery Site National Historical Landmark would be preserved and interpreted. <i>Limited vehicular access to the discovery site would be permitted. A hikers' hut could be developed as part of a system of huts proposed for the Bay Area Ridge Trail.</i></p>	<p>camping”.</p> <p><i>Potential for increased fire risk:</i></p> <p>Please ensure that the potential primitive camping sites and the potential hikers' hut do not increase the potential for wildfire spreading to SFPUC lands.</p> <p>Re “limited vehicular access” to the Bay Discovery Site: What is the purpose? What is the proposed route and/or alternative routes of vehicle access? Would these be private or NPS vehicles? Private vehicles are generally not allowed on the SFPUC's Army Road except for utility purposes.</p>
<p>I.218-219</p>	<p>Rancho Corral de Tierra Natural Zone (majority of the area)</p> <p>The upland areas and land outside the existing equestrian centers would be managed to preserve the wild, open character of the landscape and offer trail-based recreation that is light on the land, including walking, hiking, bicycling, and horseback riding. Natural habitats and processes in the zone, which includes four creek corridors, would be restored to the greatest extent possible with the help of community stewards. Visitors would enjoy the scenic coastal environment through an enhanced and sustainable system of trails. The trail network would connect local communities to the park and link the ridges of Montara Mountain to the Pacific Ocean. <i>The National Park Service would work with the San Francisco Public Utilities Commission to complete a trail connection to Sweeney Ridge through the Peninsula Watershed's northwest corner along Whiting Ridge. Unnecessary roads could be converted to trails or removed. Exploration of the park could be facilitated by scenic overlooks, sites for picnicking, primitive camping sites, and possibly a hikers' hut in a remote setting.</i></p>	<p>This is one of the few sections that actually describes what is proposed for the Peninsula watershed in the way of trails, yet the analysis does not provide any detail of these proposals or provide much in the way of analysis of the impacts of opening pristine areas to recreational users for the first time.</p> <p>See above comments for pages I.103 - 110.</p> <p>There is no analysis of potential impacts to butterfly habitat including the San Bruno elfin. Per the 5-Year Review for SBEB and Mission blue butterfly prepared by USFWS (http://ecos.fws.gov/docs/five_year_review/doc3216.pdf), <i>San Bruno Elfyn butterflies have been known from the Montara Mountain area, including Peck Mountain, since the recovery plan of 1984. The Montara Mountain area is adjacent to the SFPW and a good portion of Montara Mountain is in public protection. McNee Ranch State Park covers 253 hectares on the north slopes and is contiguous with San Pedro Valley County Park which covers 526 hectares and is contiguous with SFPW. However, some of the mountain is in private ownership, but the steepness of its slopes and access problems have kept it relatively free from</i></p>

	<p><i>development. No scheduled surveys are conducted on Montara Mountain and nearby peaks, but according to Arnold (pers. Comm., 2009) viable populations of San Bruno elfin butterflies remain on Montara Mountain and nearby peaks.</i></p> <p>Proposed park uses should be consistent with the federal protections outlined in the USFWS's 5-Year Review of the San Bruno Elfin Butterfly and Mission Blue Butterfly (http://ecos.fws.gov/docs/five_year_review/doc3216.pdf page 18):</p> <p><i>The National Park Service will inventory, monitor, and manage state and locally listed species in a manner similar to its treatment of federally listed species to the greatest extent possible. In addition, the (National Park) Service will inventory other native species that are of special management concern to parks (such as rare, declining, sensitive, or unique species and their habitats) and will manage them to maintain their natural distribution and abundance. The (National Park) Service will determine all management actions for the protection and perpetuation of federally, state, or locally listed species through the park management planning process, and will include consultation with lead Federal and state agencies as appropriate.</i></p> <p><i>Issue related to the potential for trespass</i></p> <p>The section regarding the preferred alternative's potential Natural Zone at Rancho Corral de Tierra (Volume I, page 218) mentions that "the upland areas and land outside the existing equestrian centers would be managed to preserve the wild, open character of the landscape and over trail-based recreation that is light on the land, including walking, hiking, bicycling, and horseback riding". Please ensure that the increased use of the Natural Zone by walkers, hikers, bicyclers, and horseback riders does not result in increased trespass onto SFPUC lands.</p>
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I.220	<p>Phleger Estate Natural Zone</p> <p>In all alternatives, the area would be managed to provide trail-based recreation in a natural and contemplative setting that complements the more developed recreation facilities at adjacent Huddart County Park. The redwood forest ecosystem, including West Union Creek and threatened and endangered species, would be protected and restored. The history of logging on the estate and its role in the settlement of San Mateo County would be interpreted. <i>Trail connections to adjacent lands and the regional trail system would be pursued in collaboration with San Mateo County and San Francisco Public Utilities Commission. These connections would include the Bay Area Ridge Trail, potential access from trailheads on Cañada Road and Skyline Boulevard, and a multiuse trail connection between Cañada Road and Skyline Boulevard north of Phleger Estate</i> Community stewardship of the site could contribute to trail and habitat improvements. The National Park Service would explore community trailheads and partnerships with the Woodside Store historic site.</p> <p>San Francisco Public Utilities Commission Peninsula Watershed Easements</p> <p><i>Natural Zone (majority of the area, corresponding with the scenic easement)</i></p> <p><i>Park managers would continue to cooperate with the San Francisco Public Utilities Commission for the preservation of the natural, cultural, scenic, and recreational features of the watershed. Within this zone, the park would promote completion of the Bay Area Ridge Trail connection from the Phleger Estate to Highway 92 and a new trail connection between the Bay Area Ridge Trail and the California Coastal Trail on the existing</i></p>	<p>Please ensure that the potential primitive camping sites and the potential hikers' hut do not increase the potential for wildfire spreading to SFPUC lands.</p> <p>At least the watershed management plan is referenced and the proposal reflects what is in the plan. But some of the proposed trails are within the Scenic Easement area, such as the Canada Road/ Skyline Boulevard trail north of the Phleger Estate, and an argument can be made that by promoting such trails, the NPS is not managing the Scenic Easement in accordance with its terms as required by 16 USC 460bb(p).</p> <p>The preferred alternative figure and the Alternative 2 figure for San Mateo County shows the Polhemus lands as within the Scenic and Recreation Easement; I don't believe this is the case.</p> <p>Polhemus lands and SFPUC property along San Mateo Creek below Crystal Springs Dam is not in the Scenic and Recreation Easement.</p> <p>See above comments for pages 1.103 - 110. Also, the Peninsula Watershed Management Plan describes a watershed visitor center (Management Action pub4, pg. 5.16-2), but does not state a location near Pulgas Temple or call for collaboration with GGNRA. The GMS / EIS text makes it sound like it is the policy of the SFPUC (per the watershed plan) to site a visitor center at or near Pulgas Temple in partnership with the GGNRA.</p>
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<p>I.243</p>	<p><i>alignment over Whiting Ridge; this would connect Sweeney Ridge with McNee Ranch and Rancho Corral de Tierra.</i></p> <p>Scenic Corridor Zone (eastern area closest to Highway 280, corresponding with the scenic and recreation easement) Park managers would promote preservation of natural, cultural, and scenic values with improved public access on trails. Proposed trail improvements include connecting the existing San Andreas multiuse trail to Sweeney Ridge via Sneath Lane, and improving trail access to the Phleger Estate from a new trailhead on Cañada Road. Park managers also would promote the implementation of other trails proposed in the 2002 <i>San Francisco Watershed Management Plan</i>, including completion of the north-south corridor through the watershed in areas of low sensitivity. <i>The park would work with the San Francisco Public Utilities Commission to provide a multiuse trail connection through the Peninsula watershed lands between Cañada Road and Skyline Boulevard north of Phleger Estate.</i> Preservation of scenic views along the trails, Cañada Road, Skyline Boulevard, Interstate 280, and its vista points would also be promoted in cooperation with the San Francisco Public Utilities Commission and Caltrans. The National Park Service would collaborate with the San Francisco Public Utilities Commission in creating a watershed visitor education center near the Pulgas Water Temple on Cañada Road, as described in the 2002 <i>Watershed Management Plan</i>. Additional coordination with the Juan Bautista De Anza National Historic Trail could also be provided.</p>	<p>Comment should refer to Peninsula Watershed Management Plan policies on trails and camping.</p> <p>See above comments for pages I.103 - 110. Also, there is no analysis of potential fire hazard. Prior to closing roads, they should be evaluated for emergency access for fire fighting equipment and personnel.</p>
<p>Alternative 2 Sweeney Ridge (including Cattle Hill and Picardo Ranch) Natural Zone</p>	<p>This area would be managed to protect endangered species and restore the large contiguous natural landscape <i>extending into the San Francisco Public Utilities Commission Peninsula Watershed. Visitors would experience the wild character of these lands through stewardship activities, trail use, and primitive</i></p>	

	<p><i>camping.</i> Sneath Lane could be converted to a trail and connect to the Bay Area Ridge Trail in the San Francisco Public Utilities Commission Peninsula Watershed. <i>Unnecessary fire roads could also be converted to trails or removed if not historic, and natural resources restored.</i> If acquired, a trailhead would be located at Picardo Ranch with modest visitor support facilities (restroom, picnic tables, parking).</p> <p>Rancho Corral de Tierra Natural Zone (majority of the area) Management would be the same as alternative 1, but with fewer and more primitive visitor amenities. Unnecessary fire roads could be converted to trails or removed if not historic, and natural processes restored. Sensitive Resources Zone (creek corridors) In this alternative, <i>the four equestrian facilities would be removed or relocated away from creek corridors over time. The park would partner with surrounding land managers to restore the creek corridors, reconnect them to the ocean, and restore anadromous fish passage.</i></p>	<p><i>Potential for increased fire-fighting capability:</i> It is not clear whether the existing equestrian facilities include infrastructure that, once the equestrian facilities were removed, could be used for fire-fighting efforts. If the equestrian facilities do include such infrastructure, please evaluate whether the potential use of those facilities for fire-fighting efforts outweighs the recreational benefits of those equestrian facilities—and therefore whether the removal of the equestrian facilities should be incorporated into the preferred alternative.</p>
<p>I.244-255</p>	<p>San Francisco Public Utilities Commission Watershed Easements Sensitive Resources Zone (majority of the area) In this alternative, the park managers would continue to cooperate with the San Francisco Public Utilities Commission for the preservation of the natural, cultural, scenic, and recreational features of the watershed. Park managers would promote natural resource preservation and highly managed public access in most of the watershed to support the values that resulted in designating this area as the core of the UNESCO Golden Gate Biosphere Reserve. Scenic Corridor Zone (Crystal Springs Regional Trail / Juan Bautista de Anza National Historic Trail corridor)</p>	<p>For the SFPUC Peninsula Watershed lands, the No Action alternative accurately describes NPS's current management role under Title 16, with the word "manages" perhaps better stated as "administers"; the other alternatives exceed the congressional authorization: <i>Managed by San Francisco Public Utilities Commission to protect water supply and ecological and cultural resources. The NPS manages a scenic easement and a recreation easement to protect natural values and limited recreational uses compatible with ongoing water operations.</i></p> <p>In particular, the wording of Alternative 3 on the table implies that</p>

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	<p>Park managers would promote access and visitor services along the existing multiuse trail and the implementation of trail improvements proposed in the <i>San Francisco Watershed Management Plan</i> (2002), including completion of the north-south corridor through the watershed in areas of low sensitivity. Additional coordination with the Juan Bautista De Anza National Historic Trail could also be provided.</p> <p>Alternative 3: Phleger Estate Natural Zone Management of this zone would be the same as that described under alternative 1. Interpretation would explore the estate's similarities with and differences from Muir Woods National Monument.</p> <p>San Francisco Public Utilities Commission Watershed Easements Natural Zone (majority of the area corresponding with the Scenic Easement) Management of this zone would be the same as that described under alternative 1.</p> <p>Scenic Corridor Zone (eastern edge, adjacent to Highway 280) Same as alternative 1, but with an emphasis on promoting enhanced interpretation to highlight the scope of the water system with its origins in Yosemite National Park and enhanced interpretation of Spanish exploration and colonization efforts including the Bay Area Discovery Site and Anza and Portola routes.</p> <p>Table comparing alternatives</p>	<p>NPS "manages" the watershed and should be revised: <i>Manage majority of area, corresponding to scenic and recreational easement, as in Alternative 1.</i></p> <ul style="list-style-type: none"> • <i>Manage eastern edge, adjacent to Highway 280 as in Alternative 1, but with emphasis on promoting enhanced interpretation to highlight the scope of the water system with its origins in Yosemite National Park.</i> <p>See above comments for pages I.103 - 110.</p> <p>The table comparing potential impacts on park lands, in the row labeled <i>Water Resources and Hydrologic Processes</i>, does not contain enough detail to discern whether proposed new trails in the Peninsula Watershed would have permanent impacts on water quality.</p>
I.262		
I.263		

<p>I.286</p>	<p>San Mateo County Watersheds. The watersheds in San Mateo County have not been comprehensively studied due to piecemeal land management by various agencies and private holdings. The watersheds that wholly or partly contain park land include Milagra, between Sweeney and Milagra; Sweeney; San Pedro Creek; Crystal Springs (part of the larger San Francisco watershed); and West Union / San Francisquito Creek. The 23-square-mile <i>San Francisco watershed</i> is owned and managed by the San Francisco Public Utilities Commission and is part of the water supply storage for the City and County of San Francisco. This watershed includes San Andreas Lake, Crystal Springs, Pilarcitos Lake, and a portion of the Pilarcitos Creek watershed. The San Pedro Creek watershed drains portions of the San Francisco watershed lands, Picardo Ranch, and portions of Devil's Slide. The West Union Creek watershed contains a tributary to the Searsville Lake that drains the Phleger Estate at the south end of Golden Gate National Recreation Area (NPS 2005a).</p>	<p>Should read either 23,000 acres or 35.9 square miles. If the SFPUC "manages" the watershed, how can GGNRA also "manage" it as "park" land? The text should be revised throughout to make clear that SFPUC manages the land and GGNRA "administers" the easements in accordance with 16 USC §460bb(p).</p>
<p>II.38</p>	<p>San Mateo County. Much of San Mateo County is part of the Santa Clara Valley Groundwater Basin, with portions in the San Francisco basin. Santa Clara Valley groundwater sources include coastal marine terrace or stream valley alluvial deposits where groundwater is stored in loose, unconsolidated, coarse-grained sand, and upland granitic bedrock of the Santa Clara Formation, where groundwater is stored in weathered rock openings and in rock fractures. The granite bedrock has limited storage capacity, but the alluvial deposits are good sources of groundwater. Over the long term, the marine terraces appear to be in hydrological balance; however, in dry years, pumping has reduced the water table to near sea level—increasing the risk of</p>	<p>Text does not differentiate between Santa Clara valley basin and small coastal terrace aquifers, where most park units drain to; also does not acknowledge southern westside basin and differentiate between it and SCV basin.</p>
<p>II.39</p>	<p>San Mateo County. Much of San Mateo County is part of the Santa Clara Valley Groundwater Basin, with portions in the San Francisco basin. Santa Clara Valley groundwater sources include coastal marine terrace or stream valley alluvial deposits where groundwater is stored in loose, unconsolidated, coarse-grained sand, and upland granitic bedrock of the Santa Clara Formation, where groundwater is stored in weathered rock openings and in rock fractures. The granite bedrock has limited storage capacity, but the alluvial deposits are good sources of groundwater. Over the long term, the marine terraces appear to be in hydrological balance; however, in dry years, pumping has reduced the water table to near sea level—increasing the risk of</p>	<p>Text does not differentiate between Santa Clara valley basin and small coastal terrace aquifers, where most park units drain to; also does not acknowledge southern westside basin and differentiate between it and SCV basin.</p>

	<p>salt water intrusion. The water is slightly alkaline with a mean pH value of 7.3 based on 20 samples. Hardness for the 20 wells sampled averaged 471 milligrams per liter (mg/L) as calcium carbonate (CaCO3), in excess of the 180 mg/L minimum value for water to be classified as very hard (CWA 2004).</p> <p>Some limited water quality monitoring has been conducted within the West Union / San Francisco Creek watershed (West Union Creek is located within this watershed), but no monitoring has been conducted on NPS lands. The San Francisco Creek Watershed Council is actively involved in management and monitoring of this watershed. Through the watershed council, consultants have monitored the Bear Creek watershed (including West Union Creek). However, no sites have been located within Phleger Estate or the adjacent county park (NPS 2005a). San Francisco Creek is listed on the Section 303d list as being impaired by sediment. Concerns in West Union Creek, a San Francisco Creek tributary within Phleger Estate, include erosion and runoff from trails. Landslides and significant bank erosion have been observed (NPS 2005a).</p>	<p>If the NPS is going to include the Peninsula Watershed as it was part of a "park", then the analysis has to have the detail required- the SFPUC has lots of data on water quality that is not even mentioned here.</p>
II.43	<p>Vegetation Communities Figure</p>	<p>Figure on vegetation communities following this page does not differentiate between easement lands on watershed, as is displayed in other figures.</p>
II.65-66	<p>San Francisco Garter Snake – Federal Endangered; State Endangered The San Francisco garter snake (<i>Thamnophis sirtalis tetrataenia</i>) is endemic to the San Francisco peninsula and is currently restricted to localities within San Mateo County. This listed species is primarily threatened by the loss and alteration of suitable wetland habitat due to urban development, freeway and road construction, illegal collection,</p>	<p>Is the watershed in or out of the planning area? Text does not include extensive data on SFGS in the watershed.</p> <p>Extensive natural resource data can be found in the programmatic EIRs for the Peninsula Watershed Management Plan and the Water System Improvement Program.</p> <p>In terms of SF garter snake, the FWS 2006 review specifically</p>

	<p>agricultural practices, and trampling. It is considered semi-aquatic and is found along the margins of ponds, lakes, streams, and estuaries (above tidal influx). It feeds on small amphibians and fish, especially the federal listed threatened California red-legged frog (<i>Rana aurora draytonii</i>). <i>The planning area contains three sites (Sweeney Ridge, Milagra Ridge, Mori Point / Sharp Park) that appear to have suitable habitat for the San Franciscogarter snake; however, no recent surveys specifically designed to locate the snake and assess habitat have been conducted. Only Mori Point / Sharp Park has had a documented occurrence of the San Francisco garter snake; however, no recent population data are available (NPS 2005a).</i></p> <p>Cultural Resources Figure</p>	<p>calls out existing and new trails on SFPUC watershed land as being a threat to the species. http://www.fws.gov/cno/es/San%20Francisco%20Garter%20Snake%205%20Year%20Review.FINAL.pdf</p> <p>Cultural resources figure following this page does not include Peninsula watershed lands. Is the watershed part of the planning area or not?</p>
<p>II.92 II.161</p>	<p>At San Francisco Public Utility Commission (SFPUC) watershed trailheads, parking is likewise along roadsides. However, there are more than 40 spaces at the southern end of the popular Sawyer Camp Trail. At Rancho Corral de Tierra, parking is associated with the equestrian facilities.</p>	<p>Is the watershed in or out of the plan? It is, at least with regard to trails. If GGNRA is proposing new watershed trails in its alternatives, doesn't that mean the document must include the pertinent detail on watershed resources and include the watershed in the APE for cultural resources, for example?</p> <p>See comment for II.65-66 above.</p> <p>There is no mention of the restrictions in the Scenic Easement on trail access, yet alternatives mention providing such access.</p> <p>See above comments for pages I.103 - 110.</p>
<p>II.162</p>	<p>The <i>San Mateo County Bicycle Plan</i> proposes improvements to routes popular with cyclists, including Cañada Road, and while improvements are not planned, a route allowing bike access from the San Mateo County suburbs east of Interstate 280 to the road and mountain bike trails west of Skyline Boulevard has been identified as a priority for cyclists. This could require bicycle access in the vicinity of Phleger Estate.</p>	<p>See comment for II.65-66 above.</p> <p>There is no mention of the restrictions in the Scenic Easement on trail access, yet alternatives mention providing such access.</p> <p>See above comments for pages I.103 - 110.</p>

	<p>Pedestrian</p> <p>Pedestrian access to Golden Gate National Recreation Area park sites in San Mateo County is limited. Trailheads at a few park sites, such as Milagra Ridge, Sweeney Ridge, Mori Point, Pedro Point, and Rancho Corral de Tierra, are adjacent to suburban neighborhoods and thus are relatively accessible to pedestrians (although sidewalks leading to the park sites are sometimes lacking). However, pedestrian circulation within San Mateo County park sites is in many cases very good, as most San Mateo County park sites are essentially open space preserves with trail networks. Also, two park sites, Rancho Corral de Tierra and Phleger Estate, offer extensive equestrian access. Trails within San Mateo County Golden Gate National Recreation Area park sites are detailed in appendix F.</p>	
<p>II.212</p>	<p>COMMON TO ALL ALTERNATIVES AT GOLDEN GATE NATIONAL RECREATION AREA AND MUIR WOODS NATIONAL MONUMENT NATURAL RESOURCES</p> <p>The trails policy includes goals on sustainable trail design and best management practices, which would assist the National Park Service in improving habitat quality and integrity by reducing impacts from erosion, exotic and invasive species, and habitat fragmentation.</p> <p>Conclusion</p> <p>Overall, impacts to natural resources resulting from these policies would be long term, beneficial, and would range from negligible to moderate, throughout Golden Gate National Recreation Area and Muir Woods National Monument.</p>	<p>The entry of the general public to areas long closed, and construction of trails in sensitive habitat areas, may not be "beneficial" or of "negligible to moderate" impact.</p> <p>Our prime responsibility is water supply. The western and northern edges of the Watershed have had few biological surveys to document sensitive species and habitat. Mainly because we have little construction or impact there by our own activities. The lack of surveys on [western and northern edges of the Watershed] does not mean there are not sensitive resources here. Off-road trespassing from the western perimeter has impacted sensitive resources in the interior of the watershed. How will this be guarded against with all this new public access?</p> <p>See above comments for pages I.103 – 110, particularly references to USFWS & CDFG comments on trail alternatives proposed in the Draft Peninsula Watershed Management Plan for Fifield Cahill Ridge Trail. There is insufficient analysis of potential impacts to support the conclusion of negligible to moderate impacts to natural resources. There is no analysis of</p>
<p>II.213</p>		

		<p>potential fire hazard impacts for any of the proposed trails in the GMP / EIS, and no data re existing conditions (let alone potential impacts) to natural and cultural resources on the SFPUC's Peninsula Watershed.</p> <p>SFPUC has limited resources, but has assisted with fire-guarding the perimeter on and next to GGNRA property (sometimes the only fire-guarding that exists near their property). With the introduction of more public use also comes the necessity of fire protection. GGNRA firefighting capability needs to be included as part of their plans on their property.</p>
<p>II.220</p>	<p>TRANSPORTATION Analysis</p> <p>From Phleger Estate, trail connections to adjacent lands and the regional trail system would be pursued in collaboration with San Mateo County and San Francisco Public Utilities Commission. These connections would include the Bay Area Ridge Trail and a potential multiuse trail connection between Cañada Road and Skyline Boulevard north of Phleger Estate...</p> <p>All of these measures would provide, individually and cumulatively, a long-term, moderate, beneficial impact on accessibility of these remote sites by trails connected to neighborhoods and to larger regional trails. Improved and new trailheads, trailhead parking, and improved directional signs, site identification, and wayfinding signs would also add considerable benefits. Long-term, minor, beneficial effects would be gained through slightly increasing parking at Sheldance Nursery and Sweeney Ridge.</p>	<p>Why are new trails always beneficial in terms of transportation impacts since most users arrive by car?</p> <p>Even bicyclists often transport themselves and their bicycle to the trailhead via car.</p>
<p>II.228</p>	<p><i>Alternative 1: Connecting People with the Parks (NPS Preferred Alternative for Park Sites in Marin, San Francisco, and San Mateo Counties)</i> Analysis</p>	<p>Text does not distinguish between areas where there are no trails or facilities and areas where such facilities would be removed, although implication is that new facilities in undeveloped areas would have "moderate" impacts.</p>

<p>II.229</p>	<p>In other areas (such as... Rancho Corral de Tierra in San Mateo County) <i>new development would cause minor to moderate adverse impacts to soils and geologic resources because these areas are undeveloped and the impacts would be new.</i></p> <p>Conclusion The elimination of unsustainable roads and trails would reduce soil erosion, resulting in long-term, minor, beneficial, localized impacts to soils. The removal of facilities and structures would result in long-term, minor to moderate, beneficial, localized impacts, although new recreational development would have long-term, adverse, localized impacts on soils and geologic resources. During the removal or construction period, short-term, minor, adverse impacts (such as increased erosion or compaction in adjacent areas) would occur. <i>Overall, adverse impacts would occur from new recreational development and expanded visitor use.</i> Beneficial impacts would occur from trail and road maintenance, the restoration of disturbed sites and creeks, and improved resource understanding and public support.</p>	<p>See above comments for pages I.103 - 110. Also, there is no analysis of potential fire hazard. Prior to closing roads, they should be evaluated for emergency access for fire fighting equipment and personnel. There is insufficient analysis to support the conclusion.</p>
<p>II.233</p>	<p>Alternative 1 analysis- New and/or improved recreational development—including new visitor facilities and amenities at 1) Stinson Beach, Kirby Cove, Forts Barry and Cronkhite, Slide Ranch, Golden Gate Dairy, Tennessee Valley, and Marin City Ridge / Gerbode Valley along State Route 1 and Conzelman, McCullough, and Bunker Roads in Marin County; at 2) Upper Fort Mason, Fort Miley, China Beach, and Fort Funston in San Francisco County; and at 3) Milagra Ridge, Sweeney Ridge, <i>Phleger Estate, and Rancho Corral de Tierra in San Mateo County</i>—would have short-term, negligible to minor, adverse, localized impacts on water quality from increased erosion and sedimentation, and the potential for chemical contamination resulting from inadvertent chemical spills</p>	<p>Report downplays the permanent impacts of new, visitor oriented development in pristine watershed areas and does not even mention potential impacts to SFPUC watershed resulting from proposed trails at Whiting Ridge, Canada Road to Skyline Boulevard north of Phleger Estate, and other locations. See above comments for pages I.103 - 110. Also, there is no analysis of potential fire hazard from proposed trails. In addition, there is insufficient analysis of existing conditions on the SFPUC Peninsula Watershed and potential impacts to natural and cultural resources to support the conclusion.</p>

II.234	<p>from heavy equipment at construction sites. Similar impacts to water quality could occur over the long term due to the increased potential for urban pollutants to runoff from parking lots and other developed features. In some areas (such as at Shelldance Nursery and Devil's Slide in San Mateo County) adverse impacts would be negligible to minor because the development would occur in previously developed or disturbed sites. <i>In other areas (such as at Rancho Corral de Tierra in San Mateo County), adverse impacts to water resources would be minor to moderate because new development would occur in undisturbed sites.</i></p> <p>Conclusion: Generally, adverse impacts would occur from new recreational development and expanded visitor use. Beneficial impacts would occur from trail and road maintenance and the restoration of disturbed sites and creeks. No impairment of water resources would result from this alternative.</p>	
II.237	<p>No action alternative-Natural/ Biological Resources habitat (veg & wildlife) <i>Recreational use would continue to reduce habitat integrity by trampling plants, introducing and increasing the spread of exotic species, causing disturbance (flushing and displacement) to animals, and increasing the potential for human-wildlife conflict resulting from habituation due to the presence of humans and the introduction of unnatural food sources. Recreational use also generates noise and unnatural light sources that affect wildlife. These activities would result in long-term, minor to moderate, adverse, localized impacts throughout the park.</i></p> <p>Alternative 1: Connecting People with the Parks (NPS Preferred Alternative for Park Sites in Marin, San Francisco, and San Mateo Counties)</p>	<p>If this is the status quo in areas where recreation is allowed, the analysis for the alternatives must note these impacts for areas proposed for trails and other recreation where such access does not exist.</p>
II.238	<p>Alternative 1: Connecting People with the Parks (NPS Preferred Alternative for Park Sites in Marin, San Francisco, and San Mateo Counties)</p>	<p>EIS does not distinguish between existing park areas where facilities will be better managed (e.g. trail closures/ modification) and areas proposed for new visitor access, which under the no</p>

<p><i>Analysis</i></p> <p>The impacts to vegetation and wildlife from the continued presence and maintenance of existing facilities (including structures, roads, and trails) under alternative 1 would be less than the no-action alternative because impacts to vegetation and wildlife habitat caused by erosion from unsustainable trails and roads would be reduced. Alternative 1 would develop a sustainable trail system and eliminate unneeded and unsustainable roads and trails, as well as maintain all trails and roads. Impacts to native habitat from fragmentation and exotic species would be reduced. These activities would result in longterm, minor, beneficial, localized impacts on vegetation and wildlife...</p> <p><i>Visitor access and use would be expanded under alternative 1,</i> potentially resulting in additional impacts to vegetation (trampling) and wildlife (disturbance) along trails and at primary visitor use areas—the impact would be long term, minor, adverse, and localized. New and/or improved recreational development including new visitor facilities and amenities at 1) Stinson Beach, Kirby Cove, Forts Barry and Cronkhite, Slide Ranch, Golden Gate Dairy, Tennessee Valley, and Marin City Ridge / Gerbode Valley along State Route 1 and Conzelman, McCullough, and Bunker Roads in Marin County; at 2) Upper Fort Mason, Fort Miley, China Beach, and Fort Funston in San Francisco County; and at 3) Milagra Ridge, Sweeney Ridge, Phleger Estate, and Rancho Corral de Tierra in San Mateo County would have long-term, minor, adverse, localized impacts on vegetation and wildlife due to the permanent loss of plants and wildlife habitat. Short term, minor, adverse impacts to vegetation would also occur from injury or loss of plants during construction activities; however, the area would be replanted with native plants and the natural habitat would be reclaimed. Similarly, short-term adverse impacts to wildlife, such as disturbance, would occur during construction.</p>	<p>action alternative, are said to have "long-term, minor to moderate" impacts. With regard to the Peninsula Watershed, the no-action alternative should be considered the alternative having the least impact.</p> <p>There is insufficient analysis of existing conditions and potential impacts to natural and cultural resources to support this conclusion. Also, there is no analysis of potential fire hazard. Prior to closing roads, they should be evaluated for emergency access for fire fighting equipment and personnel.</p>
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<p>II.240</p>	<p>The rehabilitation and use of Pier 4 at Fort Mason would result in impacts (habitat disturbance during construction) to marine resources—the impact would be short term, minor, adverse, and localized.</p> <p>Conclusion The development of a sustainable trail system and elimination of unneeded and unsustainable roads and trails, the removal of facilities/structures with reclamation of disturbed building sites, and habitat restoration efforts would result in long-term, minor to moderate, beneficial, localized impacts on vegetation and wildlife. The expansion of visitor access and use and the development of new or improved recreational facilities would result in long-term, minor, adverse, and localized impacts.</p> <p>The construction activities related to these developments would result in short-term, minor, and adverse impacts... <i>No impairment of vegetation or wildlife resources would result from this alternative.</i></p>	
<p>II.245</p>	<p>Special status species- no action alternative</p> <p>Special Status Species (Federal and State Threatened and Endangered Species) No-action Alternative Introduction</p> <p>In general, many of the impacts to vegetation and wildlife previously described in the habitat section would apply to special status species. For example, <i>visitor use and new development would result in changes that would have adverse impacts to listed species and their habitats.</i></p> <p>Federal Threatened and Endangered Species California red-legged frog (<i>Rana aurora draytonii</i>).</p> <p>There has not been any designated critical habitat in Marin or San Mateo counties managed by Golden Gate National Recreation Area (Federal Register 71: 19244–19346). Collectively, impacts to the California red-legged frog resulting from NPS actions that are</p>	<p>Conclusion should be compared with impact to CRLF from proposed alternatives.</p>

	<p>part of the no-action alternative (the continuation of current management and trends) would be long term, beneficial, minor, and localized.</p> <p>San Francisco garter snake (<i>Thamnophis sirtalis tetrataenia</i>). Because San Francisco garter snakes are currently restricted to localities in San Mateo County (the only documented occurrence is at Mori Point / Sharp Park). Two other locations within the planning area (Milagra Ridge and Rancho Corral de Tierra) appear to have suitable habitat to support breeding populations of San Francisco garter snakes (Swaim Biological Inc. 2006). In addition, two other sites (Sweeny Ridge and Cattle Hill) can provide connectivity between known snake populations or between high-quality aquatic habitats that potentially support San Francisco garter snakes (Swaim Biological Inc. 2006). Therefore, impacts would be restricted to these locations. Because California red-legged frogs are an important prey item for this species, effects on red-legged frogs are expected to have cascading effects on the snake.</p>	<p>No mention of populations on Peninsula watershed- populations could be affected by trail proposals- appears that the watershed is included from the perspective of new trail analysis, but is omitted from detailed analysis.</p> <p>There is insufficient analysis of existing conditions and potential impacts to conclude that impacts to SFGS would be limited to certain locations.</p>
<p>II.245-261</p>	<p><i>See comments in column to the right re information missing from this section.</i></p>	<p>The ESA Determinations for Alternatives I, II, and III are not quite complete. If the ESA determinations for the no action alternative include the statement “may affect, likely to adversely affect” for project specific actions in the short term” (text and tables in Volume II, pages 245-251), then the ESA determinations for Alternatives I, II, and III should include the same statement (text and tables in Volume II, pages 252-261).</p> <p>Because the text that describes the potential impacts for each potentially impacted species is so similar among the different alternatives, it would be helpful to include a table that describes the differences in potential impacts for each alternative (as rows) for each potentially impacted species (as columns).</p> <p><i>Issues related to marbled murrelets:</i></p> <p>It is not clear why potential impacts to the marbled murrelet are not described in the Special Status Species (Federal and State</p>

<p>Threatened and Endangered Species) section of the description of potential environmental consequences (Volume II, pages 245-261), especially since the statement in Volume II (page 62) “to evaluate the effects on special status species, a set of species considered likely or possible to experience impacts from GMP actions was selected for assessment based on the presence of suitable habitat within the project area and discussions with NPS biologists” is followed by a section devoted to a general description of the habitat requirements of the marbled murrelet in San Mateo County (Volume II, page 66).</p> <p>Please evaluate potential impacts to marbled murrelets, which include the following:</p> <ul style="list-style-type: none">the increased risk of fire due to the use of potential primitive camping sites and hikers’ huts;the increased risk of marbled murrelet displacement due to an increase of corvids caused by trash build-up from hikers, bicyclists, horseback riders that use the trails in Sweeney Ridge and Rancho Corral de Tieera—as well as those who might trespass onto SFPUC lands [see Ellen’s comment in previous email]; andthe increase in the potential for marbled murrelet disturbance during construction activities (trails, huts, fencing, etc). [Please note, however, that current disturbance includes noise from highway 280 and the dump]. <p>Monitoring of marbled murrelets on the upper Pilarcitos drainage and tributaries suggests that there is a stable or increasing nesting population of marbled murrelets on SFPUC lands and adjacent properties, particularly to the south (SFPUC Murrelet Monitoring Reports 2003-2011). In contrast, a recent and precipitous decline of nesting murrelets in historically occupied sites in the Santa Cruz Mountains, a core population at the southern edge of the species’ range, is well-documented and is attributed, at least in part, to predation pressure by corvids (Henkel and Peery 2008). Avian predation by human “subsidized” species (especially corvids) has</p>	
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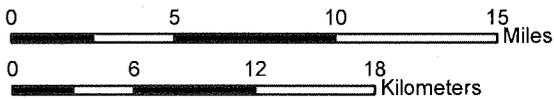
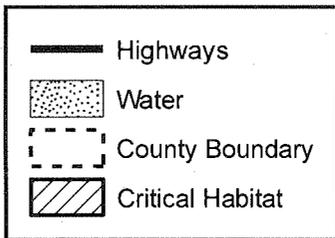
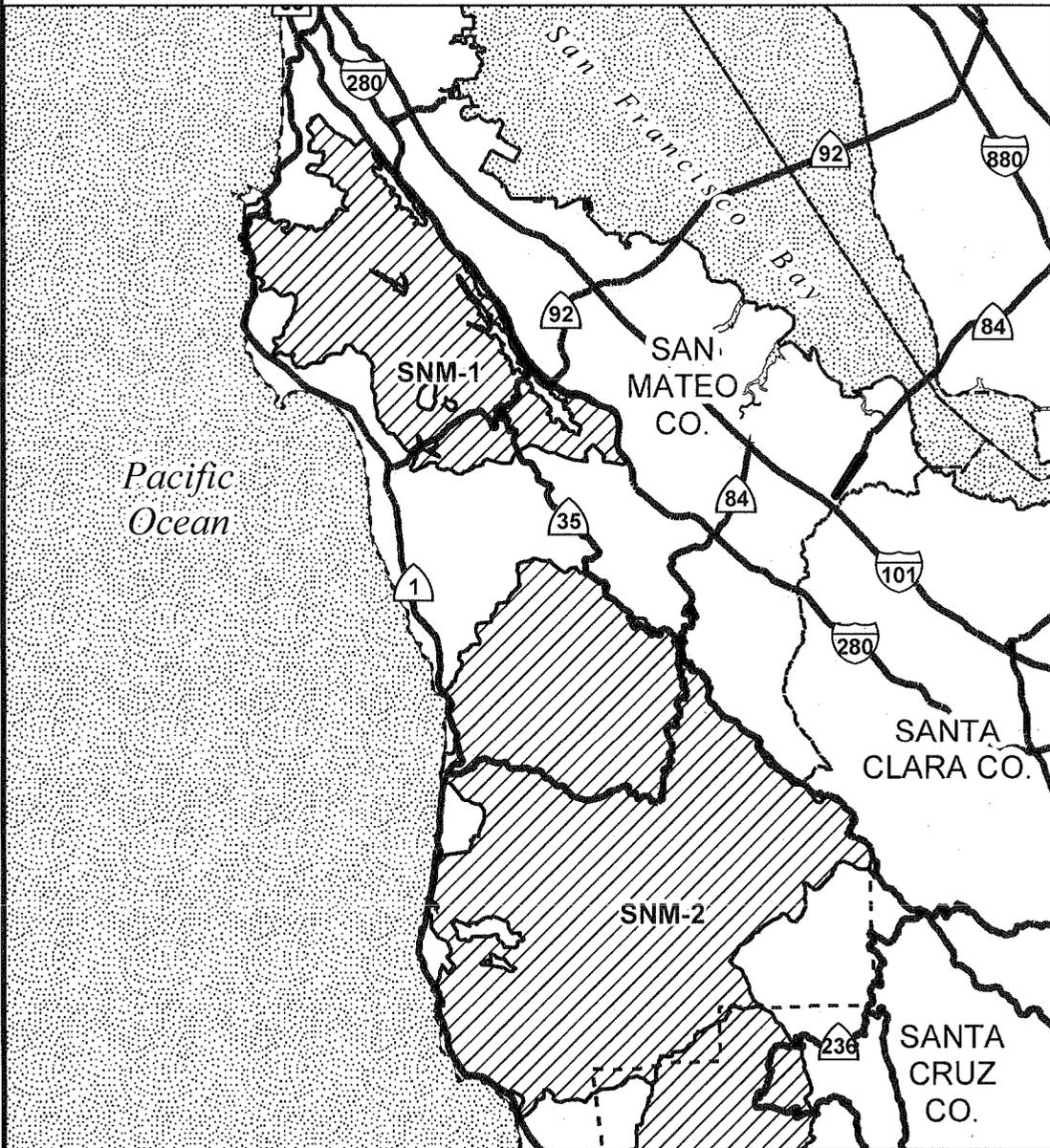
	<p>been shown to be a critical contributor to the declining murrelet population (Nelson and Hamer 1995, Evans Mach et al. 2003, Peery and Henry 2010). The perilous situation at other nesting sites, many of which are close to campgrounds and other anthropogenic sources of predator subsidies, adds importance to the relatively raven-free Pilarcitos Creek habitat, and underscores the crucial need for continued protection of the area from disturbance.</p> <p>Evans Mach, D.E., W.P. Ritchie, S.K. Nelson, E. Kuo-Harrison, T.E. Mamer. 2003. Methods for surveying Marbled Murrelets in Forests: A revised protocol for land management and research. Pacific Seabird Group: Marbled Murrelet Technical Committee, 6 January 2003.</p> <p>Henkel, L.A., and M. Z. Peery. 2008. Abundance and productivity of Marbled Murrelets off Central California during the 2007 breeding season. Final report to Command Trustee Council, California State Parks. January 2008.</p> <p>Nelson, S.K. and T. E. Hamer 1995. Nest success and the effects of predation on Marbled Murrelets. Pp. 89-98 in Ecology and conservation of the Marbled Murrelet (C. J. Ralph, G. L. Hunt, Jr., M. G. Raphael, J. F. Piatt, eds.). USDA For. Serv. Gen. Tech. Rep. PSW-152, Albany, CA.</p> <p>Peery, M.Z. and R. W. Henry. 2010. Recovering marbled murrelets via corvid management; A population viability management approach. Biological Conservation. http://bio.research.ucsc.edu/people/croll/pdf/Peery_2010.pdf</p>
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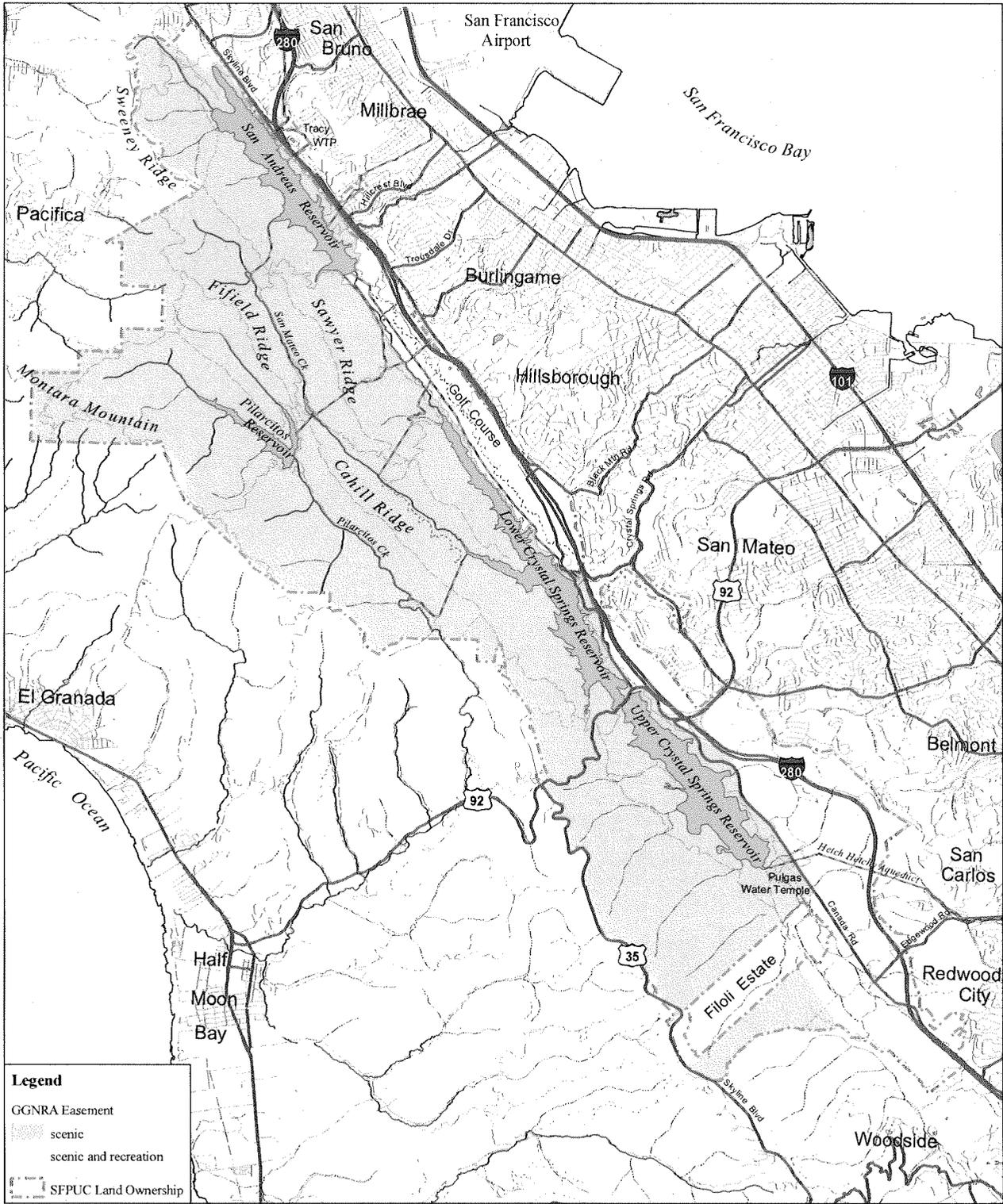
		<p>This link to the 2006 USFWS publication provides information on avoiding visual and auditory harassment of murrelets entitled "Estimating the effects of auditory and visual disturbance to northern spotted owls and marbled murrelets in Northwestern California"</p> <p>http://www.fws.gov/arcata/es/birds/MM/documents/MAMU-NSO%20Harassment%20Guidance%20NW%20CA%202006Jul31.pdf</p>
<p>II.252</p>	<p>Alternative 1: Connecting People with the Parks (NPS Preferred Alternative for Park Sites in Marin, San Francisco, and San Mateo Counties) California red-legged frog (<i>Rana aurora draytonii</i>). Impacts to California red-legged frogs and their habitat from alternative 1 would be the same as under the no-action alternative with the exception of impacts to habitat from expanded restoration of natural areas. The removal of the dam at Tennessee Pond and other infrastructure, and the restoration of riparian habitat in Lower Tennessee Valley would result in beneficial effects. Also, vegetation management, including exotic plant removal, especially in riparian and wetland areas in San Mateo County, would be greater than under the no-action alternative, creating improvements to vegetative structure and condition that could improve breeding and foraging habitat—resulting in a beneficial impact. Impacts to the frog from new recreational development under alternative 1 would not occur because any new facilities would be sited to avoid existing or potential frog habitat.</p>	<p>Hard to tell what "new recreational development" is proposed since maps do not include detail about trail locations; how can trails avoid frog habitat since the species can wander 2 miles from breeding ponds?</p> <p>Much of the SFPUC watershed is also California red-legged frog critical habitat.</p> <p>There is insufficient analysis to support this conclusion.</p>
<p>II.252-253</p>	<p>San Francisco garter snake (<i>Thamnophis sirtalis tetrataenia</i>). Impacts to the San Francisco garter snake and their habitat under alternative 1 would be the same as under the no-action alternative with the exception of habitat improvements in San Mateo</p>	<p>Unlike the CRLF, there is no mention here of impacts from "new recreational development".</p>

	<p>County. Vegetation management, including exotic plant removal in riparian and wetland areas, would improve the structure and condition of vegetation that supports snakes—resulting in a beneficial impact. Impacts to the San Francisco garter snake resulting from NPS actions that are part of alternative 1 would be long term, beneficial, minor to moderate, and localized. The determination of effect under Section 7 of the Endangered Species Act would be “<i>may affect, not likely to adversely affect</i>.”</p>	
<p>II.323</p>	<p>Transportation analysis Connections to the regional trail network at the Shelldance Nursery and the surrounding public lands (SFPUC, San Pedro Valley County Park, McNeer Ranch State Park, and Rancho Corral de Tierra) would be developed in coordination with other land managers. Additional connections to the Bay Area Ridge Trail and the Sawyer Camp Trail in the SFPUC watershed would be enhanced. These projects would have a long-term, minor to moderate, beneficial effect on connecting Golden Gate National Recreation Area sites in San Mateo County to other local and state park sites, regional trails, and surrounding communities....Visitors would access the coastal areas through an enhanced and sustainable system of multiuse trails. The trail network would connect local communities to the park and link the ridges of Montara Mountain to the Pacific Ocean. <i>Opportunities for a trail connection to Sweeney Ridge through the SFPUC watershed’s northwest corner would be explored. Unnecessary roads could be converted to trails or removed. These projects would have along-term, moderate, beneficial impact on visitor access, connecting the coastal areas to each other and to surrounding communities.</i></p>	<p>Conclusion does not distinguish between existing and proposed new recreational access, or provide any meaningful traffic analysis of impacts caused by bringing new visitors to remote areas of the watershed.</p> <p>There is insufficient analysis of existing conditions and potential impacts to natural and cultural resources to support this conclusion. Also, there is no analysis of potential fire hazard. Prior to closing roads, they should be evaluated for emergency access for fire fighting equipment and personnel.</p>
<p>II.326</p>	<p>Alternative 2 transportation analysis San Mateo County In addition to the measures described in the “Actions Common to all Alternatives” section cited previously, the following narrative describes the transportation measures for San Mateo County. At</p>	<p>It is not clear whether proposed trails in the watershed are limited to those described on page II.326, or also include access from Sawyer Camp to the Ridge Trail, proposed trails from the Phleger estate, and trails to connect communities to the ocean referenced in the document.</p>

	<p>Sweeney Ridge, Sneath Lane could be converted to a trail and connect to the Bay Area Ridge Trail in the SFPUC watershed. Unnecessary fire roads could also be converted to trails or removed if not historic, and natural resources restored. If acquired, a trailhead would be located at Picardo Ranch with modest visitor support facilities (restroom, picnic tables, parking). These measures are likely to result in a longterm, minor, beneficial impact at Sweeney Ridge. In the SFPUC watershed easement, park managers would promote access along the existing multiuse trail and the implementation of trail improvements proposed in the <i>San Francisco Watershed Management Plan (2002)</i>, including completion of the north-south corridor through the watershed in areas of low sensitivity. Completion of these actions could have a longterm, minor to moderate, beneficial effect on access to these areas.</p>	<p>There is insufficient analysis of existing conditions and potential impacts to natural and cultural resources to support this conclusion. Also, there is no analysis of potential fire hazard. Prior to closing roads, they should be evaluated for emergency access for fire fighting equipment and personnel.</p>
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California Red-Legged Frog Critical Habitat Units SNM-1 and SNM-2





Legend

- GGNRA Easement
 - scenic
 - scenic and recreation
- SFPUC Land Ownership





Making San Francisco Bay Better

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SUPERINTENDENT'S OFFICE

December 8, 2011

Superintendent
Golden Gate National Recreation Area
Attn: Draft GMP/EIS
Building 201, Fort Mason
San Francisco, CA 94123

SUBJECT: Golden Gate National Recreation Area (GGNRA)/Muir Woods National Monument Draft General Management Plan/Draft Environmental Impact Statement (DEIS); BCDC Inquiry File No.: MCMC.7603.1

Dear Superintendent:

The San Francisco Bay Conservation and Development Commission (BCDC) staff appreciates the opportunity to review and comment on the Draft General Management Plan/DEIS for the GGNRA/Muir Woods National Monument dated September 2011. Although our Commission has not had the opportunity to review the draft document, the staff comments are based on BCDC's law, the McAteer-Petris Act and the policies of the *San Francisco Bay Plan* (Bay Plan).

Commission Jurisdiction and Authority. As a regulatory authority for the San Francisco Bay and shoreline, BCDC is responsible for granting or denying permits for any proposed fill (earth or any other substance or material, including pilings or structures placed on pilings, and floating structures moored for extended periods), extraction of materials or change in use of any water, land or structure within the its jurisdiction. Generally, BCDC's jurisdiction over the Bay extends from the Golden Gate (Point Bonita to Point Lobos) to the Sacramento River and includes tidal areas up to the mean high tide level, including all sloughs, and marshlands up to five feet above mean sea level; the shoreline band consisting of territory located between the Bay shoreline and 100 feet landward and salt ponds; managed wetlands (areas diked from the Bay and managed as duck clubs); and "certain waterways" leading to the Bay.

The Commission grants permits for projects if it finds that they are either (1) necessary to the health, safety or welfare of the public in the entire Bay Area, or (2) consistent with the provisions of the McAteer-Petris Act and the Bay Plan. The McAteer-Petris Act states that fill in the Bay must serve a water-oriented use and, among other things, must have no upland alternative, be the minimum to achieve the project purpose, and not cause adverse impacts to Bay resources. The McAteer-Petris Act and the Bay Plan also require that proposed projects provide the maximum feasible public access consistent with the project.

The Commission's Bay Plan also includes priority land use designations sites along the shoreline to ensure that sufficient area is reserved for important water-oriented uses, such as ports, airports, water-related industry, parks, and wildlife areas. Much of the Golden Gate National Recreation Area is located within an area designated for Waterfront Park and Beach priority use. Projects within such areas which are inconsistent with the designated uses require an amendment to the Bay Plan. The Muir Woods National Monument is not located within the Commission's jurisdiction.

Finally, BCDC—along with the California Coastal Commission—are the California state agencies whose coastal management programs are consistent with the Coastal Zone Management Act. This should be noted on page 70 of Volume III under the Section “Coastal Zone Management Act Consistency”. We understand that the GGNRA/Muir Woods National Monument Draft General Management Plan/DEIS is a programmatic document and does not address or propose for implementation site specific federal activities. Please note that a consistency determination will be required prior to implementation of any such activities.

Public Access. Section 66602 of the McAteer-Petris Act states, in part, that “existing public access to the shoreline and waters of the San Francisco Bay is inadequate and that maximum feasible public access, consistent with a proposed project, should be provided.” Furthermore, the McAteer-Petris Act allows for the placement of fill in the Bay for water-oriented uses or for improving shoreline appearance or public access.

The GGNRA provides tremendous opportunities to recreate on and near the shoreline of the Bay at numerous locations, including Fort Mason, Crissy Field and Fort Baker. Any project identified in the Draft General Management Plan/EIS which requires Bay fill or new shoreline facilities, such as the development of a water shuttle at Fort Mason and improvements to the historic Alcatraz pier (Pier 4), should address public access improvements and how they would provide “maximum feasible access to and along the waterfront.” In addition, various alternatives in the Draft General Management Plan/EIS anticipate expansion of visitor use and access, which will likely further improve the visitor experience within the park and along the shoreline. The Final General Management Plan should recognize the potential for conflict between public access and adjacent sensitive habitat that exists at various locations, including Alcatraz and Crissy Field.

Transportation. Alternative 1 of the Draft General Management Plan anticipates improved access to the park by a water shuttle at Lower Fort Mason, expansion of the F line and development of bus rapid transit on Van Ness Avenue. It is foreseeable that some of these improvements could potentially occur within BCDC’s jurisdiction. Due to the vulnerability of the Bay to filling for transportation projects the Commission encourages alternative methods of transportation and land use planning efforts that support transit and that do not require fill.

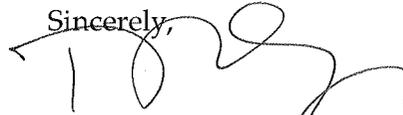
Recreation. The GGNRA provides a vast array of recreational opportunities for park users and the Final General Management Plan will likely lead to future improvements to the park’s recreational opportunities. Bay Plan policies state that “Diverse and accessible water-oriented recreational facilities, such as marinas, launch ramps, beaches, and fishing piers, should be provided to meet the needs of a growing and diversifying population, and should be well distributed around the Bay and improved to accommodate a broad range of water-oriented recreational activities for people of all races, cultures, ages and income levels.” Bay Plan Recreation policies also state in part “Ferry terminals may be allowed in waterfront park priority use areas and near fishing piers and launching lanes provided the development and operations of the ferry facilities do not interfere with current or future park and recreational uses, and navigational safety can be assured.”

Fish, Other Aquatic Organisms and Wildlife. The Golden Gate National Recreation Area provides a diverse array of habitat for species in coastal, marine and terrestrial environments. The Draft General Plan more than adequately identifies the potential for impacts upon habitats and species within the park. However, any project identified in the Final General Plan would need to be consistent with the Bay Plan policies on fish, aquatic organisms and wildlife. For example, Policy 1 states “To assure the benefits of fish, other aquatic organisms and wildlife for future generations, to the greatest extent feasible, the Bay’s tidal marshes, tidal flats, and subtidal habitat should be conserved, restored and increased.”

Sea Level Rise. Considering the potential impacts from climate change, such as sea level rise, it is appropriate that the General Management Plan addresses climate change impacts. Specifically, the Management Strategies identified in Volume I, Part 3, Page 118-120 are appropriate strategies to effectively respond and adapt to climate change impacts. BCDC has recently amended the Bay Plan to include a new "Climate Change" section and to amend the existing "Public Access, Safety of Fills, Shoreline Protection and Tidal Marsh/Tidal Flats" sections to allow the Commission to respond to climate change related impacts such as sea level rise. Upon adoption by the Office of Administrative Law the new and existing sections of the Bay Plan will be available at www.bcdc.ca.gov.

Thank you again for the opportunity to review and comment on the GGNRA Draft Management Plan/DEIS. If you have any questions please contact me directly at (415) 352-3667 or at timd@bcdc.ca.gov

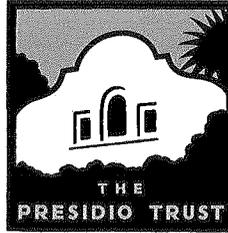
Sincerely,



TIMOTHY DOHERTY
Coastal Planner

TM/gg

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SUPERINTENDENT'S OFFICE



November 4, 2011

Mr. Frank Dean, Superintendent
Golden Gate National Recreation Area
Attn: Draft GMP/EIS
Fort Mason, Bldg. 201
San Francisco, CA 94123

Dear Superintendent Dean:

The Presidio Trust (Trust) has reviewed the **Golden Gate National Recreation Area and Muir Woods National Monument Draft General Management Plan/Environmental Impact Statement (GMP/EIS)** and is pleased to provide the attached comments for consideration in the National Park Service's (NPS) Final GMP/EIS. Our review and comments are focused primarily on issues originating from the Trust's legislative authority, jurisdiction, and contributions pertaining to the Golden Gate National Recreation Area (GGNRA) as reflected in the GMP/EIS. Our comments are provided pursuant to the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality's NEPA Implementation Regulations at 40 CFR 1500-1508, and the Trust's policies and procedures on environmental quality and control at 36 CFR part 1010.

The Draft GMP/EIS only addresses NPS-administered lands within the legislative boundaries of the GGNRA and Muir Woods National Monument. The plan does not cover park lands that are under other management arrangements or are being managed with guidance from recently approved land-use management plans and environmental documents, both categories of which apply to Area B of the Presidio, which is under Trust jurisdiction as is being managed in accordance with the 2002 Presidio Trust Management Plan: Land Use Policies for Area B of the Presidio of San Francisco. The environmental analysis in the Draft GMP/EIS also suggests, and the Trust concurs, that management actions presented in the plan would have minimal impacts on Trust-managed lands, other than long-awaited improvements to transportation to the Presidio, which would have additional environmental review. As our lands are outside of your planning process, our comments are minor and are generally focused on the Presidio. Nonetheless, we would very much appreciate having our comments addressed in the Final GMP/EIS.

Mr. Frank Dean, Superintendent
November 4, 2011
Page Two

We wish you success as you plan for the future of NPS lands within the GGNRA. As a fellow federal manager with administrative jurisdiction within the park, we offer our partnership and expertise during the course of your general management planning process. If you have any questions, please feel free to contact me at 415-561-5300.

Sincerely,

A handwritten signature in black ink, appearing to read "Craig Middleton". The signature is fluid and cursive, with a long horizontal stroke at the end.

Craig Middleton
Executive Director

**PRESIDIO TRUST COMMENTS ON THE GOLDEN GATE NATIONAL
RECREATION AREA AND MUIR WOODS NATIONAL MONUMENT DRAFT
GENERAL MANAGEMENT PLAN/ENVIRONMENTAL IMPACT STATEMENT
November 4, 2011**

Volume I, Part 1: Background

Pages vi and 9, The Planning Area, last paragraph. These sections state that GGNRA “sites with recent management plans are not addressed in this plan.” Specifically included in this category is “the Presidio of San Francisco.” To avoid misunderstanding in the remainder of the GMP/EIS, references to resources within the Presidio should be limited or qualified based on expected impacts from the planning area. As written, the document is confusing and could give the reader a false impression that the Presidio is actually within the planning area. Specific recommendations to reduce or eliminate references to Presidio resources are included in the comments below.

Page 37, Relationship of This Plan to Other Plans, Presidio General Management Plan Amendment and Environmental Impact Statement, third paragraph, second sentence. The assertion that the GMPA remains the foundation plan that guides the Trust’s planning and decision making is incorrect. The Presidio Trust Management Plan updates and succeeds the GMPA as it applies to Area B, the area under the jurisdiction of the Trust. The sentence should be corrected as follows:

The general management plan amendment ~~remains the foundation plan that~~ initially guided the Trust’s planning and decision making.

To assist the NPS, a brief discussion that clarifies the relationship of the NPS’ GMPA to the Trust’s PTMP has been prepared for the purposes of the GMP/EIS and is provided in Attachment 1.

Page 39, Current Plans for Other Park Areas not Managed by the National Park Service, Presidio Trust Management Plan: Land Use Policies for Area B of the Presidio of San Francisco, last sentence of first paragraph. The statement that the GMPA remains as the management plan for Area A is parenthetical to the discussion of the PTMP and should be deleted.

Volume II, Part 7: The Affected Environment

Page 28, Soils and Geologic Resources and Processes, Geology, last sentence of final paragraph. The rare plants found at the Presidio are not within the GMP planning area (i.e., not part of the existing environment). Because the plants could not be affected by implementation of any of the alternatives in the plan, the plants should not be included in the discussion.

Page 38, Freshwater Resources, Surface Water, San Francisco City and County Watersheds, entire paragraph. The discussion on watersheds is limited to the Presidio, which

is not part of the affected environment, and should be omitted. In addition, the discussion incorrectly implies that the Presidio East watershed is managed by the NPS. If the extraneous discussion is not deleted, the second and third sentences of the paragraph should be revised as follows:

*The ~~Park Service manages~~ **GGNRA includes** lands in San Francisco draining to San Francisco Bay, the Golden Gate Channel, and the Pacific Ocean. Tennessee Hollow, **managed by the Presidio Trust**, and Lobos Creek, ~~both of which are within Golden Gate National Recreation Area and the Presidio of San Francisco (Presidio)~~, remain in a relatively nonurban state and are significant water resources in the Presidio. The Tennessee Hollow stream in the Presidio East watershed, is the main fresh water source for the Crissy Field marsh, a recently completed wetland restoration project.*

Pages 42 and 43, Freshwater Resources, Water Quality, San Francisco and San Mateo Counties, first paragraph and first three sentences of second paragraph. The Presidio is not within the GMP planning area and much of the discussion is unnecessary to understand the effects of the alternatives. The discussion indicates that water quality monitoring has been conducted “through a contract with the Presidio.” The Presidio is not a management agency such as the Trust or the NPS, but is a park site. An appropriate reference should be provided. The discussion also mentions that basic water quality parameters have been collected by the NPS in Area A and by the Urban Watershed Project in Area B. The monitoring in Area B by the Urban Watershed Project was conducted for and funded by the Trust. Therefore, as the NPS credits itself, the contribution of the Trust should be acknowledged as well. Finally, the Urban Watershed Project has since been replaced by Project WISE (Watersheds Inspiring Student Education) through the Golden Gate National Parks Conservancy. The Trust also regularly tests water quality throughout Trust-managed watersheds.

Page 83, Cultural Resources, Introduction, third sentence of first paragraph. The introduction incorrectly states that the park’s planning area covered by the GMP includes 5 national historic landmarks. The Presidio of San Francisco, a national historic landmark, is not included in the planning area. It is also stated that the park includes more than 700 historic structures. What is not mentioned is that over 450 of those structures are historic buildings managed by the Trust and located in Area B of the Presidio, outside the GMP planning area. It would be more accurate to account for only those historic assets under NPS jurisdiction and within the planning area, which is limited to 142 historic buildings as noted on table 12 on page 184.

The GMP/EIS as it is now written indiscriminately refers to cultural resources in very different geographic areas, some of which are not under NPS jurisdiction, and thereby overstates the NPS’ management responsibilities. To avoid confusion and to be consistent with NEPA and Advisory Council on Historic Preservation guidance, it would be preferable if the document only addressed those resources in the relevant planning area and APE.

Pages 85-91, Cultural Resources, Table 5: Area of Potential Effect. The table should acknowledge that 80 percent of the Presidio of San Francisco National Historic Landmark is administered by the Trust. As it stands, it implies that the Presidio is managed solely by the NPS.

As various individual properties within the Seacoast Fortifications of San Francisco Bay are managed by the Trust, this should also be noted. The table should also disclose that the Crissy Field Ohlone District is not under the exclusive management jurisdiction of the NPS, as one of the two pre-contact archeological sites within the district is on land managed by the Trust.

Page 117, Visitor Use Experience, Diversity of Recreational Opportunities and National Park Experiences, Second Sentence of Last Paragraph and Figure 9, GGNRA Recreational Visitors by Year 1999-2009. The section mentions that the NPS and Golden Gate National Parks Conservancy team brings thousands of volunteers to the park for activities such as trail building, habitat restoration and conservation, and organized youth programs in the park. As the Trust pays for many of these activities, is an acknowledged partner of the Golden Gate National Parks Conservancy, and itself offers substantial opportunities for visitor involvement in park stewardship, and given that the discussion focuses on the park (and not the planning area), should not the Trust be acknowledged here as well?

Page 119, Visitor Use Experience, Visitor Use and Characteristics, Figure 9, GGNRA Recreational Visitors by Year 1999-2009. One of the biggest “backyards” of Bay Area residents who use the park lands for recreation and exercise is the Presidio, which accounts for more than 30 percent (approximately 5.0 million) of the mean annual visitation GGNRA-wide (approximately 14 million). The visitation trends provided are inflated and misleading because visitors to the Presidio (and other public lands within the park but not within the planning area) are taken into account, although the Presidio is not part of the affected environment. The visitor counts should explain the discrepancy, or visitation to non-GMP public lands should be subtracted from the total.

Page 122, Facilities for Maintenance, Public Safety, and Collections Storage, Management Strategies, Centralized Maintenance Facilities, first paragraph. NPS and Trust staffs have recently identified another location for a centralized maintenance facility at a location outside of the Cavalry Stables. The GMP/EIS should be updated to reflect those discussions.

Page 159, Transportation, San Francisco Park Lands, Public Transit, final sentence. The section mentions that the PresidiGo shuttle service to various GGNRA park sites and to downtown is operated by the Presidio Trust. The Trust appreciates the acknowledgement.

Page 160, Transportation, Park Transportation Network, Pedestrian, fourth paragraph. The discussion mentions that trail improvements are planned as part of the Trails Forever Program, a collaborative effort of the “Golden Gate National Parks Conservancy, the Presidio of San Francisco, and the park.” The reference to the Presidio park site instead of the Presidio Trust, the management agency, is misleading. For simplicity and accuracy, the straightforward language excerpted from the Golden Gate National Parks Conservancy website (<http://www.parksconservancy.org/our-work/trails-forever/>) should be used to guide the correction:

The Trails Forever initiative is sponsored by the Parks Conservancy, the National Park Service, and the Presidio Trust.

Page 169, Transportation, Figure 29: San Francisco Transportation Network: Baker Beach, Presidio, Crissy Field. This figure has numerous errors. It does not accurately represent the PresidiGo route, MUNI 29 route, Bay Area Ridge Trail alignment or Letterman district buildings and roadways. The San Francisco National Cemetery is incorrectly labeled. It incorrectly depicts a transit route on Lombard Street west of Letterman Drive. The figure mislabels Mason Street and Old Mason Street, one of which no longer exists. The alignment of Merchant Road is incorrect. The legend incorrectly labels “GOGA” trails in Area B of the Presidio. The figure identifies parking areas for Area A but not for Area B; this information should be provided uniformly across area boundaries. Also, the figure identifies Area A as within the GGNRA GMP area, which it is not. The figure imprecisely refers to Area B as “Other Park Areas (including Presidio Trust).” It should acknowledge that Area B is entirely within the jurisdiction of the Presidio Trust.

Page 180, Park Management, Operations, and Facilities, Cultural Resources and Museum Management Division. The discussion overstates resources that are overseen by the division, as cultural resources within the Presidio of San Francisco National Historic Landmark are managed by Trust staff.

Page 181, Park Management, Operations, and Facilities, Visitor and Resource Protection Division, fifth sentence of second paragraph. The discussion should note that structural fires within the Presidio are handled by the San Francisco Fire Department and not the Presidio Fire Department.

Volume III, Part 11: Other Analyses and Statutory Considerations

Page 38, Cumulative Impact Analysis at Golden Gate National Recreation Area, Including Alcatraz Island, Methodology, fifth paragraph. No discussions with Trust staff took place to determine potential projects that may contribute to cumulative impacts, as no plans or projects within the Presidio are identified in the cumulative impacts analysis.¹ Presidio plans with actions that will have cumulative impacts include the PTMP, the Main Post Update to the PTMP, the Presidio Vegetation Management Plan (VMP), and the Presidio Trails and Bikeways Plan, to name a few. The inclusion of these plans for the Presidio at the geographic center of the GGNRA is necessary to permit a complete analysis of cumulative effects of the GMP, and their absence represents a serious omission in the analysis. The NPS is encouraged to review the Trust’s planning and environmental documents² to determine those actions that contribute to significant cumulative effects of concern, and add them to appendix B in volume I for consideration in the analysis.

Page 39, Natural Resources. Presidio plans and projects will contribute to cumulative impacts on natural resources and have a direct relationship to the GMP. Plans and projects most relevant to natural resources within the Presidio include actions implementing the PTMP and Presidio

¹ The CEQ Handbook advises that the “first step in identifying future actions is to investigate the plans of... other agencies in the area.”

² Available at <http://www.presidio.gov/trust/documents/environmentalplans/>.

VMP, Tennessee Hollow watershed restoration, and restoration of Quartermaster Reach. These plans and projects are missing from this topic.

Page 42, Cultural Resources. Rehabilitation of Presidio buildings under the PTMP represents the largest historic preservation project underway in the nation today. Of the 750 buildings in the Presidio, 469 are on the National Register of Historic Places, mostly located in Area B. The Trust has rehabilitated more than 300 historic buildings in the Presidio and has received numerous preservation and design awards in recognition of its historic rehabilitation work. This work is highly relevant to the cumulative impacts analysis of cultural resources but is conspicuously absent. It is simply not possible for the GMP/EIS to provide an adequate analysis of cultural resources cumulative impacts without consideration of Trust projects.

Index, general comment. A review of the term “Presidio of San Francisco” on page 179 in the volume III index revealed that 3 of the 4 page entries for the term were incorrect. The index should be checked for accuracy.

ATTACHMENT 1
RELATIONSHIP OF THE PRESIDIO TRUST MANAGEMENT PLAN
TO THE GENERAL MANAGEMENT PLAN AMENDMENT

The 1,491-acre Presidio of San Francisco was identified as a national park site in the 1972 legislation that created the GGNRA. The GGNRA legislation ensured that if the military deemed the Presidio excess to its needs, jurisdiction would be transferred to the National Park Service. The current General Management Plan for the GGNRA, approved in 1980, anticipated that the Presidio would come under the jurisdiction of the NPS if and when the Army left the Presidio. In 1989, the Presidio was designated for closure and in 1994 the U.S. Army transferred the Presidio to the national park system. In 1994, as part of the transfer, the NPS completed and issued a Final GMP Amendment for the entire Presidio setting forth concepts for managing its resources. In 1996, the Presidio Trust Act (16 USC 460bb appendix) gave jurisdiction of the 1,168-acre inland area of the Presidio known as Area B to the Presidio Trust.

Pursuant to the Trust Act, the Trust has the unique responsibility of ultimately eliminating federal government costs associated with the lands under Trust jurisdiction. To achieve these goals, the Trust is provided only limited annual federal appropriations, which decrease each year and end with FY2012. The Trust generates revenue by leasing rehabilitated buildings and retains these revenues to preserve and enhance the Presidio's resources as well as to operate and maintain the Presidio as a national park site in perpetuity.

The Trust Act directs the Trust to conform only with the purposes of the GGNRA Act and the "general objectives" of the GMPA.³ Recognizing the need for an updated policy framework that would balance the concepts and principles of the GMPA with the superseding statutory requirements and mandates of the Trust Act, the Trust adopted the Presidio Trust Management Plan: Land Use Policies for Area B of the Presidio of San Francisco (PTMP) in 2002. During the course of the planning and environmental review process leading to the PTMP and its accompanying environmental impact statement, the Trust met regularly with the NPS to provide opportunities for input and discussion.

The PTMP supersedes the GMPA as it applies to the area under jurisdiction of the Presidio Trust. The GMPA remains the management plan for Area A. The PTMP describes the planning principles that help the Trust realize its goals of preserving and enhancing the park's resources, bringing people to the park, and making the lands under Trust jurisdiction financially self-sufficient. The PTMP sets forth land-use preferences and development guidelines for each of its seven planning districts.

³ As defined in Presidio Trust Board Resolution 99-11 dated March 4, 1999.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
PROGRAM PLANNING AND INTEGRATION
Silver Spring, Maryland 20910

NOV 10 2011

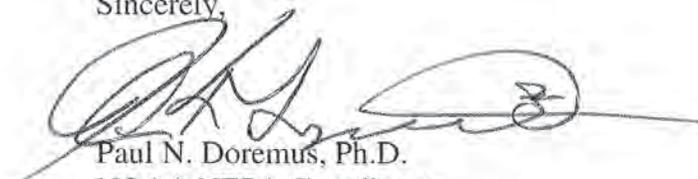
Frank Dean
General Superintendent
Golden Gate National Recreation Area
Attention: Draft GMP/EIS
Fort Mason, Building 201
San Francisco, California 94123

Dear Mr. Dean:

NOAA's Office of Program Planning Integration (PPI) is providing comments to the National Park Service (NPS) on the *Draft General Management Plan and Environmental Impact Statement for the Golden Gate National Recreation Area (GGNRA)*. Please find enclosed comments from two offices within NOAA, the National Ocean Service, Office of National Marine Sanctuaries, Gulf of the Farallones National Marine Sanctuary (on behalf of Superintendent Maria Brown), and the National Marine Fisheries Service (NMFS), Southwest Region, North Central Coast Office.

NOAA is pleased to be a co-trustee with the NPS in the management of this country's natural, historic and cultural resources, and we hope that the NPS finds our comments useful. Please do not hesitate to let us know if there are any questions we may answer for you. For questions regarding comments from the Gulf of the Farallones National Marine Sanctuary (GFNMS), please contact Karen Reyna at 415-970-5247 or karen.reyna@noaa.gov. For questions regarding comments from NMFS Southwest Region, North Central Coast Office, please contact John McKeon at John.McKeon@noaa.gov.

Sincerely,



Paul N. Doremus, Ph.D.
NOAA NEPA Coordinator

Enclosure



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Comments on the Draft General Management Plan and Environmental Impact Statement for the Golden Gate National Recreational Area (GGNRA)

Comments from the National Ocean Service, Office of National Marine Sanctuaries, Gulf of the Farallones National Marine Sanctuary (GFNMS)

Thank you for the opportunity to review the Draft General Management Plan (GMP) and Environmental Impact Statement (EIS) for the Golden Gate National Recreational Area (GGNRA). The Gulf of the Farallones National Marine Sanctuary (GFNMS) manages the waters and submerged lands of GGNRA off the Coast of San Mateo and Marin Counties to the mean high tide, including the tidal waters and submerged lands currently adjacent to, and overlapping jurisdiction with GGNRA. Therefore, we plan to be an active stakeholder, partner and collaborator with the National Park Service (NPS) in the implementation of the GMP.

All comments provided herein discuss GFNMS' suggestions on strengthening the preferred alternative within the coastal zone adjacent to and overlapping with GFNMS as well as Alcatraz Island which shares the same populations of seabirds found in sanctuary waters. Comments include addressing ocean stewardship, climate change, and water quality; maintaining and where feasible, restoring the integrity and diversity of natural resources; and clarifying GFNMS jurisdiction and mandates as related to the implementation of the GMP. Comments are divided into two parts: 1) general comments on concepts in the draft GMP and EIS; and 2) specific suggested changes to the language in Volumes I, II and III.

1) General Comments

GFNMS supports elements of the preferred alternative that address coastal, estuarine and marine resources for both GGNRA (alternative 1) and Alcatraz Island (alternative 3). Additionally, there are several elements, areas and actions in alternative 2 that, if adopted as part of the preferred alternative can further enhance the coastal and ocean ecosystem of sanctuaries. The GMP does an excellent job of explaining the interpretive themes, associated resources and desired conditions in the management zones. This approach has clearly outlined the GMP preferred alternatives as compared to the other alternatives, and predominantly, has given the reader the ability to understand the subtle differences between the alternatives.

General comments provided below cover specific topics that can affect sanctuary resources, with a focus on clarifying and strengthening the preferred alternative. For example, there are several instances where the currently identified preferred alternative can be strengthened by adding elements of alternative 2. We urge NPS to incorporate GFNMS' suggestions into the final preferred alternative.

Boundary Adjustments

There are many benefits to both sanctuaries and NPS if GGNRA boundary modifications are pursued for the two locations that would overlap with sanctuary boundaries: the offshore ocean

environment in San Mateo County, which overlaps with the Monterey Bay National Marine Sanctuary; and Bolinas Lagoon in Marin County, which overlaps with GFNMS. Both of these areas are currently managed by GFNMS. These benefits include developed partnerships on emergency response, enforcement, education and interpretation and will likely result in a cost savings to the Federal government when sharing staff resources and physical assets. GFNMS supports the proposed boundary modifications, with the understanding that the goals and criteria for designating these areas need to be consistent with sanctuary mandates.

It is critical that NPS policies and management actions in these two areas are consistent with the National Marine Sanctuaries Act (NMSA). One of the goals of the NPS boundary adjustment stated in Volume I, page 102 is to *“strengthen the diversity of park settings and opportunities supporting the park purpose to encourage, attract, and welcome diverse current and future populations while maintaining the integrity of the park’s natural and cultural resources.”* GFNMS was designated pursuant to the NMSA, the purposes and policies of which have a primary mandate of maintaining the natural biological communities, and protecting and where appropriate, restoring and enhancing natural habitats, populations, and ecological processes (16 U.S.C. §1431 et seq.). We can facilitate human use in sanctuaries to the extent such uses are compatible with the primary mandate of resource protection through innovative, coordinated, and community-based measures and techniques including inter-agency cooperative arrangements. However, maintaining, restoring and enhancing natural habitats where appropriate must be a priority in areas where GGNRA and sanctuaries overlap.

Through regulation, GFNMS and MBNMS prohibit certain activities that are inconsistent with the goals, objectives, mandates and policies of the NMSA. Additionally, we strive to ensure that human use does not impact natural resource restoration efforts, which includes both wildlife and habitat restoration. The boundary modifications description, criteria and determinations for Bolinas Lagoon seem to be consistent with sanctuary regulations and mandates. The San Mateo County offshore expansion area description and criteria also seem to be generally consistent. However, the determinations for the San Mateo County offshore expansion need additional language to ensure consistency with the mandates of the sanctuary. In Section 2 of this letter GFNMS has specific suggestions to strengthen the guidance for boundary modifications to be consistent with the NMSA by rewording the goals, and adding additional information related to the determinations for the San Mateo County offshore expansion.

Climate Change

GFNMS supports the planning approach for addressing climate change. The GMP does an excellent job of articulating key elements and administrative commitments to addressing climate change.

The executive summary states the following: *“Guidance on managing resources and visitation in the face of climate change builds upon NPS policy, current science, and the park’s ‘Climate Change Action Plan.’ The goals are to 1) reduce CO2 emissions, 2) educate and interpret the processes for visitors, and 3) assess the impacts and respond to changing conditions.*

Additionally, the GMP has identified climate change as an issue to be addressed by stating that, *“The general management plan will provide guidance on how to assess, respond to, and interpret the impacts of global climate change on park resources, and will identify objectives for*

reducing greenhouse gas emissions.” However, the preferred alternative does not have any goals specifically related to climate change and the GMP does not provide a clear path on how GGNRA would interpret or respond to climate change. Although alternative 2 does have a visitor experience goal that addresses the implications of climate change, there does not appear to be programs or strategies that outline climate change education and interpretation.

The GMP has detailed information and analysis related to the carbon footprint, and it is clear that GGNRA is actively working to reduce CO₂ emissions. However, the preferred alternative shows an increase of the gross emissions of the entire park by 2% and the draft EIS shows that the majority of this increase is caused by increased visitor use of Alcatraz Island. Although a 2% increase is considered a minor adverse impact of the NPS carbon footprint, GFNMS recommends that NPS identify additional actions that will reduce CO₂ emissions such as alternative energy installations, and the use of low emission vessels and vehicles in order to remain consistent with the NPS goal to “reduce CO₂ emissions”.

We could not find identified public interpretation and education programs that highlight carbon emissions reductions within the park. It is important to incorporate this as an example of leadership in this area, as well as help the public understand ways they too can reduce emissions and that local, individual choices do influence the global problem of climate change. Under the Visitor Experience Goal of “*encouraging hands-on stewardship through visitor opportunities that promote personal health and responsibility,*” GGNRA should consider interpreting its carbon footprint reduction, including green facilities, alternative energy, and alternative transportation.

Additionally, programs or strategies specific to climate change education, and assessing and responding to climate change are either missing or vaguely mentioned. It was difficult to find details behind some statements such as, “Reconnect fragmented habitat within and adjacent to the park to strengthen the integrity and resiliency of the coastal ecosystem to respond to climate change and urban pressures” or “Proactive management would build into the environment greater resiliency to climate change.” Adding examples and/or strategies that are linked to these actions will strengthen the GMP.

GGNRA has many tools available. The National Park Service Climate Friendly Parks Program and Climate Change Response Strategy are excellent resources that outline ways to address some of these missing elements from the GMP. Neither of these is mentioned in the Summary Edition or Volumes I-III. If linkages to the strategy and program are identified in the GMP, then this would help the reader better understand the implementation strategies related to responding to climate change. At a minimum, the GMP should provide information on this national effort in the climate change section or refer to it as another NPS plan that guides implementation.

Furthermore, in Volume III, Implementation Planning, there is no mention of climate change plans or strategies even though there appears to be an administrative commitment to addressing climate change. Given that factors such as sea level rise, ocean acidification and storm surges could affect park operations, visitor use, and natural and cultural resources, we suggest that GGNRA conducts a Climate Vulnerability Assessment or a Sea Level Rise Vulnerability Study as part of implementation planning.

GFNMS has been and would like to continue to partner with GGNRA on addressing climate change in coastal areas. The sanctuary is a partner in the collaborative project, "Our Coast–Our Future," which will be providing an online decision support tool with interactive maps to plan for sea level rise and storm hazards along the Bay Area's outer coast by fall 2012, and in San Francisco Bay by 2014. These tools can be used to inform the aforementioned assessments.

In summary, in order to be consistent with the key elements of the GMP and NPS administrative commitments related to climate change, GFNMS recommends that:

- 1) The preferred alternative include specific NPS actions planned for addressing climate change and reducing CO₂ emissions;
- 2) The visitor experience goal related to climate change from alternative 2 is added to the preferred alternative; and
- 3) NPS consider specific language changes or additions throughout the document that strengthens and clarifies information related to climate change, as outlined below under Alcatraz Island and in Section 2 of this letter.

Ocean Stewardship

GFNMS supports the four ocean stewardship goals and associated management strategies and suggests only minor edits to strengthen this plan, which are covered in Section 2 of this letter.

Water Quality

GFNMS supports all actions that protect coastal streams from erosion and restore riparian habitat. We encourage NPS to adopt elements of alternative 2 that protect and improve water quality in the creeks that drain into Sanctuary waters. Improving water quality in areas of management along coastal streams and land use in the coastal zone including Easkoot Creek, Slide Ranch, Muir Beach and Rancho Corral de Tierra helps protect sanctuary resources.

GFNMS regulations prohibit discharging or depositing any material or other matter directly into the Sanctuary from the land. Regulations also prohibit discharging or depositing any material or other matter from beyond the boundary of the Sanctuary that subsequently enters and injures a sanctuary resource or quality [15 CFR § 922.82 (a)(2)]. It is critical that any land uses within GGNRA along the shoreline have clean discharges. Through implementing several water quality and habitat improvement elements in alternative 2, NPS can help prevent both point source and non-point source surface runoff, and thus avert potential discharges that can injure a sanctuary resource or quality. Actions that improve offshore water quality should be incorporated into the preferred alternative.

Alternatives for Alcatraz Island

GFNMS supports alternative 3 (preferred) for the island perimeter and offshore bay environment including the strategy to protect colonial nesting birds and intertidal habitat, and interpret the island's evolving cultural and natural history. The overview of the preferred alternative also does an excellent job of explaining the linkages of the island's natural history to current NPS management, which is mirrored in the key elements of alternative 3. GFNMS recommends that

NPS consider adding an additional acknowledgement of the current NPS management of the island for natural resources by adding a second bullet under Fundamental Resources And Values for Alcatraz Island (Volume I, Page 19). Suggested language could include the following: Island Perimeter and Offshore Bay Environment – The waters, intertidal habitat, cliffs and wildlife of Alcatraz Island include an opportunity for visitors to learn about the natural history of San Francisco Bay.

GFNMS has a program dedicated to the protection of seabirds, The Seabird Protection Network, which began in 2006. The Network chapter that spans from Bodega Head to Point Sur specifically aims to reduce human disturbance to seabirds at coastal breeding and roosting sites in order to improve the survival and recruitment of seabirds by targeting the three main sources of these disturbances: boats, planes and humans on foot. Annual funding for education and outreach is provided, and this is also a partnership program with state and federal agencies, including National Park Service. GFNMS welcomes an ongoing partnership for seabird protection and would welcome the addition of a San Francisco Bay chapter that addresses seabird disturbance on Alcatraz Island.

The program tracks disturbances through monitoring. Monitoring data has shown that both motorized and non-motorized vessels can cause a disruption to breeding activities, and that boats have caused the most severe observed impacts to seabird colonies by approaching in close proximity. According to a report released in 1998 by H.R. Carter et al., seabird population responses to preventing disturbances by boats could include increased breeding successes, population size and roosting use.

GFNMS supports the approach of NPS to address user capacity as it relates to addressing visitor-caused bird disturbance. The table in Volume III, page 8 does an excellent job of identifying the indicators of disturbance, the monitoring strategy and the associated potential management strategies. If the identified strategies are implemented, then benefits to seabird populations would help compensate for injuries to seabirds from oils spills and other anthropogenic causes by speeding and ensuring natural population recovery in the near future.

GFNMS strongly supports the creation of a sensitive resource zone that prevents vessel approach extending 300 feet from Alcatraz Island as depicted in the map for alternative 3 (Volume I, page 173). Demarcation of this zone by the use of warning buoys will be key to ensuring compliance. Section 2 of this letter provides additional details regarding the costs for installation and maintenance of these types of buoys.

GFNMS also supports the concept for additional interpretation opportunities that are articulated in alternative 2 for Alcatraz Island, which states, “*Visitor experiences would include outdoor learning, and natural and cultural resource stewardship programming delivered in partnership with Bay Area nonprofits...visitors would be able to more freely explore, discover, and experience nature reclaiming Alcatraz Island, and understand the role the island plays in the broader marine ecosystem (reaching from San Francisco Bay to the Farallon Islands) as a result of its strategic location.*” Alcatraz Island also provides an excellent platform to educate visitors about any use of alternative energy on the Island. NPS should consider developing an alternative energy plan for Alcatraz Island. If NPS is planning to use alternative energy, it provides a key

opportunity to demonstrate leadership in addressing and reducing CO₂ emissions. GFNMS urges NPS to adopt this aspect of alternative 2 into the preferred alternative.

Alternatives for Park Lands in Marin County

Stinson Beach-Bolinas Fairfax Rd: Although alternative 1 (preferred) states plans to continue to work on flooding and water issues with local community and authorities and manage natural areas to protect and restore coastal ecosystems, there is no mention of implementing the plan for Easkoot Creek Restoration at Stinson Beach or the Locally Preferred Plan to restore Bolinas Lagoon, which was developed by a partnership with the U.S. Army Corps of Engineers, Marin County Open Space District and the local community. The Locally Preferred Plan aims to minimize the adverse human impacts to Bolinas Lagoon, thereby promoting the natural, dynamic processes of the estuarine environment. One of the actions in the Locally Preferred Plan is to investigate the use of GGNRA Stinson Beach lands to improve floodplain function for Easkoot Creek. Alternative 1 may be addressing this, but it's not clear in the GMP.

It is clear in the GMP that alternative 2 will contribute to restoration of natural processes at Bolinas Lagoon, but that contribution is not well defined, as it relates to the Locally Preferred Plan. GFNMS recommends clarifying how the actions in alternative 1 relate to the Locally Preferred Plan and restoration of Easkoot Creek and how that differs from alternative 2. Additionally, GFNMS encourages NPS to link to the "Our Coast-Our Future," which by Fall 2012, will be providing an online decision support tool with interactive maps to plan for sea level rise and storm hazards in this area. The use of this tool could influence any restoration that NPS plans for this area. For the next year, GFNMS has worked with our non-profit partners to secure a part-time staff person for implementing the Locally Preferred Plan. We would like to partner with NPS on planning for projects that mutually benefit habitats in both NPS and GFNMS jurisdiction.

State Route 1: GFNMS supports alternative 2 for the Scenic Corridor Zone (same as alternative 1, preferred), and supports the addition of the Natural Zone as described in alternative 2. We have been and will continue to review actions taken by Caltrans to manage the coastal road, and Caltrans is planning interpretive signage highlighting Bolinas Lagoon. Additionally, the Sanctuary California signage plan can fund signage highlighting sanctuary waters and the offshore waters of GGNRA. Finally, the siting of any new construction should first be evaluated for long-term viability and cost effectiveness, taking present and future climate change influences into consideration.

Slide Ranch: Although GFNMS supports environmental and farm education, NPS investment into improving facilities in this particular location should be weighed against information related to sea level rise, storm surges and known geologic conditions.

Lower Redwood Creek: GFNMS supports the actions in alternative 1 to manage the majority of the area to restore natural coastal ecosystem and riparian habitat and protect salmon through a collaborative community process to increase water storage capacity for use in dry season. GFNMS also supports actions in alternative 2 to further protect the creek's endangered salmon, which will provide greater protection to sanctuary resources.

Muir Beach: GFNMS supports the preferred alternative for the continued implementation of the wetland and creek restoration plan and NPS efforts to collaborate with agencies and the community to address water quality issues.

Offshore Marine Environment: GFNMS supports the actions in the preferred alternative for the Scenic Corridor Zone and Sensitive Resources Zone. The area off Point Bonita, at Bird Island, is now home to a Common Murre colony. Brandt's Cormorants have also been observed nesting in this area. Most of the cormorant nests are on the west side along the flatter top portion of the rock. This is an emerging colony of seabird species that are well below their historic numbers. We agree that visitation should be highly restricted to protect seabirds that are easily disturbed by humans, and that park-approved research and monitoring should be the primary activity in this zone so that breeding success and causes of disturbance can be assessed. It is unclear in the GMP if this zone will include demarcation in offshore waters through the use of warning buoys, such as area offshore of Alcatraz Island or if restrictions will be land-based.

GFNMS has a Seabird Technical Advisory Committee, composed state and federal agencies including GGNRA, which advises us on actions to protect and restore seabirds. The Committee advised us to recommend vessel "no-go" zones, defined by the state of California as special closure around the ten key seabird breeding and roosting colonies, and provided a 1000 ft closure distance recommendation. These actions would eliminate 91% of disturbance and 95% of flushing (causing birds to fly), according to U.S. Fish and Wildlife monitoring data. One of the ten locations was Bird Rock off Point Bonita. This recommendation specifically includes non-motorized vessels.

Additionally, the breeding and nesting times (including nest prospecting and pre-nesting activities) for the two main populations of seabird species near Point Bonita, Brandt's Cormorants and Common Murres, is November to August. Both species can additionally benefit by protection from human disturbance during the non-nesting season. In particular, Brandt's Cormorants need places to rest and dry their wings and year-round protection can provide these additional benefits. Therefore, NPS should consider addressing both boat-based and land-based targets and choose a distance and timeframe that will provide the greatest protection when determining how best to implement the protections for this zone.

Alternatives for Park Lands in San Mateo County

Pedro Point and Devil's Slide: GFNMS supports zoning the Devil's Slide Area west of Highway 1 as a Sensitive Resources Management Zone as identified in alternative 2, to protect the breeding Common Murre and Brandt's Cormorant colony on Devil's Slide Rock and expanded habitat on the mainland. This colony was completely abandoned in 1988. As a result, in 1996, a project to restore the Murres to Devil's Slide Rock was launched. The project used social attraction, with decoys, calls and mirrors to attract birds back to the abandoned colony. The funding was approved as part of the Apex Houston oil spill restoration fund, along with monitoring for success at the rock. Since then, over \$ 6 million dollars of restoration funds have been spent on this colony and the Luckenbach restoration plan will continue funding the restoration of this colony for the next 20 years.

The restoration effort at Devil's Slide Rock has yielded successes with breeding pairs returning to the rock by the hundreds and expanding to the adjacent cliffs on the mainland from Grey Whale Cove to Pedro Point. However, the biologists monitoring this colony and the colonies off of the coast of Marin identified human-based disturbance as one of the factors impeding recovery. The goal is to return the colony to 3,000 Common Murres, which was the estimated colony size in 1979. In order to achieve this goal it is critical to minimize human access to the rock and the surrounding cliffs. This area is currently prone to disturbances from aircraft and vessels, so it is critical to prevent adding an additional stressor to this colony. We recommend that the preferred alternative includes specific actions to protect Devil's Slide Rock and the surrounding coastal bluffs, and any proposed coastal access next to Highway 1 is constructed in a way that assists, and does not jeopardize this ongoing restoration project.

Upon review of the GMP natural resource goals in alternative 1, we believe that creating a sensitive resource zone is actually consistent with this alternative. The GMP goals for natural resources are different between alternative 1 (preferred) and 2, which we can only assume is the driver behind designating the zones in each alternative. Alternative 1 has a goal to "maintain the integrity and diversity of natural resources and systems" whereas alternative 2 aims to "optimize recovery of special status species and survival of wide-ranging wildlife." Because restoration is already underway in the area adjacent to this zone, limiting access will help to "maintain" the current diversity of this colony.

Additionally, the GMP is not completely clear about the actual difference between alternative 1 and 2. The table in volume 1 on page 285 shows that the actions for Pedro Point, Devil's Slide, and San Pedro Mountain are the same for alternatives 1, 2, and 3. If this table is correct, then the west side of highway 1 as depicted in the alternative 2 map (Volume I, page 253), which shows this area as Sensitive Resources Management Zone as identified in alternative 2, should be the same as alternative 1.

Furthermore, there is a concerted effort by San Mateo County, US Fish and Wildlife Service, GFNMS, and other local associations to develop a coastal trail on highway 1 that includes either an interpretative bird blind or a pedestrian/bike tunnel in this area in order to prevent coastal access west of highway 1 that would result in human-caused disturbance to this colony.

Finally, alternative 2 is the most consistent with how GFNMS and the California Department of Fish and Game manages and protects the area offshore of Devil's Slide mainland. The special closure at Devils Slide is one of the largest in the State and was drawn to encompass the mainland and prevent human-caused disturbance to the cliffs. Additionally, the Seabird Protection Network has invested significant staff resources into educating coastal and ocean users who frequent this area about the sensitive colony that exists both on the rock and the mainland both within and outside of the state-designated special closure.

Therefore, for several compelling reasons, GFNMS urges to NPS change the area from Pedro Point to Gray Whale Cove off the San Mateo Coast from a "Natural" zone to a "Sensitive Resources Management Zone" as it is shown and defined in alternative 2.

Rancho Corral de Tierra: GFNMS recommends NPS partner with the surrounding land managers to restore the creek corridors, reconnect them to the ocean, and restore anadromous fish passage.

Draft EIS

The draft EIS did an excellent job of describing the existing environment of GGNRA and the potential environmental consequences related to implementing the alternatives in the management plan. The information is well organized and detailed information on specific impact topics and the reasons that each was retained or dismissed from further evaluation is clear. GFNMS has minor suggestions to clarify and improve information, which is provided below in Section 2 of this letter.

2) Specific Suggested Changes

The text below provides comments on specific additions and deletions to the GMP and EIS as proposed by GFNMS. ~~Strikethrough~~ text is proposed for deletion. Text in [brackets] is proposed for addition.

Multiple Locations

The Indices at the back of Volumes I, II, III refer readers to pages that do not correlate with the topic listed. We found this discrepancy when conducting a search for the topic “Climate Change” and found instances where the words are mentioned in the document, but it’s not in the indices; and/or the sections that cover climate change have the wrong pages listed (i.e. the carbon footprint section starts on pg 25 of Volume II, but the indices direct readers to page 26).

- GFNMS recommends checking the indices for accuracy and consistency before issuing the final draft.

Summary Addition, Pg 29 under, Preferred Alternative Projects, Stinson Beach North to Bolinas–Fairfax Road and Volume I, Page 203 under Stinson Beach North to Bolinas–Fairfax Road:

- GFNMS recommends the following addition: ...Sustainable new facilities would replace deteriorated restrooms, showers, picnic areas, and parking lots. [The siting of any new facilities would first be evaluated for long-term viability and cost effectiveness, taking present and future climate change influences into consideration.]
- GFNMS recommends the same addition to page Volume I, 235 since alternative 2 is similar to alternative 1: ...As in alternative 1, sustainable new facilities would replace deteriorated restrooms, showers, picnic areas, and parking lots. [The siting of any new facilities or relocation of existing would first be evaluated for long-term viability and cost effectiveness, taking present and future climate change influences into consideration].

Executive Summary, Volume I (Management Plan)

Page 17, under
Coastal Ecosystems

- GFNMS recommends clarifying that marine habitats are nearshore by adding the following: Golden Gate National Recreation Area contains a rich assemblage of coastal native plant and animal habitat that includes forests, coastal scrub, grassland, freshwater, estuarine and [nearshore] marine habitats, beaches, coastal cliffs, and islands.

Page 28, under Issues to be Addressed, Visitor Access: Transportation and Trails

- GFNMS recommends that the GMP states that access could also be changed due to increased flooding, storms, erosion, etc. as a result of climate change and GGNRA will evaluate existing and proposed coastal access for long-term suitability.

Pages 29, Sustainable Natural Resource Preservation and Management paragraph 3, and 129, Ocean Stewardship Introduction paragraph 3, contain slight variations of the same concepts, but the wording changes between the two results in different interpretations. Page 29 states, "*Ocean resources, including natural marine resources and submerged cultural resources, are at risk due to a variety of threats. Global climate change has begun to cause sea level rise, change storm patterns, and affect ocean acidification.*" Page 129 states, "*Ocean resources, including natural marine resources and submerged cultural resources, are at risk due to a variety of threats. Climate change will cause sea level rise, changing storm patterns, and ocean acidification.*"

- GFNMS recommends the following suggested edit for both for consistency: Ocean resources, including natural marine resources and submerged cultural resources, are at risk due to a variety of threats. The effects from global climate change, [sea level rise, change[s in] storm patterns, and ~~affect~~ ocean acidification, confounds many of these threatshas begun to cause.

Page 35, under Relationship Of This Plan To Other Plans, there isn't mention of the forthcoming NPS Green Parks Plan or the NPS Climate Friendly Parks Program.

- GFNMS recommends that this may be one of the appropriate places to mention Climate Friendly Parks, since as stated above it is not included elsewhere currently.

Page 102, under Boundary Adjustments, first paragraph below goals

- Since the proposed boundary adjustments move GGNRA jurisdiction into waters overlapping to sanctuaries, and the primary mandate of the sanctuaries is to both protect and where appropriate, restore natural and cultural resources, GFNMS suggests the following addition to the first goal: Strengthen the diversity of park settings and opportunities supporting the park purpose to encourage, attract, and welcome diverse current and future populations while [maintaining the natural biological communities, and protecting and where appropriate, restoring and enhancing natural habitats, populations, and ecological processes and] maintaining the integrity of the park's ~~natural~~ ~~and~~ cultural resources.

Page 104, under Offshore Ocean Environment, San Mateo County, Determinations

- In order for GFNMS to fully support a boundary modification, we suggest the addition of the following language: Management of the areas added to the park boundary would be guided by the park's ocean stewardship policy [, the mandates of the National Marine Sanctuary Act] and the primary management purposes identified in the California state

leases that the park retains over other portions of the offshore ocean and bay environment in San Francisco and Marin counties.

Page 109, under Bolinas Lagoon, Marin County, Description

- GFNMS suggests the following addition: It is managed by Marin County Open Space District as the Bolinas Lagoon Open Space Preserve [and the Gulf of the Farallones National Marine Sanctuary].

Page 118, third sentence

- GFNMS suggests the following edit: The park staff would interpret climate change science and develop management strategies, which may include ~~predicting and~~ projecting expected changes.

Page 118, under Management Strategies:

- GFNMS suggests the following edit: ~~Predictions~~ [Projections] and observations of other climate change effects, including [changes in] weather, local climatic conditions, and phenology, would be gathered. Based on this information combined with the results of targeted monitoring, park managers could position themselves to respond and adapt according to changing conditions—a ~~sort of~~ [functioning as an] early detection system.

Page 118, Natural Resources

- GFNMS suggests adding a bullet conveying the following: Determine which species and habitats are most vulnerable to the effects of climate change (e.g., changes in temperature, increased storms, flooding and erosion, and ocean acidification) and evaluate the appropriateness of added protection for these resources.

Page 120 under Visitor Experience, top bullet

- GFNMS suggests the following edit: Remove existing visitor facilities and discontinue recreational uses where continued use is unsafe, infeasible, or undesirable due to changing environmental conditions. [Do not allow for new construction in areas that are subject to changing environmental conditions].

Page 129 under Ocean Stewardship, Introduction, end of third paragraph

- GFNMS suggests the following additions: Water quality is threatened by pollution from [surface] runoff, landslides, shoreline development, sewage outfalls, vessel [use and] traffic, oil [, chemical and cargo] spills, and contaminants exposed from dredging.

Page 130 under strategy 2.3

Currently there are no special closure areas within GGNRA boundaries and one within the proposed boundary modifications to include .25 miles offshore of San Mateo County coast.

- If GGNRA is expanded to include the area offshore of the San Mateo County coast, then GFNMS suggests that a sensitive resource zone is designated for the area of Devil's Slide Rock and Mainland from Gray Whale Cove to Pedro Point.

Page 130 under Strategy 2.4

- GFNMS suggests the following changes: Park staff will engage in restoration of estuarine

and coastal wetland habitats and will assess [the long-term viability and cost effectiveness of any] new restoration opportunities in response to changes from [taking present and future] climate change [influences into consideration].

Page 171, Summary of Costs for Alternative 3 (Alcatraz Island)

One-time capital costs need to include the cost of installing demarcation buoys. Although this is not identified as a cost related to historic preservation, it is an investment that will need to be made in order to ensure compliance with the sensitive resource zone, as it is currently defined in alternative 3. The cost per buoy ranges from \$3,000 to \$5,000 depending on the mooring tackle used and the method of installation. Inspection of demarcation buoys must be conducted at least every six months, and it should be assumed that buoys and their associated tackle will need part replacements and maintenance on an ongoing basis. Maintenance costs per buoy can range from \$1,000 to \$5,000 annually depending on the needs of each buoy. GFNMS can provide information on mooring tackle vendors, methods and lessons learned from installation and maintenance experiences.

- GFNMS recommends that an additional section or line item for the installation of demarcation buoys is added.

Page 203-204, under Stinson Beach North to Bolinas-Fairfax Road, Diverse Opportunities Zone

- GFNMS suggests the following edit: The park would continue to work with the Stinson Beach Community Services District, Marin County, [Gulf of the Farallones National Marine Sanctuary] and the local community to find sustainable solutions to flooding and floodplain function, water use, water quality, and wastewater treatment, and sea level rise related to climate change where these affect park resources.

Page 204, under Stinson Beach North to Bolinas-Fairfax Road, Natural Zone

- GFNMS suggests the following edit: Partnerships with neighboring [ocean and] land managers would be strengthened to achieve these goals across the broader landscape.

Page 204 under State Route 1 and Panoramic Highway, end of second paragraph

- GFNMS suggests the following addition: Improvements would fit with the rural character of the area. Park managers would seek to minimize impacts to natural resources caused by road use, maintenance, and drainage. [The siting of any new construction would first be evaluated for long-term viability and cost effectiveness, taking present and future climate change influences into consideration.]

Page 204 under Slide Ranch, Diverse Opportunities Zone

- GFNMS suggests the following edit: This area would be managed to enhance the environmental and farm education center and provide improved facilities for public day use of the site, including a picnic area, trail access, and a scenic overlook. Improvements would take into account the dynamic geologic conditions of the site. [The siting of any new construction would first be evaluated for long-term viability and cost effectiveness, taking present and future climate change influences into consideration.]

Volume II (Draft EIS)

Page 25, Carbon Footprint

- This section should further discuss a comparison with the 2008 emissions inventory results to give the reader a clearer picture of the current existing environmental conditions. The format of the 2008 table doesn't match with the 2006 pie charts so it is hard to compare the two. It would be useful to include a table for 2006 also.

Page 29 under Sea Level Rise and Coastal Vulnerability:

- It is important for NPS to articulate that mean sea level rise is not the immediate threat to resources. Increased storms, related coastal flooding from storm surges and erosion are more likely to happen during the 20-year GMP cycle. This should be highlighted here also.

Page 29 under Sea Level Rise and Coastal Vulnerability

- In order to adequately capture the discussion in this section regarding increased storms, flooding and erosion, GFNMS recommends that the title is changed as follows: Sea Level Rise[, Flooding,] and Coastal Vulnerability

Page 47 under Biological Resources, Habitat (Vegetation And Wildlife), Marine and Estuarine, Intertidal Zone, first full paragraph

- This section should be the driver of the potential environmental consequences section. GFNMS suggests the following edits to better characterize the wildlife and link the affected environment to the potential environmental consequences section: Birds forage in the intertidal zone at low tide or [nest and] roost in the cliffs just above the shore [or on nearshore islands off the Marin and San Mateo County coast].

Page 58 under Affected Environment, Birds

- The discussion about colonial waterbirds should include information about the colony at Bird Rock and Point Bonita as well as the Devil's Slide mainland from Point Pedro to Gray Whale Cove. This section should be the driver of the potential environmental consequences section. If information is missing in the affected environment section, then the analysis of environmental consequences will be incomplete. Information about both these colonies is available through the US Fish and Wildlife Service.

Page 180 under Environmental and Safety Division

- GFNMS suggests the following edit to better clarify the NPS sustainability programs: This group is responsible for environmental protection and occupational health and safety; the staff consists of 1% of the total park workforce. The division manages the park's sustainability programs and is central to addressing ~~climate change~~ [carbon emissions mitigation].

Page 182 under Natural Resources Management and Sciences Division

- GFNMS suggests the addition of the following sentence to the end of this section: [This division is central in addressing the effects of climate change on park resources and habitats.]

Page 212, Natural Resources, Analysis

- GFNMS supports the conclusion of the analysis of natural resources comments to all alternatives of GGNRA. However, the addition of several elements identified in alternative 2 would result in a greater benefit to both NPS and GFNMS resources.

Pages 233-234, under Water Resources and Hydrologic Processes and page 314, under Social and Economic Environment

- Analysis for both the water resources and the social and economic environment show there are greater benefits in alternative 2, as opposed to alternative 1. We understand that funding and staff resources may be the limiting factor to restoring coastal, estuarine and stream habitats, but during a 20-year plan some of the restoration activities may rise to a critical need due to other factors related to climate change. GFNMS urges NPS to review all the projects that can improve water quality and consider moving these to the preferred alternative.

Pages 238-245 under Natural Resources, Biological Resources

- Analyses of all three alternatives in this section related to habitat (vegetation and wildlife) have information missing about the waterbird colonies off the coast of the Devil's Slide area. This information is critical for determining if the different types of protection zones for the Devil's Slide mainland will result in a change to the conclusion regarding potential impacts between the alternatives.

Volume III (Implementation Planning)

Page 25 under Implementation Planning

- GFNMS recommends adding a bullet under either "Natural Resources" or "General" on page 26 that commits GGNRA to conducting a Climate Vulnerability Assessment or a Sea Level Rise Vulnerability Study as part of implementation planning.

Page 27 under Natural Resources, General, second paragraph

- GFNMS suggests the addition of the following language: During design and construction periods, NPS natural and cultural resource staff would identify areas to be avoided and would monitor activities. [The siting of any new facilities would first be evaluated for long-term viability and cost effectiveness, taking present and future climate change influences into consideration].

Page 29 under Threatened and Endangered Species and Species of Concern

- GFNMS suggests the following addition to Restoration or monitoring plans would be developed as warranted. Plans should include [evaluation of long-term viability], methods for implementation, performance standards, monitoring criteria, and adaptive management techniques.

Page 39, Natural Resources

- GFNMS suggests the following additions: Those plans and projects that are most relevant to natural resources and could contribute to cumulative impacts on this topic include the

Redwood Creek Watershed Vision and various restoration projects in the watershed; county transportation plans; management plans for various California state parks; the Point Reyes National Seashore draft general management plan and fire management plan; other plans and projects at Golden Gate National Recreation Area, such as the fire management plan, dog management plan, and the redevelopment of Fort Baker; the Gulf of the Farallones [and Monterey Bay] National Marine Sanctuary [Sanctuaries] plan; beach nourishment activities; regional land protection plans and activities such as Golden Lands, Golden Opportunities; the management of lands adjacent to the park; and past land use practices in the region.

Page 115, Other Federal Plans

The following changes are necessary in order to be consistent with the current management plan:

National Oceanic and Atmospheric Administration — Joint Management Plan for Cordell Bank, Gulf of the Farallones, and Monterey Bay National Marine Sanctuaries (2004-[2008])

- ~~After nearly three years of public input, issue prioritization, and recommendations from each site's Sanctuary Advisory Council, the National Marine Sanctuary Program is preparing draft management plans and an~~ [The Office of National Marine Sanctuaries released final revised management plans, regulations and a joint final] environmental impact statement for Cordell Bank, Gulf of the Farallones and Monterey Bay national marine sanctuaries. [The plans are the result of seven years of study, planning and extensive public input. The management plans offer a vision and course for protecting the rich marine ecosystems of three California national marine sanctuaries while continuing to allow compatible, sustainable human uses.] The plans include a review of resource protection, education and research programs, the program's resource and staffing needs, regulatory goals, and sanctuary boundaries.

The three sanctuaries include Pacific Ocean waters that extend from Bodega Bay in the north to Cambria in the south and thus could impact or be affected by the Golden Gate National Recreation Area General Management Plan. The three management plans ~~have been~~ [were] prepared jointly because the sanctuaries are adjacent to one another, managed by the same program, and share many of the same resources and issues as well as many overlapping interest and user groups. The alternatives in the general management plan are consistent with these plans and articulate additional NPS actions that strengthen ocean stewardship within the area of influence.

Page 129, Relevant NPS Policies

- This section may be a good place to summarize the National Park Service Climate Friendly Parks Program and/or Climate Change Response Strategy.

Conclusion

GFNMS commends the National Park Service in providing an adequate range of alternatives with a clear goal, and specific objectives that were developed through the public process and looks forward to working with you as an active partner when implementation of the GMP begins. GFNMS appreciates this opportunity to comment on the Draft GMP, EIS and implementation

plan, and can provide additional information as needed for the issuance of the final documents. Please contact Karen Reyna at 415-970-5247 or karen.reyna@noaa.gov if you have any questions or comments.

Thank you for requesting comments from NOAA's North Central Coast Office of the National Marine Fisheries Service, Southwest Region (NMFS) regarding the National Park Service's (NPS) Draft General Management Plan and Environmental Impact Statement (DEIS) for the Golden Gate National Recreation Area and Muir Woods National Monument (collectively referred to as GGNRA). NMFS' comments based on our review of the DEIS for the General Management Plan (GMP). The GMP (NPS reference: D18 GOGA-PLAN) is intended to guide management of these parks for the next 20 years.

General Comments

NMFS appreciates the opportunity to comment on this plan because the NPS, as a Federal resource and land stewardship Service dedicated to the preservation and enhancement of the nation's natural and cultural heritage, is uniquely qualified as a public entity to carry out the purposes of the Endangered Species Act of 1973, as amended (ESA). Congress passed the ESA "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved", and to enshrine as national policy "that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes" of the ESA (16 USC §1531). The ESA defines conserve as "the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary" (16 USC §1532). The responsibilities of all Federal agencies, including the NPS, under the ESA are described at 16 USC §1536: "All other Federal agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered species and threatened species listed".

As NPS is aware, many of the freshwater streams and estuarine habitats within the GGNRA boundaries support, or at one time supported populations of ESA listed Central California Coast (CCC) Evolutionarily Significant Unit (ESU) coho salmon (*Oncorhynchus kisutch*) and CCC Distinct Population Segment (DPS) steelhead (*O. mykiss*). Throughout the DEIS, the ESA listing status of these species is referred to as *Threatened*. This is the correct ESA listing status for the CCC steelhead DPS. However, the listing status of CCC ESU coho salmon was upgraded to *Endangered* effective August 29, 2005 (70 FR 37160). Please make this correction in the EIS.

The three action alternatives of the Plan presented in the DEIS all propose the creation of a variety of management zones that would assist in the protection of special status species by limiting or restricting public access. Under the proposed action alternatives, between 77 and 92 percent of the parks would be zoned using the Natural and Sensitive Resources designation. Also common to all action alternatives are varying suites of improvements and changes to transportation and trails to more fully address the needs of park visitors accessing the parks, to protect park resources, and to reduce the carbon footprint of public access to the parks. NMFS fully supports these actions as described in the GMP. Public access to, and education about natural resources, special status and endangered species, and the ecosystem functions that sustain

their habitats are critical to maintaining community support for preservation and recovery of these threatened resources.

Recommendations

The three action alternatives also have in common the Natural Resource goal of preserving the fundamental natural resources that contribute to the significance of the parks. However, the Natural Resource goals of Alternative II most fully implements NPS responsibilities under the ESA for the conservation of listed species and the ecosystems on which they depend. NMFS recommends the following Natural Resource goals of Alternative II be incorporated into the preferred alternative:

- Reconnect fragmented habitat within and adjacent to the parks to strengthen the integrity and resilience of the coastal ecosystems to respond to climate change and urban pressures.
- Optimize recovery of special status species and survival of wide ranging wildlife.
- Restore natural processes and/or allow these processes to evolve unimpeded to the greatest degree feasible.
- Promote partnerships to help the park become a center for innovative coastal science, stewardship, and learning.

These goals were the guiding principles during the ESA section 7 consultations completed by NMFS and the NPS regarding habitat restoration projects on lower Redwood Creek Banducci site, and at Muir Beach Big Lagoon. These projects will have significant benefits for multiple listed species, as the focus of restoration was restoring ecosystem processes and the seasonal ecosystem functions that create and sustain habitat for special status species. With the expansion of the parks into San Mateo County and the proposed land acquisitions, the GGNRA will have increased opportunity and responsibility to foster similar restoration efforts for the conservation of ESA listed species.

NMFS views the collaboration and consultations between NMFS and NPS as an integral component of strategies to conserve and recover ESA listed species of Pacific salmonids. We look forward to a continued close association with NPS in this effort. If you have any questions regarding these comments please contact John McKeon at John.McKeon@noaa.gov.

DEPARTMENT OF PUBLIC WORKS

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December 7, 2011

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DEC 12 2011
SUPERINTENDENT'S OFFICE

Superintendent
Golden Gate National Recreation Area
Attention: Draft GMP/EIS
Fort Mason, Building 201
San Francisco, CA 94123

Subject: Review of Golden Gate National Recreational Area Muir Woods National Monument – Draft General Management Plan and Environmental Impact Statement.

Dear Sirs,

We would like to thank you for the opportunity to review and comment on the Golden Gate National Recreation Area Muir Woods National Monument - Draft General Management Plan and Environmental Impact Statement, please find Marin County Department of Public Works' comments below:

1. See Volume I, Part 6, page 317, for the following statement.

To enhance the visitor experience and address congestion problems, permanent shuttle service to Muir Woods National Monument would be provided during peak periods throughout the year, supported by a new welcome center in the vicinity of the Caltrans Manzanita park-and-ride at State Route 1 and Highway 101, created in collaboration with Marin County, California state parks, and Caltrans.

We suggest revising the word "created" with "to be developed" in the following statement.

Also note that during the Comprehensive Transportation Management Plan (CTMP) process, no welcome center was created. CTMP developed several alternatives for the Visitor Center (not a welcome center) that did not have public support due to their scale.

2. See Volume II, Part 8, pages 218 and 219 for the following statements.

The park staff would also continue to work with the community and Marin County to manage parking and reduce traffic in Stinson Beach using congestion management tools. In the developed beach area, the parking lot would be replaced by a more sustainable parking facility. This would have a long-term, minor to moderate, beneficial impact on visitor access to the park, depending on the success of the congestion management efforts. Also at Stinson Beach, the park staff would explore ways to improve non-auto

access to the beach, such as promoting public transportation on weekends during the peak season.

Please elaborate on the “congestion management tools” that are to be used. Provide examples or possible suggestions for review.

Public Works - Traffic Operations Comments:

3. Under the “The Alternatives for Muir Woods National Monument”, Chapter 6, under Summary Tables for Muir Woods National Monument, Table 27, under alternative 1, it states that “The entrance would be redesigned to enhance visitors experience, protect resources, and improve safety”. Is the statement referring to traffic safety when it notes improve safety? If so, are there any records that indicate a traffic safety issue at the entrance?
4. Under the “The Alternatives for Muir Woods National Monument”, Chapter 6, under Summary Tables for Muir Woods National Monument, Table 27, under Alternative 2, it states that “the entrance would be relocated to lower parking lot area and designed to accommodate a year-round shuttle service. The majority of parking would be removed”. Removing parking at Muir Woods can create a safety issue for pedestrians who drive to the area and parking further away along Muir Wood Road and have to walk miles to access and or reach the entrance to the park. A parking demand study should be performed with existing condition and future proposed developments with pedestrian safety in mind.
5. Any configuration of Muir Woods Road or any other County maintained roads should be reviewed and approved by County of Marin, DPW staff. (Volume II, pages 218-219)
6. Under the “The Alternatives for Muir Woods National Monument”, Chapter 6, under Summary Tables for Muir Woods National Monument, Table 27, Under Alternative 1, It states that ”A welcome center would be provided in the vicinity of State Route 1 and Highway 101 with visitors services including parking, shelters, restrooms, food service, and orientation to monument and regional park destinations.” If this area to be developed to accommodate the above proposed amenities is in Manzanita Park and Ride, then parking and traffic impact studies should be conducted to address the various issues the area experiences today. For example due to the facilities proximity to on-ramp and off-ramp from and to US 101 and State Route 1, there is a high volume of traffic. The park and ride doesn’t provide protected pedestrian crossing including continuous access from and to the parking area.
7. Pohono Park and Ride - same comment as item 6, above.
8. Under the “The Alternatives for Muir Woods National Monument”, Chapter 6, under Summary Tables for Muir Woods National Monument, Table 27, Under Alternative 1, It states that” A welcome center would be provided in the vicinity of State Route 1 and

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Highway 101 with visitors services including parking, shelters, restrooms, food service, and orientation to monument and regional park destinations.” If this proposal is being considered for privately-owned property with multiple tenants, such as the Shoreline Center, then a parking study may be required and modifications to any approved development plans made through Marin County’s Community Development Agency review process to the extent that operations of other businesses on that property would be affected by long-term parking for national park or other visitor shuttle services.

9. Various traffic control signs are seasonally posted by County of Marin, DPW staff to accommodate the Muir Wood Shuttle. These signs include but are not limited to directional signs, pedestrian warning signs and parking regulations. The signs are posted at Caltrans’ Right of Way and other Cities such as City of Sausalito Ferry terminal. These signs should be incorporated into EIS and made to be permanent to accommodate the Muir Wood Shuttle.
10. The 4th paragraph on Page 13 of the Summary Addition indicates that the management strategies include intelligent transportation systems. I couldn’t find any details of employing ITS in this report. The last paragraph on page 141 of the VI, Part 3 indicates that Park Managers would continue to work with Caltrans and other agencies to employ tools to support the Muir Woods shuttle and other alternative transportation access to park sites.
11. Consideration may be given to installation of a changeable message sign (CMS), on Shoreline HWY (SR-1) near the intersection of Panoramaic HWY, informing visitors using their personal cars about the availability of parking at the entrance of Muir Woods National Monument. If parking lot is full, the sign would advise them to use shuttle and locations that they may park their vehicles. This issue may have already been considered; however, it is not included in discussions for improving the parking and shuttle program. Consideration may also be given to exploring possible areas for parking and using shuttle between the entrance of Muir Wood National Monument and Manzanita Parking lot.

Feel free to contact me at (415) 473-4398 if you have any questions.

Sincerely,



Michel Jeremias, PE
Interim Senior Civil Engineer

- c: Bob Beaumont
Craig Tackabery
Saaid Fakharzadeh
Eric Steger
Dan Dawson

DEPARTMENT OF PUBLIC WORKS

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November 28, 2011

**Superintendent
Golden Gate National Recreation Area
Attention: Draft GMP/EIS
Fort Mason, Building 201
San Francisco, CA 94123**

Subject: Comments from Marin County Department of Public Works

Please find below our comments on the Golden Gate National Recreation Area Muir Woods National Monument Draft General Management Plan/Environmental Impact Statement.

VI Part 6, pg. 317

ARRIVAL

Offsite Welcome Center

To enhance the visitor experience and address congestion problems, permanent shuttle service to Muir Woods National Monument would be provided during peak periods throughout the year, supported by a new welcome center in the vicinity of State Route 1 and Highway 101, ~~erected to be developed~~ in collaboration with Marin County, California State Parks, and Caltrans. Shuttles would travel a distance of about six miles to the monument. Express transit service from downtown San Francisco and improved connections with the regional ferry services would also be pursued. The welcome facility would provide necessary visitor services that could include parking, sheltered waiting areas, restrooms, and orientation to the monument and other regional park destinations. The facility would also connect visitors to other regional and local transportation systems.

COMMENT: The proposed new welcome center lacks design details to determine feasibility. The County of Marin requests to see preliminary design now to look at grades, alignment, topography to determine grading necessary and to ensure it properly conforms to existing infrastructure. All design aspects shall meet Marin County Codes (<http://library.municode.com/index.aspx?clientID=16476&stateID=5&statename=California>) Specifically Title 24

Note that any working in the County of Marin maintained right-of-way would require an encroachment permit to ensure it is built to County standards. If work is proposed within Caltrans right-of-way, National Parks Service shall take the lead in coordinating all agencies involved including any work in private properties.

In addition, cost estimate for this facility and any other work proposed within County of Marin, shall include County's application, review and inspection fees. Once detailed design is available, County can provide an estimate.

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The park staff would also continue to work with the community and Marin County to manage parking and reduce traffic in Stinson Beach using congestion management tools What tools? List examples.

In the developed beach area, the parking lot would be replaced by a more sustainable parking facility. This would have a long-term, minor to moderate, beneficial impact on visitor access to the park, depending on the success of the congestion management efforts WHAT EFFORTS?. Also at Stinson Beach, the park staff would explore ways to improve non-auto access to the beach, such as promoting public transportation on weekends during the peak season. Park managers would work with Marin County and state parks to explore realignment of Muir Woods Road to reduce impacts to Redwood Creek. A realignment of Muir Woods Road would have a short-term, moderate, adverse effect on access to the monument for the duration of construction activities.

COMMENT

County requests to see preliminary realignment of Muir Woods Road to determine feasibility. Muir Woods Road shall meet County roadway standards

(<http://library.municode.com/index.aspx?clientID=16476&stateID=5&statename=California>)

A construction phasing plan for the MWR realignment shall be developed now to minimize impact on existing access to the monument during construction.

Note that any work within Redwood Creek requires a creek permit from the County of Marin and other state and federal agencies, depending on scope of work. Any work within Redwood Creek shall be defined at this phase. Cost estimate for the project shall include application, review and inspection fees from the County of Marin.

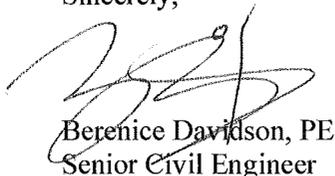
All proposed work shall meet all state and federal accessibility requirements.

In addition, attached please find additional comments from DPW's Traffic and Transportation Division.

Feel free to contact me at any time with questions/comments at (415) 473-3770 or bdavidson@marincounty.org. Note I will be out on extended leave until April 2012, during this time please call Michel Jeremias at (415) 473-4398.

Thank you for the opportunity to comment.

Sincerely,



Berenice Davidson, PE
Senior Civil Engineer

Enclosure

c: Bob Beaumont
Craig Tackabery
Saaid Fakharzadeh
Dan Dawson

Gibson, Jeanene

From: Dawson, Dan
Sent: Thursday, November 03, 2011 1:52 PM
To: Davidson, Berenice
Subject: Traffic comments on GGNRA EIS

Hi Berenice,

Here are Traffic's comments for inclusion in the department's response letter. Let me know if you have any questions.

TRAFFIC OPERATIONS:

1. Under the "The Alternatives for Muir Woods national Monument", Chapter 6, under Summary Tables for Muir Woods National Monument, Table 27, under alternative 1., it states that "The Entrance would be redesigned to enhance visitors experience, protect resources, and improve safety". Is the statement referring to traffic safety when it notes improve safety? If so are there records that indicate a traffic safety issue at the entrance.
2. Under the "The Alternatives for Muir Woods national Monument", Chapter 6, under Summary Tables for Muir Woods National Monument, Table 27, under Alternative 2, it states that "the entrance would be relocated to lower parking lot area and designed to accommodate a year-round shuttle service. The majority of parking would be removed". Removing parking at Muir Woods can create a safety issue for pedestrians who drive to the area and parking further away along Muir Wood Road and have to walk miles to access and or reach the entrance to the park. A parking demand study should be performed with existing condition and future proposed developments with pedestrian safety in mind.
3. Any configuration of Muir Woods Road or any other County maintained roads should be reviewed and approved by County of Marin, DPW staff.
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5. Pohono Park and Ride - same comment as #4, above.
6. The "The Alternatives for Muir Woods national Monument", Chapter 6, under Summary Tables for Muir Woods National Monument, Table 27, Under Alternative 1, It states that" A welcome center would be provided in the vicinity of State Route 1 and Highway 101 with visitors services including parking, shelters, restrooms, food service, and orientation to monument and regional park destinations." If this proposal is being considered for privately-owned property with multiple tenants, such as the Shoreline Center, then a parking study may be required and modifications to any approved development plans made through the Community Development Agency review process to the extent that operations of other businesses on that property would be affected by long-term parking for national park or other visitor shuttle services.
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Thanks,

Dan

Dan Dawson, AICP
Principal Transportation Planner
Marin County Department of Public Works
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415.473.7847 (fax)

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U.S. Department of Homeland Security
FEMA Region IX
1111 Broadway, Suite 1200
Oakland, CA. 94607-4052



FEMA

September 13, 2011

Superintendent
Golden Gate National Recreation Area
Attn: Draft GMP/EIS
Building 20, Fort Mason
San Francisco, California 94123

Dear Superintendent:

This is in response to your request for comments on the National Park Service, U. S. Department of Interior – Golden Gate National Recreation, Muir Woods National Monument Draft General Management Plan/Environmental Impact Statement.

Please review the current effective Flood Insurance Rate Maps (FIRMs) for the City and County of San Francisco (Community Number 060298), San Mateo County (Community Number 060311), and Marin County (Community Number 060173), Maps revised May 4, 2009. Please note that the City and County of San Francisco, Counties of San Mateo and Marin are participants in the National Flood Insurance Program (NFIP). The minimum, basic NFIP floodplain management building requirements are described in Vol. 44 Code of Federal Regulations (44 CFR), Sections 59 through 65.

A summary of these NFIP floodplain management building requirements are as follows:

- All buildings constructed within a riverine floodplain, (i.e., Flood Zones A, AO, AH, AE, and A1 through A30 as delineated on the FIRM), must be elevated so that the lowest floor is at or above the Base Flood Elevation level in accordance with the effective Flood Insurance Rate Map.
- If the area of construction is located within a Regulatory Floodway as delineated on the FIRM, any **development** must not increase base flood elevation levels. **The term *development* means any man-made change to improved or unimproved real estate, including but not limited to buildings, other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or materials.** A hydrologic and hydraulic analysis must be performed *prior* to the start of

development, and must demonstrate that the development would not cause any rise in base flood levels. No rise is permitted within regulatory floodways.

Superintendent
Page 2
September 13, 2011

- All buildings constructed within a coastal high hazard area, (any of the “V” Flood Zones as delineated on the FIRM), must be elevated on pilings and columns, so that the lowest horizontal structural member, (excluding the pilings and columns), is elevated to or above the base flood elevation level. In addition, the posts and pilings foundation and the structure attached thereto, is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components.
- Upon completion of any development that changes existing Special Flood Hazard Areas, the NFIP directs all participating communities to submit the appropriate hydrologic and hydraulic data to FEMA for a FIRM revision. In accordance with 44 CFR, Section 65.3, as soon as practicable, but not later than six months after such data becomes available, a community shall notify FEMA of the changes by submitting technical data for a flood map revision. To obtain copies of FEMA’s Flood Map Revision Application Packages, please refer to the FEMA website at <http://www.fema.gov/business/nfip/forms.shtm>.

Please Note:

Many NFIP participating communities have adopted floodplain management building requirements which are more restrictive than the minimum federal standards described in 44 CFR. Please contact the local community’s floodplain manager for more information on local floodplain management building requirements. The San Francisco City and County floodplain manager can be reached by calling Linda Yeung, Deputy City Administrator, at (415) 554-7124. The San Mateo County floodplain manager can be reached by calling Kelly Moran, at (650) 363-4161. The Marin County floodplain manager can be reached by calling Berenice Davidson, Associate Civil Engineer, at (415) 499-3770.

If you have any questions or concerns, please do not hesitate to call Cynthia McKenzie at (510) 627-7190 and/or Michael Hornick at (510) 627-7260 of the Mitigation staff.

Sincerely,

Gregor Blackburn, CFM, Branch Chief
Floodplain Management and Insurance Branch

Superintendent
Page 3
September 13, 2011

cc:

Ray Lee, WREA, State of California, Department of Water Resources, North Central Region
Office

Gregor Blackburn, CFM, Branch Chief, Floodplain Management and Insurance Branch,
DHS/FEMA Region IX

Cynthia McKenzie, Senior Planner, CFM, DHS/FEMA Region IX

Michael Hornick, Floodplanner, CFM, DHS/FEMA Region IX

Alessandro Amaglio, Environmental Officer, DHS/FEMA Region IX



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street

San Francisco, CA 94105-3901

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DEC 05 2011

Frank Dean, General Superintendent
Golden Gate National Recreation Area
Building 201, Fort Mason
San Francisco, CA 94123
Attn: General Management Plan

Subject: Draft Environmental Impact Statement for the Golden Gate National Recreation Area
General Management Plan, Marin, San Francisco, and San Mateo Counties, California
(CEQ# 20110298)

Dear Mr. Dean:

The Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (EIS) for the above project. Our review and comments are pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act.

EPA understands that a new General Management Plan (GMP) is needed to incorporate new lands that have been acquired by Golden Gate National Recreation Area (GGNRA), to address increased public demand for open spaces, and to adopt new strategies regarding climate change and transportation demands. The preferred alternative (Alternative 1 for lands in Marin, San Francisco, and San Mateo and Alternative 3 for Alcatraz Island and Muir Woods) is the environmentally preferred alternative and would provide the greatest number of visitor opportunities while still maintaining the integrity of natural and cultural resources. Based on our review, EPA has rated the document Lack of Objections (see enclosed "Summary of EPA Rating Definitions").

Master planning efforts provide an excellent opportunity to incorporate sustainability into long-term decision-making. EPA understands that with attempts to upgrade new facilities and to increase and expand visitor use in the park under Alternative 1, there could be long-term increases in energy consumption and related emissions (volume II, p. 224). We support green infrastructure as part of the remodels and renovations, such as, for example, the proposal to provide green sustainable infrastructure to replace the diesel generators on Alcatraz Island (volume I, p. 170). Decreasing emissions is also an important part of the transportation plan, and expanding shuttle and bicycle access, as is proposed, will lead to great benefits for the park.

We appreciate the opportunity to review this Draft EIS. Should you have any questions regarding our comments, please contact me at (415) 972-3521, or contact Stephanie Skophammer, the lead reviewer for the project. Stephanie can be reached at (415) 972-3098 or skophammer.stephanie@epa.gov.

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.

DEPARTMENT OF TRANSPORTATION

111 GRAND AVENUE
P. O. BOX 23660
OAKLAND, CA 94623-0660
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SUPERINTENDENT'S OFFICE

November 7, 2011

BAG051

Mr. Frank Dean
Golden Gate National Recreation Area
National Park Services
Fort Mason, Building 201
San Francisco, CA 94123

Dear Mr. Dean:

**Golden Gate National Recreation Area and Muir Woods National Monument – Draft
General Management Plan/ Environmental Impact Statement (DGMA/EIS)**

Thank you for including the California Department of Transportation (Department) in the environmental review process for the Golden Gate National Recreation Area (GGNRA) and Muir Woods National Monument project. The following comments are based on the DGMA/EIS. We are specifically concerned with; 1) inter-agency coordination for appropriate decision making responsive to emergency events as discussed for Alternative 2, 2) collaboration in drafting the long-term transportation plans associated with the project, and 3) the reduction of overall vehicle miles travelled through the implementation of non-single occupancy vehicle modes of transport to access GGNRA.

Alternative 2

For Alternative 2, the DGMA/EIS proposes abandoning State Route (SR) 1 between Muir Beach and Stinson Beach if a catastrophic landslide occurs. Please be advised that the Department will need to make an independent assessment as to the appropriate short and long-term response to such a landslide and whether SR 1 would be repaired in its current alignment or realigned elsewhere.

Transportation Management

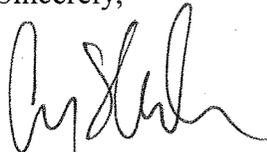
In the DGMA/EIS, it indicates that National Park Services (NPS) aims to pursue sustainable and multi-modal access to park sites. One of the strategies is the development of a long-range transportation plan. The Department would like to be an active partner in the development of the long-range transportation plan to discuss the role of state facilities as the principal access to GGNRAs within the Bay Area. With respect to the goals of the Long Range Transportation Plan, the development of future transportation projects should include input from all applicable transportation/county/transit agencies in the Bay Area. Previously, the Department had collaborated with NPS in identifying Intelligent Transportation System (ITS) elements to improve access for visitors to Muir Woods and Stinson Beach through the recently completed GGNRA ITS plan. Further, the Department is currently involved as key member and contributor for the development of the Alexander Avenue Planning Study.

Mr. Frank Dean/Golden Gate National Recreation Area
November 7, 2011
Page 2

In addition, the Department recommends providing consistent year-round shuttle service to Muir Woods and facilities to accommodate private tour buses to maximize the use of the "Welcome Center". The "Welcome Center" area can serve as a transfer hub for users to connect from private vehicles, tour buses and transit to the shuttle service. By improving transit opportunities, it can significantly reduce Single Occupant Vehicles (SOV) use to the GGNRA.

Should you have any questions regarding this letter, please call Yatman Kwan of my staff at (510) 622-1670.

Sincerely,

A handwritten signature in black ink, appearing to read "Gary Arnold", written in a cursive style.

GARY ARNOLD
District Branch Chief
Local Development - Intergovernmental Review

CALIFORNIA COASTAL COMMISSION

45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE (415) 904-5200
FAX (415) 904-5400
TDD (415) 597-5885



December 14, 2012

Nancy Hornor
Chief of Planning
National Park Service
Golden Gate National Recreation Area
Fort Mason
San Francisco, CA 94123

Subject: Negative Determination ND-049-12 (General Management Plan for the Golden Gate National Recreation Area and Muir Woods National Monument, San Francisco, Marin and San Mateo Counties)

Dear Ms. Hornor:

The Coastal Commission staff has reviewed the above-referenced negative determination. The National Park Service (“NPS”) proposes to implement the General Management Plan (“Plan”) for the Golden Gate National Recreation Area and Muir Woods National Monument (“Park”). The Plan provides the goals, objectives, and strategies that are proposed to manage the Park into the future. The main purpose of the Plan is to “offer national park experiences to a large and diverse urban population while preserving and interpreting the park’s outstanding natural, historic, scenic and recreational values.”

The previous general management plan for the Golden Gate National Recreation Area was adopted in 1980. Since then the Park has significantly expanded in size, climate change has become a management reality and changing demographics have resulted in shifts in public demand, uses and trends at the Park, thus necessitating a Plan update. The proposed Plan addresses these changes through the following key elements: boundary adjustments, climate change planning, a Park facilities plan, Native American engagement strategies, ocean stewardship policies, maintenance and expansion of the Park’s trails and collections, and strategies to improve sustainable, multimodal access to Park sites. In addition to these overarching elements, the Plan presents three alternatives that propose different visions for managing the many areas included in the Park. The NPS preferred management alternative for park lands in Marin, San Francisco and San Mateo Counties is Alternative 1, “Connecting People with Parks,” with the goal of engaging the community in the “enjoyment, understanding and stewardship of park resources and values.” The NPS preferred management alternative for Muir Woods National Monument and Alcatraz Island is Alternative 3, “Focusing on National Treasures,” which seeks to preserve and encourage appreciation and enjoyment of these sites.

The Plan includes programmatic-level descriptions of projects proposed for implementation at the Park. For example, the Plan provides for continuing public access and recreation at various locations throughout the Park, including expanding regional park ferry access and the Muir Woods shuttle service, and improving non-motorized access to park lands. The Plan also provides for the improvement of existing facilities and the construction of new facilities, including trailheads, parking lots, campsites, picnic areas and restrooms that facilitate public access to coastal resources. Water-oriented recreational activities such as surfing, swimming, hiking, kayaking, fishing, boating and crabbing will continue to be supported at several locations within the Park.

In addition, the Plan seeks to protect and strengthen coastal ecosystems. The Ocean Stewardship section of the Plan contains several strategies that achieve this goal, including identifying and quantifying threats to marine resources, establishing sensitive resource zones and special closure areas to protect biological resources, reducing point and nonpoint source pollution within and adjacent to park lands, and developing strategies to respond to climate change. Furthermore, the Plan aims to preserve the scenic and visual qualities of park lands and coastal resources. Specific strategies, including vegetative screening, design of park facilities to avoid or minimize impacts to visual resources and maintenance of existing scenic viewpoints will be implemented as appropriate on a project-specific basis.

The subject negative determination for the Plan includes a commitment by the NPS to coordinate with the Commission to determine which future Plan projects will require individual consistency or negative determinations. While proposed Plan projects may affect coastal resources, the extent of these effects, if any, cannot be fully determined until subsequent, more detailed project planning is completed. As individual project planning is completed, the NPS will contact the Commission staff to determine the need for federal consistency review.

The Commission staff **agrees** that with the commitment for additional consistency review of future development projects, implementation of the General Management Plan for the Golden Gate National Recreation Area and Muir Woods National Monument will not adversely affect coastal resources. We therefore **concur** with your negative determination made pursuant to 15 CFR 930.35 of the NOAA implementing regulations. Please contact Kate Huckelbridge at (415) 396-9708 should you have any questions regarding this matter.

Sincerely,



(fjn)

CHARLES M. LESTER
Executive Director

cc: CCC – North Central Coast District

APPENDIX I: NPS SCENIC EASEMENT ON PENINSULA WATERSHED LANDS¹²

GRANT OF SCENIC EASEMENT

This INDENTURE, made this fifteenth day of January, 1969 by and between the City and County of San Francisco, a municipal corporation, Grantor, and The United States of America, Grantee, and with the approval and concurrence of the State of California, acting by and through the Department of Public Works, and the County of San Mateo,

WITNESSETH:

WHEREAS, Public Law 88-29, dated May 28, 1963 (77 Stat. 49, 16 U.S.C., Sec 46OL-1), authorizes the Secretary of the Interior to accept and use donations of property to promote the coordination and development of effective programs relating to outdoor recreation; and

WHEREAS, Grantor is the owner in fee of certain real property, hereinafter described, situate in the County of San Mateo, State of California; and

WHEREAS, said real property is presently under the jurisdiction of the Public Utilities Commission of the City and County of San Francisco and is maintained in substantially its natural state and is devoted to the following use, to wit: the collection, storage and transmission of water and protection of water quality for human consumption, which use is compatible with preserving said land in its present state as open-space land; and

WHEREAS, Grantor desires to preserve said real property in its natural condition to the maximum extent possible consistent with the operations and activities carried on and to be carried on by the Grantor, and to limit the use of said property to the uses to which said property is presently devoted in order to discourage conversion of such land to urban use, recognizing that such land has substantial public value as open-space land and that the preservation of the land in its present open state constitutes an important physical, social, esthetic and economic asset to the City and county of San Francisco, the county of San Mateo, the State of California and The United States of America; and

WHEREAS, a 4.2 mile section of the adopted route for Interstate Route 280, hereinafter called the Junipero Serra Freeway, traverses Grantor's watershed lands south of Ralston Avenue in close proximity to Upper Crystal Springs Reservoir, and Grantor desires and has requested that said section of the Junipero Serra Freeway be relocated at a greater and safer distance from the reservoir along a ridge route in order to provide the greatest possible degree of protection against contamination and pollution of the reservoir and to preserve said real property in its natural condition to the maximum extent possible.

¹ The original copies of this easement has not been included due to the age of the original copy on hand. In order to remain legible, a transcribed version was created, omitting signature pages because they cannot be transcribed. The maps and exhibits associated with this easement have not been included for the same reason.

² An original can be requested in person at the following location (as quoted on their website): "To obtain a copy of a previously recorded document please visit our office at 555 County Center, First Floor, Redwood City, CA 94063 and use one of our public terminals for your research. Or, please send a written request with the name(s) of the parties involved, the document type, approximate date of recording along with a preprinted check (payable against a USA bank) to cover the appropriate photocopy fee to the address above." www.smcare.org/recorder/recording_documents/copy_recorded_docs.asp The citations for each easement are at the end of the transcription.

NOW, THEREFORE, for and in consideration of (a) the foregoing; (b) the relocation of the Junipero Serra Freeway generally along the alignment as shown on Exhibit "A," titled "Refined Ridge Route, Interstate Freeway 280, Lands of San Francisco Water Department, December 1968," attached hereto and made a part hereof, which alignment is acceptable to and has been approved by Grantor, or farther to the east of said alignment as may be determined by the California Highway Commission; (c) providing points of access for Panoramic Overlook, Vista Point, West Vista Point, Restoration, Cemetery and Administrative Areas and through access to the College Site, which areas are shown on Exhibit "A"; (d) the substantial additional cost to be incurred by Grantee and the State of California incident to said relocation; (e) the State of California having received assurance from Grantor that the right of way for the aforesaid relocation shall be furnished without cost to the State of California as partial consideration for said relocation; (e) the State of California having received assurance from Grantor that the right of way for the aforesaid relocation shall be furnished without cost to the State of California as partial consideration for said relocation; and (f) Grantor having received assurance by the Grantee, the State of California and the County of San Mateo that the restrictions hereinafter imposed shall have no adverse effect whatsoever upon, and shall not be considered by any court or jury in determining, the fair market value of the lands of Grantor which are presently, or may in the future be, the subject of litigation in eminent domain proceedings brought by the Grantee, the State of California or the County of San Mateo, including but not limited to proceedings now pending before the Superior Court of the State of California, in and for the County of San Mateo in Action Nos. 112271, 113072, 113136, 113137, 113798 and 120527 thereof, the Grantor does hereby grant and convey in perpetuity unto The United States of America, an estate, interest, and scenic easement in said real property of the Grantor, of the nature and character and to the extent hereinafter expressed to be and to constitute a servitude upon said real property of the Grantor, which estate, interest, scenic easement and servitude will result from the covenants and restrictions set out below and hereby imposed upon the use of said property of said Grantor, and to that end and for the purpose of accomplishing the intent of the parties hereto said Grantor covenants on behalf of itself, its successors and assigns with The United States Of America, to do and refrain from doing, severally and collectively, upon the Grantor's said property the various acts hereinafter mentioned, it being hereby agreed and expressed that the doing and refraining from said acts, and each thereof, upon said property is and will be for the benefit of the people of the City and County of San Francisco, the County of San Mateo, the State of California and The United States of America and will help preserve the scenic and natural resources of the area in which said real property is located.

1. The restrictions hereby imposed upon the use of said property of the Grantor and the acts which said Grantor so covenants to do and refrain from doing upon its said property in connection therewith are and shall be as follows: The land shall be preserved in its present natural state and shall not be used for any purpose other than for the collection, storage and transmission of water and protection of water quality, and other purposes, which shall be compatible with said use and preserving said land as open-space land.

2. No structures shall be erected upon said land except such structures as maybe directly related to and compatible with the aforesaid uses. No trailer shall be placed, used or maintained on said land as a substitute for a caretaker's residential building. The design and location of all buildings, except water utilities buildings and appurtenances, shall be subject to the concurrence of a regional representative of the Department of the Interior to be designated by the Secretary of the Interior.

3. No dump of ashes, trash or any unsightly offensive material shall be placed upon the land, except that in eroding areas of a drainage system where water runoff is destroying the natural ground cover suitable heavy fill or drainage emplacements may be installed to control and prevent further erosion.

4. No signs, billboards or advertisements, excepting directional signs and identification signs in connection with permitted uses, shall be displayed or placed upon the land.

5. Except as to encroachments presently permitted and renewals thereof, Grantor shall not permit further encroachments of any kind or nature upon said property by any adjoining property owner for the sole benefit of said adjoining land either by way of license, permit, easement or otherwise, except as authorized by a regional representative of the Department of the Interior to be designated by the Secretary of the Interior.

6. (a) Except as required to accomplish the improvements hereinafter permitted or as otherwise permitted to the Grantor hereunder, the general topography of the landscape shall be maintained in its present condition and no substantial excavation or topographic changes shall be made without the concurrence of a regional representative of the Department of the Interior to be designated by the Secretary of the Interior.

7. (b) Nothing in this Indenture shall restrict or affect the authority of the State of California to acquire rights of way for, or to construct, highways on State Routes 92, 186/35, and 186.

8. Except as required to accomplish the purposes and uses herein permitted to Grantor there shall be no cutting or permitting of cutting, destroying or removing any timber or brush without the concurrence in writing by a regional representative of the Department of the Interior to be designated by the Secretary of the Interior.

9. Concurrence in a requested action shall be deemed to have been granted if a regional representative of the Department of the Interior has not responded to a request within sixty days.

The foregoing grant and restrictions are made in consideration of and accepted subject to the express condition that the California Highway Commission shall have adopted that portion of the route for the Junipero Serra Freeway traversing lands of the Grantor south of Ralston Avenue hereinbefore provided in subparagraph (b) on pages 2 and 3 hereof. The foregoing grant and restrictions are made and accepted subject to the further following conditions, exceptions and reservations:

a. The Grantor for itself, its representatives and its successors, assigns and permittees reserves all of their rights not specifically restricted herein, including without limitation the perpetual right to use the below-described premises for purposes which they may find necessary or desirable for water or other utility operations as now or hereafter conducted, including without limiting the generality of the foregoing the right to construct maintain, repair, expand and reconstruct buildings (including caretakers' cottages), storage facilities, reservoirs, pipe systems, cable systems, flumes, head walls, retention walls, bulkheads, cofferdams, pumphouses, dikes, roadways, utilities and similar improvements upon the below-described premises.

b. Nothing herein shall be deemed to nullify, supersede or affect any unrecorded lien, encumbrance, rights or other interest in the lands described herein which was in existence at the

time of the recordation of this instrument. The Grantor represents and warrants that all of the uses or activities permitted by any of the aforesaid unrecorded liens, encumbrances, rights or other interests in these lands are compatible with the provisions of this Indenture.

c. The grant herein contained does not in any way and shall not be construed to grant to the public any right to enter the premises for any purpose.

d. The land of the Grantor, hereinabove referred to and to which provisions of this instrument apply, is bounded and described in Exhibit "B" and is shown on the map marked Exhibit "C", each of which exhibits is attached hereto and made a part hereof, to have and to hold unto The United States of America and its assigns in perpetuity. The covenants agreed to and the restrictions imposed, as aforesaid, shall be binding upon the Grantor, its successors, and assigns, and each of them, and shall constitute servitude upon the above-described lands.

All amendments to this Indenture shall be agreed to by the Grantor and Grantee and approved by the State of California and the County of San Mateo.

IN WITNESS WHEREOF, the Grantor has hereunto set its hand and seal on the day and year first above written.

*Note: Signature pages not included. They are available in hard copy at the County of San Mateo's Recorder's Office. Reference: Vol. 5633 Page 466. Recorded on May 2, 1969, 2:48pm by Marvin Church.

APPENDIX J:³⁴
NPS SCENIC AND RECREATION EASEMENT
ON PENINSULA WATERSHED LANDS

GRANT OF SCENIC AND RECREATION EASEMENT

THIS INDENTURE, made this fifteenth day of January, 1969, by and between the City and County of San Francisco, a municipal corporation, Grantor, and The United States of America, Grantee, and with the approval and concurrence of the State of California, action by and through the Department of Public Works, and the County of San Mateo,

WITNESSETH:

WHEREAS, Public Law 88-29, dated May 28, 1963 (77 Stat. 49, 16 U.S.C., Sec 460L-1), authorizes the Secretary of the Interior to accept and use donations of property to promote the coordination and development of effective programs relating to outdoor recreation; and

WHEREAS, Grantor is the owner in fee of certain real property, hereinafter described, situate in the County of San Mateo, State of California; and

WHEREAS, said real property is presently under the jurisdiction of the Public Utilities Commission of the City and County of San Francisco and is maintained in substantially its natural state and is devoted to the following uses, to wit: the collection, storage and transmission of water and protection of water quality for human consumption; outdoor recreation; and other uses, all of which shall be compatible with preserving said land in its present state as open-space land for public use and enjoyment ; and

WHEREAS, Grantor desires to preserve said real property in its natural condition to the maximum extent possible consistent with the operations and activities carried on and to be carried on by the Grantor, and to limit the use of said property to the uses to which said property is presently devoted in order to discourage conversion of such land to urban use, recognizing that such land has substantial public value as open-space land and that the preservation of the land in its present open state constitutes an important physical, social, esthetic and economic asset to the City and County of San Francisco, the county of San Mateo, the State of California and The United States of America; and

WHEREAS, a 4.2 mile section of the adopted route for Interstate Route 280, hereinafter called the Junipero Serra Freeway, traverses Grantor's watershed lands south of Ralston Avenue in close proximity to Upper Crystal Springs Reservoir, and Grantor desires and has requested that said section of the Junipero Serra Freeway be relocated at a greater and safer distance from the reservoir

³ The original copies of these two easements have not been included due to the age of the original copy on hand. In order to remain legible, a transcribed copy was created, omitting signature pages since they cannot be transcribed. The maps and exhibits associated with these easements have also not been included for the same reasons.

⁴ An original can be requested in person at the following location (as quoted on their website): "To obtain a copy of a previously recorded document please visit our office at 555 County Center, First Floor, Redwood City, CA 94063 and use one of our public terminals for your research. Or, please send a written request with the name(s) of the parties involved, the document type, approximate date of recording along with a preprinted check (payable against a USA bank) to cover the appropriate photocopy fee to the address above." www.smcare.org/recorder/recording_documents/copy_recorded_docs.asp The citations for each easement are at the end of the transcription.

along a ridge route in order to provide the greatest possible degree of protection against contamination and pollution of the reservoir and to preserve the real property in its natural condition to the maximum extent possible.

NOW, THEREFORE, for and in consideration of (a) the foregoing; (b) the relocation of the Junipero Serra Freeway generally along the alignment as shown on Exhibit "A", titled "Refined Ridge Route, Interstate Freeway 280, Lands of San Francisco Water Department, December 1968", attached hereto and made a part hereof, which alignment is acceptable to and has been approved by Grantor, or farther to the east of said alignment as may be determined by the California Highway Commission; (c) providing points of access for Panoramic Overlook, Vista Point, West Vista Point, Recreation, Cemetery and Administrative Areas and through access to the College Site, which areas are shown on Exhibit "A"; (d) the substantial additional cost to be incurred by Grantee and the State of California incident to said relocation; (e) the State of California having received assurance from Grantor that the right of way for the aforesaid relocation shall be furnished without cost to the State of California as partial consideration for said relocation; and (f) Grantor having received assurance by the Grantee, the State of California, and the County of San Mateo that the restrictions hereinafter imposed shall have no adverse effect whatsoever upon, and shall not be considered by any court or jury in determining, the fair market value of the lands of Grantor which are presently, or may in the future be, the subject of litigation in eminent domain proceedings brought by the Grantee, the State of California or the County of San Mateo, including but not limited to proceedings now pending before the Superior Court of the State of California in and for the county of San Mateo in Action Nos. 112271, 113072, 113136, 113137, 113798 and 120527 thereof, the Grantor does hereby grant and convey in perpetuity unto The United States of America, an estate, interest and scenic and recreation easement in said real property of the Grantor, of the nature and character and to the extent hereinafter expressed to be and to constitute a servitude upon said real property of the Grantor, which estate, interest, scenic and recreation easement and servitude will result from the covenants and restrictions set out below and hereby imposed upon the use of said property of said Grantor, and to that end and for the purpose of accomplishing the intent of the parties hereto said Grantor covenants on behalf of itself, its successors and assigns with the United States of America, to do and refrain from doing, severally and collectively, upon the Grantor's said property the various acts hereinafter mentioned, it being hereby agreed and expressed that the doing and refraining from said acts, and each thereof, upon said property is and will be for the benefit of the people of the City and County of San Francisco, the County of San Mateo, the State of California and The United States of America and will help preserve the scenic and natural resources of the area in which said real property is located.

The restrictions hereby imposed upon the use of said property of the Grantor and the acts which said Grantor so covenants to do and refrain from doing upon its said property in connection therewith are and shall be as follows:

1. The land shall be preserved in its present natural state and shall not be used for any purpose other than for the collection, storage and transmission of water and protection of water quality; outdoor recreation; ecological preservation and other purposes, which shall be compatible with preserving said land as open-space land for public use and enjoyment.
2. Recreational uses shall be compatible with "Preservation and Recreation Concepts, Peninsula Watershed Lands, San Francisco Water Department, March 1968" a copy of which is marked Exhibit "B", attached hereto and made a part hereof. No structures shall be erected upon said land except such structures as may be directly related to and compatible with the aforesaid uses. No trailer shall hereafter be placed, used or maintained on said land as a substitute for a caretaker's residential building. The design and location of all buildings, except water utilities buildings and

appurtenances, shall be subject to the concurrence of a regional representative of the Department of the Interior to be designated by the Secretary of the Interior.

3. No dump of ashes, trash or any unsightly offensive material shall be placed upon the land except that in eroding areas of a drainage system where water runoff is destroying the natural ground cover suitable heavy fill or drainage emplacements maybe installed to control and prevent further erosion.

4. No signs, billboards or advertisements, excepting directional signs and identification signs in connection with permitted uses, shall be displayed or placed upon the land.

5. Except as to encroachments presently permitted and renewals thereof, Grantor shall not permit further encroachments of any kind or nature upon said property by any adjoining property owner for the sole benefit of said adjoining land either by way of license, permit, easement or otherwise, unless authorized by a regional representative of the Department of the Interior to be designated by the Secretary of the Interior.

6. (a) Except as required to accomplish the improvements hereinafter permitted or as otherwise permitted to the Grantor hereunder, the general topography of the landscape shall be maintained in its present condition and no substantial excavation or topographic changes shall be made without the concurrence of a regional representative of the Department of the Interior to be designated by the Secretary of the Interior.

(b) Nothing in this Indenture shall restrict or affect the authority of the State of California to acquire rights of way for, or to construct, highways or State Routes 92, 186/35, 186 and 280 south of Ralston Avenue.

7. Except as required to accomplish the purposes and uses herein permitted to Grantor there shall be no cutting or permitting of cutting, destroying or removing any timber or brush without the concurrence in writing by a regional representative of the Department of the Interior to be designated by the Secretary of the Interior.

8. Concurrence in a requested action shall be deemed to have been granted if a regional representative of the Department of the Interior has not responded to a request within sixty days.

The foregoing grant and restrictions are made in consideration of and accepted subject to the express condition that the California Highway Commission shall have adopted that portion of the route for the Junipero Serra Freeway traversing lands of the Grantor south of Ralston Avenue as hereinbefore provided in subparagraph (b) on pages 2 and 3 hereof. The foregoing grant and restrictions are made and accepted subject to the further following conditions, exceptions and reservations:

- a. The Grantor for itself, its representatives and its successors, assigns and permittees reserves all of their rights not specifically restricted herein, including without limitation the perpetual right to use the below-described premises for purposes which they may find necessary or desirable for their water or other utility operations as now or hereafter conducted, including without limiting the generality of the foregoing the right to construct, maintain, repair, expand and reconstruct buildings (including caretakers' cottages), storage facilities, reservoirs, pipe systems, cable systems, flumes, head walls, retention walls, bulkheads, cofferdams, pumphouses, dikes, roadways, public utilities and similar improvements upon the below-described premises.
- b. Nothing herein shall be deemed to nullify supersede or affect any unrecorded lien, encumbrance, rights or other interest in the lands described herein which was in

existence at the time of the recordation of this instrument. The Grantor represents and warrants that all of the uses or activities permitted by any of the aforesaid unrecorded liens, encumbrances, rights or other interests in these lands are compatible with the provisions of this Indenture.

- c. The general public shall have the right, subject to rules and regulations as may be imposed and be published by Grantor, to enter the premises for recreational purposes.
- d. The land of the Grantor, hereinabove referred to and to which provisions of this instrument apply, is bounded and described in Exhibit "C" and is shown on the map marked Exhibit "D," each of which exhibits is attached hereto and made a part hereof, to have and to hold unto The United States of America and its assigns in perpetuity. The covenants agreed to and the restrictions imposed, as aforesaid, shall be binding upon the Grantor, its successors, and assigns, and each of them, and shall constitute a servitude upon the above-described lands.
- e. All amendments to this Indenture shall be agreed to by the Grantor and Grantee and approved by the State of California and the County of San Mateo.

IN WITNESS WHEREOF, the Grantor has hereunto set its hand and seal on the day and year first above written.

*Note: Signature pages not included. They are available in hard copy at the County of San Mateo's Recorder's Office. Reference: Vol. 5633 Page 387. Recorded on May 2, 1969, 2:48pm by Marvin Church.

GLOSSARY AND REFERENCES



GLOSSARY

Glossary List	
<i>accessibility</i>	Occurs when individuals with disabilities are able to reach, use, understand, or appreciate NPS programs, facilities, and services, or to enjoy the same benefits that are available to persons without disabilities.
<i>adaptive management</i>	System of management practices based on clearly identified outcomes, monitoring to determine if management actions are meeting outcomes, and, if not, facilitating management changes that will best ensure that outcomes are met or are re-evaluated as conditions change. Adaptive management A recognizes that knowledge about natural resource systems is sometimes uncertain and is the preferred method of management in these cases. (Source: <i>Departmental Manual 516 DM 4.16</i>).
<i>American Indian tribe</i>	Any band, nation, or other organized group or community of Indians, including any Alaska Native Village, which is federally recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.
<i>appropriate use</i>	A use that is suitable, proper, or fitting for a particular park, or to a particular location within a park.
<i>archeology</i>	The scientific study, interpretation, and reconstruction of past human cultures from an anthropological perspective based on the investigation of the surviving physical evidence of human activity and the reconstruction of related past environments. Historic archeology uses historic documents as additional sources of information.
<i>archeological resource</i>	Any material remains or physical evidence of past human life or activities, which are of archeological interest, including the record of the effects of human activities on the environment. They are capable of revealing scientific or humanistic information through archeological research
<i>asset</i>	A physical structure or grouping of structures, land features, or other tangible property that has a specific service or function.
<i>asset management</i>	A systematic process of maintaining, upgrading, and operating assets cost-effectively by combining engineering principles with sound business practices and economic theory.
<i>backcountry</i>	Primitive, undeveloped portions of parks.
<i>best management practices (BMPs)</i>	Practices that apply the most current means and technologies available to not only comply with mandatory environmental regulations, but also maintain a superior level of environmental performance. See also, "sustainable practices/principles."
<i>civic engagement</i>	As a philosophy, a discipline, and a practice, it can be viewed as a continuous, dynamic conversation with the public on many levels that reinforces the commitment of the National Park Service and the public to the preservation of park resources and strengthens understanding of the full meaning and contemporary relevance of these resources. Civic engagement is the philosophy of welcoming people into the parks and building relationships around a shared stewardship mission, whereas public involvement (also called public participation) is the specific, active involvement of the public in NPS planning and other decision-making processes.
<i>conserve</i>	To protect from loss or harm; preserve. Historically, the terms conserve, protect, and preserve have come collectively to embody the fundamental purpose of the National Park Service—preserving, protecting and conserving the national park system.
<i>consultation (cultural resources)</i>	A discussion, conference, or forum in which advice or information is sought or given, or information or ideas are exchanged. Consultation generally takes place on an informal basis; formal consultation requirements for compliance with section 106 of the NHPA are published in 36 CFR Part 800. Consultation with recognized tribes is done on a government-to-government basis.

Glossary List	
<i>cultural landscape</i>	A geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values. There are four general kinds of cultural landscape, not mutually exclusive: historic site, historic designed landscape, historic vernacular landscape, ethnographic landscape.
<i>cultural resource</i>	An aspect of a cultural system that is valued by or significantly representative of a culture or that contains significant information about a culture. A cultural resource may be a tangible entity or a cultural practice. Tangible cultural resources are categorized as districts, sites, buildings, structures, and objects for the National Register of Historic Places and as archeological resources, cultural landscapes, structures, museum objects, and ethnographic resources for NPS management purposes.
<i>cumulative actions</i>	Actions that, when viewed with other actions in the past, the present, or the reasonably foreseeable future regardless of who has undertaken or will undertake them, have an additive impact on the resource the proposal would affect.
<i>decision maker</i>	The managerial-level employee who has been delegated authority to make decisions or to otherwise take an action that would affect park resources or values. Most often it refers to the park superintendent or regional director, but may at times include, for example, a resource manager, facility manager, or chief ranger to whom authority has been redelegated.
<i>deferred maintenance</i>	Maintenance that was not performed when it should have been, and therefore, is delayed. Continued deferment of maintenance results in deficiencies. Deferred maintenance is the cost to repair an asset's deficiencies.
<i>desired condition</i>	A park's natural and cultural resource conditions that the National Park Service aspires to achieve and maintain over time, and the conditions necessary for visitors to understand, enjoy, and appreciate those resources.
<i>developed area</i>	An area managed to provide and maintain facilities (e.g., roads, campgrounds, housing) serving visitors and park management functions. Includes areas where park development or intensive use may have substantially altered the natural environment or the setting for culturally significant resources.
<i>economic multiplier effect</i>	An effect in economics in which an increase in spending produces an increase in income and consumption greater than the initial amount spent. For example, if a park builds a new visitor center, it will employ construction workers and their suppliers as well as those who work in the visitor center. Indirectly, the new visitor center will stimulate employment in restaurants, dry cleaners and service industries in the factory's vicinity.
<i>ecosystem</i>	A system formed by the interaction of a community of organisms with their physical and biological environment, considered as unit.
<i>ecosystem management</i>	A collaborative approach to natural and cultural resource management that integrates scientific knowledge of ecological relationships with resource stewardship practices for the goal of sustainable ecological, cultural, and socioeconomic systems.
<i>enabling legislation</i>	The law(s) that establish a park as a unit within the national park system.
<i>environmental assessment</i>	A brief National Environmental Policy Act (NEPA) document that is prepared, with public involvement, (a) to help determine whether the impact of a proposed action or its alternatives could be significant; (b) to aid the Park Service in compliance with the National Environmental Policy Act by evaluating a proposal that will have no significant impacts, but may have measurable adverse impacts; or (c) as an evaluation of a proposal that is either not described on the list of categorically excluded actions, or is on the list, but exceptional circumstances apply.
<i>environmental impact statement</i>	A detailed National Environmental Policy Act analysis document that is prepared, with extensive public involvement, when a proposed action or alternatives have the potential for significant impact on the human environment.

Glossary List	
<i>environmentally preferred alternative (or environmentally preferable alternative)</i>	Of the action alternatives analyzed, the one that would best promote the policies in section 101 of the National Environmental Policy Act. This is usually selected by the planning team members. The Council on Environmental Quality encourages agencies to identify an environmentally preferable alternative in the draft Environmental Impact Statement (EIS) or Environmental Assessment (EA), but only requires that it be named in the Record of Decision (ROD).
<i>ethnographic resource</i>	A 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.
<i>existing infrastructure</i>	The systems, services, and facilities currently in a park unit, including buildings, roads, trails, power equipment, water supply, etc.
<i>final plan</i>	A final plan, or final general management plan, is a document that usually includes a discussion of the purpose and need for the plan, a description of NPS mandates and policies that affect the park, a description of the preferred alternative (the actual plan), a description of appropriate mitigation measures, and relevant appendixes (e.g., references, preparers, index). A final general management plan is prepared after the Record of Decision (ROD) or Finding of No Significant Impact (FONSI) is approved and a notice is published in the Federal Register. It describes only the selected alternative without all the accompanying compliance parts included in the environmental impact statement or environmental assessment.
<i>Finding of No Significant Impact (FONSI)</i>	A determination based on an environmental assessment and other factors in the public planning record for a proposal that, if implemented, would have no significant impact on the human environment.
<i>facility costs</i>	One-time costs related to a facility, such as the cost associated with building or trail.
<i>fiscal year</i>	From October 1 of one calendar year to September 30 of the following calendar year.
<i>foundation statement (Foundation)</i>	A statement that begins a park's planning process and sets the stage for all future planning and decision making by identifying the park's mission, purpose, significance, special mandates and the broad, parkwide mission goals. This are incorporated into a park's general management plan, but a foundation statement may also be produced as a stand-alone document for a park.
<i>FTE (full time equivalent)</i>	A computed number of employees, representing the number of full-time employees that could have been employed if the reported number of hours worked by part time employees had been worked by full-time employees. For example, two half-time employees equal one FTE.
<i>fundamental resources and values</i>	Those features, systems, processes, experiences, stories, scenes, sounds, smells, or other attributes determined to warrant primary consideration during planning and management because they are critical to achieving the park's purpose and maintaining its significance. A fundamental value, unlike a tangible resource, refers to a process, force, story, or experience, such as such as an island experience, the ancestral homeland, wilderness values, or oral histories.
<i>gateway community</i>	A community that exists in close proximity to a unit of the national park system whose residents and elected officials are often affected by the decisions made in the course of managing the park, and whose decisions may affect the resources of the park. Because of this, there are shared interests and concerns regarding decisions. Gateway communities usually offer food, lodging, and other services to park visitors. They also provide opportunities for employee housing, and a convenient location to purchase goods and services essential to park administration.
<i>general management plan (GMP)</i>	A plan that clearly defines direction for resource preservation and visitor use in a park, and serves as the basic foundation for decision making. General management plans are developed with broad public involvement.
<i>geologic resources</i>	Features produced from the physical history of the earth, or processes such as exfoliation, erosion and sedimentation, glaciation, karst or shoreline processes, seismic, and volcanic activities.

Glossary List	
<i>Golden Gate</i>	A strait in western California between the Marin Headland and Fort Point, which connects the Pacific Ocean and San Francisco Bay. Discovered in 1579 by Sir Francis Drake, it was known as the Golden Gate long before the name gained popularity during the gold rush of 1849. The Golden Gate Bridge, which spans the strait, was completed in 1937.
<i>HABS/HAER/HALS</i>	HABS is the Historic American Buildings Survey, the federal government's oldest preservation program; companion programs are HAER (Historic American Engineering Record), and HALS (Historic American Landscapes Survey). Documentation produced through the programs constitutes the nation's largest archive of historic architectural, engineering, and landscape documentation.
<i>hikers' hut:</i>	A rustic yet comfortable shelter for overnight stays to facilitate longer, multi-day experiences on park trails. A hiker hut would provide basic accommodations such as sleeping platforms and restrooms.
<i>historic property</i>	A district, site, structure, or landscape significant in American history, architecture, engineering, archeology, or culture; an umbrella term for all entries eligible for or included in the National Register of Historic Places.
<i>human environment</i>	Defined by the Council on Environmental Quality (CEQ) as the natural and physical environment, and the relationship of people with that environment. Although the socioeconomic environment receives less emphasis than the physical or natural environment in the CEQ regulations, the National Park Service considers it to be an integral part of the human environment.
<i>impact</i>	The likely effect of an action or proposed action upon specific natural, cultural or socioeconomic resources. Impacts may be direct, indirect, individual, cumulative, beneficial, or adverse.
<i>impact topics</i>	Specific natural, cultural, or socioeconomic resources that would be affected by the proposed action or alternatives (including no action). The magnitude, duration, and timing of the effect to each of these resources are evaluated in the impact section of an environmental assessment or an environmental impact statement.
<i>impairment</i>	An impact that, in the professional judgment of a responsible NPS manager, would harm the integrity of park resources or values and violate the 1916 NPS Organic Act's mandate that park resources and values remain unimpaired.
<i>implementation plan</i>	A plan that focuses on how to implement an activity or project needed to achieve a long-term goal. An implementation plan may direct a specific project or an ongoing activity.
<i>indicators of user capacity</i>	Specific, measurable physical, ecological, or social variables that can be measured to track changes in conditions caused by public use, so that progress toward attaining the desired conditions can be assessed.
<i>invasive species</i>	A nonnative species whose introduction does, or is likely to cause, economic or environmental harm or harm to human, animal, or plant health. These species have the ability to displace or eradicate native species, alter fire regimes, damage infrastructure, and threaten human livelihoods.
<i>issue</i>	Some point of debate that needs to be decided. For general management planning purposes, issues can be divided into "major questions to be answered by the general management plan" (also referred to as the decision points of the general management plan) and the "National Environmental Policy Act (NEPA) issues" (usually environmental problems related to one or more of the planning alternatives).
<i>management concept</i>	A brief, statement of the kind of place the park should be (a "vision" statement).
<i>management zone</i>	A geographical area for which management directions have been developed to determine what can and cannot occur in terms of resource management, visitor use, access, facilities or development, and park operations. Each zone has a unique combination of resource and social conditions and a consistent management direction. Different actions are taken by the National Park Service in different zones.
<i>management zoning</i>	The application of management zones to a park unit. The application of different type of zones and/or size of zones will likely vary in different alternatives.

Glossary List	
<i>mitigation</i>	A modification of a proposal to lessen the intensity of its impact on a particular resource. Actions can be taken to avoid, reduce, or compensate for the effects of environmental damage.
<i>mobile combustion</i>	A source of greenhouse gases generated by combustion of fossil fuels in highway (cars, trucks, buses), off-road (construction, agricultural), water-borne, rail and air vehicles.
<i>manager</i>	The managerial-level employee who has authority to make decisions or to otherwise take an action that would affect park resources or values. Most often, it refers to the park superintendent or regional director, but may at times include, for example, a resource manager, facility manager, or chief ranger to whom authority has been redelegated.
<i>museum object</i>	A material thing possessing functional, aesthetic, cultural, symbolic, and/or scientific value, usually movable by nature or design. Museum objects include precontact and historic objects, artifacts, works of art, archival material, and natural history specimens that are part of a museum collection. Structural components may be designated museum objects when removed from their associated structures.
<i>National Park Service Organic Act</i>	The 1916 law (and subsequent amendments) that created the National Park Service and assigned it responsibility for management of the national parks.
<i>national park system</i>	The sum total of the land and water now or hereafter administered by the Secretary of the Interior through the National Park Service for park, monument, historic, parkway, recreational or other purposes.
<i>Native American</i>	Pertaining to American Indian tribes or groups, Eskimos and Aleuts, and Native Hawaiians, Samoans, Chamorros, and Carolinians of the Pacific Islands. Groups recognized by the federal and state governments and named groups with long-term social and political identities who are defined by themselves and others as Indian are included.
<i>NEPA process</i>	The objective analysis of a proposed action to determine the degree of its impact on the natural, physical, and human environment; alternatives and mitigation that reduce that impact; and the full and candid presentation of the analysis to, and involvement of, the interested and affected public—as required of federal agencies by the National Environmental Policy Act of 1969.
<i>nonfacility costs</i>	One-time costs not related to a facility, such as the cost of restoration of a landscape.
<i>one-time costs</i>	This term refers to the costs to perform a one-time action, such as construct, rehabilitate, or demolish a facility; and can include other project costs. One-time costs can also include non-facility costs, such as restoring a landscape.
<i>ONPS (Operations of the National Park Service) Funds</i>	funding that is provided for the day-to-day operations of parks including Golden Gate National Recreation Area and Muir Woods National Monument.
<i>park partner</i>	any state or local government (or subdivision thereof), public or private agency, organization, institution, corporation, individual, or other entity which is engaged in helping to ensure the protection, enhancement and enjoyment of the park's natural, cultural and recreation heritage.
<i>Planning, Environment, and Public Comment (PEPC) System</i>	An online database designed to facilitate the project management process in conservation planning and environmental impact analysis. It assists NPS employees in making informed decisions with regard to a number of compliance issues throughout the planning, design, and construction process.
<i>policy level issues</i>	The potential for some resources or values to be detrimentally affected by discretionary management decisions intended to achieve conditions consistent with the park's purpose.
<i>potential boundary modifications</i>	The description of areas or resources that meet criteria for boundary adjustments, along with the rationale for an adjustment.
<i>preferred alternative</i>	The alternative an NPS decision maker has identified as preferred at the draft EIS stage. It is identified to show the public which alternative is likely to be selected to help focus its comments.

Glossary List	
<i>preserve</i>	To protect from loss or harm; conserve. Historically, the terms preserve, protect and conserve have come collectively to embody the fundamental purpose of the National Park Service—preserving, protecting and conserving the national park system.
<i>preservation (cultural resources)</i>	The act or process of applying measures to sustain the existing form, integrity, and material of a historic structure, landscape or object. Work may include preliminary measures to protect and stabilize the property, but generally focuses upon the ongoing preservation maintenance and repair of historic materials and features rather than extensive replacement and new work.
<i>primitive campsites</i>	Primitive campsites are designated locations in remote areas of the park with only basic amenities such as tent pads and restrooms.
<i>primary interpretive themes</i>	The most important ideas or concepts to be communicated to the public about a park.
<i>professional judgment</i>	A decision or opinion that is shaped by study and analysis and full consideration of all the relevant facts, and that takes into account <ul style="list-style-type: none"> ▪ the decision maker’s education, training, and experience ▪ advice or insights offered by subject matter experts and others who have relevant knowledge and experience ▪ good science and scholarship; and, whenever appropriate ▪ the results of civic engagement and public involvement activities relating to the decision
<i>projected implementation costs</i>	A projection of the probable range of recurring annual costs, initial one-time costs, and life-cycle costs of plan implementation.
<i>public involvement (also called public participation)</i>	The active involvement of the public in NPS planning and decision-making processes. Public involvement occurs on a continuum that ranges from providing information and building awareness, to partnering in decision making.
<i>purpose</i>	The specific reason(s) for establishing a particular park.
<i>Record of Decision (ROD)</i>	The document that is prepared to substantiate a decision based on an environmental impact statement (EIS). It includes a statement of the decision made, a detailed discussion of decision rationale, and the reasons for not adopting all mitigation measures analyzed, if applicable.
<i>scoping</i>	Internal National Park Service decision making on issues, alternatives, mitigation measures, the analysis boundary, appropriate level of documentation, lead and cooperating agency roles, available references and guidance, defining purpose and need, and so forth. External scoping is the early involvement of the stakeholders, interested individuals and organizations, local societies, environmental groups, park visitors, etc.
<i>significance</i>	Statements of why, within a national, regional, and systemwide context, the park’s resources and values are important enough to warrant national park designation.
<i>soundscape (natural)</i>	The aggregate of all the natural, nonhuman-caused sounds that occur in parks, together with the physical capacity for transmitting natural sounds.
<i>special mandates</i>	Legal mandates specific to the park that expand upon or contradict a park’s legislated purpose.
<i>stakeholders</i>	Individuals and organizations that are actively involved in the project, or whose interests may be positively or negatively affected as a result of the project execution /completion. They may also exert influence over the project and its results. For GMP planning purposes, the term stakeholder includes NPS offices/staff as well as public and private sector partners and the public, which may have varying levels of involvement.
<i>standards</i>	The minimum acceptable condition for an indicator of a desired condition.
<i>superintendent</i>	The senior on-site NPS official in a park. Used interchangeably with “park superintendent,” “park manager,” or “unit manager.”

Glossary List	
<i>sustainable design</i>	Design that applies the principles of ecology, economics, and ethics to the business of creating necessary and appropriate places for people to visit, live in, and work. Development that has a sustainable design sits lightly upon the land, demonstrates resource efficiency, and promotes ecological restoration and integrity, thus improving the environment, the economy, and society.
<i>sustainable practices/principles(also sustainability)</i>	Those choices, decisions, actions and ethics that will best achieve ecological/ biological integrity; protect qualities and functions of air, water, soil, and other aspects of the natural environment; and preserve human cultures. Sustainable practices allow for use and enjoyment by the current generation, while ensuring that future generations will have the same opportunities.
<i>visitor</i>	Anyone who physically visits a park for recreational, educational or scientific purposes, or who otherwise uses a park's interpretive and educational services, regardless of where such use occurs (e.g., via Internet access, library, etc.)
<i>user capacity (also called carrying capacity)</i>	The types and levels of visitor and other public use that can be accommodated while sustaining the desired resource conditions and visitor experiences that complement the purpose of the park. The National Park Service has adopted this term in preference of the term <i>visitor capacity</i> , which does not include all public use.
<i>visitor experience</i>	The perceptions, feelings, and reactions a person has while visiting a park. Examples of visitor experiences include a sense of being immersed in a natural landscape; a feeling of being crowded; a feeling of being in an area where the sights and sounds of people and vehicles are predominant; having a sense of challenge and adventure; or a perception of solitude and privacy.
<i>warming hut</i>	Local term for a visitor facility that was pioneered at Crissy Field. Used in this general management plan to indicate a modest structure providing comfortable shelter and a range of services which may include park orientation, limited food and beverage, limited retail, and restrooms.
<i>zone</i>	See "management zone."

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As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historic places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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