



# GOLDEN GATE NATIONAL RECREATION AREA MUIR WOODS NATIONAL MONUMENT

## FINAL GENERAL MANAGEMENT PLAN/ENVIRONMENTAL IMPACT STATEMENT



*Cover photo credit: Robert Campbell*



# United States Department of the Interior

NATIONAL PARK SERVICE  
Golden Gate National Recreation Area  
Fort Mason, San Francisco, California 94123

IN REPLY REFER TO:  
D18 (GOGA-PLAN)

Dear Friend of Golden Gate National Recreation Area and Muir Woods National Monument:

We are pleased to present this final General Management Plan for Golden Gate National Recreation Area and Muir Woods National Monument. The plan is the culmination of several years of effort involving the thoughtful input and participation of thousands of individuals, dozens of public agencies, and numerous outside organizations and stakeholder groups. This plan replaces the 1980 General Management Plan. That plan for a "National Park in an Urban Area" effectively guided the park for over three decades, and most of its major concepts have been fulfilled.

A general management plan is a key document for any unit of the National Park System, because within the plan can be found the aspirations of those who care about the park, expressed as a framework that will direct and sustain more detailed implementation planning and guide management decisions over the next 20 years.

The new plan for Golden Gate National Recreation Area and Muir Woods reflects the intent of Congress in establishing the parks, as well as the vast amount of knowledge about the parks' exceptional natural and cultural resources that has been gained since 1980. The plan offers a vision of the park that accommodates its changing cultural and social landscape. It was developed in the context of the evolution in attitudes toward conservation and preservation that has occurred over the past three decades – as well as changing preferences in modes of transportation, recreation choices, and ways of experiencing parklands. The vision in this plan is predicated on *partnership* as an effective management approach, and will rely on the continued support of our partners, especially the Golden Gate National Parks Conservancy.

This park has become central to the life of the San Francisco Bay Area, and a destination for millions of people from elsewhere in the United States and around the world. Because of the way the park engages the community as visitors, stewards and advocates, it has become a model of success for park managers around the world.

We sincerely thank those who have helped shape this General Management Plan. We invite all friends of Golden Gate National Recreation Area to join us in bringing the vision of the plan to fruition.

Sincerely,

Frank Dean  
General Superintendent



## ABSTRACT

### Final General Management Plan / Environmental Impact Statement Golden Gate National Recreation Area and Muir Woods National Monument Marin County, San Francisco City and County, and San Mateo County, California

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Established in 1972, Golden Gate National Recreation Area has been operating under its first general management plan, which was approved in 1980. Muir Woods was declared a national monument in 1908 and is currently managed as part of Golden Gate National Recreation Area.

Since the establishment of Golden Gate National Recreation Area, it has doubled in size and a better understanding of natural and cultural resources and recreational uses has been gained. Thus, a new management plan is needed to guide management for the next 20 years.

The purpose of a general management plan / environmental impact statement (GMP/EIS) is to set forth a basic management philosophy for a park and to provide a frame work for future decision making. The National Parks and Recreation Act of 1978 (Public Law 95-625) requires the National Park Service to prepare and revise a GMP/EIS for each park that will include: (1) measures to preserve park resources, (2) indications of the types and general intensities of development associated with public enjoyment and use of the park, (3) identification of visitor carrying capacities, and (4) indications of potential external boundary modifications. NPS Director's Order 2: *Park Planning* requires a GMP/EIS to clearly describe the specific resource conditions and visitor experience to be achieved and identify the kinds of use, management, and development that will be appropriate in achieving and maintaining those conditions.

The *Final General Management Plan / Environmental Impact Statement* describes three action alternatives for managing Golden Gate National Recreation Area and Muir Woods National Monument. The no-action alternative consists of current park management and serves as a basis for comparison in evaluating the other alternatives. Alternative 1, "Connecting People with the Parks," would further the founding idea of "parks to the people," and would engage the community and other potential visitors in the enjoyment, understanding, and stewardship of park resources and values. Park management would focus on ways to attract and welcome people; connect people with park resources; and promote understanding, enjoyment, preservation, and health. Alternative 1 is the NPS preferred alternative for park lands in Marin, San Francisco, and San Mateo counties. Alternative 2, "Preserving and Enjoying Coastal Ecosystems," would place an emphasis on preserving, enhancing, and promoting the 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 history and international significance. Alternative 3, "Focusing on National Treasures," would place an emphasis on the nationally important natural and cultural resources of the park unit. The fundamental resources of each showcased site would be managed at the highest level of preservation to protect the resources in perpetuity and to promote appreciation, understanding, and enjoyment of those resources. Visitors would have the opportunity to explore the wide variety of experiences that are associated with the many different types of park units—all in this national recreation area. All other resources would be managed to complement the nationally significant resources and associated visitor experience. Alternative 3 is the NPS preferred alternative for Alcatraz Island and Muir Woods National Monument.

The potential impacts of implementing the various alternatives were analyzed in six broad topic areas: natural resources; cultural resources; visitor use and experience; the social and economic environment; transportation; and park management, operations, and facilities. Natural resources included both physical and biological resources. Cultural resources included archeological, ethnographic, and cultural landscape resources; historic structures; and park collections.

This *Final General Management Plan / Environmental Impact Statement* has been distributed to other agencies and interested organizations and individuals for their review and comment. Following distribution of the *Final General Management Plan / Environmental Impact Statement* and a 30-day no-action period, a Record of Decision approving a final plan will be signed by the National Park Service, Pacific West Regional Director upon the recommendation of the general superintendent of Golden Gate National Recreation Area. The Record of Decision will document the selection of an alternative for implementation. With the signing of the Record of Decision, the plan can then be implemented.

Once the planning process is completed, the selected alternative will become the new management plan for the park and will be implemented over the next 20 years. It is important to note that all of the actions recommended for approval in the final plan will require more detailed study and implementation planning.



# **Golden Gate National Recreation Area Muir Woods National Monument**

Final General Management Plan /  
Environmental Impact Statement



# SUMMARY

## PURPOSE AND NEED

The last general management plan for Golden Gate National Recreation Area and Muir Woods National Monument was completed over 30 years ago.

Generally, the overall need for a new general management plan includes the following:

- § The park has significantly expanded in size and includes many new lands in San Mateo County. This planning process takes a comprehensive parkwide approach that will ensure that the management of natural and cultural resources and visitor experience is consistent and thorough across all park areas.
- § There is an increased public demand for access to, and use of, open spaces within the San Francisco Bay region. The general management plan provides a regional collaborative approach to open space preservation and recreation use.
- § The changing demographics in the Bay Area are bringing notable shifts in park visitation, uses, and trends. The general management plan provides desired conditions that will guide decision making for managing the anticipated increases and changes in visitation.
- § Through research and management practices that have occurred since the 1980 plan, park staff have gathered a considerable amount of new information and knowledge regarding resources and visitor use. This new awareness is reflected in the desired conditions, proposed management actions, and policies of this general management plan.

- § Since the 1980 plan, climate change is better understood and its effects more evident on both ecological systems and cultural resources. The general management plan examines the potential impacts of climate change on park operations and visitor use and identifies direction and management actions to guide efforts to create a more resilient park.
- § How visitors access the park continues to evolve as local transportation infrastructure changes. Strategies that were identified in 1980 continue to be explored. The general management plan identifies new ideas and techniques that address sustainable options for park access and strategies to reduce traffic congestion around and within the park.
- § To comply with federal law, the general management plan specifies the types and intensities of projected development, including anticipated costs. This is important because the availability of federal funds may be limited over time.

Implementation of the approved plan, no matter which alternative is selected, will depend on future National Park Service (NPS) funding levels and servicewide priorities and on partnership funds, time, and effort. The approval of a general management plan does not guarantee that funding and the staffing needed to implement the plan will be forthcoming. Full implementation of the plan could be many years in the future.

## THE PLANNING AREA

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) 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 being acquired, and (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 easements. The total area of land and water addressed in this plan is approximately 50,000 acres.

Specifically these areas include the following:

- § Alcatraz Island and the surrounding bay environment
- § park lands in Marin County, including Stinson Beach north to Bolinas-Fairfax Road, Slide Ranch, Muir Beach, Lower Redwood Creek, Golden Gate Dairy, Tennessee Valley, Marin Headlands, and the nearshore ocean environment
- § park lands in San Francisco, including Upper Fort Mason, China Beach, Lands End, Fort Miley, Ocean Beach, Fort Funston, and the nearshore ocean and bay environments
- § 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; Point San Pedro (also known as Pedro Point Headlands); Rancho Corral de Tierra; Montara Lighthouse; Phleger

Estate; San Francisco Public Utilities Commission watershed easements; and the nearshore ocean environment

### § Muir Woods National Monument

Park sites with recent management plans are not addressed in this plan—the Presidio of San Francisco (including Crissy Field and Baker Beach); Fort Point National Historic Site; Sutro Historic District; Fort Baker; Lower Fort Mason (the Fort Mason Center); and the northern district of the park (north of Bolinas-Fairfax Road) that is managed by Point Reyes National Seashore.

## FOUNDATION STATEMENTS AND GUIDING PRINCIPLES

### Golden Gate National Recreation Area

#### *Park Purpose*

The purpose of Golden Gate National Recreation Area is to offer national park experiences to a large and diverse urban population while preserving and interpreting the outstanding natural, historic, scenic, and recreational values of the park lands.

#### *Key Interpretive Themes and Associated Resources and Values*

**Recreational and Educational Opportunities.** The park provides diverse recreational and educational opportunities from contemplative to active pursuits including participation in stewardship and volunteer activities. Its proximity allows an urban population to connect with nature and history.

Fundamental resources and values associated with the recreational and educational opportunities include the diverse settings found within the park and access to the park that is supported by a system of trails and scenic park roads.

**Coastal Corridor.** In a world of diminishing biological diversity and threatened natural resources, the Golden Gate National Recreation Area preserves islands of biodiversity within and near a large urban area. The accelerating rate of global climate change threatens even these remnants.

Fundamental resources and values associated with the coastal corridor are the ocean and bay environment, the rich variety of coastal ecosystems, large numbers of threatened and endangered species, and fresh and saltwater resources. Historic shipwrecks are also a significant cultural resource within this corridor.

**Military Installations and Fortifications.** Coast defense posts are at the heart of park lands and are a major reason the park is preserved today. Although no hostile shot was ever fired, every major type of military fortification and architecture represented here demonstrates evolving defense technology. War, peace, and the nature of protection have shaped and will continue to shape the country.

The cultural landscapes, features, and archeological sites, structures, and museum collections are the fundamental resources and values associated with military installations and fortifications.

**Alcatraz Island.** The layers of history so evident on the island present visitors with a chance to contemplate the 155-year span of Alcatraz history—from the U.S. Army period through the federal penitentiary era and the American Indian occupation to the current NPS management of the island. As a site of international notoriety, Alcatraz Island provides a powerful opportunity to encourage visitors to confront their personal views on crime and punishment, the judicial system, and freedom.

The cultural landscapes, historic structures, archeological sites, museum collections, and stories associated with the use of the island as a Civil War period fort, military prison,

and federal penitentiary, and as the site of the American Indian occupation of 1969 to 1971 are the fundamental resources and values associated with Alcatraz Island.

**Scenic Beauty.** The powerful positive influences that park land and undisturbed open space can exert on urban settings and residents constitute an important interpretive message. The scenic beauty of the park's historic and natural undeveloped landscapes inspired a grassroots movement that led to their protection. Proposed development that would have destroyed these lands sparked Bay Area community members to organize and ultimately preserve the open spaces that contribute so much to their quality of life.

The fundamental resources and values associated with the scenic beauty of the park include the extraordinary setting, which provides a dramatic contrast to urban environments and undeveloped spaces and the compelling historical background that contributes to understanding the history of the area.

**Physical Landforms.** The park's underlying natural geologic systems and processes, and the resulting effects on people and the environment, link the park to the highly visible and significant geologic forces around the world.

Geologic resources are the fundamental resources and values associated with this theme.

**Coast Miwok and Ohlone People.** The natural features and resources of the park, along with its location on the San Francisco Bay estuary, sustained the Coast Miwok and Ohlone people who lived on the lands comprising the park for thousands of years before Europeans arrived. Archeological sites in the park link to these pre-European inhabitants and to their descendants who retain a vibrant culture to this day.

Archeological sites in the park document the traditional homelands of the Coast Miwok and Ohlone people and are fundamental resources and values.

## Muir Woods National Monument

### *Park Purpose*

The purpose of Muir Woods National Monument is to preserve the primeval character and ecological integrity of the old-growth redwood forest for scientific values and inspiration.

### *Key Interpretive Theme and Fundamental Resources and Values*

The majestic, primeval old-growth redwoods of Muir Woods National Monument invite visitors, in the words of namesake John Muir, to “come to the woods, for here is rest.” The forest ecosystem of these towering trees and the creek beneath them supports an abundance of life. This remnant of the Bay Area’s once abundant redwood forests inspires visitors through its seminal conservation story, today welcoming travelers from around the world to have what is, for many, their first wildlands experience.

The fundamental resources and values associated with Muir Woods National Monument are old-growth redwood forests and their associated processes and the conservation movement, including both the initial preservation of redwood forests and ongoing actions.

### *Guiding Principles*

Some principles, forged through daily management of this new kind of national park over the last 40 years, are deeply rooted, distinctive, and will continue to provide direction and focus to future park management. They include the park’s commitments to

- § sustainability
- § community-based stewardship
- § civic engagement
- § partnerships
- § regional collaboration
- § inclusion

## ISSUES ADDRESSED IN THE PLAN

Planning issues identified during the public and internal scoping and analysis stages include the following:

- § Visitor Access: Transportation and Trails
- § Recreation Opportunities and Conflicts
- § Sustainable Natural Resource Preservation and Management
- § Sustainable Cultural Resource Preservation and Management
- § Climate Change
- § Land Acquisition
- § Reaching New Audiences
- § Operational Facilities
- § Scenic Beauty and Natural Character
- § Regional Cooperation
- § National Park Service Identity
- § Partnerships
- § American Indian Values

## ELEMENTS COMMON TO ALL ACTION ALTERNATIVES

In the process of developing the management alternatives described in the next section, the planning team identified several elements as being appropriate for all of the action alternatives. Some of these elements are required by National Park Service policy such as Ocean Stewardship.

Others, like American Indian Engagement, reflect an effective long-standing park practice. In other cases, alternatives were explored but were eliminated from further consideration for various reasons.

### *Key Elements*

- § **Boundary Adjustments:** Proposed adjustments are in San Mateo County. They consist of approximately 330 acres of undeveloped parcels, the 710-acre McNee Ranch (part of Montara State Beach), and a 0.25-mile strip from the mean high tide line of land already within the park boundary. These adjustments present opportunities to preserve critical resources and habitat links, aid in management, and expand recreational opportunities in the park.
- § **Climate Change:** 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 CO<sub>2</sub> emissions, (2) educate and interpret the processes for visitors, and (3) assess the impacts and respond to changing conditions.
- § **Facilities Not Directly Related to the Park Mission:** This summarizes analyses of facilities that can be removed from the park, generating substantial savings in annual operational and maintenance costs. Proposed actions are estimated to reduce costs by almost \$7,000,000.
- § **Maintenance, Public Safety, Collections, and Visitor Facilities:** Through an extensive focused planning effort, the park identified the need for new maintenance facilities (at Kent Canyon shared with Mount Tamalpais State Park in the Capehart housing area of the Marin Headlands and in the Presidio), a single hub for park law enforcement

(at Fort Baker), a network of multifunctional satellite offices (most of which is in place), and a central facility for the majority of the park's museum collection (in the Presidio). This section also describes park goals for visitor facilities.

- § **American Indian Engagement:** This section documents established commitments to working with Coast Miwok and Ohlone communities to (1) survey, identify, and inventory archeological and ethnographic sites; (2) develop interpretive and educational activities for visitors; and (3) support the revitalization of native communities and their traditions.
- § **Ocean Stewardship:** This policy addresses the park's responsibilities for managing extensive nearshore ocean resources. It focuses on four goals: (1) supporting a seamless network of protected areas, (2) inventorying and mapping in the service of protection, (3) engaging the public in stewardship, and (4) increasing the park's technical capacity.
- § **Park Collections:** Primary goals are to connect people with the park's extensive collection (the largest collection in the national park system), and to strengthen, preserve, and maintain the collection.
- § **Partnerships:** Distills the key goals employed by the park in developing powerful and successful partnerships.
- § **Trails:** Broad goals and management strategies are identified for the improvement and maintenance of the extensive trails network, which is one of the most important ways that visitors experience and enjoy the park. The plan includes brief summaries of future efforts in each county.

- § **Transportation:** Broad goals and management strategies are identified for pursuing sustainable, multimodal access to park sites in partnerships with other organizations. The strategies include regional ferry access, ferry access to Alcatraz Island, trip planning and wayfinding, congestion management, the Muir Woods shuttle, intelligent transportation systems, and development of a long-range transportation plan.
- § **User Capacity:** The park’s proposed commitments for managing user capacity, also known as carrying capacity, are described in part 7. Indicators and standards are identified for Alcatraz and Muir Woods.

## MANAGEMENT ALTERNATIVES

### No-action Alternative

Under this alternative, Golden Gate National Recreation Area and Muir Woods National Monument would continue to be managed as outlined in the 1980 General Management Plan.

#### *Key Elements*

**Park Lands in Marin County:** Golden Gate National Recreation Area forms the southern core of a large network of regional, state, and federal protected lands and waters (many of which are recognized as part of the UNESCO Golden Gate Biosphere Reserve). Under the no-action alternative, the park would continue to manage this large expanse of preserved natural landscape containing scattered concentrations of developed facilities to provide visitors with multiple opportunities for recreation through miles of trails, preserved historic military fortifications, and scenic and historic landscapes.

The county features some of the most varied landscapes in Golden Gate National Recreation Area, including lush woodlands, rugged coasts, sandy beaches, meadows, marshes, grasslands, and coastal scrub. As a result, visitors can experience an array of wildlife and several different habitats in one brief hike.

Much of this area has been managed as part of Golden Gate National Recreation Area since the park was established in 1972. Management of this land would continue to be guided by the park’s 1980 General Management Plan and subsequent, more-detailed implementation plans.

A diverse set of park partners—many housed in historic structures—would continue to provide programs and facilities for visitor education and enjoyment. These facilities and programs currently include a hostel, environmental education and arts programming, equestrian facilities, and a marine mammal rehabilitation center. Park-managed visitor facilities would continue to include a visitor center, scenic overlooks, trails, campsites, and parking areas at recreational beaches.

National Park Service maintenance facilities, collections, staff housing, administrative offices, and various partner offices would also continue to operate where currently located in the park.

**Park Lands in San Francisco:** Park lands in San Francisco ring the northern and western shores of the city of San Francisco, preserving a coastal greenbelt next to dense urban neighborhoods. These lands would continue to be major attractions to tourists and central to the quality of life for local citizens. They offer city dwellers places to recreate, rejuvenate, and learn about the fascinating natural and cultural history of the region. Management of these lands and marine/bay waters would continue to focus on preserving natural, cultural, and scenic resources and providing a variety of recreational uses

in the varied settings along San Francisco Bay and the Pacific coast.

**Park Lands in San Mateo County:**

Stretching south 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. These lands support an abundance of plants and wildlife and tell the story of the people who have shaped this peninsula over many generations.

Park lands in San Mateo County serve a large and diverse local population and present many opportunities for visitors to explore and appreciate these areas.

Currently, the National Park Service presence in San Mateo County is limited, sites are not always well identified, and there are few basic facilities to support access. Management of park lands in San Mateo County is guided by the authorizing legislation for the park 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—and Mori Point—for which a detailed landscape restoration plan was recently executed.

Site planning for enhancing visitor facilities, such as the planning recently completed at Mori Point, would continue.

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.

**Alcatraz Island:** Under the no-action alternative, the island would continue to be managed to preserve historic and natural resources and provide public access to a variety of settings and experiences where

appropriate and safe. The primary visitor experience would be day use, beginning with a ferry ride from San Francisco. The Alcatraz Island experience would continue to be centered on the federal penitentiary; however, other periods of island history and bird life would also be interpreted. Scheduled evening tours of Alcatraz Island would continue to provide visitors with this unique opportunity.

The deterioration of buildings and landscapes (accelerated by the harsh island environment) and the protection of areas for bird nesting habitat would continue to limit visitor access to much of the island. Rehabilitation of historic buildings and landscaped areas would continue to be somewhat intermittent and subject to available funding.

Many areas of Alcatraz Island would continue to be closed during breeding season to protect waterbird colonies from human disturbance. In areas open to the public, western gulls would continue to be managed under an existing agreement with the U.S. Fish and Wildlife Service in accordance with the Migratory Bird Treaty Act, through the use of bird exclusion measures, and other deterrents to protect visitor health and safety. Education and stewardship opportunities would inform visitors about the importance of the island to nesting birds and what the public can do to help protect them.

**Muir Woods National Monument:** Under the no-action alternative, Muir Woods National Monument would continue to be managed to protect the primeval redwood forest in the larger Redwood Creek watershed and to interpret the monument's natural history, as well as the establishment of the monument, which had a major role in the early U.S. conservation movement.

Muir Woods National Monument would remain a popular international destination and ecological treasure, supporting a diversity of flora and fauna, in addition to

*Sequoia sempervirens*, the old-growth redwoods.

The park staff would continue to balance preservation of the redwood ecosystem with providing access to hundreds of thousands of visitors annually. For many visitors, Muir Woods National Monument would continue to provide their initial experience with the national park system. Overall, management of the monument would continue to be guided by the 1980 General Management Plan. Key park objectives would include fostering a conservation ethic among visitors, preserving and restoring habitat for threatened and endangered species, supporting public transportation as a way to reduce congestion, and promoting a watershed perspective in land management that includes Mount Tamalpais State Park, two water districts, an organic farm, equestrian stables, and local communities.

***Some Potential Impacts of the No-action Alternative***

- § Current conditions would continue to cause loss of habitat integrity; however, restoration efforts and educational activities would result in some beneficial impacts.
- § Continued unsystematic approaches to preservation and maintenance of historic buildings and structures would result in long-term, minor to moderate, adverse impacts on those structures.
- § Continuation of current conditions would result in long-term, moderate, adverse impacts on park collections.
- § Continuation of existing opportunities would result in long-term, minor to moderate, beneficial impacts on visitor experience; however, minor to moderate, adverse impacts would continue from congestion, use conflicts, and limited access to some areas.
- § Existing transit service would have a long-term, minor to major, adverse

impact on access to popular sites, and minor impacts on transportation in other areas.

- § Existing staffing levels would result in continued long-term, moderate, adverse impacts on park operations; volunteer programs would continue to have beneficial impacts on operations.
- § Existing funding would result in long-term, major, adverse impacts on park facilities; existing facilities would result in long-term, moderate, adverse impacts on operations.

**Alternative 1: Connecting People with the Parks**

Alternative 1 is the NPS preferred alternative for park lands in Marin, San Francisco, and San Mateo counties. The preferred alternative for Alcatraz Island and Muir Woods National Monument is alternative 3.

***Concept***

The emphasis of this alternative is to reach out and engage the community and other visitors in the enjoyment, understanding, and stewardship of park resources and values. Park management would focus on ways to attract and welcome people; connect people with the resources; and promote enjoyment, understanding, preservation, and health—all as ways to reinvigorate the human spirit. Visitor opportunities would be relevant to diverse populations now and in the future.

***Goals***

**Visitor Experience.**

- § Actively seek opportunities to respond to the needs and interests of the diversity of visitors.
- § Encourage visitors to engage in a wide range of opportunities and experiences in a diversity of settings.

- § Enhance outreach and access to and within park lands and make them welcoming places to visit.
- § Foster the visitor’s deep personal connection to the park and discovery of the values and enjoyment of the natural and cultural environment.
- § Encourage hands-on stewardship through visitor opportunities that promote personal health and responsibility.

interpretive opportunities that include messages about the sensitivity of park resources, park regulations, and appropriate visitor behaviors.

*Key Elements*

**Park Lands in Marin County (Preferred Alternative):** Park managers would preserve the qualities that are enjoyed today and would improve access to the park for all visitors. They would work to preserve and restore interconnected coastal ecosystems through collaborative partnerships with other land management agencies in the region. A stronger national park identity and message would welcome people as they arrive, and improved orientation and information services would inform them of the variety of experiences available in the park. Important park operational uses would remain in the Marin Headlands—facilities at these sites would be improved.

**Cultural Resources.**

- § Maximize adaptive reuse and rehabilitation, stabilization, and interpretation of cultural resources (structures, landscapes, archeological sites, ethnographic resources, and museum collections) to support visitor enjoyment, understanding, and community connections.
- § Work with the public, park partners, local communities, historical organizations, and regional collaborators to steward, preserve, and protect cultural resources.
- § Preserve and protect cultural resources so that visitors can connect with and appreciate these resources and their histories.

Sustainable approaches to rehabilitating visitor facilities that are in place today would improve trailheads and trails, as well as roads, parking lots, campsites, picnic areas, restrooms, and other structures at popular destinations. Some new facilities would be developed to improve visitor services and support the growing stewardship programs. Park partners would continue to have an important role in preserving resources and offering programs and services to visitors in support of the park mission. Public transportation and multimodal access to park sites would be improved.

**Natural Resources.**

- § Maintain the integrity and diversity of natural resources and systems and mitigate the effects of climate change and urban pressures.
- § Enhance public access to natural resources to promote visitor understanding and appreciation.
- § Integrate natural resource preservation and concepts with visitor stewardship opportunities to deepen visitor understanding.
- § Increase visitor understanding, awareness, and support for park resources through education and

**Park Lands in San Francisco (Preferred Alternative):** The park lands in San Francisco would be managed to preserve and enhance a variety of settings and improve and expand the facilities that welcome and support visitors.

The identity of these diverse park sites as part of the national park system would be strengthened. Visitors would be introduced to the park and the national park system

through facilities, informational media, and programming at popular arrival nodes and recreational destinations.

This alternative would emphasize the importance of education, civic engagement, and healthy outdoor recreation, including offering nature experiences to city children and their families. Existing and new facilities, including a state-of-the-art museum collection facility, would support visitor enjoyment, learning, and community-based natural and cultural resource stewardship. Recreational and stewardship opportunities would promote healthy parks and healthy communities. This alternative would engage the community to revitalize coastal park areas such as Ocean Beach, Fort Funston, and Lands End, in collaboration with other land managers and incorporating measures to address sustainability and climate change.

Park managers would continue to improve trails and trailheads throughout the San Francisco park lands to make the park accessible to the broadest array of visitors. Sites would be connected to each other and to communities by the trail system and the city's transit and multimodal access systems.

**Park Lands in San Mateo County (Preferred Alternative):** Park lands and ocean environments would be managed 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 long-term preservation of ecological values and significant cultural resources.

This alternative would focus on the importance of improving access and community engagement in these newest park lands. Key efforts would include improving the visibility and identity of NPS sites. Park trails would be improved to create a sustainable system that provides

opportunities to enjoy park sites, connects with local communities, and contributes to an exceptional regional trail network. Equestrian facilities would continue to have an important role in recreation and stewardship. A comprehensive trail plan would be prepared to help achieve these goals. Park managers would work with county transit providers to improve transit connections to local trailheads and east-west transit between bayside communities and State Route 1.

The addition of signs and trailheads would help visitors find their way to various park sites and help them gain an understanding of the park's diverse natural and cultural resources. Equestrian needs would be incorporated in trailhead and trail design.

There could be additional facilities that welcome visitors to the park. This alternative would promote visitor information and orientation centers in Pacifica and the coastside area south of Devil's Slide. 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.

**Alcatraz Island:** Alcatraz Island would be managed to provide an expanded variety of settings and experiences that would connect visitors to the greater breadth of the island's resources and history. The park would seek to enrich the scenic, recreational, and educational opportunities in the heart of San Francisco Bay.

Visitors would have access to the majority of the island's historic structures and landscapes to experience the layers of island history and its natural resources and settings. Many of the indoor and outdoor spaces currently inaccessible to visitors would be reopened to expand the range of available activities.

All historic structures would be preserved—most would be rehabilitated and adaptively

reused for visitor activities and park operations. Food service, meeting and program space, and overnight accommodations (possibly including a hostel or camping area) would be provided.

Sensitive wildlife areas, such as the shoreline, would be protected. Park managers would provide visitors with opportunities to see wildlife and nesting waterbirds and to participate in resource stewardship activities. Gulls would be managed to reduce conflicts in visitor use areas.

**Muir Woods National Monument:** The monument would offer visitors the opportunity to experience and enjoy the primeval forest ecosystem and understand the monument's place in U.S. conservation history through a variety of enhanced programs, facilities, and trails that access the forest and connect local communities to the park and surrounding open space.

While much of the present system of forest trails would be retained, some existing facilities and use areas, such as the entrance area and parking lots, would be modified or relocated to reduce ecosystem impacts and improve the park experience.

The monument would continue to welcome a diversity of visitors and support a range of experiences, better serving as a gateway or stepping stone to understanding the national park system.

An off-site welcome center for the shuttle system, including parking and visitor services, would be an important first point for orientation and a key to providing sustainable access to the monument. Collaboration with other public land managers would continue to address watershed restoration and stewardship needs.

### *Some Potential Impacts of Alternative 1*

- § Elimination of unneeded roads and removal of unneeded structures would result in long-term beneficial impacts on vegetation and wildlife; cultural resources could be adversely impacted; some construction activities would have short-term adverse impacts; education and stewardship programs would result in long-term, minor to moderate, beneficial impacts both locally and parkwide.
- § Strengthening the integrity and adaptive use of historic structures would result in general overall long-term, beneficial impacts, although some localized loss of historic fabric would occur.
- § Establishing a curatorial and research facility would have a long-term, beneficial impact on park collections.
- § New facilities, increased diversity of opportunities, and a purposeful effort to engage more diverse audiences would result in long-term, moderate, beneficial impacts on visitor services.
- § Improved access to park sites, increased transit services, and improved trails would result in long-term, minor to major, beneficial impacts on transportation.
- § An increase in park staffing would result in long-term, moderate, beneficial impacts on park operations.
- § Activities that address deferred maintenance issues and proposed changes to facilities would result in long-term, moderate, beneficial impacts on park operations.

## 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. Facilities and other built infrastructure could be removed to reconnect fragmented habitats and to achieve other ecosystem goals.

### *Goals*

#### Visitor Experience.

- § Connect visitors with resources and the park through expanded and diverse science and stewardship programs that are focused on preservation and restoration of coastal and marine resources and address the implications of climate change.
- § Provide greater opportunities for visitors to explore wild areas and immerse themselves in nature.
- § Manage low-impact visitor use that enhances the qualities of solitude, quiet, and naturalness in sensitive natural resource areas and accommodate active recreational pursuits in other areas.
- § Increase visitor understanding, awareness, and support for coastal resources through participation in programs about human interaction with, and dependency on, natural resources.

#### Cultural Resources.

- § Incorporate the history of conservation and the collections related to natural resources to raise awareness of ongoing efforts to conserve marine ecosystems.
- § In park interpretation and education programs, emphasize sites and stories about coastal resources, including shipwrecks, archeological sites, agricultural lands and uses, coastal defense, and lighthouses, so visitors can connect with those resources.
- § Maximize adaptive reuse and rehabilitation of cultural resources to support visitor enjoyment, understanding, and community connections.
- § Work with interested groups and populations to preserve and protect cultural resources.
- § Preserve and protect cultural resources so that visitors can connect with and appreciate these resources and their history.

#### Natural Resources.

- § 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.
- § 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.

### *Key Elements*

**Park Land in Marin County:** In this alternative, management would strive to further preserve and restore the dynamic, interconnected coastal ecosystems at the core of protected lands through collaborative regional partnerships. Partners would work on common goals to sustain the area's native biodiversity, reconnect fragmented habitats and migration corridors, minimize the impact of invasive species, manage for changing fire regimes, protect threatened and endangered species, and restore naturally functioning ecosystems. Proactive management would work to build resiliency to climate change into the natural environment.

Marin County park lands and waters would be highlighted as living laboratories, engaging visitors in participatory science, education, and stewardship to nurture personal connections with nature and inspire advocacy.

Opportunities to explore trails and beaches would further highlight the coastal natural and cultural resources of the park. Cultural resource sites and history would emphasize human occupation of the coastal environment, as reflected in lighthouses, coastal defense structures, archeological sites, and agricultural land uses.

**Park Lands in San Francisco:** While welcoming visitors to the park, this alternative would focus on engaging visitors, local communities, and partners in participatory science, education, and stewardship focused on the coastal environment.

Park management, in collaboration with community partners, would demonstrate leadership in proactive adaptation and management in the face of climate change and accelerated sea level rise. Interpretive messages would reach visitors enjoying the coastal environment along the San Francisco Bay Trail and the California Coastal Trail.

Cultural resource sites and stories would also highlight the human connection to the coastal environment; sites would include information about archeological sites, European exploration, maritime history, and coastal defense.

**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 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.

Park lands in San Mateo County provide an extensive wildlife corridor that includes habitat for threatened and endangered species. These lands would serve as living laboratories, engaging visitors in participatory science, education, and stewardship—activities that nurture personal connections with nature and inspire advocacy.

Exploration along the vast network of trails would further highlight the park's diverse ecosystems and rich cultural resources. Cultural resource sites and history—archeological sites, European exploration, agricultural land uses, coastal defense sites, and the lighthouse—would emphasize human occupation of the coastal environment. Most cultural resources would be stabilized if not in conflict with natural resource restoration.

Land protection strategies would seek to reconnect fragmented endangered species

habitat and strive to remove features that impede movement or migration of species or disrupt ecological functions.

**Alcatraz Island:** The island’s inhospitable and isolated—yet strategic—location at the entry to the Golden Gate and San Francisco Bay would be highlighted. The island’s past and present significance to colonial nesting birds and its layers of human history—the Civil War fortress, the lighthouse, the prison and penitentiary—all derive from its position in the bay.

The island’s changing natural and built landscape would continue to evolve, further enhancing habitat for nesting birds. Only those buildings and features necessary to maintain the island’s national historic landmark status would be preserved; the natural elements would reclaim other features as part of the “wilding” of Alcatraz Island.

Visitors would be immersed in opportunities that showcase the island’s isolation, its natural resources, and all the layers of history that can be found at the Main Prison Building. Visitor experiences would include outdoor learning and natural and cultural resource stewardship programming delivered in partnership with Bay Area nonprofit organizations.

While access would be managed to protect sensitive resources, 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.

**Muir Woods National Monument:** Park management would seek to restore the primeval character of the old-growth redwood forest. Visitors would be immersed in the forest and could experience the natural sounds, smells, light, and darkness of the forest. The experience would be more

primitive than it is today; the majority of the built environment—buildings, parking lots, paved trails—would be removed, and all visitors would arrive by shuttle, bicycle, or on foot. The landscape would be “messier” than it is today, but the forest would function more naturally: Redwood Creek would be allowed to meander across the floodplain, flooding the valley bottom, uprooting trees, and opening gaps in the canopy.

Where not in conflict with natural resource goals, historic trails and structures could be retained or adapted for contemporary uses. A light-on-the-land, accessible trail would reach into the heart of the forest. Visitors would engage in participatory stewardship, education, and science that further the preservation of the forest and all its parts—the creek, salmon, spotted owls, bats, natural sounds—as part of the continuing history and evolution of land preservation and the conservation movement.

An off-site welcome center for the shuttle system, including parking and visitor services, would be an important first point for orientation and a key to providing sustainable access to the monument.

Restoration of the Redwood Creek watershed would be accelerated in collaboration with other land managers. Actions would include the removal of unneeded management roads, stabilization of sediment sources, and removal of invasive vegetation, as well as removal of streambank stabilization structures in Redwood Creek, removal and possible relocation of some pedestrian bridges, and restoration of natural floodplain function.

### *Some Potential Impacts of Alternative 2*

- § Elimination of unneeded roads and removal of unneeded structures would result in long-term beneficial impacts on vegetation and wildlife; cultural resources could be adversely

impacted; some construction and restoration activities (such as the removal of structures) would have short-term adverse impacts; education and stewardship programs would result in long-term, minor to moderate, beneficial impacts both locally and parkwide.

- § Actions could result in impacts on historic structures that range from long term and beneficial (because of improved treatment) to permanent and adverse because of adaptive use and potential damage through coastal erosion.
- § This alternative would result in both beneficial and adverse, long-term, moderate impacts on the cultural landscape at Alcatraz Island.
- § Establishing a curatorial and research facility would have a long-term beneficial impact on park collections.
- § Regulation and restrictions on some visitor activities and access to some areas might have a long-term, moderate, adverse impact on visitor experience. On Alcatraz Island, increased conflicts between visitors and an expanding bird population could result in long-term, moderate, adverse impacts on visitor experience. At Muir Woods, exclusive access by shuttle could reduce the number of visitors to the monument.
- § A reduction in parking at Stinson Beach could have a long-term, major, adverse impact or a long-term, moderate, beneficial impact on transportation, depending on concurrent efforts.
- § An increase in park staffing would result in long-term, moderate, beneficial impacts on park operations.
- § Activities that address deferred maintenance issues would result in long-term, moderate, beneficial

impacts on park operations. Difficulty for public safety personnel to reach more primitive areas would result in long-term, minor, adverse impacts on operations.

### Alternative 3: Focusing on National Treasures

Alternative 3 is the NPS preferred alternative for Alcatraz Island and Muir Woods National Monument. The preferred alternative for park lands in Marin, San Francisco, and San Mateo counties is alternative 1.

#### *Concept*

The emphasis of this alternative is to focus on, or showcase, the park’s nationally important natural and cultural resources. The fundamental resources of each showcased site would be managed at the highest level of preservation to protect the resources in perpetuity and to promote appreciation, understanding, and enjoyment of those resources. Visitors would have the opportunity to explore the wide variety of experiences that are associated with many different types of national parks—all in Golden Gate National Recreation Area and Muir Woods National Monument. All other resources would be managed to complement the nationally significant resources and associated visitor experience.

#### *Goals*

##### Visitor Experience.

- § Provide visitors with opportunities to explore, learn, and enjoy the park’s unique resources and history.
- § Allow the park’s distinctive resources and associated history to shape recreational opportunities.
- § Emphasize active public participation in stewardship programs at showcased sites.

- § Provide visitors with opportunities for understanding and enjoying their national park experiences.

**Cultural Resources.**

- § Emphasize the preservation of fundamental cultural resources that contribute to the national significance of the park, including national historic landmarks. Manage all other resources to complement the significant resources and visitor experience.
- § Tie associated cultural resources, museum collections, and stories to showcased sites.
- § Preserve and protect cultural resources to highlight the interpretive and educational values and provide, wherever possible, direct contact with the resources.

**Natural Resources.**

- § Emphasize preservation of fundamental natural resources that contribute to the significance of each park unit. Manage all other resources to complement distinctive resources and experiences.
- § Protect or restore the integrity of fundamental natural resources and processes that support the significance of each park unit.
- § Manage distinctive natural resources to ensure their ecological integrity while providing opportunities to engage visitors in hands-on stewardship and exploration.

*Key Elements*

**Park Lands in Marin County:** The park would continue to be a welcoming place with a vast network of open space that protects natural and cultural resources and offers many forms of recreation in a setting

of national importance. The park would highlight several nationally important sites including Muir Woods, the Golden Gate, and the historic U.S. Army posts on the Marin Headlands.

Although this alternative shares many characteristics of alternatives 1 and 2, the management of Marin Headlands historic core would be very different. Sheltering the best-preserved collection of seacoast fortifications in the country, the Marin Headlands tell the story of two centuries of evolving weapons technology and the nation's unwavering efforts to protect the Golden Gate. As a result, this alternative would focus on immersing visitors in its compelling sites and history, actively using and interpreting preserved structures and landscapes ranging from Battery Townsley to the Nike Missile Launch Site.

Other important nonmilitary landmarks, such as the Point Bonita Lighthouse, also would be preserved and interpreted for visitors.

**Park Lands in San Francisco:** The focus would be on the collection of historic sites and the dynamic coastal landscape that defines San Francisco's coastline from Fort Mason to Fort Funston. Visitors would be welcomed to the park, with a focus on the nationally important sites that are connected by the San Francisco Bay Trail and California Coastal Trail, thus creating a scenic and historic corridor.

Park lands in San Francisco encompass a significant collection of historic sites ranging from the Civil War era at Black Point in Fort Mason to the World War II-era military coastal fortifications at Fort Funston. These sites are in a windswept coastal environment featuring rocky bluffs, acres of dunes, sandy beaches, and fragile native habitat.

Under this alternative, the park would expand interpretive programs and visitor services at these popular destinations to enable residents and visitors to further

appreciate the significant landmarks and landscapes at the Golden Gate.

**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. This alternative, however, would highlight how this “quilt” of undeveloped land has been protected by numerous organizations. Over the past decades, the National Park Service, local governments, private land trusts, and dedicated individuals have collaborated to acquire and preserve this “wilderness” next door.

Today, these lands are a national treasure of recreational, natural, and cultural resources. Several nationally significant historic sites are in San Mateo County, along with habitat for numerous endangered species. Many of these important resources are managed by other agencies on nearby sites. This alternative would focus on protecting resources in the park while developing recreational and interpretive connections between sites managed by other land managers.

Park management would look beyond the immediate park lands to explore the potential to stimulate regional landscape management and enhance heritage tourism. To do so, park managers would work with communities between Pacifica and Santa Cruz to support strategies such as special designations. The highway is one of the distinguishing and unifying features of the rural coast that is characterized by forested hills, small-scale agriculture, and seaside communities.

**Alcatraz Island (Preferred Alternative):** This is the preferred alternative for Alcatraz Island. This alternative would immerse visitors extensively in all of Alcatraz Island’s historic periods—the Civil War military fortifications and prison, the federal penitentiary, and American Indian occupation. Alcatraz Island’s history would

be interpreted, first and foremost with tangible and accessible historic resources, including the structures, cultural landscape, archeological sites, and museum collection. These resources contribute to the island’s national historic landmark status and its recognition as an international icon.

The visitor’s immersion in Alcatraz Island history would begin from an embarkation site in San Francisco. The primary embarkation site would remain on San Francisco’s northern waterfront where visitor services, including education about Alcatraz and orientation to Golden Gate National Recreation Area, could be enhanced. On the island, visitors would ascend to the Main Prison Building through a landscape of preserved historic structures and features. While the primary visitor experience would focus on the federal penitentiary, visitors also would be exposed to other periods of history, literally and programmatically.

This alternative would require excavations, extensive stabilization, rehabilitation, and restoration of historic buildings and small-scale landscape features, and archeological sites, as well as creative interpretative and educational programs and visitor services. Park managers would create additional opportunities for cultural resource stewardship programs.

Visitors would have opportunities to learn about the natural history of San Francisco Bay. The colonial waterbird habitat that has grown in regional importance would be protected, enhanced, and interpreted. In addition, a comprehensive user capacity strategy would help the park monitor and adaptively manage crowding and impacts to cultural and natural resources.

Visitors could explore the island perimeter, managed to protect sensitive bird populations while providing opportunities to observe them or participate in stewardship activities. The large population of gulls would be managed to reduce conflicts in

primary visitor use areas such as the Parade Ground.

**Muir Woods National Monument (Preferred Alternative):** This is the preferred alternative for Muir Woods National Monument. Alternative 3, this alternative, would present the monument as a contemplative setting for visitors to discover the primeval redwood forest and the monument's place in the early U.S. conservation movement—within minutes of San Francisco.

The system of trails would continue to lead visitors into the forest to feel, see, and learn in different ways about the essential qualities of the forest. These qualities include its giant trees, the ecology of Redwood Creek, and William Kent's generous donation of the forest to the American public. Rather than continue to concentrate visitation along a main trail, visitors would be encouraged to take different thematic interpretive trails, some new and some existing, to experience different parts of the park. Other trails would be enhanced to better link the monument with the surrounding Mount Tamalpais State Park.

Some existing facilities and use areas, such as the entrance area and parking lots, would be modified or relocated to reduce their impacts on the ecosystem and improve the park experience.

To enhance visitor experience and address congestion problems, permanent shuttle service to Muir Woods National Monument would be provided during peak periods throughout the year. The existing transit hub in the vicinity of State Route 1 and Highway 101 could continue to serve as a shuttle intercept facility.

Visitors would continue to be drawn to the monument to see the old-growth redwood forest, but they would leave with a richer understanding of this precious ecosystem and how saving of these few acres helped spark a conservation movement across the

United States. They would be motivated to return and learn more of the story. In addition, a comprehensive user capacity strategy would help the park monitor and adaptively manage crowding, user conflicts, and impacts on resources.

The National Park Service would continue to collaborate with the public and other land managers to address watershed restoration, stewardship, and recreation.

### *Some Potential Impacts of Alternative 3*

- § Because nationally significant buildings would be rehabilitated and showcased, this alternative would have comprehensive, long-term, beneficial impacts on historic structures.
- § There would be some loss of cultural landscape features, but historically significant cultural landscapes with integrity would be rehabilitated and showcased; this would result in long-term, beneficial impacts on cultural landscapes.
- § Elimination of unneeded roads and removal of unneeded structures would result in long-term beneficial impacts on vegetation and wildlife; cultural resources could be adversely impacted; some construction activities would have short-term adverse impacts; education and stewardship programs would result in long-term, minor to moderate, beneficial impacts both locally and parkwide.
- § Evaluatory excavations, stabilization, and preservation of archeological sites and structures would provide conservation, stewardship, and interpretive benefits previously unrealized for these properties and for visitor experience; this would result in a long-term, beneficial impact to cultural resources.

- § Establishing a curatorial and research facility would have a long-term beneficial impact on park collections.
- § Establishing a preservation stewardship workshop on Alcatraz Island would have a long-term beneficial impact on cultural resources.
- § Improved access and connectivity and increased opportunities for visitors to understand, appreciate, and help preserve fundamental resources would result in long-term, moderate, beneficial impacts on visitor experience. Some changes to existing opportunities would result in long-term, minor to moderate, adverse impacts on those who use those areas now.
- § Improving the main ferry embarkation facility would have a long-term, moderate, beneficial impact on transportation to Alcatraz Island; trail expansion and improvement on the island would also have a long-term, beneficial impact.
- § An increase in park staffing would result in long-term, moderate, beneficial impacts on park operations.
- § Activities that address deferred maintenance issues and changes to facilities would result in long-term, moderate, beneficial impacts on park operations.

## ESTIMATED COSTS OF THE ALTERNATIVES

The costs of the proposals within each alternative are summarized in the following table. The last column, “Total, Preferred Alternative,” represents the costs associated

with implementation of alternative 3—the preferred alternative for Alcatraz Island and Muir Woods National Monument and alternative 1, the preferred alternative, for park lands in Marin, San Francisco, and San Mateo counties, as well as the costs common to all alternatives.

The alternatives describe the maximum potential capital improvements; fewer improvements may be implemented or constructed in phases if necessary. The implementation of the approved plan will depend on future funding. The approval of this plan does not guarantee that the funding and staffing needed to implement the plan will be forthcoming. Full implementation of the actions in the approved general management plan could be many years in the future. Additionally, some of the future long-term funding needed to implement the various actions in the alternatives is anticipated to come from nonfederal partners, consistent with current practices of the park.

## NEXT STEPS

Following distribution of the *Final General Management Plan / Environmental Impact Statement* and a 30-day no-action period, a Record of Decision approving a final plan will be signed by the National Park Service, Pacific West Regional Director. The Record of Decision will document the selection of an alternative for implementation. With the signing of the Record of Decision, the plan can then be implemented.

Once the planning process is completed, the selected alternative will become the new management plan for the park and will be implemented over the next 20 years. It is important to note that many of the actions in the selected alternative will require more detailed study and implementation planning.

SUMMARY

**S-1. SUMMARY OF COSTS ASSOCIATED WITH IMPLEMENTATION OF THE ALTERNATIVES**

	No-action Alternative	Alternative 1	Alternative 2	Alternative 3	Total, Preferred Alternative
<b>Recurring Costs</b>					
Annual Operating Costs <sup>1</sup>	\$28,030,000	\$32,000,000	\$31,090,000	\$31,630,000	\$32,000,000
Muir Woods Shuttle Operations	\$340,000	\$600,000- \$1,400,000	\$4,000,000- \$9,500,000	\$600,000- \$1,400,000	\$600,000- \$1,400,000
Staffing (additional FTE <sup>2</sup> )	334 (+0)	380 (+46)	369 (+35)	377 (+43)	380 (+46)
<b>One-time Capital Costs<sup>3</sup></b>					
Alcatraz Island	\$4,260,000	\$61,190,000	\$37,440,000	\$54,380,000	\$54,380,000
Park Lands in Marin, San Francisco, and San Mateo Counties	\$5,280,000	\$49,710,000	\$50,250,000	\$78,210,000	\$49,710,000
Muir Woods National Monument	\$920,000	\$15,900,000	\$16,870,000	\$15,560,000	\$15,560,000
Common to All Action Alternatives	\$0	\$33,200,000	\$33,200,000	\$33,200,000	\$33,200,000
Total One-time Capital Costs <sup>4</sup>	\$10,460,000	\$160,000,000	\$137,760,000	\$181,350,000	\$152,850,000

All costs in 2009 dollars; Acquisition costs for proposed boundary adjustments are not included in this presentation of costs.

NOTES REGARDING SUMMARY OF COSTS TABLE:

<sup>1</sup> Annual operating costs are the total costs per year for maintenance and operations associated with each alternative, including utilities, supplies, staff salaries and benefits, and leasing.

<sup>2</sup> The total number of FTEs (full-time equivalents) is the number of person-years of staff required to maintain the assets of the park at a good level, provide acceptable visitor services, protect resources, and generally support the park's operations. The FTE number indicates ONPS-funded NPS staff only, not volunteer positions or positions funded by partners. (ONPS funds are funds designated for the "Operation of the National Park Service.") FTEs are from the 2010 Green Book, adjusted to reflect loss of 32 structural fire positions.

<sup>3</sup> One-time costs for the no-action alternative only include costs associated with projects already approved and fully funded in contrast to costs for other alternatives that include all major projects forecast over the next 20 years.

<sup>4</sup> Total includes costs for both Essential/Priority and Desirable/Lower Priority Projects. Essential/Priority projects are required to preserve fundamental resources and experiences and would likely require federal funding. Desirable/Lower Priority projects are important to full implementation of the alternative but may be accomplished with nonfederal funds or in later phases.

**S-2. ESSENTIAL/PRIORITY\* ONE-TIME CAPITAL COSTS FOR THE PREFERRED ALTERNATIVE**

	Facility Rehabilitation	Historic Preservation	Natural Resource Restoration	Facility Removal	New Construction	Total
Alcatraz Island	\$0	\$38,300,000	\$0	\$0	\$0	\$38,300,000
Park Lands in Marin, San Francisco, and San Mateo Counties	\$11,500,000	\$8,430,000	\$4,220,000	\$500,000	\$980,000	\$25,630,000
Muir Woods National Monument	\$9,150,000	\$340,000	\$4,700,000	\$720,000	\$0	\$14,910,000
Common to All Action Alternatives	\$0	\$14,740,000	\$0	\$0	\$0	\$14,740,000
Total One-time Capital Cost	\$20,650,000	\$61,810,000	\$8,920,000	\$1,220,000	\$980,000	\$93,580,000

\*Essential/Priority projects are required to preserve fundamental resources and experiences and would likely require federal funding.

**S-3. DESIRABLE/LOWER PRIORITY\* ONE-TIME CAPITAL COSTS FOR THE PREFERRED ALTERNATIVE**

	Facility Rehabilitation	Historic Preservation	Natural Resource Restoration	Facility Removal	New Construction	Total
Alcatraz Island	\$0	\$16,080,000	\$0	\$0	\$0	\$16,080,000
Park Lands in Marin, San Francisco, and San Mateo Counties	\$8,980,000	\$11,730,000	\$0	\$0	\$3,370,000	\$24,080,000
Muir Woods National Monument	\$0	\$650,000	\$0	\$0	\$0	\$650,000
Common to All Action Alternatives	\$0	\$1,830,000	\$0	\$0	\$16,630,000	\$18,460,000
Total One-time Capital Cost	\$8,980,000	\$30,290,000	\$0	\$0	\$20,000,000	\$59,270,000

\*Desirable/Lower Priority projects are important to full implementation of the alternative but may be accomplished with nonfederal funds or in later phases.



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BACKGROUND 1





## INTRODUCTION

Over 30 years ago, the National Park Service (NPS) adopted a plan outlining the future of Golden Gate National Recreation Area, then a new and different park that brought the national park system to a large urban area. Because of the size and diversity of the San Francisco Bay Area community and the National Park Service commitment to a pioneering public involvement process, it took five years to prepare the plan. This diligence was a success and the final plan won the unanimous support of the community. That plan, along with several amendments, has firmly guided the preservation and enhancement of Golden Gate National Recreation Area for three decades.

It is not unusual for many long-range plans to just sit on the shelf and gather dust—usually as a result of inadequate funding to implement the dreams they offer, but also because of changing conditions and fading public support. When the future of the Presidio's Crissy Field was being discussed early in the planning process, one member of the park's advisory commission confided that the National Park Service would never get the funds to improve it, especially considering demolition and toxic cleanup costs. Today Crissy Field stands as an international standard for waterfront restoration and is a top visitor destination.

Success stories like Crissy Field happen because of the appeal and popularity of park resources, enhanced by the efforts of Golden Gate National Parks Conservancy and the resultant financial support of generous members of the community.

When considering the transformational expectations offered by the 1980 General Management Plan, it has been a remarkable success. In addition to Crissy Field, the visions for Alcatraz Island, Fort Mason, Cliff

House, Lands End, Fort Baker, and much of the Marin Headlands have been achieved.

Today, Golden Gate National Recreation Area constitutes one of the largest urban national parks in the world, extending north of the Golden Gate Bridge to Tomales Bay in Marin County and south to Half Moon Bay in San Mateo County. These lands are also coastal preserves that encompass many miles of bay and ocean shoreline.

The park has an abundance of historical and cultural assets, including sites such as early fortifications on Alcatraz Island, Forts Cronkhite and Barry in the Marin Headlands, Fort Mason, Fort Point, and the Presidio of San Francisco. These sites comprise a variety of archeological resources, military batteries, and other historic structures that present a rich history. Chronicles of American Indian settlements, the frontier of the Spanish Empire, the Mexican Republic, evolution of U.S. coastal fortifications, maritime history, 19th century and early 20th century agriculture and ranching, the U.S. Army in World War I and World War II, the California Gold Rush, Buffalo Soldiers, and the growth of San Francisco are told in the settings in which they occurred.

Golden Gate National Recreation Area is also rich in natural resources. The park includes 19 types of ecosystems in numerous distinct watersheds and is home to over 1,200 known plant and animal species. The park provides habitat for many sensitive, rare, threatened, or endangered species, including the mission blue butterfly, northern spotted owl, and California red-legged frog. Coho salmon and steelhead trout inhabit the clean waters of Redwood Creek as it flows through Muir Woods National Monument.

Each year 16 to 20 million visitors explore the park. Visits to Muir Woods National Monument and Alcatraz Island are high priorities for many people. Trips to the park account for nearly 50% of all visits to the 29 national park system units in California.

Each year, park visitors contribute hundreds of millions of dollars to the Bay Area economy. This money directly sustains the revenue stream and jobs at hotels, restaurants, and stores that serve park visitors. Economic modeling indicates that in 2010, park visitors spent \$260 million in the local economy and supported 1,500 local jobs (Stynes 2011).

In looking back at the 1980 General Management Plan and where the park is today, there appears to be only one major goal yet to be fully accomplished—the ambitious transportation proposals contained in the document. Lack of funding and jurisdictional issues have hindered their accomplishment. However, one of the principal goals of this element of the plan was to provide access to the park for under-represented populations. Other strategies have apparently made progress in reaching that goal, as general observations indicate that increasing numbers of young people from underrepresented groups are visiting the park. It can be safely assumed that this apparent trend is strengthened by the many educational and volunteer programs managed by the park and park partners.

It is our goal to continue this trend. Golden Gate National Recreation Area and Muir Woods National Monument are in one of the most demographically diverse regions in the United States. In addition, demographic

trends forecast a dramatic increase in the diversity of the statewide population and in the number of residents who are less than 18 years of age. As a result, the park is uniquely situated to reconnect people with the national parks, with a goal of reaching a 21st century audience—more diverse and younger than today’s national park visitor—and sustaining their engagement.

The impacts of Golden Gate National Recreation Area are not contained solely within its borders. The park plays a large role in contributing to the quality of life of Bay Area residents by providing open space as well as recreational opportunities and community outreach, education, and resource stewardship programs. In terms of economics, the park has the potential to generate economic activity in a variety of ways that benefit gateway communities in the three adjacent counties.

Even before the 1980 General Management Plan was approved, the park was growing. Legislation for a boundary expansion was passed by Congress in 1978, and since then various acts of Congress have added many additional acres to the park. Research and management activities have revealed new resource values, both cultural and natural. Visitation has increased and new activities have put unanticipated pressures on park resources. In short, today’s park is vastly different from the one depicted in the 1980 General Management Plan. The first plan served to shape a new park and reach a consensus on the definition of its identity. This document will serve to fine tune and expand the vision for a maturing national park and will shape and define new areas being added to the park.

## PURPOSE AND NEED

The purpose of this general management plan (GMP) is to guide planning and decision making at Golden Gate National Recreation Area and Muir Woods National Monument for the next 20 years. The first general management plan, completed in 1980, is now more than 30 years old. Since the completion of that first plan, the issues, opportunities, and challenges associated with the park and monument have significantly changed. In addition, park managers have had 30 years to better understand the natural and cultural resources of the park and monument and the changing needs of park visitors.

This new *General Management Plan / Environmental Impact Statement (GMP/EIS)* will serve as a foundation and frame work for the management of these park lands. The plan articulates the desired future conditions for park resources and visitor experience that will best fulfill the legislative and presidential mandates that established these park units as part of the national park system.

This plan has been developed by an interdisciplinary team in consultation with NPS offices; park partners; tribal, federal, state, and local agencies; and other interested organizations. There has been substantial input and participation from the general public. These public involvement and consultation efforts helped to ensure that the decisions made through this planning process are widely supported and sustainable over time. A completed general management plan represents an agreement with the citizens of the United States about how these lands and facilities will be managed. The plan will be a blueprint for the future.

The “Planning Issues” section of this general management plan provides details of issues,

opportunities, and challenges. Generally, the overall need for a new general management plan has arisen because of the following:

- § The park has significantly expanded in size and includes many new lands in San Mateo County. This planning process is based on a comprehensive look at the park as a whole rather than its individual sections. This comprehensive parkwide approach will help ensure that management of natural and cultural resources and visitor experience is consistent across all park areas.
- § There is an increased public demand for access to and use of open spaces within the ever-growing San Francisco Bay Area). The general management plan provides a regional collaborative approach to open space preservation.
- § The changing demographics in the Bay Area are bringing notable shifts in park visitation, uses, and trends. The general management plan provides desired conditions that will guide the decision making needed to manage the anticipated increase in visitation.
- § Through research and park management over the years the park has gathered a considerable amount of new information and knowledge regarding resources and visitor use. This new awareness is incorporated into the desired conditions, proposed management actions, and policies of this general management plan.
- § In recent years, climate change has become better understood and its effects more evident on both ecological systems and cultural resources. The general management plan considers the potential impacts

of climate change to park operations and visitor use and identifies the management actions necessary to guide efforts to minimize the park's carbon footprint.

- § Visitor access to the park continues to evolve as the local transportation infrastructure changes. The strategies that were identified in 1980 continue to be explored; new ideas and techniques are also identified to help address sustainable options for park access and strategies to reduce traffic congestion around and within the park.
- § To comply with federal law, the plan specifies the types and intensities of projected development, including anticipated costs. This is important, as the availability of federal funds may be limited over time.

This general management plan addresses these overall issues and the detailed issues identified in the "Planning Issues" section;

the alternatives suggest ways to address these issues over the next 20 years.

The *General Management Plan / Environmental Impact Statement* provides recommendations regarding the use of many park facilities; however, future decisions about the specific use of individual facilities will be based on a number of criteria and opportunities for maximizing the life and value of these important public resources. Facilities could serve a variety of uses over the 20-year life of the general management plan consistent with the surrounding management zoning and NPS policy.

Implementation of the approved plan, no matter which alternative, will depend on future NPS funding levels and servicewide priorities and on partnership funds, time, and effort. The approval of a general management plan does not guarantee that the funding and staffing needed to implement the plan will be forthcoming. Full implementation of the plan could be many years in the future.

# GUIDING PRINCIPLES FOR PARK MANAGEMENT

In addition to the many laws, policies, and directives that govern management of all units of the national park system, the leadership at Golden Gate National Recreation Area and Muir Woods National Monument has highlighted some of the principles that are most deeply rooted and distinctive at this park. These originate from the 1916 Organic Act that established the National Park Service to “...*promote and regulate the use of the Federal areas known as national parks, monuments, and reservations... by such means and measures as 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.*”

## SUSTAINABILITY

The National Park Service will continue to learn about and use practices that help sustain park resources. Sustainability will be fundamental to the facilities, projects, programs, and operations of the park, using sound environmental management practices. The National Park Service will seek opportunities to promote sustainability and stewardship to park visitors, neighboring communities, and stakeholders.

## COMMUNITY-BASED STEWARDSHIP

The National Park Service is committed to ongoing involvement of individuals and organizations in understanding, caring for, and preserving the park’s natural habitats, historic places, and trails. This community stewardship brings the commitment to preserve our common heritage and public lands—national treasures that can best be sustained by the efforts of many.

## CIVIC ENGAGEMENT

The National Park Service is dedicated to ongoing, dynamic conversations about the contemporary relevance of park resources and will also provide opportunities for meaningful involvement to promote better understanding and communication, discuss concerns, and express values and preferences when park decisions and policies are being developed and implemented.

## PARTNERSHIPS

The National Park Service will continue to build on the legacy of the many partnerships that have enhanced the ability to protect resources and serve the public since the park was established. Through mutual collaboration, shared values, and learning, these partnerships have created outcomes beyond any one organization’s individual capacity. Partnerships will continue to be an important way to accomplish the park’s mission and build a community of stewardship.

## REGIONAL COLLABORATION

In working to preserve the park’s resources unimpaired for future generations, cooperative relationships with managers of adjacent public lands and watersheds; tribal, state, and local governments; community organizations; and private landowners will be established and maintained. To ensure that watersheds, ecosystems, historic properties, prehistoric sites, 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, collaborative relationships will be built and sustained.

## **INCLUSION**

Recognizing the special opportunities and obligations resulting from the park's location within a region of great demographic and socioeconomic diversity, the National Park Service will strive to ensure that Golden

Gate National Recreation Area is a "park for all." Working *with*, rather than *for*, various community partners, we will undertake proactive strategies that make the park welcoming and accessible to those at every economic strata, people with disabilities, and ethnic and cultural communities who have not traditionally visited national parks in numbers proportionate to the changing demographics of California and the nation.

## THE PLANNING AREA

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, park staff have 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.

The new general management plan will provide park management with guidance for the following park sites: (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) 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 [SFPUC] Peninsula Watershed easements). The total area of land and water addressed in this plan is approximately 50,000 acres.

Specifically these areas are

- § Alcatraz Island and the surrounding bay environment
- § park lands in Marin County including Stinson Beach to Bolinas-Fairfax Road, Slide Ranch, Muir Beach, Lower Redwood Creek, Golden Gate Dairy, Tennessee Valley, Marin Headlands, and the nearshore ocean and bay environment
- § park lands in San Francisco including Upper Fort Mason, China Beach, Lands End, Fort Miley, Ocean Beach,

Fort Funston, and the nearshore ocean and bay environment

- § park lands in San Mateo County including the coastal area extending south from Fort Funston to Mussel Rock, Milagra Ridge, Sheldance Nursery Area, Sweeney Ridge, including Cattle Hill and Picardo Ranch, Mori Point, Point San Pedro (also known as Pedro Point Headlands), Rancho Corral de Tierra, Montara Lighthouse, the Phleger Estate, and the nearshore ocean environment
- § San Francisco Public Utilities Commission Peninsula Watershed easements administered by the park
- § all lands within Muir Woods National Monument

The following are Golden Gate National Recreation Area sites that have recently completed new land use management plans and therefore are not included in the GMP/EIS planning area. These park areas will not be revisited in this plan.

- § Presidio of San Francisco including Crissy Field, Baker Beach, and Lobos Creek Valley
- § Fort Point National Historic Site
- § Sutro Historic District including Cliff House, Sutro Heights Park, Sutro Baths, and Lands End
- § Fort Baker
- § Lower Fort Mason (Fort Mason Center)
- § Golden Gate National Recreation Area Northern District, north of Bolinas-Fairfax Road—(these lands are managed by Point Reyes National Seashore and are being addressed in the *Point Reyes National Seashore /*

*Golden Gate National Recreation  
Area Northern District General  
Management Plan)*

The park is currently working on a variety of detailed project and program implementation plans. The implementation plans cover topics such as detailed actions for natural and cultural resource restoration and preservation, visitor use, transportation, and park operations. There are several major project and program implementation plans that are in the process of being prepared or implemented. In the preparation of this general management plan, the planning team coordinated with the development of these plans to ensure consistency. Ongoing planning and implementation efforts include the following:

- § Marin Headlands and Fort Baker Transportation Infrastructure and Management Plan Final Environmental Impact Statement
- § Wetland and Creek Restoration at Big Lagoon, Muir Beach Final Environmental Impact Statement
- § Marin Equestrian Stables Plan / Environmental Assessment
- § Headlands Institute (NatureBridge) Campus Improvement and Expansion Plan / Environmental Assessment
- § Dog Management Plan for Golden Gate National Recreation Area / Environmental Impact Statement
- § Vista Grande Drainage Improvement Project





# *Foundation Statements: Guidance for Planning*

In 1916, with the passage of the National Park Service Organic Act, Congress established the National Park Service to oversee and manage the national parks of the United States. Individual national parks continue to be established by Congress or by presidential proclamation. The legislation that authorizes a new national park system unit guides its management. (See appendix A for legislation related to the National Park Service, Golden Gate National Recreation Area and Muir Woods National Monument.)

The following pages present foundation statements for Golden Gate National Recreation Area and Muir Woods National Monument, respectively, as they are two distinct units of the national park system.



## **PARK PURPOSE**

The park purpose is a statement that summarizes why Congress and/or the president established the area as a unit of the national park system. It is based on the enabling legislation and the legislative history of the unit. The purpose statement provides the most fundamental criteria against which the appropriateness of all plan recommendations, operational decisions, and actions are tested.

## **PARK SIGNIFICANCE**

Statements of park significance define what is most important about a park's many resources and values. In developing these significance statements, the planning team was guided by park legislation and the knowledge acquired through management, research, and civic engagement. The significance statements focus on the attributes that make the area's resources and values important enough to be included in the national park system. Each unit in the national park system contains many significant resources, but not all of these resources contribute to the purpose for which the park or monument was established as a unit of the national park system.

The park purpose and significance statements are used to guide all planning and management decisions. This ensures that the resources and values that Congress and the president wanted preserved are understood and are the park's first priority.

## **FUNDAMENTAL RESOURCES AND VALUES**

The National Park Service works to ensure the conservation and public enjoyment of those resources and values that are fundamental to park significance. Fundamental resources and values are those resources and values that directly contribute to the significance for which the park was established.

## **PRIMARY INTERPRETIVE THEMES**

Primary interpretive themes describe the key stories and concepts of the park that help visitors understand and appreciate the park purpose and significance. The development and interpretation of primary interpretive themes provide the foundation on which the park's educational and interpretive program is based.

# *Foundation Statements for Golden Gate National Recreation Area*

The founders of Golden Gate National Recreation Area, established in 1972, intended to bring national park experiences to urban populations. The park's extensive collection of natural, historic, and scenic resources and diverse recreational opportunities fulfill the purpose of bringing "parks to the people"—particularly to the 7 million people who live in the Bay Area. Today, however, the resources of Golden Gate National Recreation Area are nationally and internationally recognized as well, extending their value to all of the United States and beyond.

## **PARK PURPOSE**

The purpose of Golden Gate National Recreation Area 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.





## *Recreational and Educational Opportunities*

### **SIGNIFICANCE**

The continuum of park resources at the doorstep of the San Francisco Bay Area provides an abundance of recreational and educational opportunities.

### **FUNDAMENTAL RESOURCES AND VALUES**

- **Diverse Park Settings** – The diversity of settings, from remote to urban, provides visitors with active and passive recreational and educational opportunities, including participation in park stewardship.
- **Park Access** – A system of designated trails and scenic park roads supports access to settings that provide visitors with a broad range of activities and varied experiences.

### **INTERPRETIVE THEME**

The park provides for diverse recreational and educational opportunities from contemplative to active pursuits, including participation in stewardship and volunteer activities. Its proximity allows an urban population to connect with nature and history.

# Coastal Corridor

## SIGNIFICANCE

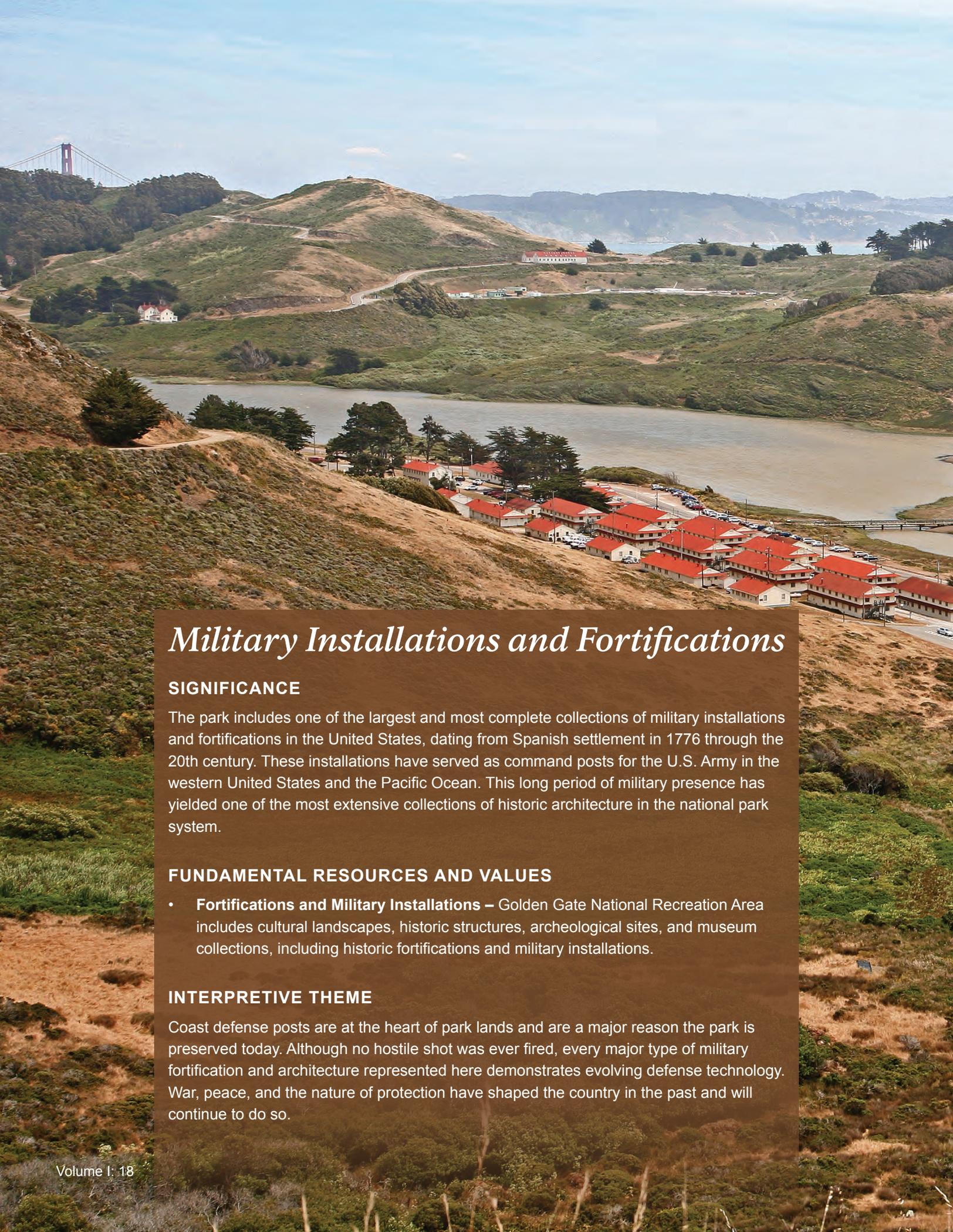
The remnant of undeveloped coastal corridor comprising marine, estuarine, and terrestrial ecosystems supports exceptional native biodiversity and provides refuge for one of the largest concentrations of rare, threatened, and endangered species in the national park system.

## FUNDAMENTAL RESOURCES AND VALUES

- **Ocean and Bay Environment** – Oceanic conditions, such as tides, currents, waves, surf, upwelling, and sea level, influence Golden Gate National Recreation Area's coastal environment, including climate and the land.
- **Coastal Ecosystems** – Golden Gate National Recreation Area contains a rich assemblage of coastal native plant and animal habitats that includes forests, coastal scrub, grassland, freshwater, estuarine and nearshore marine habitats, beaches, coastal cliffs, and islands.
- **Threatened and Endangered Species** – Golden Gate National Recreation Area supports one of the largest numbers of federally listed threatened and endangered species in the national park system. This island of refuge is due to the protected confluence of unique and diverse habitats adjacent to the urban Bay Area.
- **Water Resources** – Golden Gate National Recreation Area's water resources support coastal corridor ecosystems, which consist of groundwater sources (aquifers and springs); freshwater systems (streams, lakes, and ponds); coastal, estuarine, and marine water resources (the Pacific Ocean and San Francisco Bay); and other wetlands.

## INTERPRETIVE THEME

In a world of diminishing biological diversity and threatened natural resources, Golden Gate National Recreation Area preserves islands of biodiversity within and near a large urban area. The accelerating rate of global climate change threatens even these remnants.



## *Military Installations and Fortifications*

### **SIGNIFICANCE**

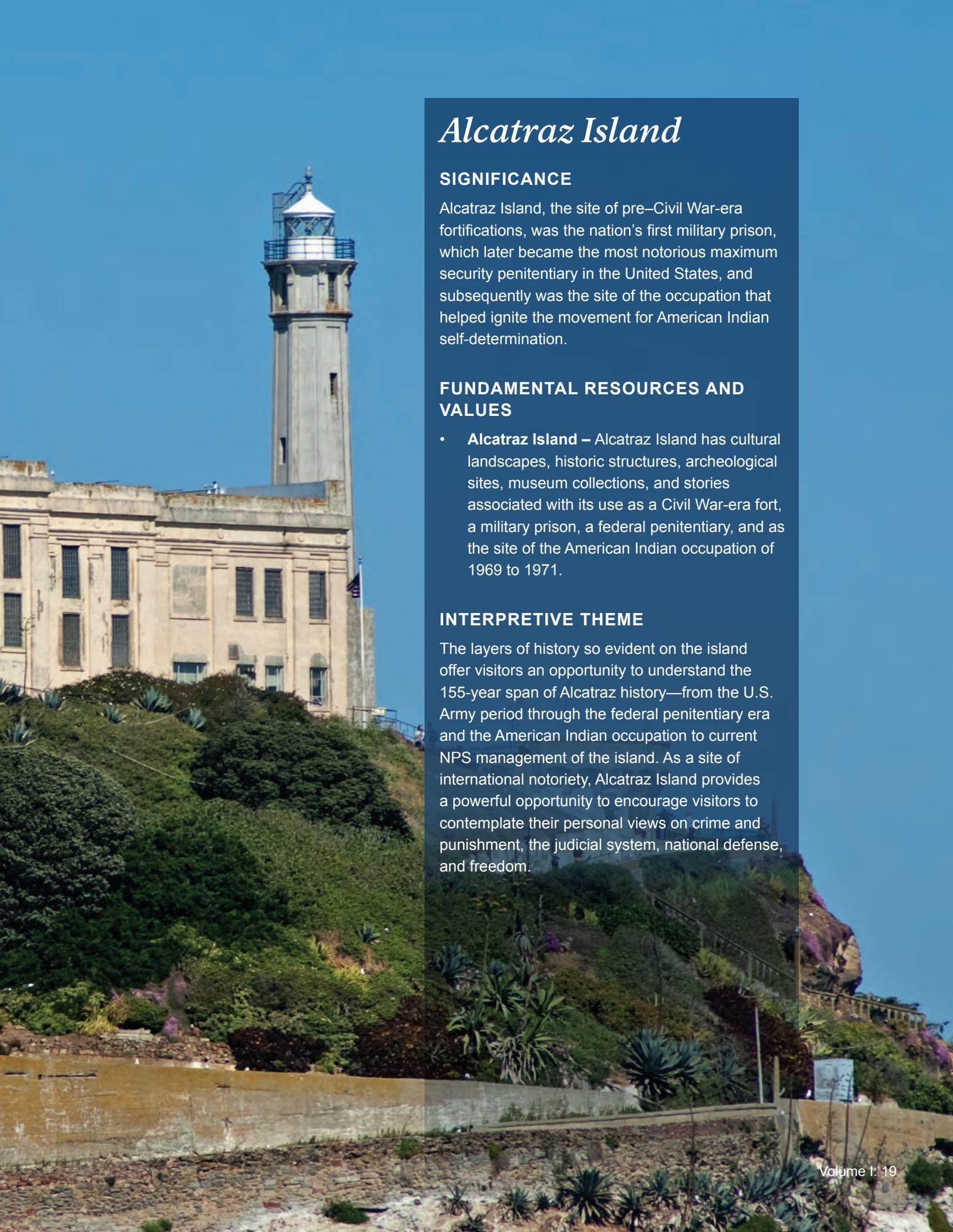
The park includes one of the largest and most complete collections of military installations and fortifications in the United States, dating from Spanish settlement in 1776 through the 20th century. These installations have served as command posts for the U.S. Army in the western United States and the Pacific Ocean. This long period of military presence has yielded one of the most extensive collections of historic architecture in the national park system.

### **FUNDAMENTAL RESOURCES AND VALUES**

- **Fortifications and Military Installations** – Golden Gate National Recreation Area includes cultural landscapes, historic structures, archeological sites, and museum collections, including historic fortifications and military installations.

### **INTERPRETIVE THEME**

Coast defense posts are at the heart of park lands and are a major reason the park is preserved today. Although no hostile shot was ever fired, every major type of military fortification and architecture represented here demonstrates evolving defense technology. War, peace, and the nature of protection have shaped the country in the past and will continue to do so.



# *Alcatraz Island*

## **SIGNIFICANCE**

Alcatraz Island, the site of pre–Civil War-era fortifications, was the nation’s first military prison, which later became the most notorious maximum security penitentiary in the United States, and subsequently was the site of the occupation that helped ignite the movement for American Indian self-determination.

## **FUNDAMENTAL RESOURCES AND VALUES**

- **Alcatraz Island** – Alcatraz Island has cultural landscapes, historic structures, archeological sites, museum collections, and stories associated with its use as a Civil War-era fort, a military prison, a federal penitentiary, and as the site of the American Indian occupation of 1969 to 1971.

## **INTERPRETIVE THEME**

The layers of history so evident on the island offer visitors an opportunity to understand the 155-year span of Alcatraz history—from the U.S. Army period through the federal penitentiary era and the American Indian occupation to current NPS management of the island. As a site of international notoriety, Alcatraz Island provides a powerful opportunity to encourage visitors to contemplate their personal views on crime and punishment, the judicial system, national defense, and freedom.

# Scenic Beauty

## SIGNIFICANCE

The headlands of the Golden Gate have long been recognized for their outstanding scenic qualities. The remarkable convergence of land and sea and of bay and ocean—combined with the palpable energy of 16 major rivers merging—create a spectacle that is truly unique.

## FUNDAMENTAL RESOURCES AND VALUES

- **Dramatic Settings** – In concert with the open lands that frame it, the Golden Gate serves as the backdrop to the San Francisco metropolitan area. The dynamic contrast between urban environments and undeveloped spaces ranging from the open waters of the Pacific Ocean and San Francisco Bay to beaches, estuaries, headlands, and valleys contribute greatly to the scenic experience enjoyed by area residents and visitors alike.
- **Compelling Historical Stage** – With its exceptional diversity of natural settings and central role in many significant chapters from America’s past, the Golden Gate instills a continuous sense of wonder and appreciation.

## INTERPRETIVE THEME

The powerful positive influences that park land and undisturbed open space can exert on urban settings (and residents) constitute an important interpretive message. The scenic beauty of the park’s historic and natural undeveloped landscapes inspired a grassroots movement that led to their protection. Proposed development that would have destroyed these lands sparked Bay Area community members to organize and ultimately preserve the open spaces that contribute so much to their quality of life.





## *Physical Landforms*

### **SIGNIFICANCE**

The convergence of the San Andreas Fault, San Francisco Bay at the Golden Gate, and the California coastline creates a dynamic environment of exceptional scientific value.

### **FUNDAMENTAL RESOURCES AND VALUES**

- **Geologic Resources** – Golden Gate National Recreation Area’s geologic resources include faults, plate margins, and a subduction zone; a diversity of rock types and deposits representing more than 100 million years of earth’s history; and complex geologic processes that continue to shape the landscape.

### **INTERPRETIVE THEME**

The park’s underlying natural geologic systems and processes and the resulting effects on people and the environment, link the park to the highly visible and significant geologic forces around the world.



## *Coast Miwok and Ohlone People*

### **SIGNIFICANCE**

Park lands are within the traditional homelands of the Coast Miwok and Ohlone people. They comprise indigenous archeological sites of native heritage and historic and scientific values.

### **FUNDAMENTAL RESOURCES AND VALUES**

- **Archeological Sites** – Sites in the park document the traditional homelands of the Coast Miwok and Ohlone people

### **INTERPRETIVE THEME**

The natural features and resources of the park, along with its location on the San Francisco Bay estuary, sustained the Coast Miwok and Ohlone people for thousands of years before Europeans arrived. Archeological sites in the park link to these pre-European inhabitants and to their descendants who retain a vibrant culture to this day.

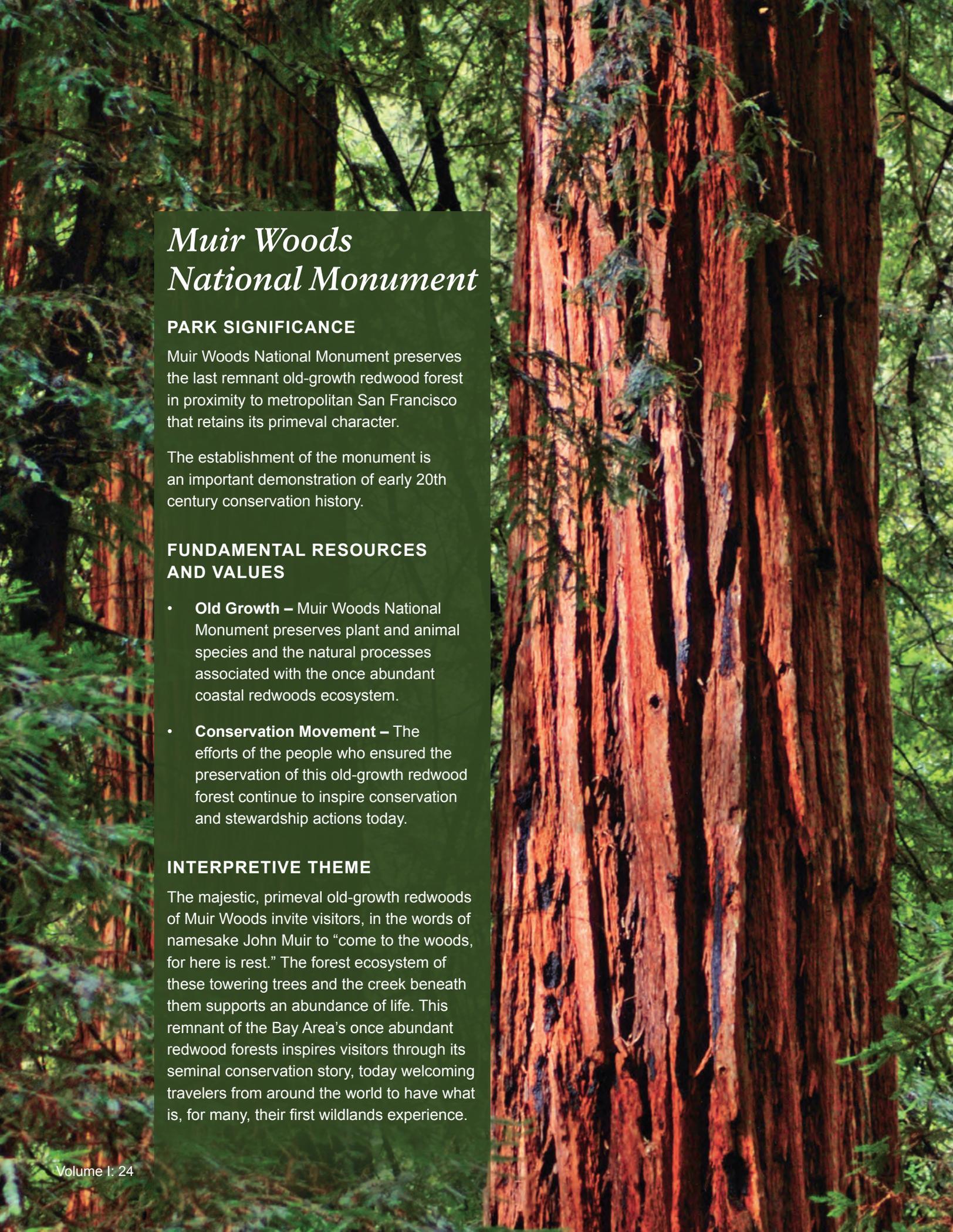
# *Foundation Statements for Muir Woods National Monument*

Until the 19th century, an abundance of redwood trees were found in the many coastal valleys of northern California; however, the logging industry removed most of them to supply the demand for building materials for a growing population. In 1905, when William Kent and his wife, Elizabeth Thacher Kent, realized that Redwood Canyon, a popular hiking and recreation destination, contained one of the last uncut stands of old-growth redwoods in the San Francisco Bay Area, they purchased 612 wooded acres for \$45,000. To protect the trees, the Kents donated 298 acres comprising the core of the forest to the U.S. government. President Theodore Roosevelt proclaimed the area Muir Woods National Monument in 1908. The proclamation states that the tract contains “an extensive growth of redwood trees (*Sequoia sempervirens*)” that was “of extraordinary scientific interest and importance because of the primeval character of the forest in which it is located, and of the character, age and size of trees.” At Kent’s suggestion, the monument was named for conservationist John Muir. Due to circumstances surrounding its founding, Muir Woods National Monument holds a significant place in conservation history. It was the tenth national monument to be designated under the Antiquities Act, the first to be in proximity to a major city, and the first to consist of formerly privately owned lands.

## **PARK PURPOSE**

The purpose of Muir Woods National Monument is to preserve the primeval character and ecological integrity of the old-growth redwood forest for scientific values and inspiration.





# *Muir Woods National Monument*

## **PARK SIGNIFICANCE**

Muir Woods National Monument preserves the last remnant old-growth redwood forest in proximity to metropolitan San Francisco that retains its primeval character.

The establishment of the monument is an important demonstration of early 20th century conservation history.

## **FUNDAMENTAL RESOURCES AND VALUES**

- **Old Growth** – Muir Woods National Monument preserves plant and animal species and the natural processes associated with the once abundant coastal redwoods ecosystem.
- **Conservation Movement** – The efforts of the people who ensured the preservation of this old-growth redwood forest continue to inspire conservation and stewardship actions today.

## **INTERPRETIVE THEME**

The majestic, primeval old-growth redwoods of Muir Woods invite visitors, in the words of namesake John Muir to “come to the woods, for here is rest.” The forest ecosystem of these towering trees and the creek beneath them supports an abundance of life. This remnant of the Bay Area’s once abundant redwood forests inspires visitors through its seminal conservation story, today welcoming travelers from around the world to have what is, for many, their first wildlands experience.

## SPECIAL MANDATES AND ADMINISTRATIVE COMMITMENTS RELATED TO GOLDEN GATE NATIONAL RECREATION AREA

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.

### LAND ACQUISITION

Several pieces of legislation specify how Golden Gate National Recreation Area will conduct land acquisition activities.

- § Public Law 92-589, the enabling legislation for Golden Gate National Recreation Area, specifies that "any lands or interests owned by the State of California, or any political subdivision thereof, may only be acquired by donation" (see appendix A).
- § Public Law 95-625, Sec. 317(e), specifies that Golden Gate National Recreation Area (through the Secretary of the Interior) "shall accept and manage any land and improvements adjacent to the recreation area which are donated by the State of California or its political subdivisions."
- § Public Law 96-199, Sec. 103(b), specifies spending limits on land acquisition.

### MANAGEMENT AND ADMINISTRATION

- § Public Law 95-625, Sec. 317(f), specifies that "no fees or admissions shall be charged, except to portions under lease or permit for a specific purpose. The Secretary [of the Interior] may authorize reasonable charges for public transportation."
- § Public Law 106-291, Sec. 140, gives the park authority for fee-based education, interpretive, and visitor service functions within Crissy Field and Fort Point areas of the Presidio.
- § Public Law 96-199, Sec. 103(b), specifies spending limits on park development.
- § Golden Gate National Recreation Area signed a memorandum of understanding (MOU) for the United Nations Educational, Scientific, and Cultural Organization's (UNESCO) Golden Gate Biosphere Reserve that requires the recreation area to cooperate with reserve partners and promote reserve activities. The biosphere was designated in 1988.
- § Golden Gate National Recreation Area acquired several parcels of park land through donations from the City and County of San Francisco. These parcels include portions of the areas known as Sutro Heights, Fort Funston, and Ocean Beach. The City and County of San Francisco included certain reservations, restrictions, conditions, and rights of reverter in the deeds of transfer and agreements for these lands.
- § These reservations include, but are not limited to: (1) easements for roads and railways, utilities

infrastructure, and subsurface sewer tunnels; (2) that these properties be used for recreation or park purposes; (3) where consistent with the law, the National Park Service shall not charge fees for admission to the donated lands; (4) the National Park Service will inform and consult with the Department of City Planning on all matters related to construction on donated lands; and (5) that the area known as Sutro Heights shall be forever kept as a free public park or resort under the name Sutro Heights.

- § An agreement between the City of San Francisco and the National Park Service provides for consultation through the Department of City Planning on proposed construction within lands transferred by the city to Golden Gate National Recreation Area and establishes cooperation regarding maintenance of certain roads and bridges. This agreement was initially created in 1975.

## SAN FRANCISCO PENINSULA WATERSHED EASEMENTS

The San Francisco Peninsula Watershed is home to three drinking water reservoirs and is managed by the San Francisco Public Utilities Commission for watershed protection as a water supply resource with limited public access. Located in San Mateo County, 13 miles south of San Francisco, the watershed consists of approximately 23,000 acres of forested hills, coastal scrub, and grasslands.

On January 15, 1969, the United States of America was granted easements on watershed lands owned by the City and 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 1980, the watershed lands were added to the Golden Gate National

Recreation Area's authorized boundary and the park was charged with the responsibility of ensuring that conditions of the easements are upheld.

The scenic easement generally includes Crystal Springs and San Andreas reservoirs and the area to the west (approximately 19,000 acres). 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 and other purposes which shall be compatible with said use and preserving said land as open space land."

The scenic and recreation easement generally includes the area within the watershed east of the Crystal Springs and San Andreas reservoirs (approximately 4,000 acres). 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; outdoor recreation; ecological preservation and other purposes which shall be compatible with preserving said land as open space land for public use and enjoyment."

The scenic and recreation easement also grants the public "the right, subject to rules and regulations as may be imposed and published by (the SFPUC), to enter the premises for recreational purposes."

Both easements contain numerous restrictions on use or modifications of the property and require park approval for certain actions (appendixes I and J). 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. Golden Gate National Recreation Area and the San Francisco Public Utilities Commission entered into a joint communications procedures agreement in 1997 for routine work and special projects within the San Francisco Peninsula Watershed.

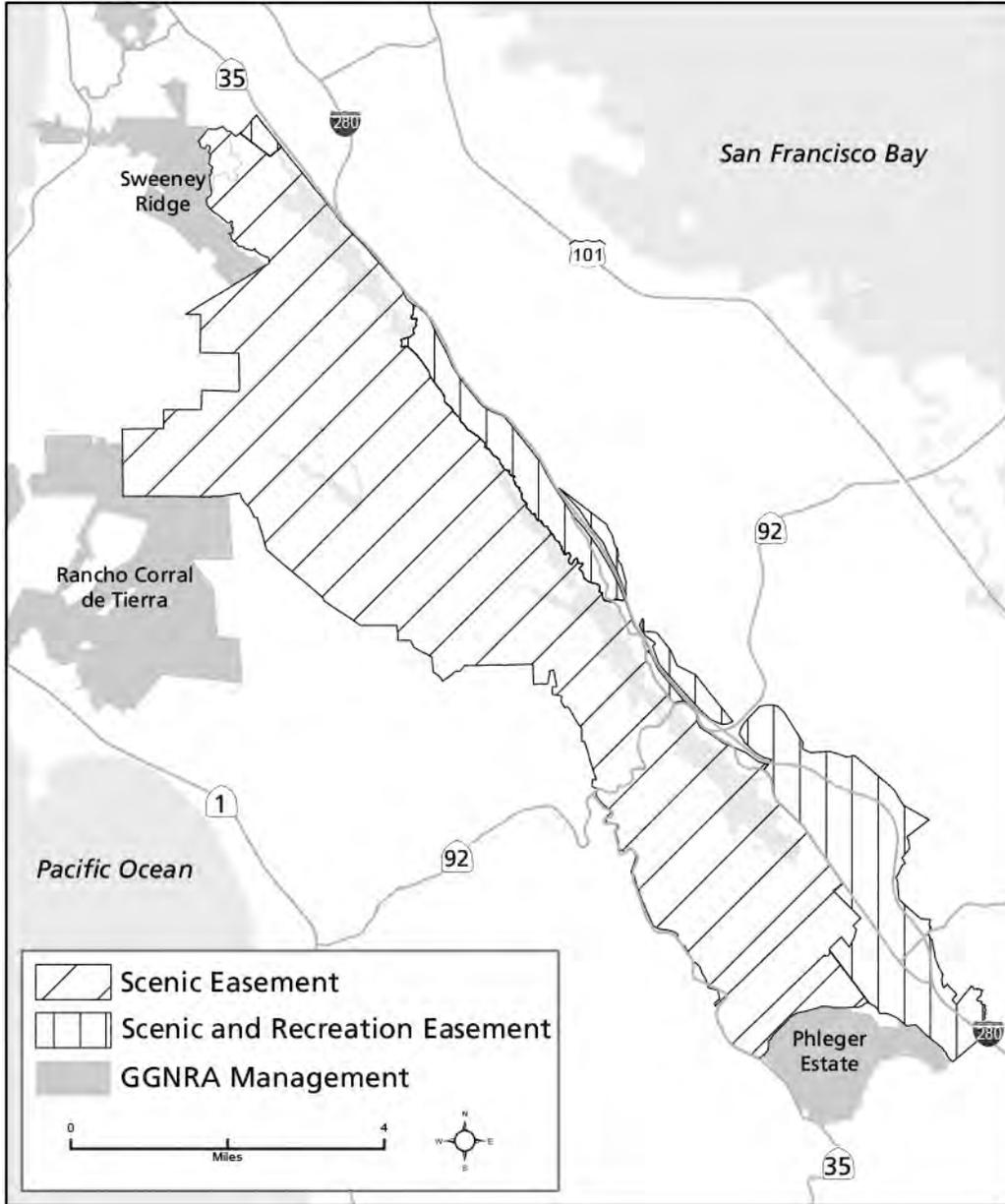


FIGURE 1. SAN FRANCISCO PENINSULA WATERSHED EASEMENTS

## TIDELANDS AND SUBMERGED LANDS LEASE

Golden Gate National Recreation Area leases tidelands and submerged lands from the California State Lands Commission. These include all offshore areas adjacent to park lands in Marin and San Francisco counties west of the Golden Gate. The current term of the lease began June 1, 2009, and extends through May 31, 2058. Under the conditions of the lease, public access to and use of the existing beaches and strands shall remain open and available for public use subject to reasonable regulation. The recreation area is required to notify the state within 10 days in the event that the public is charged any direct or indirect fee for the use and enjoyment of the leased areas. The lease also specifies that hunting on leased lands is prohibited.

The primary management purposes are to

- § enhance public safety, use, and enjoyment of the subject lands and waters
- § protect and conserve the environment and any cultural and historical resources that may be present
- § preserve the subject lands in their natural state and protect them from development and uses that would destroy their scenic beauty and natural character
- § provide for recreation and educational opportunities
- § manage the subject lands consistent with the administration and management of Golden Gate National Recreation Area, so long as it is not inconsistent with California state law

## LIGHTHOUSES

In September 2006, the U.S. Coast Guard (USCG) notified the park of their plan to

excess and transfer five lighthouses and navigational aids to the Department of the Interior in compliance with the park's enabling legislation (Public Law 92 as amended under Public Law 96-607) and the 2000 National Historic Lighthouse Preservation Act. The properties include Point Bonita Lighthouse, Point Diablo, and Lime Point in Marin County; the Montara Lighthouse in San Mateo County; and the Alcatraz Island Lighthouse.

Following transfer to the park, the U.S. Coast Guard will continue to use the five sites as navigational aids under an NPS permit. The properties require substantial environmental cleanup and structural improvements to ensure public safety and visitor access in the future. The National Park Service and the U.S. Coast Guard are cooperating to complete due diligence reports including environmental testing and analysis, building condition assessments, and developing cost estimates to determine remediation and structural safety requirements.

The park anticipates additional planning for the long-term preservation and use of the five lighthouses and is seeking funding prior to transfer. At the time of this writing, the time frame and milestones for the property excess and transfer from the Coast Guard have not been established.

## OTHER EASEMENTS

Golden Gate National Recreation Area is required to recognize numerous title encumbrances, including easement rights for access, utilities, and other purposes. These publicly and privately held rights can affect park operations and resources. Park managers cooperate with easement holders to protect park resources and provide visitor access.

## PLANNING ISSUES

Just as citizens helped to establish Golden Gate National Recreation Area, citizens helped identify the needs and opportunities that will shape the future management of the park. In 2006, more than 4,000 copies of the first GMP newsletter were distributed through a mailing list and by park partners and at park visitor centers, popular park destinations, and park events. The newsletter asked people for their opinions on what they value and enjoy most about the park, their concerns and suggestions for management, their ideas for the future of the park, and for any other comments they wanted to provide to the planning team. The park held six public open house events in April 2006 to gather additional input from the public. A scoping roundtable was attended by representatives of many local and regional jurisdictions, resource and regulatory agencies, and other public land managers. Discussion groups with environmental, historic, and community organizations and meetings with American Indian tribal representatives, park partners, and park founders were held to gather information. In addition, meetings with NPS staff were conducted as part of the scoping process.

The information gathered during these activities was used to develop and clarify the important planning issues. Exploring different ways to address the issues was the basis for developing the range of management concepts and creation of the different management alternatives.

### ISSUES TO BE ADDRESSED

#### Visitor Access: Transportation and Trails

The current system of access to the park and monument do not fully address the needs of

some park visitors or adequately protect park resources. The reliance on cars and the lack of affordable transit options excludes some visitors, adds to roadway congestion, and increases emissions, resulting in a greater carbon footprint. This also creates problems with informal parking, public safety, visitor experience, and access for park neighbors. In some places, the condition of trails and their lack of connectivity to desired destinations do not meet all visitor and resource protection needs. Connections from communities within the region to the park are not adequate. There is a need for improved, safe trail connections among park sites and communities to provide seamless, safe, direct access alternatives. Visitor information and directional signs are inadequate, which leads to visitor frustration and underutilization of park resources. The general management addresses visitor access to and within the park to improve visitor experience, improve connections among park sites and the larger community, and protect resources.

#### Recreation Opportunities and Conflicts

Park use has increased in recent years, especially by traditional recreational users such as hikers, bicyclists, and equestrians. New activities such as boardsailing and mountain biking have developed and evolved since the 1980 General Management Plan was completed. There is interest in expanding current uses, including bicycling, hang gliding, dog walking, individual and group camping, group day use/picnicking, and hiking, and introducing new and different types of recreation. Requests to use the park and monument as venues for special events continue to increase. Conflicts between users—primarily between

equestrians, mountain bikers, dog walkers, and hikers—have increased as overall park use has increased. There is concern about resource impacts associated with existing recreation activities, including habitat fragmentation, eroding trails, wildlife disturbance and harassment, litter, vandalism and graffiti, and vegetation trampling. The general management plan addresses recreational opportunities by identifying the types of use, desired experiences, and support facilities that are appropriate for different park areas and sites in response to visitor demand and resource sensitivity.

### Sustainable Natural Resource Preservation and Management

Golden Gate National Recreation Area is rich in natural resources: it comprises 19 types of ecosystems in numerous distinct watersheds and is home to rare, threatened, and endangered plant and animal species. The park is incorporated into the UNESCO Golden Gate Biosphere Reserve, designated by UNESCO's Man and the Biosphere Programme—a program that provides a global network of sites representing the world's major ecosystem types. Historically, the lands within the park have been used for ranching, dairy farming, and military activities. This use has resulted in the modification of many of the area's natural ecosystems. Fire suppression and other management activities have also influenced natural ecosystems. Invasive plants from adjacent urban communities have taken root within the park.

The general management plan addresses how the park can preserve fundamental natural resources, as the fragility of those resources becomes better understood at the same time that visitation is increasing. The plan provides direction for preserving and managing fundamental natural resources of the park in a sustainable manner and provides direction for encouraging ongoing public stewardship.

Ocean resources, including natural marine resources and submerged cultural resources, are at risk due to a variety of threats. The effects of global climate change, sea level rise, changes in storm patterns, and ocean acidification, compounds many of these threats. Natural sediment transport, which affects shoreline and beach dynamics, is affected by activities outside park boundaries, including sand mining, dredging, dredge disposal, shoreline stabilization structures, and altered flow regimes. Overflights, boating, and other uses of marine habitats cause disturbance to marine species. Invasive nonnative species inhabit the park's ocean and estuarine waters, displacing native species. Recreational and commercial fisheries may impact nearshore fish populations and ecosystem dynamics. Water quality is threatened by pollution from runoff, landslides, shoreline development, sewage outfalls, vessel traffic, oil spills, and contaminants exposed from dredging. Potential wave and tidal energy developments may alter habitat and disrupt physical processes. Numerous aquatic environments are in need of restoration. Currently, the park has limited enforcement capacity for marine and estuarine resource protection.

Alcatraz Island is a unique part of Golden Gate National Recreation Area. Accounts of early explorers describe the island as having little plant life and being covered with bird guano. Construction of fortifications during the Civil War and later the federal penitentiary changed the landscape substantially, sharpening the incline of shoreline cliffs and flattening the slopes. Most of the existing plants on Alcatraz Island are a result of prison gardens or other means of importation, including soils brought from Angel Island during fort construction. Since the closure of the prison, many bird species have made the island home. Waterbirds and terrestrial landbirds (songbirds) have taken advantage of planted and unmanaged vegetation on the island. The seabirds and waterbirds are colonial nesting species that are highly susceptible to disturbance.

Coupled with limited preservation of historic landscape features, the extent of seabird habitat has grown sharply since 1972. The result is tension between habitat protection and visitor access to many of the island's historic points.

Muir Woods National Monument preserves one of the last remaining old-growth redwood forests in the Bay Area. From its inception, Muir Woods National Monument was designed to protect the “primeval character” of the redwood forests, and today, ecological integrity is a major driving force behind management of the monument. Surrounding Muir Woods National Monument are mostly protected lands, including other units of Golden Gate National Recreation Area and lands managed by California State Parks (Mount Tamalpais State Park) and the Marin Municipal Water District.

Muir Woods National Monument is entirely within the watershed of Redwood Creek, which originates on Mount Tamalpais (over 2,400 feet in elevation), flows through the heart of the national monument, bisects Frank Valley, and discharges into the Pacific Ocean at Muir Beach, approximately 3 miles below Muir Woods National Monument. The Redwood Creek watershed—extending from Mount Tamalpais to Muir Beach—is a delicate ecosystem that includes the northern spotted owl, coho salmon, and steelhead trout, and demands utmost care and vigilance. The Civilian Conservation Corp (CCC) implemented projects to harden the banks of the creek to direct the flow of water away from redwood groves. The stream stabilization on Redwood Creek has impacted the natural functions of the creek.

### **Sustainable Cultural Resource Preservation and Management**

The park has a large collection of historic structures and archeological sites within a mosaic of cultural and natural landscapes.

The majority of these cultural resources are nationally significant; however, their condition varies. The identification of appropriate preservation treatments, including sustainable adaptive uses of these resources, poses a substantial challenge. Cultural resources and archeological sites are impacted in a variety of ways such as through weathering, increases in visitor use, erosion, vandalism, and deferred maintenance. There is a continued need for developing baseline documentation of historic structures, cultural landscapes, and archeological inventories throughout the park. The park continues to work to balance the preservation needs of the park's natural and cultural resources. Still, there is a need to identify priorities when such balance is not clear. The general management plan addresses how to preserve fundamental cultural resources where visitation is increasing with the understanding of the fragility and significance of those resources. The general management plan provides direction for preserving and managing fundamental cultural resources of the park in a sustainable manner and provides direction for encouraging ongoing public stewardship.

Golden Gate National Recreation Area houses its museum collections in numerous separate facilities throughout the park that function as visitor centers, interpretive exhibits, or dedicated storage areas. One of the largest storage areas is in a building managed by the Presidio Trust with no lease agreement in place. The facility that housed the park archeology lab was removed in 2010 to make way for the Presidio Parkway project. The park museum collections are in a vulnerable position due to temporary space and deteriorating structural conditions. The current conditions for museum collections in the park do not meet NPS standards for long-term preservation, protection, and use of museum collections. The park has been working to consolidate collections and improve existing conditions where possible. Staffing for the museum collections has not been stable, thus precluding reliable access

for researchers, the public, and park staff. Although planning has been underway, a suitable location for the park's museum collections has yet to be determined.

Alcatraz Island is a designated national historic landmark because of its national significance in the areas of military history and social history (penology: the study of incarceration). Although Alcatraz Island is a highly visible and popular site in San Francisco Bay, many of its buildings, archeological sites, and landscape features are deteriorating, and sections of its shoreline are eroding. The park lacks the funding and personnel to protect and preserve all of the island's historic resources. In addition, some conflict has arisen over management strategies for protecting the island's cultural and natural resources (e.g., protecting important bird nesting habitat), as preservation of nesting habitat can inhibit historic preservation. The general management plan provides direction for preserving and managing historic structures, archeological sites, cultural landscapes, and museum collections.

## Climate Change

Climate change has begun to affect both park resources and visitors. The effects are predicted to include changes in temperature, precipitation, evaporation rate, ocean and atmospheric chemistry, local weather patterns, and increases in storm intensities and sea levels. These effects will likely have direct implications for resource management and park operations and influence the way visitors experience the park. Sustaining and restoring park resources will require the National Park Service to address many challenges, including fiscal and ecological threats and threats to the integrity of cultural and natural resources. Proactive planning and management actions will allow the park to avoid, mitigate, adapt to, and interpret these effects.

The National Park Service recognizes that the major drivers of climate change are outside the control of the agency. However, climate change is a phenomenon whose impacts throughout the national park system cannot be discounted. The National Park Service has identified climate change as one of the major threats to natural park units and has developed a Climate Change Response Strategy (NPS 2010a) and Action Plan (NPS 2012a) that focus on science, adaptation, mitigation, and communication, and identify near-term priorities for the agency. Some climate change impacts are already occurring or are expected in Golden Gate National Recreation Area and Muir Woods National Monument in the time frame of this plan. Therefore, this general management plan provides guidance on how to assess, respond to, and interpret the impacts of global climate change on park resources and identifies objectives for reducing greenhouse gas emissions.

## Land Acquisition

The 1978 National Parks and Recreation Act (16 *United States Code* [USC] 1a-7) requires general management plans to address potential modifications to park boundaries. Current or potential changes in adjacent land uses could pose threats to the fundamental resources of the park and could limit the park's ability to protect the resources that support park purpose and significance.

The diversity of park lands presents challenges for land and boundary management. The park needs to strengthen its strategic approach to land acquisition and park boundary changes and management in coordination with agencies and owners of property within the park boundary. A reassessment of guidelines and priorities is needed.

Golden Gate National Recreation Area and Muir Woods National Monument are portions of a larger area of protected open space in the Bay Area. The natural and

cultural resources of the park would face a greater threat if not for the many other open space areas that contribute to the integrity of coastal ecosystems, scenic beauty, recreational opportunities, and preservation of historic resources. The general management plan addresses future land protection and boundary changes that support both preservation of the park's fundamental resources and regional conservation priorities.

### Reaching New Audiences

Visitation at many park sites does not reflect changing regional or state demographics. Some groups may not be aware of the park, feel a direct connection to it, or view the park as a recreational opportunity or a resource to be protected. Changing technology can also influence the park's relevancy to future generations. Reaching these audiences is essential to effective park management and to achieving civic engagement and community-based stewardship goals. The general management plan includes strategies to help engage new audiences.

### Operational Facilities

Park resources, visitor safety, and visitor experience have suffered because of the lack of adequate operational facilities in appropriate locations. Golden Gate National Recreation Area has expanded in size in recent years, especially to the south in San Mateo County; the current distribution of facilities is no longer effective or efficient for day-to-day operations. Park maintenance and public safety functions are scattered throughout the park and are often at sites and facilities that were not intended for such uses. Often, these functions operate out of makeshift facilities because they have been displaced by other park uses or outside forces, or have outgrown previous spaces. These operations have been forced to adapt to conditions that do not adequately meet

their space, size, function, mobility, and security requirements. The general management plan identifies a strategy and actions for placement of operational facilities.

### Scenic Beauty and Natural Character

The park's scenic beauty and natural character provide opportunities for visitors to experience dramatic settings. The park's varied landscapes are the stage for multi-sensory experiences that are a hallmark of the Bay Area. Preserving these important scenic resources and making them available to the public are primary reasons the park was established. The National Park Service needs to protect these resources from degradation that can result from modern intrusions, including new development on the surrounding lands and waters. The general management plan provides guidance in the preservation and enhancement of scenic resources.

### Regional Cooperation

Visitor experience and resource protection in the park are affected by a variety of outside influences. Watersheds, viewsheds, soundscapes, ecosystems, and trail and transportation systems all extend beyond park boundaries. Their management and preservation require cooperation with other adjacent public land managers, local jurisdictions, and private landowners. The park is in an urban/suburban setting, which places demands on park lands and resources (particularly by local public utilities). The park cannot successfully manage the natural and cultural resources and visitor experience by looking only within the park boundary. The general management plan provides guidance on improving communication, coordination, and participation with public and private stakeholders with the goal of protecting ecosystems, watersheds, viewsheds, and visitor opportunities that cross jurisdictional boundaries.

## National Park Service Identity

For a variety of reasons, the park does not have an easily recognized identity as part of the national park system. These reasons include the large number of points of entry with minimal or no identifying entry features; the lack of NPS staff presence in many locations; the close juxtaposition of city, county, and state lands with NPS lands; and the lack of clearly marked park boundaries. The general management plan provides guidance on improving and promoting the recognition of Golden Gate National Recreation Area and Muir Woods National Monument as national park system units and as areas where many visitors are first introduced to the concept and values of the national park system.

## Partnerships

Partners are fundamental to long-term sustainability of the park. They help the National Park Service manage natural and cultural resources, deliver public programs, reach new audiences, and remain relevant and inclusive. They also help the park innovate and build community support. The National Park Service cannot fully accomplish parts of its mission without partners. Despite the many commonalities and objectives shared by the park staff and park partners, the current set of partners creates a diversity of goals and interests that may not be compatible with park goals. Partners' needs cannot always be accommodated in the park. The general management plan provides guidance on partnership development and management that enables NPS managers to make effective decisions and foster flexible, productive relationships that strengthen the purpose and mission of the park.

## American Indian Values

Since the late 1990s, the park staff has worked with American Indian groups,

including the Federated Indians of Graton Rancheria (the federally recognized tribe composed of park-associated Coast Miwoks and Southern Pomo), the many Ohlone tribes seeking federal recognition, and Ohlone individuals who partake in the stewardship of Ohlone heritage. Park lands in Marin County are the aboriginal homelands of Coast Miwoks. Park lands in San Francisco and San Mateo counties are the aboriginal homelands of the Ohlones. The park staff desires to build on the relationship and civic engagement with American Indians in three broad activity areas: (1) cultural resource management, (2) interpretation and education, and (3) revitalization of community and tradition. The general management plan provides guidance for integrating American Indian values with resource management and visitor experience.

## ISSUES THAT ARE NOT ADDRESSED

### Dog Management

This general management plan does not make decisions about dog walking in the park. The National Park Service is conducting a separate planning process to develop a dog management plan that will decide how best to manage dog walking. The dog management plan will identify a range of alternatives, evaluate them, solicit public review, and make decisions. The planning team for the general management plan worked in close coordination with the dog management planning team to ensure consistency between the plans. The National Park Service could make minor changes to the preferred alternative in the general management plan to make the plan consistent with the final dog management plan.

## RELATIONSHIP OF THIS PLAN TO OTHER PLANS

Golden Gate National Recreation Area and Muir Woods National Monument are 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 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.

### **NPS LAND USE PLANS FOR GOLDEN GATE NATIONAL RECREATION AREA SITES NOT INCLUDED IN THE GENERAL MANAGEMENT PLAN**

Many of the park sites within Golden Gate National Recreation Area have recent management plans and environmental documents that provide updated guidance in how the lands will be managed. The following NPS management plans and decisions were reviewed in preparation of the general management plan to ensure coordinated management of park lands. For

a complete understanding of how all lands and marine areas will be managed at Golden Gate National Recreation Area, the managers will be guided by this new general management plan in addition to the plans that cover park sites outside this planning process. Each of these plans followed a prescribed planning process that involved public participation in their development. Following are descriptions of the management plans that, together with this plan, provide guidance for managing the park.

### **Point Reyes National Seashore and Golden Gate National Recreation Area Northern District Draft General Management Plan**

The current guiding document for Point Reyes National Seashore and Golden Gate National Recreation Area is the 1980 *Golden Gate National Recreation Area / Point Reyes National Seashore General Management Plan* and its subsequent amendments. Since the 1980 plan was approved, Point Reyes National Seashore has managed the lands of the Northern District of Golden Gate National Recreation Area from the Bolinas-Fairfax Road northward. The 1980 General Management Plan is being updated through the GMP/EIS planning process for Point Reyes National Seashore and the Northern District of Golden Gate National Recreation Area. The staff at Golden Gate National Recreation Area participated in the planning process for Golden Gate National Recreation Area Northern District and worked to ensure consistency between the plans.

## Fort Baker Plan and Final Environmental Impact Statement (2000)

In 1995, the remaining military land at Fort Baker was determined to be excess to the needs of the military by the Department of Defense (DoD) Base Realignment and Closure Committee. As a requirement of that determination, the land was transferred to the National Park Service, consistent with Public Law 92-589. The Fort Baker site includes a historic district listed in the National Register of Historic Places containing 45 contributing features (including post-Civil War-era coastal fortifications), a marina and waterfront area at Horseshoe Cove, and important open space and scenic and natural areas including habitat for the federally listed endangered mission blue butterfly. The purpose of the 2000 environmental impact statement was to identify the following:

- § the program and types of uses that would be accommodated in historic buildings and generate adequate revenue for building rehabilitation and preservation
- § improvements to facilitate public uses, including new construction and removal of buildings, landscape treatments, trails, parking, circulation, and locations and patterns of use
- § waterfront improvements
- § opportunities for habitat restoration
- § an approach to the protection, rehabilitation, and maintenance of historic and natural resources

The highlights of the plan included development of a conference and retreat center, improvements to the Bay Area Discovery Museum, and retention of the USCG Golden Gate Station. The plan provided guidance for restoration of the historic parade ground, use of the historic boat shop as a public center; improvements

to the marina; restoration of the beach; protection of mission blue butterfly habitat; and preservation of fortifications, batteries, and historic landscapes. Implementation of this plan contributes to the diversity of recreational opportunities provided at Golden Gate National Recreation Area and preserves military structures and landscapes that reflect the military history of the site. Actions in the GMP alternatives are consistent with the *Fort Baker Plan and Final Environmental Impact Statement*.

## Fort Mason Center Long-term Lease Environmental Assessment (2004)

Fort Mason is part of the San Francisco Port of Embarkation National Historic Landmark District, historically serving as a major point of embarkation for U.S. troops. In 1972, the U.S. Army transferred responsibility for its maintenance, restoration, and use of the long-time military base to the National Park Service as part of Golden Gate National Recreation Area. In 1975, a nonprofit group expressed an interest in moving to the lower part of Fort Mason, and the Fort Mason Foundation, a private nonprofit organization, was created by San Francisco civic and business leaders to negotiate with the National Park Service on behalf of the nonprofit community. In 2004, following an environmental assessment and public review process, the National Park Service entered into a long-term lease with the Fort Mason Center to continue its public programming and management of Lower Fort Mason and to invest in the capital improvements needed for historic building preservation. The long-term lease accommodates continued use of Building E by San Francisco Maritime National Historical Park. The alternatives in this general management plan are consistent with this environmental assessment and long-term lease.

## **Presidio General Management Plan Amendment and Environmental Impact Statement (1994)**

The transition of the Presidio of San Francisco from military post to the national park system began in 1972 when, in legislation creating Golden Gate National Recreation Area, Congress included a provision that the Presidio would become part of the national recreation area if the military ever declared the base excess to its needs. After the Presidio was designated for closure in 1989 by the Base Realignment and Closure Act, the U.S. Army transferred jurisdiction of the Presidio to the National Park Service in 1994. As part of the transition in July 1994, the National Park Service completed and issued a final general management plan amendment for the Presidio laying out a vision for its future use and management.

Once the general management plan amendment was created, difficult issues remained regarding how to fund implementation of the plan. The National Park Service recognized that implementing the amendment would require innovative approaches and unique authorities to manage those aspects of the amendment. The National Park Service also recognized that the costs associated with this unit were high and uncharacteristic for the National Park Service. In 1996, Congress established the Presidio Trust pursuant to the Presidio Trust Act for the purpose of preserving, enhancing, and maintaining the Presidio as a park, using revenues from its leasable assets to fund that effort. In response to competing

public policy goals, Congress gave the Presidio Trust the unique responsibility to reduce and eventually eliminate the costs of the Presidio to the federal government while retaining the Presidio within Golden Gate National Recreation Area.

The Presidio Trust assumed jurisdiction over 80% of the Presidio of San Francisco (referred to as Area B) on July 1, 1998, and the National Park Service retains jurisdiction over the coastal areas and Lobos Creek and dunes (referred to as Area A). The general management plan amendment initially guided the Presidio Trust's planning and decision making. In 2000, the trust decided to develop a long-term management plan that would set the parameters within which the trust would balance its preservation and financial responsibilities (figure 1).

The general management plan amendment guidance for Area A, managed by the National Park Service, provides for natural resource restoration, education, and outdoor recreation along the coastal areas of San Francisco Bay and the Pacific Ocean. Major sites within Area A include Crissy Field, Fort Point National Historic Site, Baker Beach, and Lobos Creek and dunes.

For Area A, the actions proposed in this general management plan are consistent with the amendment that covers management of the lands within the Presidio of San Francisco. The waters of the Pacific Ocean and San Francisco Bay that are adjacent to the Presidio have been zoned in the new general management plan.

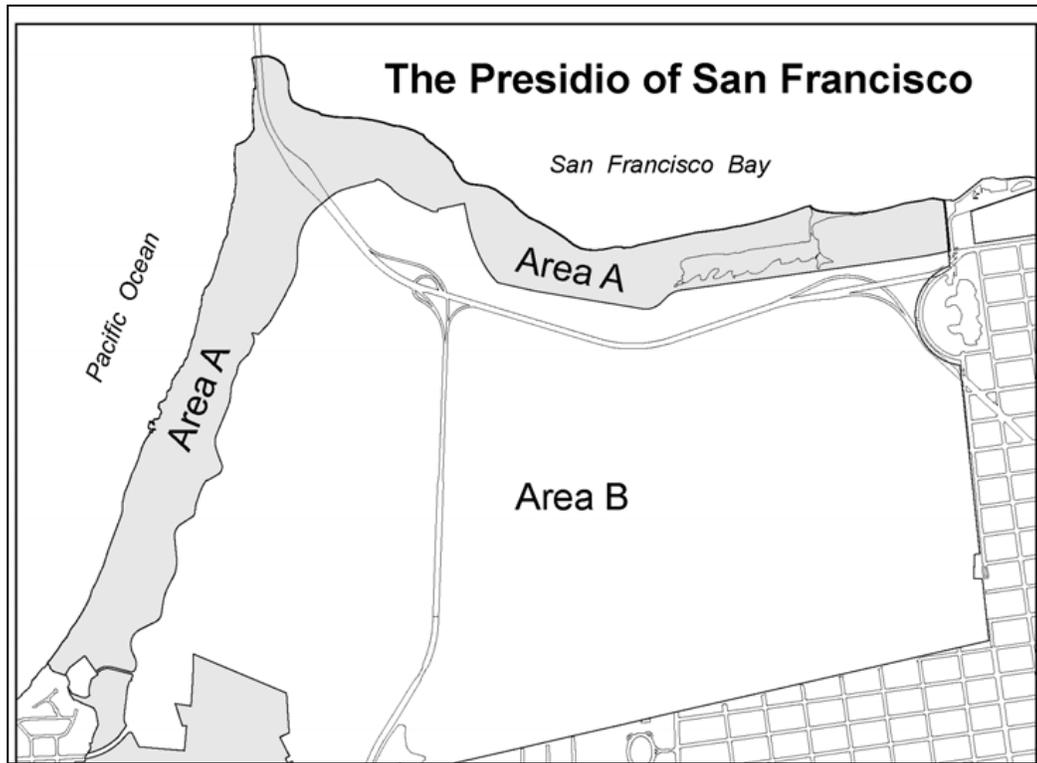


FIGURE 2. AREAS A AND B OF THE PRESIDIO OF SAN FRANCISCO

### **Sutro Historic District Comprehensive Design and Environmental Assessment (1993)**

The *Sutro Historic District Comprehensive Design and Environmental Assessment* provides management guidance for landscape rehabilitation of the Adolph Sutro Historic District. The plan retains the historic character while making changes to the property for new uses and interpretation for park visitors. The National Park Service continues to manage the Sutro Historic District structures, landscape, and archeological sites, including Cliff House, Sutro Baths, and Sutro Heights Park. The landscape adjacent to the historic district includes the Lands End Lookout Visitor Center, trails, and parking. The extended area is managed for natural and scenic values. The actions proposed in this general

management plan recognize that the natural attributes and biotic systems of the larger surrounding park landscape contribute to the historical significance of the historic district. The alternatives are consistent with the environmental assessment.

### **CURRENT PLANS FOR OTHER PUBLIC LANDS NOT MANAGED BY THE NATIONAL PARK SERVICE**

#### **Presidio Trust Management Plan: Land Use Policies for Area B of the Presidio of San Francisco (2002)**

The *Presidio Trust Management Plan* (PTMP) is an update of the 1994 General Management Plan Amendment for the portion of the Presidio transferred to the Presidio Trust jurisdiction in 1998. The act

directs the Presidio Trust to manage Area B in accordance with the park purposes identified in the enabling legislation for Golden Gate National Recreation Area and the general objectives of the amendment. The latter were defined in Trust Board Resolution 99-11 (General Objectives). The *Presidio Trust Management Plan* provides an updated land use policy frame work for Area B of the Presidio wholly consistent with the amendment's general objectives, and which retains and builds on the amendment's policies and principles. Since the time the amendment was adopted and the Presidio Trust Act was enacted, key land use and financial conditions have changed. The *Presidio Trust Management Plan* took into account the new Trust Act requirements, conditions that had changed since the amendment was adopted, new policies and management approaches, and provides a level of flexibility not contemplated in the amendment. The *Presidio Trust Management Plan* describes the planning principles that help the Presidio Trust realize its goals of preserving and enhancing park resources, bringing people to the park, and making the lands under the trust jurisdiction financially self-sufficient. The *Presidio Trust Management Plan* sets forth land-use preferences and development guidelines for each of its seven planning districts. The *Presidio Trust Management Plan* is the plan that the Presidio Trust looks to in making management and implementation decisions in Area B that are consistent with the purposes of Golden Gate National Recreation Area enabling legislation and the general objectives of the amendment.

The actions proposed in this general management plan are consistent with the *Presidio Trust Management Plan*.

## OTHER NATIONAL PARK SERVICE PLANS

In addition to the overall vision and management plans previously described, the National Park Service develops detailed

project and program implementation plans in order to apply the goals and objectives of those broader plans. The implementation plans cover topics such as natural and cultural resource restoration and preservation, visitor use, transportation, and park operations. An overall description of each plan or program in the following list, along with its relationship to this general management plan, is provided in appendix B.

### NPS Trails and Transportation Plans and Programs

- § *Marin Headlands and Fort Baker Transportation Infrastructure and Management Plan Final Environmental Impact Statement* (2009)
- § Trails Forever Program, in partnership with the Golden Gate National Parks Conservancy

### NPS Restoration Plans

- § *Alcatraz Island Historic Preservation and Safety Construction Program Environmental Impact Statement* (2001)
- § *Easkoot Creek Restoration at Stinson Beach Environmental Assessment* (2009)
- § *Lower Redwood Creek Floodplain and Salmonid Habitat Restoration, Banducci Site Environmental Assessment* (2003)
- § *Mori Point Restoration and Trail Plan Environmental Assessment* (2006)
- § *Ocean Park Stewardship Action Plan, National Park Service* (2007–2008)
- § *Pacific Ocean Park Strategic Plan, National Park Service* (2006)
- § *Redwood Creek Watershed: Vision for the Future* (2003)

- § *Wetland and Creek Restoration at Big Lagoon, Muir Beach Final Environmental Impact Statement (2008)*

### **NPS Program Implementation Plans**

- § *Alcatraz Development Concept Plan and Environmental Assessment (1993)*
- § *Bay Area Museum Resource Center Plan (2010)*
- § *Golden Gate National Recreation Area Climate Change Action Plan (2008), NPS Climate Friendly Parks Program (ongoing), NPS Climate Change Response Strategy (2010), NPS Climate Change Action Plan (2012), NPS Green Parks Plan (2012)*
- § *Comprehensive Interpretive Plan for the Golden Gate National Parks (2011)*
- § *Fire Management Plan / Final Environmental Impact Statement for Golden Gate National Recreation Area (2006)*
- § *Golden Gate National Recreation Area – Park Asset Management Plan (2007)*
- § *Marin Equestrian Stables Plan and Environmental Assessment (2011)*

### **NPS Park Partner Plans**

- § *Headlands Center for the Arts Master Plan (1990)*
- § *Headlands Institute Campus Improvement and Expansion Plan \ Environmental Assessment (2009)*
- § *Marine Mammal Center Site and Facilities Improvements Project Environmental Assessment (2004)*
- § *Slide Ranch Master Plan and Environmental Assessment (1996)*

### **NPS Plans in the Process of Being Developed**

- § *Dog Management Plan / Environmental Impact Statement for Golden Gate National Recreation Area (draft)*
- § *Golden Gate National Recreation Area – Long Range Transportation Plan (2010)*
- § *Alcatraz Ferry Embarkation Environmental Impact Statement (draft)*

### **Other NPS General Management Plans**

- § *San Francisco Maritime National Historical Park General Management Plan—preparation of a new general management plan for the historical park is anticipated to begin shortly and will require close coordination with the staff at Golden Gate National Recreation Area (1997).*
- § *Point Reyes National Seashore General Management Plan—preparation of a new general management plan is underway. This plan addresses lands that are part of Golden Gate National Recreation Area that are administered by Point Reyes National Seashore (draft).*

### **OTHER FEDERAL PLANS**

- § *National Oceanic and Atmospheric Administration (NOAA)—Joint Management Plan for Cordell Bank, Gulf of the Farallones, and Monterey Bay National Marine Sanctuaries (2008)*
- § *Natural Resource Trustee Agencies—Cosco Busan Oil Spill Final Damage Assessment and Restoration Plan (2012)*

**STATE AND REGIONAL PLANS**

- § *Association of San Francisco Bay Area Governments: Bay Trail Plan*
- § *California Department of Parks and Recreation—Angel Island State Park Resource Management Plan / General Development Plan / Environmental Impact Report*
- § *California Department of Parks and Recreation— California Outdoor Recreation Plan*
- § *California Department of Parks and Recreation— Gray Whale Cove State Beach General Plan Amendment*
- § *California Department of Parks and Recreation—Pacifica State Beach General Plan*
- § *California Department of Parks and Recreation—Mount Tamalpais State Park General Plan*
- § *California Department of Transportation (Caltrans) District 4 Devil’s Slide Project*
- § *Coastal Conservancy—Completing the California Coastal Trail*
- § *Golden Lands, Golden Opportunity: Preserving Vital Bay Area Lands for all Californians (Greenbelt Alliance, Bay Area Open Space Council, Association of Bay Area Governments)*
- § *San Francisco Bay Plan*
- § *San Francisco Bay Area Seaport Plan*
- § *San Francisco Bay Area Water Transit Authority Final Program Environmental Impact Report: Expansion of Ferry Transit Service in the San Francisco Bay Area*
- § *South Access to the Golden Gate Bridge—Doyle Drive Final Environmental Impact Statement / Report*

- § *Statewide Historic Preservation Plan for California, 2006–2010*

**COUNTY AND LOCAL PLANS**

- § *Central Marin Ferry Connection Project*
- § *Fitzgerald Marine Reserve Master Plan*
- § *Huddart and Wunderlich Parks Master Plan*
- § *Marin County Bicycle and Pedestrian Master Plan*
- § *Marin County Local Coastal Program Unit 1*
- § *Marin Countywide Plan, as amended*
- § *Midcoast Action Plan for Parks and Recreation: Planning Team Report*
- § *City of Pacifica Pedro Point Headlands Coastal Trail Connection*
- § *PG&E Jefferson-Martin 230kV Transmission Line Proposed Settlement and Environmental Assessment*
- § *Regional Bicycle Plan for the San Francisco Bay Area*
- § *San Francisco General Plan*
- § *San Francisco Public Utilities Commission – Peninsula Watershed Management Plan (2004)*
- § *San Mateo County Comprehensive Bicycle Route Plan*
- § *San Mateo County Trails Plan*
- § *San Mateo Countywide Transportation 2010 Plan*
- § *San Pedro Valley County Park*
- § *Sausalito General Plan*
- § *Extension of San Francisco Municipal Railway’s Historic Streetcar Environmental Impact Statement*

## RELATED LAWS AND NATIONAL PARK SERVICE POLICIES

Many park management directives are specified in laws and policies guiding the National Park Service and are not subject to alternative approaches. For example, there are laws and policies about managing environmental quality (such as the Clean Air Act, the Endangered Species Act, Executive Order 13112, “Invasive Species,” and Executive Order 11990, “Protection of Wetlands”); laws governing the preservation of cultural resources (such as the National Historic Preservation Act and the Native American Graves Protection and Repatriation Act); and laws about providing public services (such as the Americans with Disabilities Act). In other words, a general management plan is not needed to decide that it is appropriate to protect endangered species, control nonnative species, protect historic and archeological sites, conserve artifacts, or provide access for disabled persons. Laws and policies have already addressed those and many other issues. Although attaining some conditions set forth in these laws and policies may have been temporarily deferred in the park because of funding or staffing limitations, the National Park Service will continue to strive to implement these requirements with or without a new general management plan. However, the general management plan provides an opportunity to develop more detailed interpretations needed in order to apply them in specific situations, and this is best decided during the development of the general management plan or during other planning processes.

There are other laws and executive orders that are applicable solely or primarily to units of the national park system. These include the 1916 Organic Act that created the National Park Service; the General Authorities Act of 1970; the National Parks and Recreation Act of 1978 (also called the Redwoods National Park Expansion Act),

relating to the management of the national park system; and the National Parks Omnibus Management Act (1998).

The National Park Service Organic Act (16 USC 1) provides the fundamental management direction for all units of the national park system:

*[P]romote and regulate the use of the Federal areas known as national parks, monuments, and reservations . . . by such means and measure as conform to the fundamental purpose of 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.*

The National Park System General Authorities Act (16 USC 1a-1 et seq.) affirms that while all national park system units remain “distinct in character,” they are “united through their interrelated purposes and resources into one national park system as cumulative expressions of a single national heritage.” The act makes it clear that the National Park Service Organic Act and other protective mandates apply equally to all units of the system. Further, amendments state that NPS management of park units should not “derogate[e] . . . the purposes and values for which these various areas have been established.”

The purpose of a general management plan / environmental impact statement is to set forth a basic management philosophy for a park and to provide a frame work for future decision making. The National Parks and Recreation Act of 1978 (Public Law 95-625)

requires the National Park Service to prepare and revise a general management plan / environmental impact statement for each park that would include: (1) measures to preserve park resources, (2) indications of the types and general intensities of development associated with public enjoyment and use of the park, (3) identification of visitor carrying capacities, and (4) indications of potential external boundary modifications. NPS Director's Order 2: *Park Planning* requires a general management plan / environmental impact statement to clearly describe the specific resource conditions and visitor experience to be achieved and identify the kinds of use, management, and development that would be appropriate in achieving and maintaining those conditions.

The National Park Service also has established policies for all units under its stewardship. These are identified and explained in a guidance manual entitled *NPS Management Policies 2006*. The action alternatives considered in this document (alternatives 1, 2, and 3), as well as the no-action alternative (current management), incorporate and comply with the provisions of these mandates and policies. Appendix C details key NPS policies and their desired conditions and strategies.

Section 1.4 of *NPS Management Policies 2006* requires analysis of potential effects to determine whether alternatives would impair park resources and values.

The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities

Act, as amended, begins with a mandate to conserve resources and values. National Park Service managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on resources and values. Although Congress has given the National Park Service the management discretion to allow certain impacts within a unit, that discretion is limited by the statutory requirement that the National Park Service must leave resources and values unimpaired unless a particular law directly and specifically provides otherwise.

The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of resources and values, including the opportunities that otherwise would be present for the enjoyment of those resources or values (*NPS Management Policies 2006* section 1.4.5). An impact would be more likely to constitute impairment if it (1) results in a moderate or major adverse effect on a resource or value whose conservation is necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the area, (2) is key to the natural or cultural integrity of the area or to opportunities for enjoyment of the area, or (3) is identified as a goal in the area's general management plan or other relevant NPS planning documents.

A written determination on nonimpairment will ultimately be prepared for the selected alternative and appended to the Record of Decision for the *Final General Management Plan / Environmental Impact Statement*.







## INTRODUCTION

The development of the alternatives for this general management plan began with publication of newsletter 1 (spring 2006) and public open house events that asked people what they valued and enjoyed most about Golden Gate National Recreation Area and Muir Woods National Monument. Additionally, the public was asked for their concerns and suggestions about the future management of the park. The public response was analyzed and reported in newsletter 2 (spring 2007). During this time, the planning team met with park staff, park partners, and other stakeholders to collect information on existing conditions and related issues.

Throughout the scoping process, the planning team collected and analyzed information about the park's natural and cultural resources and about visitor characteristics and use patterns. Guided by public input and the results of the analysis, the planning team defined the issues that the new general management plan would address. Next, the planning team explored different ways to address the issues. This exploration formed a set of concepts that would be used to develop the alternatives for the general management plan. The planning team developed four management concepts, each exploring a different possible future for Golden Gate National Recreation Area and Muir Woods National Monument. These management concepts were presented to the public in newsletter 3 (fall 2007). The management concepts were as follows:

- § Concept 1: Connecting People with the Parks
- § Concept 2: Preserving and Enjoying Coastal Ecosystems
- § Concept 3: Focusing on National Treasures
- § Concept 4: Collaborating Regionally

The planning team used these management concepts to guide development of the preliminary alternatives for the general management plan. Each preliminary alternative consisted of two main components. First, there was a management concept that created a general theme for the overall management of the park. Second, management zones were created that identified a range of potential desired conditions for natural and cultural resources, opportunities for visitor experiences, and general levels of development and visitor use and services based on the purpose and significance of the park. These management zones were then applied to the park in different ways to reflect the concept of each alternative.

Eight management zones were developed for this general management plan. The desired conditions are different in each management zone and reflect the focus of that particular zone. Guided by each management concept, zones were applied to the park in different configurations, forming the basis of the preliminary alternatives. The preliminary alternative maps reflected the intent of each concept and described how the zones would be allocated.

As the preliminary alternatives were being developed, it became apparent to the planning team that the fourth management concept, "Collaborating Regionally," was a philosophy that applied to the overall management of the park and was applicable in all of the alternatives, rather than a specific park vision used to guide development of one alternative. Therefore, the park managers adopted the "Collaborating Regionally" concept as a *guiding principle* for managing the park and did not further develop a fourth preliminary alternative.

Once developed, the three preliminary alternatives were described in detail in

newsletter 4 (spring 2008) and shared with the public. The planning team hosted local workshops to explain and test the alternatives with the public. Using the public comments, the planning team worked to strengthen the alternatives and identify the NPS preferred alternative. With the alternatives approved by park managers, the planning team began preparation of this *Final General Management Plan / Environmental Impact Statement*.

This general management plan presents the alternatives with their zone maps and supporting narratives, including the NPS preferred alternative, for future management of Golden Gate National Recreation Area and Muir Woods National Monument. Also included is a description of current

conditions, representing the management direction and trends that are based on the 1980 General Management Plan and its subsequent amendments. The description of the current conditions serves as a basis of comparison with the three alternatives and is referred to as the “No-action Alternative.” The other alternatives are referred to as “Action Alternatives.”

The next section presents the three management concepts that were used to guide development of the alternatives for the general management plan. This is followed by an explanation of how the NPS preferred alternatives were identified. Then the reader is presented with detailed descriptions of the eight management zones.

## CONCEPTS FOR FUTURE MANAGEMENT

The legislation that established the parks, the histories of the parks, and the issues and needs that were identified early in the planning process all helped to shape four general concepts for future management of the parks. While four concepts were developed, only three of them were carried forward to guide the development of distinct alternatives as the fourth applied to all alternatives. The following three concepts, then, formed the basis for developing potential management alternatives.

### CONCEPT 1: CONNECTING PEOPLE WITH THE PARKS (EVOLVED INTO ALTERNATIVE 1)

The emphasis of this concept is to reach out and engage the community and other visitors in the enjoyment, understanding, and stewardship of park resources and values. Park management would focus on ways to attract and welcome visitors; connect people with resources; and promote understanding, enjoyment, preservation, and health—all as ways to reinvigorate the human spirit. Visitor opportunities would be relevant to diverse populations now and in the future.

#### Rationale

This concept emphasizes park management's commitment to the founding idea of "parks to the people" and the park's fundamental purpose of bringing national park experiences to a large and diverse urban population. Improving connections between the park and visitors is fundamental to achieving the park's purpose and to maintaining the public's continued interest and support.

#### Goals

##### *Visitor Experience*

- § Actively seek opportunities to respond to the needs and interests of the diversity of visitors.
- § Encourage visitors to engage in a wide range of opportunities and experiences in a diversity of settings.
- § Enhance outreach and access to and within the park and monument and make them welcoming.
- § Foster the visitor's deep personal connection to the park and discovery of the values and enjoyment of the natural environment.
- § Encourage hands-on stewardship through visitor opportunities that promote personal health and responsibility.

##### *Cultural Resources*

- § Maximize adaptive reuse, rehabilitation, stabilization, and interpretation of cultural resources (structures, landscapes, archeological sites, ethnographic resources, and museum collections) to support visitor enjoyment, understanding, and community connections.
- § Work with the public, park partners, local communities, historical organizations, and regional collaborators to steward, preserve, and protect cultural resources.
- § Preserve and protect cultural resources so that visitors can connect with and appreciate these resources and their stories.

### ***Natural Resources***

- § Maintain the integrity and diversity of natural resources and systems and mitigate the effects of climate change and urban pressures.
- § Enhance the public's access to natural resources to promote visitor understanding and appreciation.
- § Integrate natural resource preservation and concepts with visitor stewardship opportunities to deepen visitor understanding.
- § Increase visitor understanding, awareness, and support for park resources through education and interpretive opportunities that include messages about the sensitivity of park resources, park regulations, and appropriate visitor behavior.

### **CONCEPT 2: PRESERVING AND ENJOYING COASTAL ECOSYSTEMS (EVOLVED INTO ALTERNATIVE 2)**

The emphasis of this concept 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. Facilities and other built infrastructure could be removed to reconnect fragmented habitats and achieve other ecosystem goals.

### **Rationale**

The concept creates a vision for intentionally connecting resources and systems to form contiguous habitat from the ocean to the coastal hills. The more connected the water and land base, the

better the ability for ecosystems to adjust and adapt, thus increasing their resiliency to urban pressures and climate change. This concept also responds to the public's strong interest in having more natural wildlands in proximity to the urban communities of the San Francisco Bay Area.

### **Goals**

#### ***Visitor Experience***

- § Connect visitors with resources and the park through expanded and diverse science and stewardship programs that are focused on preservation and restoration of coastal and marine resources and address the implications of climate change.
- § Provide greater opportunities for visitors to explore wild areas and immerse themselves in nature.
- § Manage low-impact visitor use that enhances the qualities of solitude, quiet, and naturalness in sensitive natural resource areas and accommodate active recreational pursuits in other areas.
- § Increase visitor understanding, awareness, and support for coastal resources through participation in narratives and programs about human interaction with and dependency on natural resources.

#### ***Cultural Resources***

- § Incorporate the history and collections related to natural resources to raise awareness of the ongoing efforts of the United States to conserve marine ecosystems.
- § In park interpretation and education programs, emphasize sites and the history connected to coastal resources, including shipwrecks, archeological sites, agricultural lands

and uses, coastal defense, and lighthouses so visitors can connect with those resources.

- § Maximize adaptive reuse and rehabilitation of cultural resources to support visitor enjoyment, understanding, and community connections.
- § Work with interested groups and populations to preserve and protect cultural resources.
- § Preserve and protect cultural resources so that visitors can connect with and appreciate these resources.

### *Natural Resources*

- § 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.
- § 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.

### **CONCEPT 3: FOCUSING ON NATIONAL TREASURES (EVOLVED INTO ALTERNATIVE 3)**

The emphasis of this concept is to focus on the park's nationally important natural and cultural resources. The fundamental resources of each showcased site would continue to be managed at the highest level of preservation to protect the resources in perpetuity and to promote appreciation, understanding, and enjoyment of those

resources. Visitors would have the opportunity to explore the wide variety of experiences that are associated with many different types of national parks—all in this park. All other resources would be managed to complement nationally significant resources and associated visitor experience.

### **Rationale**

The concept highlights the park's variety of nationally significant resources. By distinguishing the nationally significant resources and promoting the NPS identity, the objective of bringing exemplary national park experiences to an urban population would be met. The concept would also allow the National Park Service to focus management of park resources, visitor experience, and partnerships, giving priority to the most significant sites.

### **Goals**

#### *Visitor Experience*

- § Provide visitors with opportunities to explore, learn, and enjoy the park's unique resources and history.
- § Allow the park's distinctive resources and associated narratives to shape recreational opportunities.
- § Emphasize active public participation in stewardship programs at the showcased sites.
- § Provide visitors with opportunities for understanding and enjoying the national park experience.

#### *Cultural Resources*

- § Emphasize the fundamental resources that contribute to the national significance of the park, including national historic landmarks. Manage all other resources to complement significant resources and visitor experience.

- § Tie the associated cultural resources, museum collections, and histories to the showcased sites.
- § Preserve and protect cultural resources to highlight the interpretive and educational values and provide, wherever possible, direct contact with the resources.

***Natural Resources***

- § Emphasize the preservation of fundamental natural resources that contribute to the significance of each

park unit. Manage all other resources to complement the distinctive resources and experiences.

- § Protect or restore the integrity of fundamental natural resources and processes that support the significance of each park unit.
- § Manage distinctive natural resources to ensure their ecological integrity while providing opportunities to engage visitors in hands-on stewardship and exploration.

## ACTIONS AND ALTERNATIVES CONSIDERED BUT DISMISSED FROM FURTHER CONSIDERATION

During the planning process for this general management plan, five alternative concepts were developed:

1. Connecting People with the Parks
2. Preserving and Enjoying Coastal Ecosystems
3. Focusing on National Treasures
4. Mosaic of National Park Experiences
5. Collaborating Regionally

A number of other concepts were developed in early brainstorming sessions: (1) Golden Gate National Recreation Area is a Crown Jewel, (2) A Park for the Next Century, (3) The Park as an Experiment / Living Laboratory, (4) A Center of Hands-On Learning and Action, (5) Healthy People / Healthy Parks, and (6) Sustainability in Action. Each of these concepts eventually evolved into ideas built into the remaining concepts, became guiding principles, or were recognized as NPS policy; therefore, they were not retained as individual alternative concepts.

As the planning team developed the five concepts into alternatives, two of the early concepts were dismissed from further consideration— Mosaic of National Park Experiences and Collaborating Regionally.

### MOSAIC OF NATIONAL PARK EXPERIENCES

“Mosaic of National Park Experiences” envisioned Golden Gate National Recreation Area and Muir Woods as providing visitors with opportunities to explore different types of national parks within the park. Park areas would be designated to promote distinct types of

national park settings and visitor experience based on the primary natural and cultural resources and key interpretive themes. For example, one area of the park would be managed as a marine preserve, another park area managed as a national seashore, and one as a national historical park. Visitors would have the opportunity to explore the wide variety of national park experiences at one park. However, the planning team determined that this concept had more utility as a marketing strategy, rather than as a management concept. In addition, this alternative duplicated several elements of alternatives. For example, parts of this concept are evident in “Focusing on National Treasures,” as it centers on the best that each area has to offer. Therefore, the Mosaic concept was dismissed from consideration and not brought forward to the public.

### COLLABORATING REGIONALLY

The second dismissed concept, “Collaborating Regionally,” was shared with the public in newsletter 3 (fall 2007). The emphasis of the concept was to manage the park and monument as the core of extensive public lands, connecting all parks and open spaces and other resources as a seamless whole, regardless of land ownership and boundaries. Collaboration among land managers would integrate NPS management of the park with that of surrounding natural and cultural resources and visitor opportunities. However, the planning team determined that this concept was applicable to all alternatives. The concept was eventually identified as an overall management philosophy applicable to all the alternatives. As a result, this alternative duplicated core elements of the other alternatives. The “Collaborating Regionally”

concept was therefore incorporated as a guiding principle for park management; integrated into all alternatives, and was not carried forward as a distinct land use alternative. Additionally, specific actions promoting collaboration among land managers are included within each alternative. A few of the many examples of these actions include trail connections to public lands and communities; multiagency visitor centers and maintenance facilities, collaborative ocean stewardship, and cooperative interpretation and planning for cultural resource preservation.

### **FULL RESTORATION OF BUILDINGS AND LANDSCAPES ON ALCATRAZ ISLAND**

An early version of “Alternative 3: Focusing on National Treasures,” originally contained

a high level of restoration of historic resources on Alcatraz Island. Given the economic infeasibility due to the high cost of fully restoring numerous buildings and features, and too great an environmental impact to breeding colonies of waterbirds, the planning team revised the proposal to be more financially achievable and sustainable. The result is a more focused approach, highlighting the buildings and landscape areas that contribute most to visitor experience and national historic landmark status, while minimizing impacts to wildlife. Costs were reduced by two-thirds through this approach. The revised alternative 3 includes restoration of only select parts of buildings and emphasizes stabilization and rehabilitation for other historic resources.

## IDENTIFICATION OF THE NATIONAL PARK SERVICE PREFERRED ALTERNATIVES

The NPS preferred alternatives, one for planning area sites within Golden Gate National Recreation Area and another for Alcatraz Island and Muir Woods National Monument, were developed following an analysis of the advantages of each preliminary alternative, including consideration of public comments received in response to newsletter 4. The National Park Service uses a process called Choosing by Advantages (CBA) that allows the agency to evaluate the relative advantages of the alternatives, determine the importance of those advantages based on park purpose and related public interest, and assess whether those advantages are worth their associated costs.

The topics that the planning team used to evaluate the relative advantages among the alternatives were as follows:

- § Strengthen the integrity and resiliency of coastal ecosystems.
- § Strengthen the integrity of resources that contribute to the National Register of Historic Places, national historic districts, and national historic landmarks.
- § Support a diversity of recreational opportunities and national park experiences.
- § Improve and promote public understanding of park resources, identity, and NPS values.
- § Provide visitors with safe and enjoyable access and circulation to and within the park.

The evaluation of the advantages and costs of each alternative were initially identified by park managers during a week-long workshop, with several follow-up meetings to further refine the NPS preferred

alternative. The CBA process indicated the following:

**Alternative 1** represents the greatest advantage for the park lands of Golden Gate National Recreation Area in Marin, San Francisco, and San Mateo counties.

**Alternative 3** represents the greatest advantage for Alcatraz Island and Muir Woods National Monument.

The CBA evaluation was an important step in identifying and refining the NPS preferred alternatives. Critical changes to the NPS preferred alternatives were made to incorporate ideas from the other alternatives where they were consistent with the management concept and provided additional advantages to the park. The process of shaping the preferred alternatives continued well after the CBA workshop through additional public comment and consultation with the staff at the NPS Pacific West Regional Office.

In September 2011, Golden Gate National Recreation Area released the *Draft General Management Plan / Environmental Impact Statement* for public review and comment. During the public comment period, 542 pieces of correspondence were received from agencies, organizations, and private individuals.

Overall, there was considerable support for the plan and the draft preferred alternative alternatives analyzed. The National Park Service has responded to all substantive comments raised by the public as part of finalizing the *General Management Plan / Environmental Impact Statement*; see part 12 of this document. In general, the planning team responded to comments by:

- § **modifying the alternatives as requested**
- § **developing and evaluating suggested alternatives**
- § **supplementing, improving, or modifying the analysis**

- § **making factual corrections**
- § **explaining why the comments do not warrant further agency response, citing sources, authorities, or reasons that support the agency's position**

## MANAGEMENT ZONES

Management zones are the heart of the alternatives developed for the general management plan. Each zone defines a set of desired conditions for natural and cultural resources, visitor experience, and general levels of development. These desired conditions are different in each management zone and reflect the overall focus of that particular zone. Eight management zones have been developed.

TABLE 1. MANAGEMENT ZONES

Resource	Diverse Opportunities Zone	Scenic Corridor Zone	Evolved Cultural Landscape Zone	Historic Immersion Zone	Interpretive Corridor	Natural Zone	Sensitive Resources Zone	Park Operations Zone
<b>SUMMARY</b>	<p>This management zone provides a range of natural and historic settings and facilities to welcome and support a variety of opportunities appropriate to the setting. Significant fundamental park resources would be preserved while different levels of visitor use would be accommodated. Visitors would have a wide range of educational, interpretive, and recreational opportunities to enjoy and appreciate the park's resources.</p> <p>Rare and exceptional natural resources, processes, systems, and values would be preserved and enhanced.</p>	<p>This management zone includes scenic trails, roads, and coastlines that provide sightseeing and related recreational opportunities. Resources could be modified in this zone and facilities would highlight and enhance the natural, cultural, and scenic values, as well as provide for a safe tour route.</p>	<p>This management zone would preserve significant historic, archeological, architectural, and landscape features while being adaptively reused for contemporary park and partner needs. Cultural resources, as well as the surrounding natural resources that are often integral to the historic site, would be preserved and interpreted. This zone could contribute to visitor enjoyment and exploration of the historic values and events while providing for other types of uses.</p>	<p>This management zone would preserve historic sites, structures, and landscapes that are evocative of their period of significance. Selected exteriors and designated portions of interior spaces would be managed to protect their historic values and attributes. Visitors would have opportunities to be immersed in the historic setting to explore history with direct contact to cultural resources, complemented by rich interpretation of past stories and events.</p>	<p>(This management zone is applied only to alternatives for Muir Woods National Monument.)</p> <p>This management zone would preserve the monument's natural character and would be richly interpreted through a variety of means. Visitor use would be managed to preserve important natural and cultural resources and their associated values and could involve controlled access.</p>	<p>This management zone would retain the natural, wild, and dynamic characteristics and ecological functions. The natural resources would be managed to preserve and restore resource integrity while providing for various types of visitor experience. Visitors would have opportunities to directly experience the natural resources primarily from trails and beaches. Visitor use would be managed to preserve resources and their associated values and could involve controlled access by means of fencing off sensitive areas. Modest facilities that support management and visitor use within this zone, such as a trailhead, could be placed on the periphery of the zone.</p>	<p>This management zone would consist of fundamental natural resources that are highly sensitive to a variety of activities and would receive the highest level of protection. Resources would be managed to preserve their fundamental values while being monitored and often studied for scientific purposes. Access to these areas would be highly controlled, possibly by fencing off sensitive areas. These areas could be subject to closures, and access could be restricted to the less sensitive edges of the zone. External threats to resources would be addressed.</p>	<p>This management zone would primarily support developed facilities for park and partners operations and maintenance functions. This zone would be managed to provide facilities that are safe, secured, and appropriate for functions required for park management. Access to these areas for visitors would be controlled and limited to organized meetings, programs, and access to park administration.</p>
<b>NATURAL RESOURCES</b>	<p>Natural resources provide distinct visitor opportunities and experiences through a range of park settings. The natural elements of these park settings would help define and locate visitor opportunities, services, and facilities.</p>	<p>Visitor opportunities and park operations would be managed to maintain and restore natural resource integrity.</p> <p>Opportunities that allow visitors to view high quality natural resources and their inherent scenic qualities would be provided.</p>	<p>Natural resource integrity would be maintained and restored while the area would provide for historic preservation, visitor activities, and park operations.</p> <p>Natural resources are often an integral component of cultural landscapes and would be managed to highlight the cultural resources and their associated values and characteristics. Natural resource objectives would be pursued in collaboration with, and where they complement, cultural resource objectives.</p>	<p>Natural resource integrity would be maintained and restored as compatible with historic preservation objectives.</p> <p>The natural elements of cultural resources and designated cultural landscapes would be managed to highlight the cultural resources and their associated values and characteristics. Natural resource objectives would be pursued in collaboration with, and where they complement, cultural resource objectives.</p>	<p>Natural resource integrity would be maintained and restored while providing for visitor opportunities and park operations.</p>	<p>Natural resource integrity would be maintained by preserving and restoring natural resources and their processes, systems, and values.</p> <p>Rare and exceptional natural resources, processes, systems, and values would be preserved and enhanced.</p> <p>Natural functions and processes would be reestablished in human-disturbed areas of the park to improve and maintain resource integrity.</p>	<p>Rare and exceptional natural resources, processes, systems, and values would be preserved and enhanced.</p> <p>Natural functions and processes would be reestablished in human-disturbed areas to improve and maintain resource integrity.</p>	<p>Natural resources would be managed to accommodate operational uses/activities and to facilitate sustainable maintenance operations.</p> <p>The intrusion of maintenance and operations activities on the surrounding park setting would be minimized through planning, design, screening, and noise reduction efforts. No park development actions would be taken that would preclude future natural resource protection or restoration.</p>

TABLE 1. MANAGEMENT ZONES

Resource	Diverse Opportunities Zone	Scenic Corridor Zone	Evolved Cultural Landscape Zone	Historic Immersion Zone	Interpretive Corridor	Natural Zone	Sensitive Resources Zone	Park Operations Zone
<b>Geologic Resources</b>	Natural geologic processes, including natural physical shoreline processes, would be left unimpeded except when required for safety and to protect human health. To the greatest extent possible, infrastructure would be designed or relocated to avoid paleontological resources and geologic resources and hazards. Impacted areas would be restored to the greatest extent possible. Geologic and paleontological features and resources would be protected from visitor use impacts.	Natural geologic processes, including natural shoreline processes, would be left unimpeded except when human health and safety are threatened. To the greatest extent possible, infrastructure would be designed or relocated to avoid paleontological resources and geologic resources and hazards. Impacted areas would be restored to the greatest extent possible. Geologic and paleontological features and resources would be protected from visitor use impacts.	Natural geologic processes, including natural shoreline processes, would be left unimpeded except when action is required for safety and to protect human health and important cultural resources. Impacted areas would be restored to the greatest extent possible. Geologic and paleontological features and resources would be protected from visitor use impacts.	Natural geologic processes, including natural shoreline processes, would be left unimpeded except when action is required for safety and to protect human health and important cultural resources. Impacted areas would be restored to the greatest extent possible. Geologic and paleontological features and resources would be protected from visitor use impacts.	Natural geologic processes would be left unimpeded except when action is required for safety and to protect human health. To the greatest extent possible, infrastructure would be designed or relocated to avoid paleontological resources and geologic resources and hazards. Impacted areas would be restored to the greatest extent possible. Geologic and paleontological features and resources would be protected from visitor use impacts.	Natural geologic processes, including natural shoreline processes, would be left unimpeded except when action is required for safety and to protect human health. Impacted areas would be restored to the greatest extent possible. Unique geologic features would be preserved, and paleontological resources would be undisturbed.	Natural geologic processes, including natural shoreline processes, would be left unimpeded except when action is required for safety and to protect human health. Impacted areas would be restored to the greatest extent possible. Unique geologic features would be preserved, and paleontological resources would be undisturbed.	Natural geologic processes, including natural shoreline processes, would be left unimpeded to the extent possible. Impacted areas would be restored to the greatest extent possible. Unique geologic features would be preserved, and paleontological resources would be protected while meeting operational needs. Avoidance and mitigation would be used to minimize impacts on geologic and paleontological resources. Where impacts are unavoidable, paleontological resources would, if necessary, be collected and properly cared for.
<b>Water Resources</b>	Natural hydrologic systems and processes would be left unimpeded to the greatest extent possible. Impacted areas would be restored to the greatest extent possible. Hydrologic systems and processes would be reestablished while incorporating visitor use objectives. Potential impacts from visitor use, including erosion, surface and groundwater contamination, and alteration of natural processes, would be avoided or minimized.	Natural hydrologic systems and processes would be left unimpeded to the greatest extent possible. Impacted areas would be restored to the greatest extent possible. Hydrologic systems and processes would be reestablished while incorporating visitor use objectives. Potential impacts from visitor use, including erosion, surface and groundwater contamination, and alteration of natural processes, would be avoided or minimized.	Natural hydrologic systems and processes would be left unimpeded unless some alteration was required to protect cultural resources. Impacted areas would be restored to the greatest extent possible. Hydrologic systems and processes would be reestablished while incorporating cultural resource and visitor use objectives. Potential impacts from visitor use, including erosion, surface and groundwater contamination, and alteration of natural processes, would be avoided or minimized.	Natural hydrologic systems and processes would be left unimpeded, unless some alteration was required to protect cultural resources. Impacted areas would be restored to the greatest extent possible. Hydrologic systems and processes would be reestablished while incorporating cultural resource and visitor use objectives. Potential impacts from visitor use, including erosion, surface and groundwater contamination, and alteration of natural processes, would be avoided or minimized.	Natural hydrologic systems and processes would be left unimpeded to the extent feasible, unless some alteration was required to protect cultural resources and/or accommodate important visitor use objectives. Impacted areas would be restored to the greatest extent possible. Hydrologic systems and processes would be reestablished while incorporating cultural resource and visitor use objectives. Potential impacts from visitor use, including erosion, surface and groundwater contamination, and alteration of natural processes, would be avoided or minimized.	Natural hydrologic systems and processes would be left unimpeded. Impacted areas would be restored to the greatest extent possible. Dynamic, sustainable, hydrologic systems and processes that support the diverse native life unique to the region would be reestablished.	Natural hydrologic systems and processes would be left unimpeded. Impacted areas would be restored to the greatest extent possible, unless specifically managing for sensitive cultural resources. Dynamic, sustainable, hydrologic systems and processes that support the diverse native life unique to the region would be reestablished.	Natural hydrologic systems and processes would be left unimpeded to the greatest extent possible. Previously impacted areas would be restored to the greatest extent possible. Potential impacts from park operations, including erosion, surface and groundwater contamination, and alteration of natural processes, would be avoided or minimized.
<b>Marine Environment</b>	The natural physical processes of marine and coastal areas would be left unimpeded to the extent possible. Impacted areas would be restored to the greatest extent possible. Marine resources would be protected from visitor use impacts.	The natural physical processes of marine and coastal areas would be left unimpeded to the extent possible. Impacted areas would be restored to the greatest extent possible. Marine resources would be protected from visitor use impacts.	The natural physical processes of marine and coastal areas would be left unimpeded to the extent possible. Impacted areas would be restored to the greatest extent possible. Marine resources would be protected from visitor use impacts.	The natural physical processes of marine and coastal areas would be left unimpeded to the extent possible. Impacted areas would be restored to the greatest extent possible. Marine resources would be protected from visitor use impacts.	Not Applicable.	The natural physical processes of marine and coastal areas would be left unimpeded to the extent possible. Impacted areas would be restored to the greatest extent possible. Protection of marine areas that support the conservation of native species and biodiversity would be maximized.	The natural physical processes of marine and coastal areas would be left unimpeded to the extent possible. Impacted areas would be restored to the greatest extent possible. Protection of marine areas that support the conservation of native species and biodiversity would be maximized unless the marine areas are specifically managed for sensitive cultural resources.	The natural physical processes of marine and coastal areas would be left unimpeded to the extent possible. Impacted areas would be restored to the greatest extent possible. Marine resources would be protected from impacts from park operations.

TABLE 1. MANAGEMENT ZONES

Resource	Diverse Opportunities Zone	Scenic Corridor Zone	Evolved Cultural Landscape Zone	Historic Immersion Zone	Interpretive Corridor	Natural Zone	Sensitive Resources Zone	Park Operations Zone
<b>Coastal Ecosystems: Vegetation</b>	<p>Native vegetation and vegetation communities (including aquatic vegetation) would be preserved to the greatest extent possible.</p> <p>Species that can withstand and support intense visitor use may be desired in developed areas or areas that receive high levels of trampling. Nonnative invasive plants could be present, but would be suppressed and actively managed.</p>	<p>Native vegetation and vegetation communities (including aquatic vegetation) would be preserved to the greatest extent possible.</p> <p>Vegetation—focused on sites lacking native habitat value—could be modified in this zone to accommodate and enhance scenic views. Intact native habitat loss would be mitigated through restoration actions and result in no net loss. Species that can withstand and support high levels of visitor use and trampling may be desired. Nonnative invasive plants could be present, but would be suppressed and actively managed in the park.</p>	<p>Native vegetation and vegetation communities (including aquatic vegetation) would be preserved in collaboration with, and where they complement, cultural landscape objectives. Nonnative species (contributing) could be desired and maintained to provide vegetation communities and patterns that support cultural landscape values and/or tolerate high levels of visitor use. These areas would be managed to minimize potential impacts on adjacent native vegetation. Nonnative invasive plants that do not contribute to the cultural resource values could be present, but would be suppressed and actively managed with the goal of eradication in the park.</p>	<p>Native vegetation and vegetation communities (including aquatic vegetation) would be preserved to the greatest extent possible, while cultural resource values would be supported. Nonnative species could be maintained to provide vegetation communities and patterns that contribute to cultural resource values and/or tolerate to high levels of visitor use. These areas would be managed to minimize potential impacts on adjacent native vegetation. Nonnative invasive plants that do not contribute to cultural resource values could be present, but would be suppressed and actively managed with the goal of eradication in the park.</p>	<p>Native vegetation and vegetation communities (including aquatic vegetation) would be preserved to the greatest extent possible with the goal of conserving native biodiversity. Nonnative invasive plants could be present, but would be contained and actively managed with the goal of eradication in the monument.</p>	<p>Native vegetation and vegetation communities (including aquatic vegetation) would be preserved to the greatest extent possible with the goal of conserving native biodiversity. Nonnative invasive plants could be present, but would be contained and actively managed with the goal of eradication in the park.</p>	<p>Native vegetation and vegetation communities (including aquatic vegetation) would be preserved to the greatest extent possible with the goal of conserving native biodiversity. Nonnative invasive plants could be present, but would be contained and actively managed with the goal of eradication in the park.</p>	<p>Native vegetation and vegetation communities (including aquatic vegetation) would be preserved to the greatest extent possible. Impacts from park operations on these areas and on adjacent vegetation would be minimized. Species that can withstand and support operational uses may be desired. Nonnative invasive plants could be present, but would be suppressed and actively managed in the park.</p>
<b>Coastal Ecosystems: Aquatic and Terrestrial Wildlife</b>	<p>Native wildlife and wildlife habitat would be protected from visitor use impacts to the greatest extent possible and wildlife watching opportunities would be available. Nonnative invasive wildlife would be managed to the extent feasible, with emphasis on species that have inordinate impacts on native communities or are associated with human health risks.</p>	<p>Native wildlife and wildlife habitat would be protected from visitor use impacts to the greatest extent possible. Nonnative invasive wildlife would be managed to the extent feasible, with emphasis on species that have inordinate impacts on native communities or are associated with human health risks in high use areas.</p>	<p>Native wildlife and wildlife habitat would be preserved to the greatest extent possible while the integrity of cultural landscapes would be maintained. Consequently, wildlife habitat may appear more “groomed” in this zone to meet cultural landscape preservation goals. Nonnative invasive wildlife would be managed to the extent feasible, with emphasis on species that have inordinate impacts on native communities or public safety.</p>	<p>Native wildlife and wildlife habitat would be preserved to the greatest extent possible while cultural resource values would be maintained. Consequently, wildlife habitat may appear more “groomed” in this zone to meet cultural resource goals. Nonnative invasive wildlife would be managed to the extent feasible, with emphasis on species that have inordinate impacts on native communities or are associated with human health risks.</p>	<p>Native wildlife and wildlife habitat would be protected from visitor use impacts to the greatest extent possible. Nonnative invasive wildlife would be managed to the extent feasible, with emphasis on species that have inordinate impacts on native communities or public health.</p>	<p>Native wildlife communities and ecosystem processes would be preserved and restored to the greatest extent possible. Nonnative invasive wildlife would be managed with the goal of eradication in the park.</p>	<p>Native wildlife communities and ecosystem processes would be preserved and promoted to the greatest extent possible. Nonnative invasive wildlife would be managed with the goal of eradication in the park.</p>	<p>Native wildlife communities would be protected to the greatest extent possible. Nonnative invasive wildlife would be managed to the extent feasible, with emphasis on species that have inordinate impacts on native communities or are associated with human health risks.</p>
<b>Natural Sounds (soundscapes and lightscapes)</b>	<p>The natural soundscape would often be mixed with sounds from human activity, visitor use, and historically appropriate sounds. The soundscape would be affected by the developed landscape, and noise impacts on wildlife behavior and habitat could exist in areas. These impacts would be minimized as much as possible while providing for</p>	<p>The natural soundscape would often be mixed with sounds from human activity and visitor use. The soundscape would be affected by the developed landscape, and noise could impact wildlife behavior and habitat in some areas. These impacts would be minimized as much as possible while providing for human uses. During times of low</p>	<p>The natural soundscape would often be mixed with sounds from human activity and visitor use. Noise impacts on wildlife behavior and habitat would be minimized as much as possible while providing for visitor use. During times of low visitation, including nighttime and off-peak times, the natural soundscape could</p>	<p>The natural soundscape would often be mixed with sounds from human activity, visitor use, and development. Noise impacts on wildlife behavior and habitat could exist in some areas. These impacts would be minimized as much as possible while providing for human uses and interpretation. During times of low visitation, including</p>	<p>The natural soundscape would often be mixed with sounds from human activity and visitor use. Noise impacts on wildlife behavior and habitat would be minimized to the greatest extent possible while providing for visitor use. During times of low visitation, including nighttime and off-peak times, the natural soundscape would</p>	<p>The natural soundscape would be intact in this zone, and noise impacts on wildlife behavior and habitat would be minimal. Natural sounds would occasionally be mixed with sounds from human activity and visitor use.</p> <p>Dark night skies and natural lightscapes would be preserved and restored to</p>	<p>The natural soundscape would be intact in this zone, and noise impact on wildlife behavior and habitat would be minimal. Natural sounds would occasionally be mixed with sounds from human activity and visitor use.</p> <p>Dark night skies and natural lightscapes would be preserved and restored to maintain and improve</p>	<p>Natural sounds would be mixed with sounds from human activity, visitor use, and park operations. Noise impacts on wildlife behavior and habitat would be minimized where possible. During those times when activity associated with park operations is low, the natural soundscape could predominate, with occasional noise-free</p>

TABLE 1. MANAGEMENT ZONES

Resource	Diverse Opportunities Zone	Scenic Corridor Zone	Evolved Cultural Landscape Zone	Historic Immersion Zone	Interpretive Corridor	Natural Zone	Sensitive Resources Zone	Park Operations Zone
	<p>human uses and interpretation. During times of low visitation, including nighttime and off-peak times, the natural soundscape could predominate, with occasional noise-free intervals.</p> <p>Dark night skies and natural lightscapes would be preserved as much as possible while providing for visitor use and achieving historic preservation goals, such as re-creating historic lighting from the period of significance. Outdoor lighting would provide adequate illumination for visibility while minimizing impacts on nocturnal wildlife behavior to the extent possible.</p>	<p>visitation, including nighttime and off-peak times, the natural soundscape could predominate, with occasional noise-free intervals.</p> <p>Dark night skies and natural lightscapes would be preserved as much as possible while providing for visitor experience opportunities. Outdoor lighting would provide adequate illumination for visibility while minimizing impacts on nocturnal wildlife behavior as much as possible.</p>	<p>predominate. In areas away from roads, there could be frequent and prolonged noise-free intervals.</p> <p>Dark night skies and natural lightscapes would be preserved as much as possible while providing for visitor experience opportunities. Outdoor lighting would provide minimal visibility, and impacts on nocturnal wildlife behavior would be minimized to the greatest extent possible. Only essential lights would be installed, and they would be operational only when needed.</p>	<p>nighttime and off-peak times, the natural soundscape could predominate, with occasional noise-free intervals.</p> <p>Dark night skies and natural lightscapes would be preserved as much as possible while providing for visitor experience opportunities. Outdoor lighting would provide adequate illumination for visibility and visitor expectation while minimizing impacts on nocturnal wildlife behavior as much as possible.</p>	<p>predominate. In areas away from roads there could be frequent and prolonged noise-free intervals.</p> <p>Dark night skies and natural lightscapes would be preserved and restored to maintain and improve conditions for nocturnal wildlife behavior. Only essential lights would be installed, and they would be operational only when needed. Outdoor lighting would provide minimal visibility, and light impacts on the ecological system would be minimized to the greatest extent possible.</p>	<p>maintain and improve conditions for nocturnal wildlife behavior. Only essential lights would be installed, and they would be operational only when needed. Outdoor lighting would provide minimal visibility, and light impacts on the ecological system would be minimized to the greatest extent possible.</p>	<p>conditions for nocturnal wildlife behavior. No permanent outdoor lighting would be allowed except as needed for emergency response, critical natural resource goals, or emergency communications.</p>	<p>intervals.</p> <p>Dark night skies would be preserved to the greatest extent possible while operational needs and uses are accommodated. Impacts on nocturnal wildlife behavior would be minimized as much as possible while providing adequate outdoor illumination.</p>
<b>Threatened and Endangered Species and their Habitat</b>	T&E species and their habitats would be managed to support species requirements.	T&E species and their habitats would be managed to support species requirements.	T&E species and their habitats would be proactively managed to support species requirements. Listed species and their habitats would be restored where such action is compatible with cultural landscape objectives.	T&E species and their habitats would be managed to support species requirements.	T&E species and their habitats would be managed to support species requirements.	T&E species and their habitats would be proactively managed to support species requirements, including recovery actions. Natural habitat conditions and processes would be reestablished.	T&E species and their habitats would be proactively managed to support species requirements, including recovery actions. Natural habitat conditions and processes would be reestablished.	T&E species and their habitats would be managed to support species requirements.
<b>CULTURAL RESOURCES</b>	Cultural resources would provide distinct visitor opportunities and experiences through a range of park settings. The cultural elements of these park settings would be the backdrop for interpretation, visitor use and activities, and other visitor services.	The scenic qualities of cultural resources or designated cultural landscapes would be managed to preserve their visual and historic characteristics.	Cultural resources would be preserved through adaptive reuse. Historic values and characteristics would be preserved for interpretation and enjoyment.	Cultural sites, structures, and landscapes would be preserved, rehabilitated, or restored to reflect their period of significance, allowing people to experience these resources first-hand and learn about their associated stories and events.	Cultural resources would be preserved by managing for adaptive reuse. Historic values and characteristics would be preserved for interpretation and enjoyment.	Cultural resource objectives would be pursued in collaboration with, and where they complement, natural resource objectives. These cultural resources could be stabilized and preserved to maintain their integrity.	Cultural resource objectives would be pursued in collaboration with, and where they complement, natural resource objectives. These cultural resources would be stabilized and preserved to maintain their integrity.	Cultural resources could be preserved by adaptive reuse for the purposes of park operations and administration.

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Resource	Diverse Opportunities Zone	Scenic Corridor Zone	Evolved Cultural Landscape Zone	Historic Immersion Zone	Interpretive Corridor	Natural Zone	Sensitive Resources Zone	Park Operations Zone
<b>Historic Structures</b>	Based on their condition, national register significance, and suitability for recreational, visitor use/educational, or operational/administrative purposes, historic structures would be rehabilitated, stabilized, allowed to deteriorate naturally, or removed if they become unsafe. (See "Mitigation Measures" in part 7 for more information on the treatment of structures listed in or eligible for listing in the national register.)	Based on their condition, national register significance, and suitability for recreational, visitor use/educational, or operational/administrative purposes, historic structures would be rehabilitated, stabilized, allowed to deteriorate naturally, or removed if they become unsafe. (See "Mitigation Measures" in part 7 for more information on the treatment of structures listed in or eligible for listing in the national register.)	Historic structures would undergo preservation treatments ranging from stabilization to restoration based on whether they are fundamental park resources, their national register significance, condition, and interpretive value. (See "Mitigation Measures" in part 7 for more information on the treatment of structures listed in or eligible for listing in the national register.)	Historic structures would be rehabilitated or restored to their period of significance based on whether they are fundamental park resources and their national register significance, condition, and interpretive value. (See "Mitigation Measures" in part 7 for more information on the treatment of structures listed in or eligible for listing in the national register.)	Based on their condition, national register significance, and suitability for recreational, visitor use/educational, or operational/administrative purposes, historic structures would be rehabilitated, stabilized, allowed to deteriorate naturally, or removed if they become unsafe. (See "Mitigation Measures" in part 7 for more information on the treatment of structures listed in or eligible for listing in the national register.)	Based on their condition, national register significance, safety considerations, and suitability as elements of the visitor experience, historic structures would be stabilized, become "discovery sites" that are allowed to deteriorate naturally, or be removed. (See "Mitigation Measures" in part 7 for more information on the treatment of structures listed in or eligible for listing in the national register.)	Based on their condition, national register significance, safety considerations, and suitability as elements of the primitive visitor experience, historic structures would be stabilized, become "discovery sites" that are allowed to deteriorate naturally, or be removed. (See "Mitigation Measures" in part 7 for more information on the treatment of structures listed in or eligible for listing in the national register.)	Most historic structures would be rehabilitated for adaptive reuse. Historic structures not suited for adaptive reuse would be stabilized or, depending on condition, be removed. (See "Mitigation Measures" in part 7 for more information on the treatment of structures listed in or eligible for listing in the national register.)
<b>Cultural Landscapes</b>	Cultural landscapes would be managed to preserve their physical attributes and their use when that use contributes to their historical significance. Elements may be adapted to accommodate visitor use or education or park and partner operations, while preserving those features that convey historical, cultural, or architectural values.	Cultural landscapes would be managed to preserve their physical attributes and their use when that use contributes to their historical significance. Elements may be adapted to accommodate visitor use/education or park and partner administration while preserving those features that convey historical, cultural, or architectural values.	Cultural landscapes would be rehabilitated for appropriate contemporary use of the landscape while preserving those features that convey historical, cultural, or architectural values.	Cultural landscapes would be rehabilitated or restored for appropriate contemporary use of the landscape while preserving those features that convey historical, cultural, or architectural values.	Cultural landscapes would be rehabilitated in collaboration with, and where they complement, natural resource objectives to preserve their significant features.	Cultural landscapes would be allowed to gradually revert to a more natural state, except where important landscape resources can be preserved without compromising natural resource values.	Cultural landscapes would be allowed to gradually revert to a more natural state, except where important landscape resources can be preserved without compromising natural resource values.	Cultural landscapes would be rehabilitated for appropriate contemporary use of the landscape while preserving those features that convey historical, cultural, or architectural values.
<b>Ethnographic Resources</b>	Access for traditional activities would be preserved. The National Park Service would continue to recognize the past and present existence of peoples in the region and the traces of their use of resources as an important part of the cultural environment to be preserved and interpreted. The Park Service would consult with associated American Indian tribes to develop and accomplish the programs of the park in a way that respects the beliefs, traditions, and other cultural values of the tribes who have ancestral ties to the park lands.	Access for traditional activities would be preserved. The National Park Service would continue to recognize the past and present existence of peoples in the region and the traces of their use of resources as an important part of the cultural environment to be preserved and interpreted. The Park Service would consult with associated American Indian tribes to develop and accomplish the programs of the park in a way that respects the beliefs, traditions, and other cultural values of the tribes who have ancestral ties to the park lands.	Access for traditional activities would be preserved. The National Park Service would continue to recognize the past and present existence of peoples in the region and the traces of their use of resources as an important part of the cultural environment to be preserved and interpreted. The Park Service would consult with associated American Indian tribes to develop and accomplish the programs of the park in a way that respects the beliefs, traditions, and other cultural values of the tribes who have ancestral ties to the park lands.	Access for traditional activities would be preserved. The National Park Service would continue to recognize the past and present existence of peoples in the region and the traces of their use of resources as an important part of the cultural environment to be preserved and interpreted. The Park Service would consult with associated American Indian tribes to develop and accomplish the programs of the park in a way that respects the beliefs, traditions, and other cultural values of the tribes who have ancestral ties to the park lands.	Access for traditional activities would be preserved. The National Park Service would continue to recognize the past and present existence of peoples in the region and the traces of their use of resources as an important part of the cultural environment to be preserved and interpreted. The Park Service would consult with associated American Indian tribes to develop and accomplish the programs of the park in a way that respects the beliefs, traditions, and other cultural values of the tribes who have ancestral ties to these lands.	Access for traditional activities would be preserved. The National Park Service would continue to recognize the past and present existence of peoples in the region and the traces of their use of resources as an important part of the cultural environment to be preserved and interpreted. The Park Service would consult with associated American Indian tribes to develop and accomplish the programs of the park in a way that respects the beliefs, traditions, and other cultural values of the tribes who have ancestral ties to the park lands.	Access for traditional activities would be preserved. The National Park Service would continue to recognize the past and present existence of peoples in the region and the traces of their use of resources as an important part of the cultural environment to be preserved and interpreted. The Park Service would consult with associated American Indian tribes to develop and accomplish the programs of the park in a way that respects the beliefs, traditions, and other cultural values of the tribes who have ancestral ties to the park lands.	Access for traditional activities would be preserved. The National Park Service would continue to recognize the past and present existence of peoples in the region and the traces of their use of resources as an important part of the cultural environment to be preserved and interpreted. The Park Service would consult with associated American Indian tribes to develop and accomplish the programs of the park in a way that respects the beliefs, traditions, and other cultural values of the tribes who have ancestral ties to the park lands.

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Resource	Diverse Opportunities Zone	Scenic Corridor Zone	Evolved Cultural Landscape Zone	Historic Immersion Zone	Interpretive Corridor	Natural Zone	Sensitive Resources Zone	Park Operations Zone
<b>Archeological Resources and Submerged Cultural Resources</b>	Archeological resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, stabilization, data recovery, interpretation, or development requirements. These preserved resources would be kept in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Significant archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, or development activities would be recovered, recorded, or otherwise preserved. Strategic surveys would be conducted in those areas where visitor use, management zone practices, natural process policies (unimpediment, restoration, vegetation removal), or park or partner undertakings threaten sensitive archeological areas. Significant findings would be incorporated into current park planning strategies upon discovery.	Archeological resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements. These resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Significant archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, or development activities would be recovered, recorded, or otherwise preserved.	Archeological resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements. These resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Significant archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, or development activities would be recovered, recorded, or otherwise preserved.	Archeological resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements. These resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Important archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, or development activities would be recovered, recorded, or otherwise preserved.	Archeological resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements. These resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Important archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, and development activities would be recovered, recorded, or otherwise preserved.	Archeological resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements. These resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Important archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, and development activities would be recovered, recorded, or otherwise preserved. Active management of nonnative vegetation which results in ground disturbance or ground clearance, and areas whose natural processes are left unimpeded, would require strategic archeological survey to identify archeological resources placed in vulnerable positions by these policy or project undertakings.	Archeological resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements. These resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Important archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, or development activities would be recovered, recorded, or otherwise preserved. Historic archeological sites in sensitive coastal resource zones may require evaluation to determine if they constitute stressor to natural resources and need to be removed. For example, large historic trash deposits along the littoral of Alcatraz Island.	Archeological resources and submerged cultural resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements. These resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Important archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, and development activities would be recovered, recorded, or otherwise preserved.
<b>Park Collections</b>	Park collections (archeological artifacts, archival materials, natural history collections, and historical artifacts) would be documented, cataloged, and protected to ensure long-term preservation according to NPS standards and guidelines. Collections would be made available for research, exhibits, and interpretive programs in order to inform and engage the public in ongoing stewardship.	Park collections (prehistoric and historic objects, artifacts, works of art, archival material, and natural history specimens) would be acquired, accessioned, cataloged, preserved, protected, and made available for access and use according to NPS standards and guidelines.	Park collections (archeological artifacts, archival materials, natural history collections and historical artifacts) would be documented, cataloged, and protected to ensure long-term preservation according to NPS standards and guidelines. Collections would be used to inform interpretive programs and incorporated into exhibits when feasible.	Park collections (archeological artifacts, archival materials, natural history collections and historical artifacts) would be documented, cataloged and protected to ensure long-term preservation according to NPS standards and guidelines. Collections would be used to inform historically furnished spaces and incorporated into exhibits when feasible.	Park collections (archeological artifacts, archival materials, natural history collections and historical artifacts) would be documented, cataloged and protected to ensure long-term preservation according to NPS standards and guidelines. Collections would be used in interpretive programs to help visitors understand the primeval forest and early 20th century conservation history.	Park collections (archeological artifacts, archival materials, natural history collections and historical artifacts) would be documented, cataloged, and protected to ensure long-term preservation according to NPS standards and guidelines. Knowledge of natural history and archeology would be expanded by documentation, and collected when appropriate, to monitor changes over time.	Park collections (archeological artifacts, archival materials, natural history collections and historical artifacts) would be documented, cataloged, and protected to ensure long-term preservation according to NPS standards and guidelines. Knowledge of natural history and archeology would be expanded by documentation, and collected when appropriate, to monitor changes over time.	Park collections (archeological artifacts, archival materials, natural history collections and historical artifacts) would be documented, cataloged, and protected to ensure long-term preservation according to NPS standards and guidelines. Collections would be stored in centralized facilities and made available for research, exhibits, and interpretive programs to inform and engage the public in ongoing stewardship.

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Resource	Diverse Opportunities Zone	Scenic Corridor Zone	Evolved Cultural Landscape Zone	Historic Immersion Zone	Interpretive Corridor	Natural Zone	Sensitive Resources Zone	Park Operations Zone
<b>VISITOR EXPERIENCE</b>	People could participate in a range of recreational, interpretive, and educational opportunities supported by a variety of visitor services.	Visitors would have the opportunity to tour through the scenic corridors with multiple opportunities to stop along the route for sightseeing, wildlife viewing, picnicking, or interpretive or educational information.	Visitors would have the opportunity to explore designated portions of historic landscapes and structures while participating in contemporary activities.	Visitors would have the opportunity to be immersed in a historic setting. Visitors could experience the sights, sounds, and activities that are evocative of the site's period of significance.	Visitors would have the opportunity to be immersed in a natural environment (which could include historic resources) and participate in a variety of interpretive and educational opportunities to gain an in-depth understanding of these resources. Opportunities to experience natural sounds and closeness to nature would be important aspects of a visit to this area. Visitor use would be controlled to ensure that activities and their intensities are compatible with protecting resource integrity.	Visitors would have the opportunity to be immersed in a natural environment and could seek areas where they could experience natural sounds, tranquility, closeness to nature, and a sense of remoteness and self-reliance. Visitor use would be managed to ensure that activities and their intensities are compatible with protecting resource integrity.	Visitors would have the opportunity to experience the fundamental resources in the zone in limited areas and during specific times as determined by the park to ensure preservation of the resources. Visitors would be encouraged to understand and value the sensitive nature of these resources with highly controlled and managed access to ensure that visitor activities and their intensities are compatible with protecting resource integrity.	Visitors would have the opportunity for limited and controlled access to these areas for purposes of orientation, organized meetings, and access to park administration.
<b>Types of Activities</b>	<p>The following recreational activities typically occur in this zone, but are not a full listing of all allowed activities:</p> <ul style="list-style-type: none"> <li>§ beach activities such as informal sports, walking, swimming, picnicking, and surf fishing</li> <li>§ marine activities such as recreational fishing, boating, crabbing, kayaking, surfing, and sightseeing</li> <li>§ land-related activities such as developed camping, overnight lodging, picnicking, biking, hiking, walking, running, horseback riding, hang gliding, sightseeing, and bird and wildlife viewing</li> <li>§ other kinds of activities: exploring historic sites and structures, participating in interpretive programs and participating in stewardship programs, nature study, photography, and artistic endeavors</li> <li>§ In addition, special and organized events could be allowed when appropriate, but measures would be taken to mitigate impacts on resources</li> </ul>	<p>The following recreational activities typically occur in this zone, but are not a full listing of all allowed activities:</p> <ul style="list-style-type: none"> <li>§ beach activities such as informal sports, walking, swimming, picnicking, and surf fishing</li> <li>§ marine activities such as recreational fishing, boating, crabbing, kayaking, surfing, and sightseeing</li> <li>§ land-related activities such as picnicking, biking, hiking, walking, running, horseback riding, hang gliding, sightseeing, and bird and wildlife viewing</li> <li>§ other kinds of activities such as exploring historic sites and structures, participating in interpretive programs and participating in stewardship programs, nature study, photography, and artistic endeavors</li> <li>§ In addition, special and organized events could be allowed when appropriate, but measures would be taken to mitigate impacts on resources</li> </ul>	<p>The following recreational activities typically occur in this zone, but are not a full listing of all allowed activities:</p> <ul style="list-style-type: none"> <li>§ beach activities such as informal sports, walking, swimming, picnicking, and surf fishing</li> <li>§ marine activities such as recreational fishing, boating, crabbing, kayaking, surfing, and sightseeing</li> <li>§ land-related activities such as overnight lodging, picnicking, biking, hiking, walking, running, horseback riding, sightseeing, and bird and wildlife viewing</li> <li>§ other kinds of activities, such as exploring historic sites and structures, participating in interpretive programs and participating in stewardship programs, nature study, photography, and artistic endeavors</li> <li>§ In addition, special and organized events could be allowed when appropriate, but measures would be taken to mitigate impacts on resources</li> </ul>	<p>The following recreational activities typically occur in this zone, but are not a full listing of all allowed activities:</p> <ul style="list-style-type: none"> <li>§ beach activities such as guided or self-guided interpretive walks, tours, or participation in historic interpretive programs</li> <li>§ marine activities such as guided or self-guided boat/kayaking trips or tours relevant to historic interpretive programs</li> <li>§ land-related activities such as guided and self-guided walks, hikes, tours, experiential learning (may include overnight stays), or historic study</li> <li>§ other kinds of activities such as exploring historic sites and structures, participating in interpretive programs and participating in stewardship programs, photography, and artistic endeavors</li> <li>§ In addition, special and organized events could be allowed when appropriate, but measures would be taken to mitigate impacts on resources</li> </ul>	<p>The following recreational activities typically occur in this zone, but are not a full listing of all allowed activities:</p> <ul style="list-style-type: none"> <li>§ walking, hiking, sightseeing, and wildlife viewing</li> <li>§ programs and special events could include environmental education, stewardship, history, and science themes</li> </ul>	<p>The following recreational activities typically occur in this zone, but are not a full listing of all allowed activities:</p> <ul style="list-style-type: none"> <li>§ beach activities such as walking, swimming, and surf fishing</li> <li>§ marine activities such as recreational fishing, crabbing, kayaking, surfing, and sightseeing</li> <li>§ land-related activities such as primitive camping, hiking, walking, biking, horseback riding, sightseeing, and bird and wildlife viewing</li> <li>§ other kinds of activities such as exploring historic sites and structures, nature study, photography, artistic endeavors, and participating in stewardship programs</li> <li>§ In addition, special and organized events could be allowed when appropriate, but measures would be taken to mitigate impacts on resources and other visitors during these events.</li> </ul>	<p>NPS-authorized visitor activities or activities requiring an NPS permit could include the following:</p> <ul style="list-style-type: none"> <li>§ beach activities such as guided walks</li> <li>§ marine activities such as boating, kayaking, and sightseeing along the perimeter, and guided tours within the sensitive resources zone</li> <li>§ land-related activities such as hiking, walking, sightseeing, and bird and wildlife viewing along the perimeter, and guided tours within the sensitive resource zone</li> <li>§ other kinds of activities such as guided trips through historic sites and participation in participatory science and stewardship programs</li> </ul>	<p>The following recreational activities typically occur in this zone, but are not a full listing of all allowed activities:</p> <ul style="list-style-type: none"> <li>§ stewardship activities</li> <li>§ special organized events would be permitted where compatible with park operations—group sizes could be limited</li> </ul>

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Resource	Diverse Opportunities Zone	Scenic Corridor Zone	Evolved Cultural Landscape Zone	Historic Immersion Zone	Interpretive Corridor	Natural Zone	Sensitive Resources Zone	Park Operations Zone
	and other visitors during these events.		and other visitors during these events.	and other visitors during these events.				
<b>Interpretation / Education / Orientation</b>	<p>Visitors would gain an understanding about the importance of the monument’s natural (including marine), scenic, and historic resources and the potential threats to those resources. Further, visitors would have diverse recreational and educational opportunities near the urban area.</p> <p>A high level of visitor orientation and interpretive services would be available in this zone.</p> <p>Communication of interpretive themes would occur through many interpretive methods.</p>	<p>A high level of visitor orientation and interpretive services would be available in this zone.</p> <p>Communication of interpretive themes would occur through a broad array of interpretive methods.</p>	<p>Visitors would gain an understanding and appreciation of the importance of the park’s historic and cultural resources and the strategy of adaptive reuse to sustain the preservation of historic structures.</p> <p>A moderate to high level of visitor orientation and interpretive services would be available in this zone.</p> <p>Communication of interpretive themes would occur through a broad array of interpretive methods.</p>	<p>Through immersion in the cultural setting, visitors would gain an understanding of the importance of the park’s historic and cultural resources and the long-standing physical and spiritual connection of people to these lands.</p> <p>A high level of visitor orientation and interpretive services would be available in this zone.</p> <p>Communication of interpretive themes would occur through a broad array of interpretive methods.</p>	<p>Through the opportunity to experience the natural and cultural resources of the area, visitors would gain an understanding and appreciation of the significance of the park’s natural and cultural resources and the potential threats to those resources.</p> <p>A moderate to high level of interpretive and education services would be available in this zone.</p> <p>Communication of interpretive themes would occur through a broad array of interpretive methods.</p>	<p>Through opportunities to experience a wild setting and explore natural areas, visitors would gain an understanding and appreciation of the significance of the park’s natural resources (including marine) and the potential threats to those resources.</p> <p>A low to moderate level of guided/unguided interpretive services would be available in this zone.</p> <p>Communication of interpretive themes would most often occur outside or at the entry to this zone through printed media and information kiosks; some guided programs would occur within the zone.</p>	<p>Visitors would gain an understanding and appreciation of the importance of the park’s sensitive resources (including marine resources) and the potential threats to those resources.</p> <p>A low to moderate level of guided/unguided interpretive services would be available in this zone.</p> <p>Communication of interpretive themes would most often occur outside or at the entry to this zone through printed media and information kiosks, with some guided programs within the zone.</p>	<p>Visitors would gain an understanding of opportunities in the park. A minimal to moderate level of visitor orientation would be available depending on the site.</p> <p>Communication of interpretive themes would not be emphasized in this zone.</p> <p>Operational facilities may be screened to minimize impacts on scenic views.</p>
<b>Scenic Views</b>	Outstanding views of natural, cultural, and scenic resources would be an integral part of the visitor experience of this zone. Operational facilities may be screened to minimize impacts on scenic views.	Outstanding views of natural, cultural, and scenic resources would be an integral part of the visitor experience of this zone.	Outstanding views of natural, cultural, and scenic resources may be available and would enhance the visitor experience in this zone.	Outstanding views of cultural resources would be an integral part of the visitor experience of this zone.	Outstanding views of natural, cultural, and scenic resources may be available if unobstructed views occur naturally. If available, views would enhance the visitor experience in this zone.	Outstanding views of natural, cultural, and scenic resources would be available if unobstructed views occur naturally. If available, views would enhance the visitor experience of this zone.	Outstanding views of natural, cultural, and scenic resources may be available if unobstructed views occur naturally.	Outstanding views of natural, cultural, and scenic resources may be available if unobstructed views occur naturally.
<b>Natural Sounds (soundscapes and lightscapes)</b>	<p>Natural sounds would be audible and would enhance the visitor experience in this zone. The natural soundscape would often be mixed with sounds from human activity and visitor use. In some areas, the soundscape would be affected by development. During times of low visitation, including nighttime and off-peak times, the natural soundscape could predominate, with occasional noise-free intervals.</p> <p>Dark night skies and natural lightscapes would enhance the visitor experience in this zone. Outdoor lighting would provide appropriate illumination for safety and visitor expectation while minimizing light pollution.</p>	<p>Natural sounds would be audible and would enhance the visitor experience in this zone. The natural soundscape would often be mixed with sounds from human activity and visitor use. During times of low visitation, including nighttime and off-peak times, the natural soundscape could predominate. In areas away from roads, there could be frequent and prolonged noise-free intervals.</p> <p>Dark night skies and natural lightscapes would enhance the visitor experience in this zone. Outdoor lighting would provide minimal visibility, and light pollution would be minimized. Only essential lights would be installed, and they would be operational only when needed. Nocturnal</p>	<p>Natural sounds would be audible and would enhance the visitor experience in this zone. The natural soundscape would often be mixed with sounds from human activity and visitor use. The soundscape would be affected by the developed landscape. During times of low visitation, including nighttime and off-peak times, the natural soundscape could predominate, with occasional noise-free intervals.</p> <p>Dark night skies and natural lightscapes would enhance the visitor experience in this zone. Outdoor lighting would provide appropriate illumination for safety and cultural resource</p>	<p>Natural sounds would be audible and would enhance the visitor experience in this zone. Historically appropriate sounds would also enhance the experience of this zone. The soundscape would be affected by the developed landscape. During times of low visitation, including nighttime and off-peak times, the natural soundscape could predominate, with occasional noise-free intervals.</p> <p>Dark night skies and natural lightscapes would enhance the visitor experience in this zone. Outdoor lighting would provide appropriate illumination for safety and cultural resource interpretation while</p>	<p>Natural sounds would be audible and would enhance the visitor experience in this zone. The natural soundscape would often be mixed with sounds from human activity and visitor use. During times of low visitation, including nighttime and off-peak times, the natural soundscape could predominate. In areas away from roads there could be frequent and prolonged noise-free intervals.</p> <p>Dark night skies and natural lightscapes would enhance the visitor experience in this zone. Outdoor lighting would provide minimal visibility, and light pollution would be minimized. Only essential lights would be installed, and they would be operational only when needed. Nocturnal</p>	<p>The natural soundscape would be intact in this zone and would be an important part of the visitor experience. Natural sounds would occasionally be mixed with sounds from human activity and visitor use. Noise disturbance of wildlife would be minimal in this zone.</p> <p>Dark night skies and natural lightscapes would be integral to the visitor experience in this zone. Nocturnal lightscapes would be preserved and restored. Only essential lights would be installed, and they would be operational only when needed. Outdoor lighting would provide minimal visibility, and light pollution would be minimized. This zone would provide an opportunity to demonstrate</p>	<p>The natural soundscape would be intact in this zone and would be an integral part of the visitor experience. Natural sounds would occasionally be mixed with sounds from human activity and visitor use. Noise disturbance to wildlife would be minimal in this zone.</p> <p>Dark night skies and natural lightscapes would be integral to the visitor experience in this zone. Nocturnal lightscapes would be preserved and restored. No permanent outdoor lighting would be allowed except as needed for emergency response, critical natural resource goals, or emergency communications.</p>	<p>Natural sounds would be audible and would enhance the visitor experience in this zone. Natural sounds would be mixed with sounds from human activity, visitor use, and park operations. During those times when activity associated with park operations is low, the natural soundscape could predominate, with occasional noise-free intervals.</p> <p>Dark night skies would be preserved to the greatest extent possible while operational needs and uses are accommodated. Outdoor lighting would provide adequate illumination for visibility while minimizing light pollution. This zone would provide an opportunity to</p>

TABLE 1. MANAGEMENT ZONES

Resource	Diverse Opportunities Zone	Scenic Corridor Zone	Evolved Cultural Landscape Zone	Historic Immersion Zone	Interpretive Corridor	Natural Zone	Sensitive Resources Zone	Park Operations Zone
		lightscares would be preserved and restored to the extent possible.	interpretation while minimizing light pollution. Nocturnal lightscares would be preserved and restored to the extent possible.	minimizing light pollution. Nocturnal lightscares would be preserved and restored to the extent possible while achieving historic preservation goals, such as re-creating lighting from the period of significance.	lightscares would be preserved and restored to the extent possible.	environmental leadership and to educate the public about light pollution.		demonstrate environmental leadership and educate the public about light pollution.
<b>Use Levels / Density / Encounters</b>	High levels of use in centralized activity nodes would be expected, leading to the likelihood of high rates of encounters among visitors. Groups of many sizes would be accommodated. Refer to "Chapter 7: User Capacity" for additional specific guidance.	Moderate to high use levels would be expected along scenic corridors, leading to the likelihood of moderate to high rates of encounters between visitors, particularly at locations such as overlooks, day use areas, and waysides. Groups would be accommodated, but group sizes could be limited based on facility capacities and/or experiential objectives.	Moderate use levels would be expected around focused activity nodes, leading to the likelihood of moderate numbers of encounters with other visitors. Group sizes could be limited based on facility capacities and/or experiential objectives. Refer to "Chapter 7: User Capacity" for additional specific guidance.	Moderate use levels would be expected around focused activity nodes, leading to the likelihood of moderate numbers of encounters between visitors. Group sizes could be limited based on facility capacities and/or experiential objectives. Refer to "Chapter 7: User Capacity" for additional specific guidance.	Moderate to high use levels would be expected along interpretive corridors, leading to the likelihood of moderate to high rates of encounters between visitors. Groups would be accommodated, but group sizes could be limited based on facility capacities and/or experiential objectives. Refer to "Chapter 7: User Capacity" for additional specific guidance.	Low to moderate use levels would be expected in this zone, with moderate use levels often found at entry points or points of interest. A moderate rate of encounters with other visitors would be expected, but opportunities for solitude might be found in certain areas if a visitor seeks it. Group sizes could be limited to protect experiential and resource protection objectives. Refer to "Chapter 7: User Capacity" for additional specific guidance.	Low use levels would be expected in these areas. At entry points or points of interest, a moderate number of encounters between visitors would be expected. As visitors travel away from these areas, there would be fewer encounters with other visitors. Group sizes could be limited to promote resource protection objectives. Refer to "Chapter 7: User Capacity" for additional specific guidance.	Low use levels would be expected because this area is intended for staff and visitors on official business. Frequency of encounters with other visitors would be low.
<b>DEVELOPMENT and MANAGEMENT</b>	Development could include a diversity of facilities to welcome, orient, and support visitors.	Development may include road and trail corridors and associated day use facilities that support and direct visitor use.	Development may include a blend of historic and compatible modern structures to support visitor use and services.	Development would include sensitive rehabilitation or restoration of historic resources and may include modern visitor support facilities compatible with the historic setting.	Development would be minimal and would be aimed at facilities that provide access, public safety, resource protection, and interpretation/education.	Development would be minimal and would be aimed at facilities that provide access, public safety, and resource protection.	There would be minimal, if any, development except for some visitor facilities such as trails to allow for the concentration and direction of visitor use and the protection of resources.	Development patterns would include a diversity of facilities to support visitor services and park administration.
<b>Type / Character of Visitor Access</b>	Visitor access would be a dominant aspect of the zone, with a system of multiple transportation modes that are highly interconnected to allow for user-defined access to and within the zone.  Vehicular and nonvehicular access would be provided to and throughout the zone.	Visitor access would be the defining element of the experience in this zone and would be interconnected and designed to encourage use of multiple transportation modes.  Vehicular and nonvehicular access would be provided to and throughout the zone.	Visitor access would blend with the historic setting and consist of multiple transportation modes that are interconnected to provide user-defined access. The transportation system would connect points of interest to facilitate storytelling related to cultural resources.  Vehicular and nonvehicular access would be provided to and throughout the zone.	Visitor access would be a dominant aspect of the zone, with a system of multiple transportation modes that are highly interconnected to allow for user-defined access to and within the zone.  Vehicular and nonvehicular access would be provided to and throughout the zone.	Access opportunities would be subordinate to the natural setting and may be highly managed (i.e., restrictions on access) to protect resources and desired visitor experiences, as necessary.  Only NPS administrative and emergency vehicular access would be permitted; nonvehicular access would be the primary mode of transportation throughout the zone.	Access opportunities would be subordinate to the natural setting and may be highly managed (i.e., restrictions on access) to protect resources and desired visitor experiences, as necessary.  Trail access may be permitted to major destinations and access points.	Access opportunities would be highly managed (i.e., permitted access, area closures) to protect sensitive resources.  Vehicular access may be permitted to major access points, but nonvehicular access would be the primary mode of transportation throughout the zone.	Access opportunities would be limited and controlled for purposes of orientation, organized meetings, and access to park administration.  Vehicular and nonvehicular access would be provided to administrative facilities. Trails would not likely be found in the zone, but pedestrian sidewalks and crosswalks would be appropriate in this zone. Trailheads connecting with other parks and neighboring communities would be appropriate in this zone.

TABLE 1. MANAGEMENT ZONES

Resource	Diverse Opportunities Zone	Scenic Corridor Zone	Evolved Cultural Landscape Zone	Historic Immersion Zone	Interpretive Corridor	Natural Zone	Sensitive Resources Zone	Park Operations Zone
<b>Types of Facilities</b>	<p>The following types of facilities could be provided:</p> <ul style="list-style-type: none"> <li>§ Interpretive: visitor centers/contact stations, amphitheaters, interpretive kiosks</li> <li>§ Recreational: designated trails, designated activity areas, boardwalks, picnic facilities, boat docks, designated nonmotorized boat launch sites, recreational fishing platforms, temporary boat tie-ups, horse stables, designated camping areas</li> <li>§ Support: overnight lodging facilities, retail/rental/food facilities, large event gathering areas, restroom facilities, parking areas, transportation facilities (multimodal hubs, bike paths, roads)</li> </ul>	<p>The following types of facilities could be provided:</p> <ul style="list-style-type: none"> <li>§ Interpretive: interpretive kiosks, small gathering places for interpretive programs</li> <li>§ Recreational: designated trails, designated activity areas, boardwalks, picnic facilities, boat docks, designated nonmotorized boat launch sites, recreational fishing platforms, and temporary boat tie-ups</li> <li>§ Support: retail/rental/food facilities, restroom facilities, parking areas, and transportation facilities (multimodal hubs, bike paths, roads)</li> </ul>	<p>The following types of facilities could be provided:</p> <ul style="list-style-type: none"> <li>§ Interpretive: visitor contact stations, interpretive kiosks, and small gathering places for interpretive programs</li> <li>§ Recreational: designated trails, designated activity areas, picnic facilities, boat docks, designated nonmotorized boat launch sites, temporary boat tie-ups</li> <li>§ Support: overnight lodging facilities, retail/rental/food outlets, restroom facilities, parking areas, transportation facilities (multimodal hubs, bike paths, roads)</li> </ul>	<p>The following types of facilities could be provided:</p> <ul style="list-style-type: none"> <li>§ Interpretive: interpretive kiosks, and small gathering places for interpretive programs</li> <li>§ Recreational: designated trails, picnic tables, boat docks/ designated boat put-ins, and temporary boat tie-ups</li> <li>§ Support: restroom facilities, parking areas, and transportation facilities (multimodal hubs, bike paths, roads)</li> </ul>	<p>The following types of facilities could be provided:</p> <ul style="list-style-type: none"> <li>§ Interpretive: trailhead kiosks, small gathering places for interpretive/ education programs, and waysides</li> <li>§ Recreational: designated trails, and boardwalks</li> <li>§ Support: trailhead restroom facilities, limited parking areas, fences, benches, and pedestrian bridges</li> </ul>	<p>The following types of facilities could be provided:</p> <ul style="list-style-type: none"> <li>§ Interpretive: trailhead kiosks</li> <li>§ Recreational: designated trails, designated primitive campsites, rustic huts for overnight accommodations, and designated nonmotorized boat launch sites</li> <li>§ Support: trailhead restroom facilities, and limited parking areas and access roads (focused on the periphery of the zone to the extent possible)</li> </ul>	<p>The following types of facilities could be provided:</p> <ul style="list-style-type: none"> <li>§ Interpretive: trailhead kiosks</li> <li>§ Recreational: designated trails</li> <li>§ Support: trailhead restroom facilities, and limited parking areas (focused on the periphery of the zone to the extent possible)</li> </ul>	<p>The following types of facilities could be provided:</p> <ul style="list-style-type: none"> <li>§ Administrative: offices, maintenance and storage facilities, parking, pedestrian walkways, waste water and utility management facilities, and other operational needs</li> </ul>
<b>Commercial Services and Nonprofit Programming</b>	<p>A variety of necessary and appropriate commercial services offerings that may be available include but are not limited to: equipment rentals, guides, recreational, equestrian, overnight accommodations, and food/beverage/retail.</p> <p>A variety of nonprofit programming that may be available includes, but is not limited to environmental, educational, interpretive, community, and arts. Certain buildings may be leased for compatible uses.</p>	<p>A variety of necessary and appropriate commercial services offerings that may be available include but are not limited to: equipment rentals, guides, recreational, equestrian, overnight accommodations, and food/beverage/retail.</p> <p>A variety of nonprofit programming that may be available includes, but is not limited to environmental, educational, interpretive, community, and arts. Certain buildings may be leased for compatible uses.</p>	<p>A variety of necessary and appropriate commercial services offerings that may be available include but are not limited to: equipment rentals, guides, recreational, equestrian, overnight accommodations, and food/beverage/retail.</p> <p>A variety of nonprofit programming that may be available include but are not limited to environmental, educational, interpretive, community, and arts. Certain buildings may be leased for compatible uses.</p>	<p>Necessary and appropriate commercial services offerings that may be available include: limited food/beverage/retail, equipment rentals, guides, and recreational.</p> <p>Nonprofit programming could be focused in the areas of environmental, educational, and interpretive. Certain buildings may be leased for compatible uses.</p>	<p>Commercial services would be minimal. Nonprofit programming in the area of education and interpretation may be available.</p>	<p>Commercial services would be minimal. Nonprofit programming in the area of education and interpretation may be available.</p>	<p>Commercial services and nonprofit programming would be minimal.</p>	<p>No visitor support services or nonprofit programming would be expected in this zone.</p>

ELEMENTS COMMON TO ALL ACTION ALTERNATIVES

3





## INTRODUCTION

While three different concepts for management are presented in the three action alternatives described in this document, there is some overarching management direction that will continue to guide the park and monument, regardless of the alternative selected. Some of these actions have developed through time from the founding principles of the park and monument; some are currently underway; and some are required by law or policy. The actions discussed in this section will occur regardless of the management alternative selected.

The following topics are included in this section:

- § American Indian Engagement
- § Boundary Adjustments
- § Climate Change
- § Facilities Not Directly Related to the Park Mission
- § Maintenance, Public Safety, Collections, and Visitor Facilities
- § Ocean Stewardship
- § Park Collections
- § Partnerships
- § Trails
- § Transportation

## AMERICAN INDIAN ENGAGEMENT

Since the late 1990s, the NPS staff has worked with the Federated Indians of Graton Rancheria (the federally recognized tribe composed of park-associated Coast Miwoks and Southern Pomo), with the many Ohlone tribes seeking federal recognition, and with Ohlone individuals who partake in the stewardship of Ohlone heritage. Park lands in Marin County are the aboriginal homelands of Coast Miwoks. Park lands in San Francisco and San Mateo counties are the aboriginal homelands of the Ohlones. The park staff would continue to work with the Coast Miwok and Ohlone people in the three broad activity areas in which it has worked with them to date: cultural resource management, interpretation and education, and revitalization of community and tradition.

### GOALS

- § Inventory Archeological and Ethnographic Sites  
The park staff, together with tribal representatives, would complete strategic surveys to inventory fundamental native resources and determine treatment for sites that become threatened by natural or use vectors. The park would participate with tribes in preservation-oriented regional collaborations. American Indians are permitted by law, regulation, or policy to pursue customary religious, subsistence, and other cultural uses of resources with which they are traditionally associated. Recognizing that its resource protection mandate affects this human use and cultural context of park resources, the National Park Service would plan and execute programs in ways that safeguard cultural and natural resources while

reflecting informed concern for the contemporary peoples and cultures traditionally associated with them.

- § Work with Park-associated Native People on a Range of Interpretive and Educational Activities  
The park staff would continue to work with park-associated native people on a range of interpretive and educational activities. These activities could include Indian-led interpretive programs offered throughout the park, permanent and temporary exhibits on native history and culture, annual commemorative festivals with native components, teacher trainings on American Indian curricula, and participation of native people on visitor center advisory boards.

- § Continue to Support the Revitalization of Coast Miwok and Ohlone Communities and Traditions  
The park staff would continue to support the revitalization of Coast Miwok and Ohlone communities and traditions. Native people would continue to conduct religious activities in the park, gather natural materials for use in traditional crafts, participate in the study of native histories and genealogies, and work with park staff on ethnographic landscape restoration efforts.

### MANAGEMENT STRATEGIES

To provide direction for these activities, the National Park Service would work to establish and implement a set of protocols that would institutionalize the way that park staff engage American Indians in the park.

Each protocol agreement would be tailored to the specific type of relationship that the National Park Service and the tribe have developed or are in the process of developing. Protocols and agreements could be developed that may include the following elements or stipulations:

- § Establish a government-to-government relationship with the tribe by first contacting or notifying the tribal chair when issues arise.
- § Establish contacts by the park superintendent (or designated staff) with specific tribal representatives or tribal council office(s) designated by the tribal council or tribal chairperson to deal with specific park proposals (or issues) that may arise. (The agreement should include a list of the types of proposed NPS activities for which the tribe would like notification.)
- § Conduct routine notification of appropriate tribal officials (designated by the tribal council or tribal chairperson) by the park regarding park planning, project development, or environmental impact assessments. (Appropriate methods for this preliminary

notification should be summarized in the agreement—e.g., letter, telephone contact, meeting with tribal chair, cultural committee, tribal council.)

- § Schedule meetings between park management and the tribe on a periodic basis to review upcoming park plans or projects that may impact American Indian resources in or near the park (e.g., once a year, once every six months).
- § Exchange information and research results and technical assistance between the National Park Service and the tribe.
- § Develop a time frame for responding to oral and written communications.
- § Create steps for resolving disputes (e.g., alternative dispute resolution processes, third-party mediation, or mediation by the NPS regional director or American Indian Affairs Office director).
- § Define the process for amending or modifying the agreement.
- § Establish a time period in which the agreement would remain in effect.
- § Define the process for ending or canceling the agreement.

## BOUNDARY ADJUSTMENTS

The 1978 National Parks and Recreation Act (16 USC 1a-7) requires general management plans to address potential modifications to park boundaries. Park boundaries are often initially drawn to reflect a wide range of practical considerations, and they do not necessarily reflect natural or cultural resource features, administrative considerations, or changing land uses. Current or potential changes in adjacent land uses could pose threats to park resources and limit the staff's ability to strengthen the fundamental resources that support the park purpose and significance.

Golden Gate National Recreation Area and Muir Woods National Monument are part of a larger area of protected open space in the Bay Area. The natural and cultural resources of the park would pose a greater threat if not for the many other open space areas that contribute to the integrity of coastal ecosystems, scenic beauty, recreational opportunities, and the preservation of historic resources.

### GOALS

The potential park boundary modifications would be guided by the following three major goals:

- § 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.
- § Strengthen the integrity and resilience of coastal ecosystems by filling habitat gaps, creating habitat links, providing for the recovery of special status species and the survival of wide-ranging wildlife. In addition,

boundary modifications would restore natural processes and ecosystem capacity to respond to the effects of climate change. Boundary adjustments would be guided by science-based approaches that build on the goals of cooperative regional efforts.

- § Preserve nationally important natural and cultural resources related to the park's purpose.

In addition to following this guidance, the park staff would play a partnership role in regional land and marine area protection efforts. This role includes coordinating and developing multiple strategies with adjacent public land managers and open space organizations when land acquisition goals and objectives can be shared.

Any proposed boundary changes would be critically evaluated to confirm that such actions contribute to achieving the park's mission and resource protection goals and that the park is not accepting undue management burdens. Proposed land acquisitions must be feasible to administer considering their size, configuration, costs, and ownership. In addition, changes could be made if the land acquired was needed to address operational and management issues, such as visitor access, or to have logical and identifiable boundaries. The potential boundary modifications would continue to be made with regional collaboration in mind, while working to strengthen and protect the park's natural, cultural, recreational, and scenic resources.

## PROPOSED BOUNDARY ADJUSTMENTS

In compliance with federal law (Public Law 95-625, and Public Law 101-628) and NPS *Management Policies 2006*, the park has evaluated six properties using the three established criteria for inclusion within the official boundary. The lands and waters proposed here for inclusion within the park boundary either

1. include significant resources or opportunities for public enjoyment related to the purposes of the park; or
2. address operational and management issues such as access and boundary identification by topographic or other natural features or roads; or
3. protect park resources critical to fulfilling park purposes.

The planning team also has

- § determined that the areas are feasible to administer
- § determined that other alternatives for management and resource protection are not adequate
- § consulted affected agencies and others
- § estimated acquisition costs, if any

Descriptions of the proposed boundary adjustments and evaluations of how they meet the criteria and determinations are below. It is the planning team's conclusion that each proposed boundary adjustment meets the federal criteria and is consistent with the park-specific goals stated above. See map 2 for the location of these properties.

## Nearshore Ocean Environment, San Mateo County

### *Description*

The park includes several coastal properties in San Mateo County. The western boundaries of these properties end at the line of mean high tide in the Pacific Ocean. The proposed boundary adjustment would place the new boundary 0.25 mile from the line of mean high tide to include nearshore areas (approximately 2,000 acres). Boundary adjustments are proposed for nearshore areas adjacent to lands within the existing NPS boundary.

### *Criteria*

§ **Significance:** The nearshore areas proposed for inclusion within the boundary support an abundance of significant resources including marine mammals, seabirds, and intertidal resources. Portions of the areas are within Monterey Bay National Marine Sanctuary, two state marine protected areas (Montara State Marine Reserve and Egg [Devil's Slide] Rock to Devil's Slide Special Closure), and Egg Rock, which is part of the California Coastal National Monument managed by the Bureau of Land Management (BLM). Known submerged or intertidal cultural resources include shipwrecks and features of a whaling station. These are also popular recreational areas for exploring tide pools and for boating, recreational fishing, swimming, and surfing.

§ **Operational Issues:** Unlike San Francisco and Marin counties where the official boundary extends 0.25 mile beyond the line of mean high tide, the park boundary in San Mateo County ends at mean high tide. This exclusion restricts coordinated management of marine resources and visitor activities with other federal

and state agencies. Lack of a consistent boundary also poses difficulties in coordinating with county public safety departments for visitor protection services such as rescues. Questions about jurisdiction have complicated the park's rescue and recovery efforts.

- § **Protects Park Resources—Fulfills Park Purpose:** Protection of significant nearshore resources and provision of appropriate recreational opportunities are part of the park's legislated purpose. Resource protection would be enhanced by including this parcel within the park boundary. The effects of climate change (especially sea level rise) and development of the NPS Pacific West Region's strategic plan for Pacific Ocean parks, make inclusion of these areas within the boundary a timely objective.

### *Determinations*

Administration of these areas through cooperative management would be feasible. Park management of similar areas in San Francisco and Marin counties has not been an undue burden for park staff, due in large part to collaboration with other agencies. Adding these areas to the park would enhance the value of current collaborative actions, rather than substitute management by the National Park Service alone. The proposal has the support of related agencies. Inclusion through a California state tide and submerged lands lease would have no cost. 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 Sanctuaries Act, general NPS regulations, and the primary management purposes identified in the California state leases that the park retains over other portions of the nearshore ocean environment in San Francisco and Marin counties. If acquired, a portion of the area would be managed according to the sensitive

resources zone description. The remaining area would be managed according to the scenic corridor zone description. The National Park Service anticipates this proposal would require a legislative boundary change.

### **Gregerson Property, San Mateo County**

#### *Description*

The property forms a long rectangle of about 206 acres with three sides in common with the park's 4,200-acre Rancho Corral de Tierra unit. It is owned by the Peninsula Open Space Trust (POST), who acquired it in 2007. The trust maintains the property as conservation land. The property is undeveloped, with the exception of a caretaker residence and paved access road that crosses the property from north to south. The only access to the property is from the south on a park road.

#### *Criteria*

- § **Significance:** The property has many of the same qualities and characteristics as Rancho Corral de Tierra, which was determined eligible for inclusion in the park in the *San Mateo County Boundary Study* (NPS 2001a). The study determined that Rancho Corral de Tierra is a logical and understandable southern entryway into the park and an unusually large piece of significant scenic and ecological resources that is firmly linked to existing park lands. Rancho Corral de Tierra was included in the park boundary in 2005 through Public Law 109-131. Like Rancho Corral de Tierra, the Gregerson property contains habitat for federally listed plant and animal species and provides connectivity in an important wildlife corridor. The property also possesses scenic vistas to the southeastern coast, and has

high potential for recreation, including a trail along the ridge connecting to a future Bay Area Ridge Trail segment.

- § **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.
- § **Protects Park Resources—Fulfills Park Purpose:** Protection of federally listed species and provision of appropriate recreational opportunities are part of the park's legislated purpose. Resource protection and trail-based recreation would be enhanced by including this parcel within the park boundary.

### *Determinations*

Administration of this small undeveloped property as part of the larger Rancho Corral de Tierra unit would be feasible. The road and other structures (residence, well, septic system, and solar power complex) are in good condition and could be used for park operations, environmental education, or other park purposes. The trust acquired this property with the objective of permanent protection, which it has identified as best being achieved through fee transfer to the National Park Service for inclusion in Golden Gate National Recreation Area. An access easement alone is not considered satisfactory because use of the property by others would continue to compromise the NPS ability to maintain security at the main gate. This proposal has support from the trust and San Mateo County, which manages nearby lands. The cost of acquisition has not been determined. If acquired, the area would be managed according to the natural zone description. The National Park Service

anticipates this would be a minor boundary adjustment.

### **Margins of Rancho Corral de Tierra, San Mateo County**

#### *Description*

These two areas (about 58 acres) are at the margins of agricultural lands owned by the Peninsula Open Space Trust and are immediately adjacent to the park's 4,200-acre Rancho Corral de Tierra unit. The northern area is maintained as an open field with a light vegetation cover, but is not cultivated due to poor soil conditions. The southern area is primarily gently sloping hillsides adjacent to cultivated fields. Both areas abut State Route 1 and have informal access roads from it.

#### *Criteria*

- § **Significance:** Like the Gregerson property, these areas have some of the same qualities and characteristics as Rancho Corral de Tierra, which was determined eligible for inclusion in the park in a 2001 boundary adjustment authorized by Congress. These areas may contain habitat for federally listed plant and animal species and provide connectivity in an important wildlife corridor. The properties also possess scenic vistas to the coast and have high potential to serve as the critically needed principal trailheads providing safe, direct access from State Route 1 and logical connections to existing recreational trails on Rancho Corral de Tierra. The northern area has been classified as "unique farmland" (of lesser quality than "prime farmland" due to substantial limitations for the production of crops.) The southern area includes soils with unique and lesser classifications in addition to a small area of prime farmland, which could

constrain development of nonagricultural facilities.

- § **Operational Issues:** These two properties are highly suitable for providing the principal vehicular access points to Rancho Corral de Tierra from State Route 1. There are good sight lines from State Route 1 to the properties, along with other favorable conditions for roadway improvements to enable safe, logical, vehicular access and egress. Creation of a trailhead with a parking area and essential visitor facilities, such as restrooms and orientation kiosks, is feasible on each property without impacting the highly scenic coastal landscape. The size of these areas has been kept to the minimum necessary to facilitate development of a trailhead and a connecting trail on each property. Development of these principal trailheads would enhance management of Rancho Corral de Tierra by reducing visitor reliance on existing trailheads that are on local streets in the community. Furthermore, the trailheads would reduce conflicts with visitors in the existing equestrian stables areas and avoid conflicts with ongoing agricultural operations and have the potential to be served by existing transit.
- § **Protects Park Resources—Fulfills Park Purpose:** Protection of federally listed species and provision of appropriate recreational opportunities are part of the park's legislated purpose. Resource protection and trail-based recreation would be enhanced by including this parcel within the park boundary.

### *Determinations*

Administration of these areas as part of the larger Rancho Corral de Tierra unit would be feasible. The two trailheads are critically important to providing appropriate public access and enjoyment of the Rancho unit,

and would not pose undue management burdens on Golden Gate National Recreation Area. It is likely that these objectives could be accomplished with less-than-fee acquisition, such as trail easements over a portion of the property; however, a boundary adjustment is desirable to facilitate expenditure of federal funds for development of the trailheads, connecting trail, and long-term land management. This proposal has support from Presidio Trust Management Plan, the agricultural operator, California State Parks, San Mateo County, and the local community. If acquired, the area would be managed according to the natural zone description. The cost of acquisition has not been determined. The National Park Service anticipates this would be a minor boundary adjustment.

### **Additions to Cattle Hill: Vallemar Acres and State Route 1 Frontage, Pacifica**

#### *Description*

Vallemar Acres and the State Route 1 Frontage parcel are both at the edges of Cattle Hill, a prominent coastal landform in Pacifica. As such, they share similar characteristics and are evaluated together. Vallemar Acres consists of about 61 acres of sloping undeveloped land owned by the City of Pacifica and is contiguous to the city's adjacent Cattle Hill property, proposed for donation. It is part of the lower southern slope of Cattle Hill and extends to the property lines of residences on the north side of Fassler Avenue, which ends at an unimproved trailhead. The State Route 1 Frontage parcel consists of about 6 acres of sloping undeveloped land at the western end of Cattle Hill along State Route 1. It is owned by the state and managed by Caltrans.

#### *Criteria*

- § **Significance:** Cattle Hill was evaluated in 1998 boundary study authorized by an act of Congress,

then added to the park in 2000 (U.S. House 1998). It protects habitat for federally listed species, preserves outstanding scenic values, and connects to the extensive open space and network of trails of Sweeney Ridge including designated segments of the Bay Area Ridge Trail. These two adjoining parcels are extensions of the distinct landform possessing the same natural resource values as Cattle Hill and Sweeney Ridge—coastal scrub with documented and potential habitat for federally listed San Francisco garter snake and California red-legged frog. As integral parts of the scenic coastal hill, they present ready opportunities for enhanced trailheads and access to existing trails and contribute to the open space values of the adjacent public lands.

- § **Operational Issues:** Inclusion of these parcels would establish a more logical park boundary that corresponds with the main extent of the landform. Inclusion would also eliminate intervening ownerships and could prevent the development of unauthorized trails and access points with related impacts on resources. Slope stability would need to be evaluated.
- § **Protects Park Resources—Fulfills Park Purpose:** Protection of significant resources and provision of appropriate recreational opportunities are part of the park’s legislated purpose. Resource protection and trail-based recreation would be enhanced by including this parcel within the park boundary.

### *Determinations*

Administration of these parcels as part of Sweeney Ridge would be feasible. The resources are in good condition and no need for remedial actions has been identified. The City of Pacifica staff works closely with the

park staff on resource management and visitor services. The city had understood that the parcel was already included in the boundary and supports this proposal as a donation, along with the proposed donation of the adjacent city-owned Cattle Hill property. Appropriate acquisition methods could be either fee or less than fee with appropriate easements for trails, trailheads, and habitat management. Caltrans, which manages the frontage property for the State of California, has plans to improve State Route 1 as it passes the base of Cattle Hill. This project (Calera Parkway) is in the early design stages, but is unlikely to affect the frontage parcel, which rises sharply from the roadway. Caltrans has not expressed any objections to this proposal. The park seeks to include the frontage parcel within the boundary to facilitate cooperative management and provide for a future trailhead. The National Park Service anticipates this would be a minor boundary adjustment.

### **McNee Ranch, San Mateo County**

#### *Description*

This 710-acre former ranch property lies on the east side of State Route 1, just south of Devil’s Slide. It is a unit of the California state park system, managed as part of Montara State Beach, which is principally on the west side of State Route 1. The property shares a long boundary with Rancho Corral de Tierra, which generally follows Martini Creek. The property includes two trailheads on State Route 1, a pedestrian bridge over Martini Creek, and two ranger residences—one near the bridge, the other close to the northern trailhead. No other major structures are present.

#### *Criteria*

- § **Significance:** The property possesses extensive natural biodiversity, especially on the serpentine soils of the lower slopes where such endangered species as Hickman’s

cinquefoil (*Potentilla hickmanii*) and San Mateo thornmint (*Acanthomintha duttonii*) are found. The ranch 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 coast-side communities of Montara and Moss Beach, and lead to the highest points on Montara Mountain. These trails are important to the potential east-west connection that would enable hikers to cross from San Francisco Bay to the Pacific Ocean. The property is also adjacent to public lands managed by Caltrans at Devil's Slide, which have high ecological value and may be opened to recreational use. The segment of Old San Pedro Mountain Road (now a multiuse trail) that crosses the property may be eligible for the national register.

- § **Operational Issues:** Inclusion of the property within the park would facilitate cooperative management of resources and visitors. The property is the only state park land adjacent to the Golden Gate National Recreation Area that is not also within the federal authorized boundary. Cooperative management is especially critical for the Martini Creek watershed, which was divided nearly equally between NPS and state park ownership. An equestrian facility is immediately adjacent to the creek on NPS land. A heavily used bridge carries Old San Pedro Mountain Road across the creek.
- § **Protects Park Resources—Fulfills Park Purpose:** Protection of significant resources and provision of appropriate recreational opportunities are part of the park's legislated purpose. Cooperative

management to achieve common goals would be enhanced by including this parcel within the park boundary.

### *Determinations*

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 afterward. As is the case with other California state parks in the boundary, administration (cooperative management) would not be an additional burden. No other management alternatives were considered. The California Department of Parks and Recreation supports this proposal. There would be no acquisition costs. The National Park Service anticipates this proposal would require a legislative boundary adjustment.

### POTENTIAL FUTURE BOUNDARY ADJUSTMENTS

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 would 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 may lead to eventual acquisition by the National Park Service.

Several other areas are of great interest to the National Park Service and appear to meet NPS criteria for boundary adjustments. The park would continue working with open space partners to pursue protection of these properties, possibly including an NPS boundary adjustment guided by the goals expressed earlier and would study additional opportunities to protect significant prehistoric and historic resources adjacent to park lands.

### Priority Conservation Areas

Four areas adjacent to the park were identified as Priority Conservation Areas through a regional planning effort led by the Association of Bay Area Governments and documented in *Golden Lands, Golden Opportunities* (Bay Area Open Space Council 2009). Multiple strategies and multiple land managers may have a role in managing these lands. At this time, no specific boundary adjustments are proposed by the park in these areas. However, anticipated studies would evaluate which specific properties within these areas would be most appropriately managed by the National Park Service.

1. **Marin City Ridge, Marin County:** Undeveloped lands adjacent to the Marin Headlands unit could enhance protection for the natural, scenic, and recreational resources of the park while improving trail connections into an underserved community. These sites were evaluated in a boundary study in 2005 and determined appropriate for inclusion in the park.
2. **Pacifica Conservation Area (south of Mussel Rock to McNee Ranch), San Mateo County:** Disconnected, undeveloped parcels at the fringes of the Pacifica community may enhance the continuity of existing Golden Gate National Recreation Area lands, including the park's trail links

to the California Coastal Trail and Bay Area Ridge Trail, and improve natural resource corridors.

3. **Montara Mountain Complex, San Mateo County:** Undeveloped parcels adjacent to Rancho Corral de Tierra could strengthen protection of threatened and endangered species and contribute to regional conservation efforts focused on preserving large natural resource corridors and scenic beauty.
4. **Gateway to San Mateo County:** Comprising a large area of land between Rancho Corral de Tierra and Highway 92, this area may contribute substantially to natural resource protection, the regional trails network, and preservation of scenic and rural character.

### Upland Goals Conservation Areas

A science-based approach toward identifying biologically important lands for protection in the San Francisco Bay Area was developed by the Bay Area Open Space Council (Weiss et al. 2008), with participation of NPS staff. The result was a network of conservation areas based on computer models that strive to achieve conservation goals for targeted vegetation types and individual species, along with assessments of viability, ecological integrity, and level of connectivity of conservation lands. The model output identifies five areas adjacent to the park that would help sustain diverse and healthy communities of plant, fish, and wildlife resources in the nine-county Bay Area. Some of these areas overlap with Priority Conservation Areas.

1. **Stinson Beach Environs:** Currently undeveloped lands near Panoramic Highway were identified as essential conservation areas and would enhance the park's protection of

contiguous coastal biological resources.

2. **Lower Redwood Creek:** Lands along the Redwood Creek corridor below its intersection with State Route 1 have been identified as essential conservation areas and would help enhance the park's protection of contiguous stream resources and associated threatened and endangered species.
3. **Nyhan Creek:** Lands along the Nyhan Creek corridor from its headwaters to the Bay Area have been identified as an essential conservation area and would help the park contribute to the protection of contiguous stream resources within the region.
4. **Mori-Milagra-Sweeney Connector:** Currently undeveloped lands in the Pacifica area have been identified as essential conservation areas; their protection would help the park increase the long-term resiliency of small natural areas such as Milagra Ridge, as well as secure important habitat corridors to facilitate species and community movements over time and space.
5. **San Pedro Mountain and Rancho Corral de Tierra Environs, South to Highway 92:** Currently undeveloped lands in the Montara, Moss Beach, and Half Moon Bay areas have been identified as essential conservation areas; their protection would help the park increase the core of protected lands along the spine of the San Francisco peninsula. Similar to those in the Pacifica area, these protected areas would provide important habitat

corridors to facilitate species and community movements over time and space.

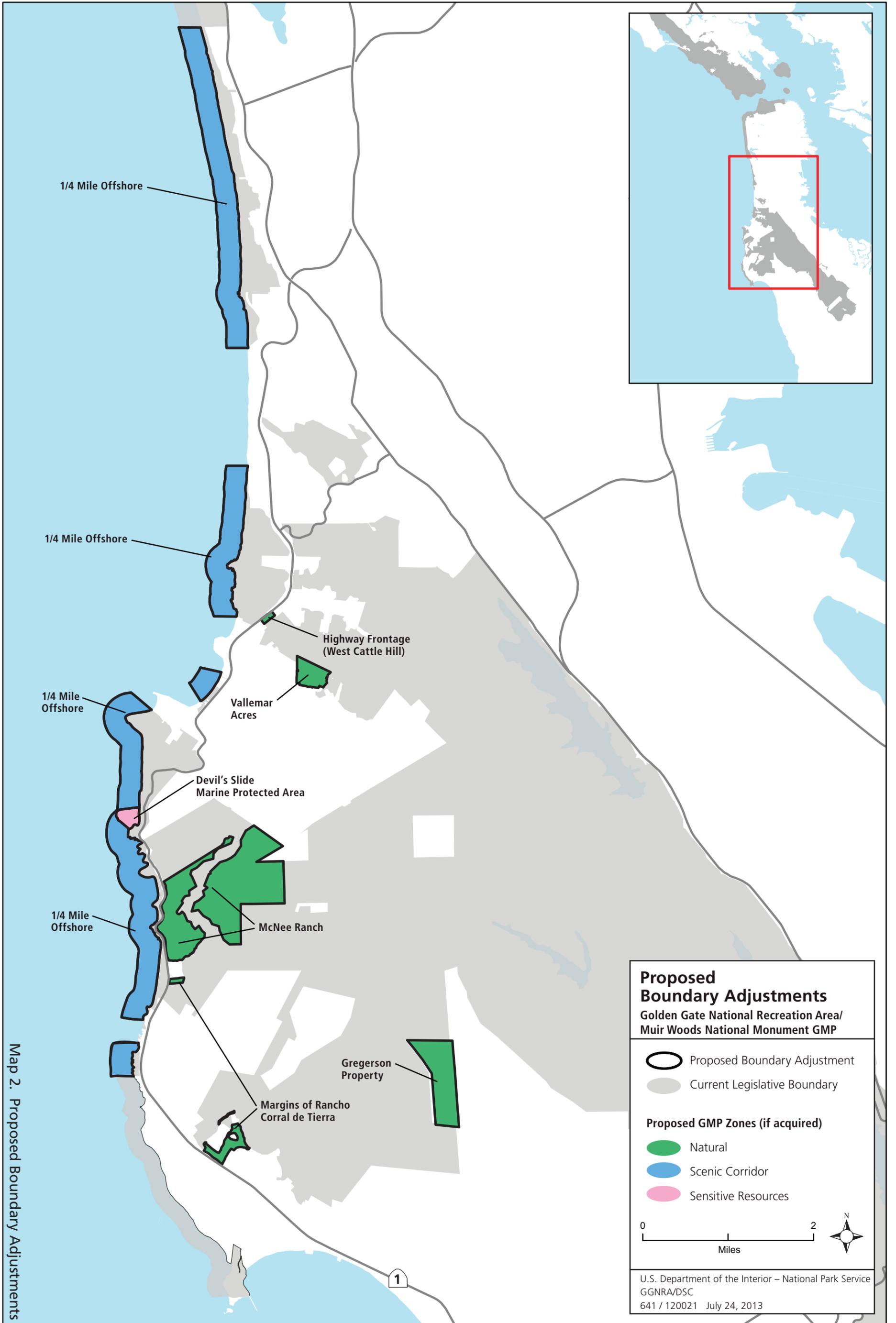
## OTHER FUTURE BOUNDARY ADJUSTMENTS

### Northeast Sweeney Ridge

Owned by the City and County of San Francisco, 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 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 City and County of San Francisco declare the property excess.

### *Foothill Parcel Adjacent to Rancho de Tierra, San Mateo County*

This parcel contains the site of the adobe complex of Francisco Guerro y Palomares, the original grantee of Rancho Corral de Tierra in 1839. This important archeological site has exceptionally high potential to reveal information about Mexican-California ranchos and to supplement the park's interpretation of this important era of California history. Addition to the national park would achieve the purpose of protecting this significant cultural resource and strengthening the diversity of the park's visitor opportunities.



Map 2. Proposed Boundary Adjustments

**Proposed Boundary Adjustments**  
 Golden Gate National Recreation Area/  
 Muir Woods National Monument GMP

Proposed Boundary Adjustment  
 Current Legislative Boundary

**Proposed GMP Zones (if acquired)**

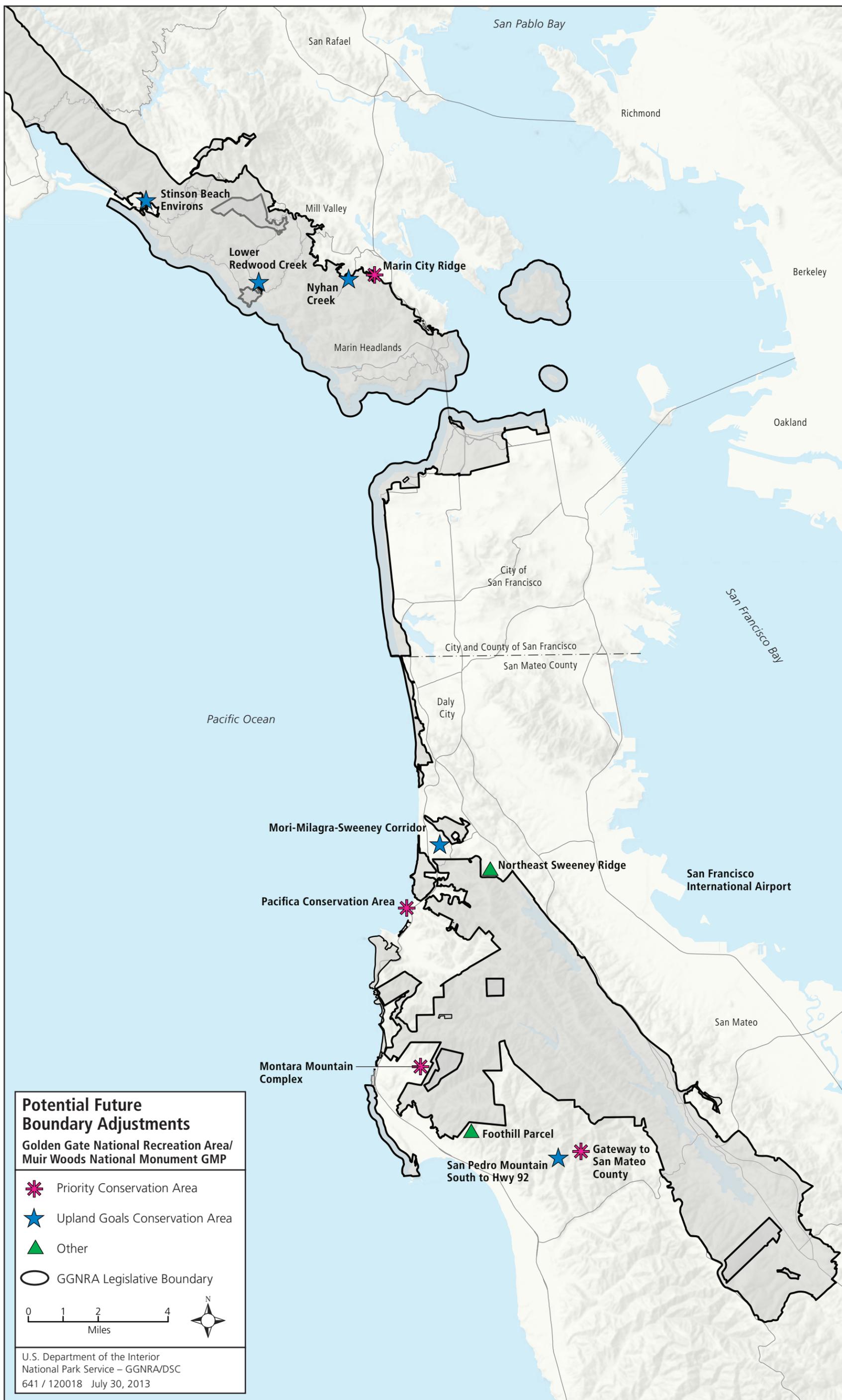
Natural  
 Scenic Corridor  
 Sensitive Resources

Miles  
 N

U.S. Department of the Interior – National Park Service  
 GGNRA/DSC  
 641 / 120021 July 24, 2013



Map 3. Potential Future Boundary Adjustment





## CLIMATE CHANGE

The National Park Service has developed goals to guide the way climate change will be addressed. Sustaining and supporting the resiliency of park resources in the face of climate change will require the National Park Service to address many challenges. The general management plan describes the approach that the park would take to reduce emissions, educate visitors on the topic, and adapt to the effects of climate change during the next 20 years. Some existing information on the carbon footprint and sea level rise and coastal vulnerability for the park may be found in volume II of the general management plan. In addition, the park maintains a Climate Change Action Plan that outlines the actions that would be taken to accomplish these broad goals.

### GOALS

#### § Reduce CO<sub>2</sub> Emissions

The park will become a carbon neutral park by 2016 by reducing the CO<sub>2</sub> emissions of NPS and partner operations, increasing the use of renewable energy and other sustainable practices, and reducing visitor emissions by lessening dependency on personal automobiles.

National parks can demonstrate how to minimize their contribution to global warming through practices such as energy efficiency and use of renewable energy. Because emissions from visitor driving are estimated to contribute to more than 90% of park emissions, the park staff and partners would assist in reducing visitor greenhouse gases by providing opportunities for alternative transportation options.

#### § Educate and Interpret

The park staff will help park visitors understand the process of global warming, climate change, the threats to the park, and how they can respond. Visitors are inspired to action through leadership and education.

Through the efforts of employees, partners, and educational and interpretive media, park staff can engage visitors on the topic of climate change, provide the latest park research and monitoring data and trends, inform the public about what response is being taken at the park, and inspire visitors to aid in that response.

#### § Assess Impacts and Respond to Changing Conditions

The park staff will proactively monitor, plan, and adapt to the effects of climate change by using the best information as it becomes available.

Climate change is a global phenomenon, outside the control of the National Park Service. The park cannot control the impacts of climate change on the park through its own emissions reductions and education practices. However, the park staff would do their part to improve conditions and demonstrate environmental leadership.

NPS staff would use and promote innovation, best practices, and partnerships to respond to the challenges of climate change and its effects on park resources. By using and developing tools and monitoring

methods, including seeking outside assistance, the park staff can better respond to climate change. The park staff would interpret climate change science and develop management strategies, which may include projecting expected changes. The park staff would coordinate with other agencies in developing tools and strategies to help identify and manage climate change impacts. By adopting the best information on climate change as it becomes available, the park staff would be positioned to respond quickly and appropriately to the local effects of climate change.

The park staff may choose to use an adaptive management framework to respond to the effects of climate change. Temperature and precipitation changes may require that the park manages for native biodiversity and ecosystem function instead of managing for natural communities. In most cases, park managers would allow natural processes to continue unimpeded, except when public health and safety or the park's fundamental resources and values are threatened. Scenario planning would likely play a pivotal role in developing the park's responses to climate change.

The park staff would coordinate with neighboring communities while implementing adaptation strategies that support the protection, preservation, and restoration of coastal wetlands and coastal processes, and can serve as vital tools in buffering coastal communities from the effects of climate change and sea level rise.

## MANAGEMENT STRATEGIES

To meet the above goals, a more detailed management approach would be developed and would be an evolving process. The park staff would use local, regional, and larger-scale monitoring, modeling, and mapping evaluations. Through this data gathering, the park staff would identify and refine the assessment of park lands and resources that are vulnerable to sea level rise, extreme storms, and associated coastal erosion. 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—functioning as an early detection system.

The following approaches and management actions could be implemented to respond to the effects of climate change on park resources.

### Natural Resources

- § Reduce current and future stressors to the resource and the environment; this would improve the condition of the resource and build resiliency in the ecosystem that would help minimize future adverse effects of climate change.
- § 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.
- § Collect and/or document resources that would be otherwise lost to the effects of climate change (e.g., fossils, unique geologic resources, unique biological resources).

- § Sustain native biodiversity.
  - § Reduce habitat fragmentation and increase habitat connectivity and movement corridors.
  - § Restore and enhance habitats.
  - § Focus on ecosystem management and natural processes.
  - § Restore naturally functioning ecosystems.
  - § Manage for biological diversity.
  - § Minimize impact of invasive species.
  - § Plan for post-disturbance management.
  - § Employ adaptive management.
  - § Manage for realistic outcomes (triage).
- in situ, coupled with sustainable efforts (intervention techniques) to mitigate and reduce any stressors that might adversely affect the resource.
  - § Pursue managed retreat when the results of the triage process indicate that preservation treatment or relocation is not practical.
  - § Pursue recordation and relocation of the resources with high significance and technically and economically feasible treatment and relocation options, and where there is high confidence in the predicted effects of sea level rise or other climate change impacts.
  - § Conduct strategic surveys of uninventoried park lands within zones of climate change effects to document the resources involved.

## Cultural Resources

- § Reduce current and future stressors to the resource; this would improve the condition of the resource and help to minimize future adverse effects from climate change.
- § Develop proactive triage criteria that would assist park staff in prioritizing preservation treatments and other management actions. The decision on how to best treat a resource facing potential adverse effects from climate change should be based on (1) significance of the resource, (2) feasibility of the preservation action, (3) cost of the treatment/action, and (4) confidence in the data used to determine potential effects of sea level rise or climate change on the resource.
- § Give highest priority to preserving cultural resources and artifacts

## Visitor Experience

- § Continue to provide a range of experiences by transitioning recreational use away from locations where changes in resource conditions no longer support such uses.
- § Remove or relocate existing visitor facilities and discontinue or modify recreational uses where continued use is unsafe, infeasible, or undesirable due to changing environmental conditions. Do not plan new construction in areas that are most likely to be subject to changing environmental conditions.
- § Evaluate and support changing visitor use patterns, as appropriate.

## FACILITIES NOT DIRECTLY RELATED TO THE PARK MISSION

Maintaining park facilities in acceptable condition is a continuing challenge that requires a multitude of management strategies. The park manages 1,150 assets without the funding required to do so adequately. Some of the facilities do not meet the needs of the park and its partners, and therefore are not used and are deteriorating.

According to the 2009 Park Asset Management Plan, the total assets of the park require \$24.6 million in annual operations and maintenance; yet, typically, only \$5.3 million has been allocated toward that need. This leaves a gap of nearly \$20 million each year. Related to the inability to fund all maintenance needs is \$198.1 million in deferred maintenance backlog related to park and partner-assigned assets. The \$6.0 million typically allocated from special project funding each year for this need does not adequately reduce the deferred maintenance backlog.

This general management plan proposes to remove assets that are in poor condition and are not contributing to the preservation of natural or cultural resources or supporting visitor experience. Disposal of unneeded assets would allow funding and staff resources to be redistributed to higher value assets.

While developing GMP alternatives, the planning team identified facilities that did not contribute to the park mission. Further evaluation with an interdisciplinary team led to the identification of assets proposed for removal and the development of the following strategies. Before any facility would be scheduled for removal, appropriate National Environmental Policy Act of 1969 (NEPA) and National Historic Preservation Act of 1966 (NHPA) determinations would be completed.

The management team will continue to monitor and identify facilities not needed for implementation of the selected alternative in an effort to bring assets to acceptable conditions and to sustain those conditions over time.

### GOALS

- § Address the gap between maintenance funding and maintenance needs by reducing the number of park assets that require ongoing maintenance.
- § Continue to address deferred maintenance by reducing the number of park assets.
- § Support asset management strategies identified in the park asset management plan.
- § Enhance the preservation of natural and cultural resources, support the visitor experience, and support park and partner operational needs through asset removal.

### MANAGEMENT STRATEGIES

The following proposed actions would reduce deferred maintenance by approximately \$1,520,000.

**Muir Woods National Monument Maintenance Facilities:** The park staff has identified inefficient and deteriorating structures to be removed from the monument. Removal would allow further natural resource restoration and a reduced development footprint consistent with the action alternatives. Through this action, there is potential for deferred maintenance reductions of \$40,000.

**Camino del Canyon and Conlon Avenue Structures:** The park staff has proposed removal of deteriorating structures that do not contribute to the history of the park. Removal would be in concert with natural resource restoration objectives, including habitat restoration and restoration of the natural functioning of the tributary creek. Through this action, there is potential for deferred maintenance reductions of \$210,000.

**Lower Redwood Creek and Tennessee Valley Structures:** Facilities that do not support the park mission and some that are in deteriorated condition were identified for removal. Removal of these structures would allow extensive natural resource restoration, including a return of natural watershed

processes, preservation of outstanding natural features, and protection of threatened and endangered species such as coho salmon and red-legged frog. Riparian areas adjacent to Tennessee Valley would also be enhanced through facility removal. By this action, there is potential for deferred maintenance reductions of \$600,000.

**Structures in Marin County:** Structures, including Capehart Housing and associated sheds and outbuildings north of Bunker Road, were identified for removal to improve the scenic entrance to Rodeo Valley. Other structures were identified for removal in support of the cultural landscape and for habitat restoration. Through this action, there is potential for deferred maintenance reductions of \$670,000.

## MAINTENANCE, PUBLIC SAFETY, COLLECTIONS, AND VISITOR FACILITIES

Park maintenance, public safety, and collections storage functions are scattered throughout the park at sites and facilities that in many cases were not intended for these uses. These functions have had to adapt to conditions that do not adequately meet their space, size, function, mobility, and security requirements. Maintenance and public safety operations have also had to relocate numerous times, requiring them to reprogram their operations each time, resulting in many inefficiencies. Consigning the park's museum collection to multiple storage facilities jeopardizes long-term preservation and restricts the availability of the collection for research, education, and interpretive programming, thus limiting its usefulness to the public and park personnel.

The following section proposes a comprehensive approach to building and facility uses necessary to meet the existing and projected needs of these operational functions in conjunction with all alternatives. The actions proposed are based on a thorough analysis of park programs and facilities, including the possibilities for placing functions outside park boundaries. The park has other operational facilities such as staff offices, housing, native plant nurseries, and horse patrol facilities. The locations of these facilities vary among the alternatives and are addressed in the description of the alternatives.

### GOALS FOR MAINTENANCE AND PUBLIC SAFETY

The large scale of the park, with sites distributed across three counties, poses a distinct challenge to providing facilities for maintenance and public safety operations. Over the years, a system organized around centralized facilities supported by smaller

satellite sites has been an effective and successful means to manage the park. It is proposed to continue this organizational concept, but to more permanently establish the sites of the centralized facilities. This action would allow the park to gain efficiencies through consolidation of some functions in central facilities and still retain the flexibility to meet dispersed maintenance and safety needs through satellite offices.

### Management Strategies

#### *Centralized Maintenance Facilities*

New maintenance facilities would be established in the park. North of the Golden Gate Bridge, a new centralized facility would be constructed in part of the Capehart housing area of the Marin Headlands south of Bunker Road. This new facility (about 45,000 square feet in size) would be a state-of-the-art, environmentally sustainable complex that would accommodate the park's buildings and utilities, roads, and Marin grounds functions. The project would include demolition of selected housing units and new construction of shops, offices, covered storage, parking, and work yards. Maintenance operations presently at Fort Baker (Building 513) and Fort Cronkhite (Buildings 1046, 1070, Nike Missile Launch Site) would be relocated to this new facility. The estimated cost of demolition and construction of a maintenance facility at Capehart is \$16,630,000. This project could take place many years in the future. In the interim, maintenance functions could be placed in existing facilities such as the Fort Barry balloon hangar.

South of the Golden Gate Bridge, the National Park Service would rehabilitate a building in the Presidio to house the

centralized maintenance functions for Area A, the part of the Presidio for which the National Park Service is responsible. Reuse of the building would be contingent upon an agreement between the National Park Service and the Presidio Trust and NPS confirmation of feasibility. Existing NPS maintenance operations, currently spread among several buildings, would be consolidated at one site. The estimated cost for the maintenance facility is \$7,680,000. If the project is not determined feasible, other alternatives would be developed.

### ***Public Safety Hub***

A single centralized operational hub would be developed at Fort Baker to meet park law enforcement needs. These functions would be in Building 507. Park wildland fire functions (offices, garaged vehicles, and fire caches) would be relocated from Fort Cronkhite Buildings 1068 and 1069. These functions would move to the former Nike Missile Launch Site near the Marine Mammal Center that would be vacated by the current roads operation. The historic fire station would remain at Fort Cronkhite. Dispatch and communications operations that serve the park and the Presidio would remain at Presidio Building 35 in the Main Post area. The estimated cost of these facilities is \$1,830,000.

### ***Muir Woods Public Safety and Maintenance Facility***

At Muir Woods National Monument, essential public safety and maintenance functions would continue to be near the monument entrance. These functions could remain in existing structures or be incorporated into other facilities. However, the other maintenance operations would move from the Old Inn and lower Conlon Avenue areas to a new facility shared with California State Parks in Kent Canyon. This action is dependent upon an interagency agreement with California State Parks.

### ***Satellite Offices***

A well-distributed system of park operations satellite offices already exists in Marin and San Francisco counties. These sites would need minor improvements to function more efficiently. Satellites would be extended into San Mateo County by adapting existing park sites for these uses, or through partnerships with other agencies. Typically, each satellite site may have the capacity to collocate functions from several different divisions. The following is a list of satellite locations:

- § Stinson Beach – No change is anticipated to the scale of the office, which serves both maintenance and public safety functions.
- § Marin Headlands – Law enforcement would continue to have access to offices used by the wildland fire program in Fort Cronkhite.
- § Presidio of San Francisco – Public safety would continue to have access to offices by the U.S. Park Police.
- § Alcatraz Island – Public safety offices would remain in Building 64 and maintenance facilities would be expanded in the rehabilitated Quartermaster Warehouse.
- § Fort Mason – Maintenance and public safety would continue to have administrative offices at park headquarters in Fort Mason. Grounds maintenance facilities would remain.
- § Fort Miley – Maintenance and public safety facilities would continue at East Fort Miley.
- § Fort Funston – The existing public safety and maintenance offices would remain. A small building for heavy equipment would be constructed.
- § San Mateo County north of Devil's Slide – Maintenance and public safety offices could be sited at the current Sheldance Nursery area or at San Pedro Valley County Park in

Pacifica, subject to an agreement with San Mateo County.

- § San Mateo County south of Devil's Slide – A new satellite office for maintenance and public safety offices would be developed at a site yet to be determined.

## GOALS FOR COLLECTION STORAGE FACILITIES

The majority of the park's collection would be consolidated in one building in the Presidio that formerly served as stables for the U.S. Cavalry. When rehabilitated, the building would provide adequate space for most of the collection and meet national standards for security, fire protection, and environmental control. This consolidated facility would also provide public space for exhibits and programs that engage visitors in memorable and meaningful learning opportunities based on the collection. The estimated cost of this facility is \$7,060,000. This action is dependent upon an inter-agency agreement with the Presidio Trust, consistent with the 2001 Presidio Trust Act (section 103[b]) that authorizes the Presidio Trust to transfer administration of properties within the Presidio, which are surplus to the needs of the trust and which serve essential purposes of Golden Gate National Recreation Area.

Development of the facility would augment ongoing improvements to collections storage such as installation of space-saving storage equipment and use of a historic battery in the Marin Headlands to provide space for over-sized museum objects.

## GOALS FOR VISITOR-SERVING FACILITIES

While striving for excellence in visitor services, the park would limit new visitor facility development to that which is necessary and appropriate beyond the

network of existing facilities in places like Muir Woods, the Marin Headlands, Crissy Field, Lands End, and Alcatraz Island. Facilities would be designed, built, and maintained in accordance with accepted NPS standards for quality, sustainability, accessibility, and the NPS commitment to visitor satisfaction. As appropriate, visitor-serving facilities may include information services, interpretive exhibits, original artifacts, audiovisual programs, sales of educational materials and theme-related items, and other staffed or self-help programs and spaces necessary for a high-quality visitor experience. Additionally, the need for restrooms, food service, and other basic visitor requirements would be considered during the planning and design stage.

Development of new visitor-serving facilities could be accomplished in partnership with other organizations such as the Presidio Trust and Parks Conservancy. Given the speed of technological changes in information dissemination, the park would stay attuned to the state-of-the-art, pursuing interactive digital technologies to serve diverse users outside traditional visitor centers.

The new visitor-serving facilities proposed in the management alternatives, some of which involve adaptive use of historic structures, have been evaluated using an NPS-created visitor center planning model approved for the purposes of inclusion in this plan. Additional planning, design, and compliance would be required for implementation. Proposed actions are addressed in the description of alternatives.

## COSTS OF ELEMENTS COMMON TO ALL ACTION ALTERNATIVES

Cost estimates for actions common to all the alternatives are identified in table 2.

The actions common to all alternatives describe the maximum potential capital

improvements; lesser improvements may be implemented or built in phases if necessary. The implementation of the approved plan would depend on future funding. The approval of this plan does not guarantee that the funding and staffing needed to implement the plan would be forthcoming. Full implementation of the actions in the

approved general management plan could be many years in the future. Additionally, some of the future long-term funding needed to implement the various actions called for in the alternatives is anticipated to come from nonfederal partners, consistent with the park's current practices.

**TABLE 2. ESSENTIAL/PRIORITY\* ONE-TIME CAPITAL COSTS FOR ELEMENTS COMMON TO ALL ALTERNATIVES**

<b>Essential/Priority Projects*</b>	
Presidio: Cavalry Stables: collection storage facility	\$7,060,000
Presidio: Centralized maintenance facility in San Francisco	\$7,680,000
<b>Total</b>	<b>\$14,740,000</b>

\*Essential/priority projects are required to preserve fundamental resources and experiences and would likely require federal funding.

**TABLE 3. DESIRABLE/LOWER PRIORITY\* ONE-TIME CAPITAL COSTS FOR ELEMENTS COMMON TO ALL ACTION ALTERNATIVES**

<b>Desirable/Lower Priority Projects*</b>	
Capehart: Central park operational facility	\$16,630,000
Forts Baker and Cronkhite: Consolidated law enforcement hub and wildland fire facility	\$1,830,000
<b>Total</b>	<b>\$18,460,000</b>

\*Desirable/lower priority projects are important to full implementation of the general management plan, but may be accomplished with nonfederal funds or many years in the future.

# OCEAN STEWARDSHIP

## INTRODUCTION

This section of the general management plan articulates an ocean stewardship policy that is based on and intended to support the Pacific West Region's strategic plan. The strategies and objectives included below are targeted at addressing the unique needs of Golden Gate National Recreation Area's ocean resources. The park would develop an implementation plan that would contain specific actions intended to achieve the measures included below.

Golden Gate National Recreation Area manages miles of coastline and associated marine and estuarine resources inside San Francisco Bay and along the outer coast. The park's legislative boundary extends 0.25 mile from the mean high tide line in San Francisco and Marin counties. General NPS regulations apply to waters subject to the jurisdiction of the United States within the boundaries of the park, without regard to ownership of the submerged lands or the park's jurisdictional status. In addition, a renewable lease through 2058 from the California State Lands Commission grants the National Park Service management authority over tidelands and submerged lands within the park boundary west of the Golden Gate Bridge. In certain areas, the park shares overlapping management authority with the Gulf of the Farallones and Monterey Bay national marine sanctuaries.

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, changes in storm patterns, and ocean acidification compounds many of these threats. Natural sediment transport, which affects shoreline and beach dynamics, is affected by sand mining, dredging, dredge disposal, shoreline stabilization structures,

and altered flow regimes such as dams. Overflights, boats, and other uses of marine habitats cause disturbance to marine species. Invasive nonnative species inhabit the park's ocean and estuarine waters, displacing native species. Recreational and commercial fisheries may impact nearshore fish populations and ecosystem dynamics. 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. Potential wave and tidal energy developments may alter habitat and disrupt physical processes.

Effective management of the park's natural and cultural ocean resources requires a strategic approach. The National Park Service developed an *Ocean Park Stewardship Action Plan* (NPS 2007e) to respond to the issues and threats previously described. In 2007, the Pacific West and Alaska Regions of the National Park Service developed a strategic plan for Pacific Ocean parks, which provided guidance and implementation details for achieving the goals of the servicewide plan. The strategic approach outlined in this plan is consistent with the policies and priorities of Executive Order 13547, "Stewardship of the Ocean, Our Coasts, and the Great Lakes."

## GOALS AND MANAGEMENT STRATEGIES

In order to be an effective steward of the park's natural and cultural ocean resources, park staff must research, monitor, and protect these resources, expand current and explore new partnerships with other agencies and organizations, and communicate an ocean stewardship message to visitors, park managers, and the public. To

accomplish this, park staff must develop a plan and then pursue funding and leverage partnerships.

***Goal 1. Support a Seamless Network of Ocean Protected Areas***

In order to effectively and efficiently manage the park's ocean resources, park staff must work with other agencies that have shared goals and objectives for marine resource protection. This local network currently includes Gulf of the Farallones National Marine Sanctuary, Monterey Bay National Marine Sanctuary, Cordell Bank National Marine Sanctuary, Point Reyes National Seashore, Farallon National Wildlife Refuge, Bolinas Lagoon Open Space Preserve, James V. Fitzgerald Marine Reserve, and portions of California Coastal National Monument.

Strategy 1.1. To ensure that the network is seamless in practice, park staff will work to expand current collaboration and strengthen communication with federal, state, and local agencies with overlapping and adjacent jurisdiction and with nongovernment organizations for management of ocean resources.

***Goal 2. Inventory, Map, and Protect Ocean Parks***

In collaboration with other agencies and organizations managing ocean resources, park staff would further develop their understanding of the park's natural and cultural ocean resources.

Strategy 2.1. Through collaboration with other agencies and organizations, the park will continue to conduct and support regional baseline inventories, monitoring, and mapping of marine and estuarine resources.

Strategy 2.2. Park staff will identify and quantify threats to marine resources, including those associated with climate change and land- and water-based activities.

Strategy 2.3. Through the establishment of sensitive resource zones and special closure areas, the park will protect the most sensitive biological resources from disturbance.

Strategy 2.4. 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 taking present and future climate change influences into consideration.

Strategy 2.5. Park staff will continue to work with the State Lands Commission to obtain additional state lease of all tidelands and submerged lands within the park's legislated boundary.

Strategy 2.6. Park staff will pursue the necessary authorization to correct coastal boundary deficiencies with respect to mean high tide line.

Strategy 2.7. Park staff will increase public awareness of park jurisdiction by working with the National Oceanic and Atmospheric Administration and the Federal Aviation Administration to include park boundaries and special closure areas on nautical and aviation charts.

Strategy 2.8. Park staff will work proactively with the National Oceanic and Atmospheric Administration, the Bureau of Ocean Energy Management, Regulation, and Enforcement, and the Federal Energy Regulatory Commission, and other agencies where appropriate, in addressing planning efforts as they relate to renewable ocean energy.

Strategy 2.9. Park staff will work with local, regional, and state agencies to reduce point and nonpoint source pollution within and adjacent to the park and improve water quality in the

marine and estuarine waters by implementing best management practices.

Strategy 2.10. Park staff will work with the NPS Submerged Resources Center, State Lands Commission, the National Oceanic and Atmospheric Administration, and other agencies to identify and formally assess the condition and value of submerged shipwrecks and other submerged archeological resources, and strategize for their protection, treatment, and interpretation.

***Goal 3. Engage Visitors and the Public in Ocean Park Stewardship***

Given the park's location and its millions of visitors each year, the park affords outstanding opportunities to educate the public about threats to ocean resources. Communication of scientific findings and outreach through education and stewardship programs are needed to elevate awareness of ocean issues, protect resources, and actively engage visitors and the public in ocean stewardship.

Strategy 3.1. Through collaboration with park partners, park staff will work to improve public understanding of the park as an ocean park through expanded interpretation and outreach through media and new technologies.

Strategy 3.2. Park staff will collaborate with the NPS Pacific Coast Science and Learning Center to expand communication of ocean science and research to park staff, visitors and the general public.

Strategy 3.3. Park staff will continue to engage students and visitors in ocean stewardship through the Crissy Field Center, park partners, and other organizations through educational programs.

Strategy 3.4. Park staff will support the Bay Water Trail as a form of sustainable recreation and collaborate with other organizations to outreach to trail users to ensure protection of marine and estuarine resources.

***Goal 4. Increase Technical Capacity for Ocean Exploration and Stewardship***

By drawing on the resources and expertise of other agencies and organizations, the park will leverage partnerships and increase its technical capacity to protect natural and cultural ocean resources.

Strategy 4.1. Through joint research programs with other agencies and organizations, park staff will facilitate research and improved understanding of ocean resources.

Strategy 4.2. Park staff will partner with regional agencies on research and modeling of, and management response to, sediment dynamics and other coastal and ocean processes within the San Francisco littoral cell.

Strategy 4.3. Park staff will actively support ocean stewardship programs of park partners such as California Seabird Protection Network, Gulf of the Farallones National Marine Sanctuary Beach Watch program, and Point Reyes Bird Observatory Conservation Science's Alcatraz Island seabird program.

Strategy 4.4. Park staff will continue to partner with regional, state, and federal agencies to monitor and model sea level rise and other local effects of climate change and assess effects on ocean and coastal resources.

Strategy 4.5. Park staff will partner with local and regional scientific and political entities to develop protection, mitigation, adaptation and restoration strategies and provide guidance on management of park resources that may

be affected by climate change, including inundation and accelerated coastal erosion associated with sea level rise,

increased storm wave energy and altered flow regimes.

# PARK COLLECTIONS

## INTRODUCTION

The park collections represent one of the largest in the national park system, reflecting more than 200 years of history. The park's legacy is reflected through artifacts relating to American Indian culture, the evolution of military history from Spanish Colonial times to the coastal defense and Cold War periods, the advances of maritime history and westward expansion, and the park's relationship with the surrounding San Francisco Bay Area communities. Highlighting this rich chronicle of history are significant collections from Alcatraz Island, the U.S. Army, the Nike Missile Launch Site; archeological remains from every episode of the park's history; and archival photographs, oral histories, architectural drawings, and documents. The park's natural specimen collections reflect the unique geologic features and fragile biodiversity of central California coastal ecosystems.

To convey the diversity and scope of the collections and their representation of the park's cultural and natural resource heritage, these goals allow the collections to be better understood through continued access, study, interpretation, and education, while ensuring their preservation.

The goals that follow broaden the scope of collection management for long-term preservation and for the use of the collections in interpretive and educational programs.

## GOALS AND MANAGEMENT STRATEGIES

### § Preserve and Maintain the Collections

Establish a curatorial and research facility that permits consolidation of the majority of the park collections while meeting the national standards for security, fire protection, and environmental control. Provide public space for research and changing exhibits in this facility.

Provide facilities and implement programs that ensure the long-term preservation of the collections through regular maintenance and preventive conservation.

Evaluate and catalog the entire collection to ensure that materials are accessible and information is available for educational programming, research, and exhibits.

For more information on collection storage facilities, see "Maintenance, Public Safety, Collections, and Visitor Facilities" earlier in this section.

### § Connect People with the Park's Collections

Develop a park collection program that engages the visitor in memorable and meaningful learning opportunities, broadens public access, and creates a sense of place within historic sites.

Create opportunities for individuals to participate in stewardship of the park collections so that visitors connect with, learn about, and enjoy this park resource.

Conduct oral histories that capture the stories associated with the park's

resources and primary interpretive themes. Preserve the oral histories and make them accessible to staff, visitors, researchers, and scholars.

Develop a research and scholar's program that expands our knowledge and understanding of the park collections. Using evolving technologies, develop partnerships with and links to local and national organizations to place the collections in a broader historical and scientific context.

Provide outreach opportunities to a wider community and national audiences through virtual technologies and traveling exhibits. These technologies and exhibits would inform and orient visitors, increase understanding and appreciation of park resources, and improve public use and accessibility of the park collections.

#### § Strengthen the Collection

Strengthen the park's collection by focusing on representations of the park's themes and varied resources.

Strengthen the park collections' comprehensiveness and representation of the park's significance and varied resources through the targeted collection of materials that are missing, misrepresented, or underrepresented in the collections.

Establish a set of protocols with the repositories that maintain the park's natural history specimen collections that allow access for park staff, visitors, researchers, and scholars. Define parkwide policies for future collection and storage of the park's natural history specimens.

## PARTNERSHIPS

When people experience Golden Gate National Recreation Area through participation in either a park or park partner program, they make an emotional connection to the park. This connection often results in an appreciation and support for public lands and resources. Golden Gate National Recreation Area has effectively established and maintained an array of partnerships that have increased the number and variety of channels through which a diverse community can experience the park. These partnerships not only strengthen public ties to the national park system and help fulfill the park's mission and goals, but they also enhance Golden Gate National Recreation Area's overall financial sustainability. Park partners fund and manage programs and services for new segments of the visiting public and they contribute significantly to the preservation of historic NPS facilities from which programs are provided. In some cases, partnerships are a source of direct revenue to the park as well.

For all these reasons, Golden Gate National Recreation Area works to facilitate and maintain partnership opportunities by incorporating partnership development into every aspect of the organization. This includes specifically recruiting and training for partnering skills, organizing staff in a way that facilitates partnerships, and seeking partners in the search for solutions to park issues. Park management is continuously evolving the partnership concept and exploring partnership practices from around the globe to gather innovative ideas and best practices. The park aspires to maintain its role as a learning laboratory in developing programmatically diverse, powerful, and successful partnerships in a national park setting and would embrace and promote partnership development with the following guiding principles:

### IDENTIFY PARTNERSHIP OPPORTUNITIES

Partnership solutions would be actively considered when undertaking park management issues. The decision to establish a specific partnership would be guided by a defined need related to the park's mission, purpose, and/or strategic goals, and under circumstances in which the need may be best fulfilled or significantly strengthened with a park partner. The park will seek partners most qualified and capable of meeting the specific objectives at hand.

### BE INNOVATIVE IN CRAFTING PARTNERSHIPS

The park is committed to a broad partnership vision and culture that includes taking reasonable risks in partnerships within the parameters of policy as well as a willingness to share control in realizing the vision for the park.

### DEVELOP WIN-WIN PARTNERSHIPS

All parties to a partnership need to have a clear understanding of mutual benefits. With this in mind, the park would continue to select and maintain partnerships in which the objectives are directly linked to a partner's organizational mission and goals. The park would strive to share resources, benefits, and recognition of successes of partnerships.

### SHARE THE VISION

The park and its partners would jointly develop and continually refine a shared vision of the work to be accomplished, in order to ensure joint ownership and buy-in

of the objectives. The shared vision would encompass both the broad body of work and individual projects or initiatives undertaken. The park would foster a partnership culture of full engagement that leads to collective enthusiasm and clear results.

#### **MAINTAIN CLEAR EXPECTATIONS**

Partnerships would include formal written agreements and work plans that define mutual interests and expectations, roles and responsibilities for the park and partner, and

clear accountability for the work to be performed.

#### **ACTIVELY MANAGE PARTNERSHIPS**

The park would invest time and resources in its partnerships to ensure that they meet the objectives. If a partnership is not fully performing, the park would reinvigorate, restructure, or discontinue the partnership so that resources remain directed to successful and valuable joint endeavors.

# TRAILS

## INTRODUCTION

Golden Gate National Recreation Area's trail system would continue to be managed and improved to provide an enduring system of sustainable trails. Trails provide one of the most important ways that visitors experience and enjoy the park and discover its diverse settings.

The park's extensive network of trails allows millions of people to discover the natural world and deepen their awareness of the grandeur and fragility of park landscapes and resources. Sustainably designed and maintained trails welcome public use while protecting habitat and landscape and, in some cases, are historic resources themselves. Trails can support healthy lifestyles and offer a nonmotorized way to get to the park and its destinations.

A system of ranch and military roads inherited when the park was established in 1972 is the basis for much of the current trail system. Since then, park managers, with partners and the community, have planned and completed many improvements to park trails to better serve the public and protect park resources.

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.

The successful Trails Forever initiative that was launched in 2003 with a focus on the California Coastal Trail is the most current and best example of the potential of public-community collaboration to establish a network of exceptional trails. Looking

beyond the trails to incorporate caring for the setting through which they travel has integrated improvements to the natural and cultural resources along trail corridors into the trail projects. This approach has expanded the benefits and reach of the program and has inspired an unprecedented level of volunteer support that is key to the ongoing success of the program.

Golden Gate National Recreation Area's trail system would provide a sustainable network for visitors to access, enjoy, and understand the diversity of park settings while protecting park resources. The recreation area's trails would connect communities to the park, and park sites and destinations to each other, to adjacent public lands, and to the regional network of trails.

## GOALS AND MANAGEMENT STRATEGIES

- § Provide a system of trails integrated with the trail network beyond park boundaries, with coordinated regulations and supported by accurate maps and consistent signs.
- § Continue to coordinate with other agencies and organizations to complete a comprehensive regional and national trail system that includes the California Coastal Trail, Bay Area Ridge Trail, San Francisco Bay Trail, Juan Bautista de Anza National Historic Trail, American Discovery Trail, and San Francisco Bay Water Trail.
- § Establish and maintain a trail system that offers a diversity of park experiences, including walking, hiking, scenery viewing, learning, horseback riding, bicycling; trails of varying lengths and loop

configurations, varying degrees of challenge; access to a diversity of park settings; and opportunities for universal access where appropriate.

- § Locate, design, and maintain new or improved trails and trailheads using best practices and sustainable design to protect the park's natural and cultural resources, provide enjoyable and safe access, and reduce ongoing maintenance requirements.
- § Integrate improvements to the surrounding cultural landscape and natural habitats when creating or rehabilitating trails and, where appropriate, convert unnecessary management roads to trails.
- § Create trails and trailheads that promote nonmotorized travel to and within the park, reducing the carbon footprint and supporting healthy communities.
- § Establish a coordinated system of signs to provide wayfinding information, support understanding of the park history and resources, and communicate regulations.
- § Create and support partnerships and community involvement in trail planning and ongoing stewardship, while continuing to engage the community through the Trails Forever initiative.
- § Complete strategic archeological surveys of the trail system to ensure that cultural resources are considered in the planning and design process.
- § Where appropriate, convert management roads to trails.

## Marin County Trails

The Marin County trail system is well established. For much of Golden Gate National Recreation Area's Marin County lands, trail improvements have been identified in recent plans and trail system improvements are ongoing. Future efforts would focus on continuing to improve existing trails, including sustainable alignments and design, improving connectivity and accessibility, and providing wayfinding signs.

## San Francisco City and County Trails

The more formal trails of San Francisco in the planning area are the Bay Trail, the California Coastal Trail, and their connectors. Continued efforts to improve these trails would focus on sustainable design to protect park resources, address the volume of use, and improve connectivity, especially to transit and the regional trail system.

## 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, unnecessary management roads would be converted to trails. A more comprehensive approach to trail planning would be required for new areas coming into park management (Point San Pedro) and areas where trail deficiencies have not been addressed (Phleger Estate, Rancho Corral de Tierra).

## TRANSPORTATION

Continued transportation planning and management is key to providing the broadest range of access for all visitors to Golden Gate National Recreation Area while reducing the park's carbon footprint. To protect the park's natural and cultural resources and provide a high-quality visitor experience, addressing congestion, improving safety, and facilitating access/circulation to and within the park must remain important components of park planning. Access to the park must be provided and improved via alternative modes such as transit, bicycle, ferries, and trails. These transportation strategies were highlighted in the 1980 General Management Plan for the park and they are even more relevant today in the face of demographic and climate change.

The park would pursue sustainable, multimodal access to park sites in partnership with other organizations. By improving trails, roads, and transit connections, a network of equitable, energy efficient, low-emissions, multimodal transportation options would provide enjoyable access to park sites.

### GOALS

- § Reduce greenhouse gas emissions.
- § Create enjoyable and welcoming transportation experiences for all visitors.
- § Preserve and protect park resources by minimizing transportation impacts.
- § Create equitable and convenient multimodal transportation options to and within the park.
- § Inspire environmental consciousness by demonstrating environmental excellence in transportation.

- § Optimize management of the park transportation system through coordinated planning, programming, management, and maintenance.

### MANAGEMENT STRATEGIES

- § Expand Regional Park Ferry Access  
As envisioned in the 1980 General Management Plan, the staff at Golden Gate National Recreation Area continues to pursue expanded ferry access as an alternative means of travel among Fort Baker, Fort Mason, and the Presidio including possible links to Alcatraz Island, Angel Island, Sausalito, Tiburon, Larkspur, and the East Bay.

The National Park Service would continue to collaborate with the Water Emergency Transportation Authority and the Port of San Francisco to explore a range of future ferry connections. These planning efforts seek to improve visitor experience with links between park sites and the regional ferry network. Water taxi access would also be considered as a component of the full network of access where fixed-route and scheduled ferry service may not be warranted.

- § Address Alcatraz Island Ferry Access  
Consistent with regional, multiagency planning efforts, the National Park Service is evaluating new ferry departure points for Alcatraz Island from the northern waterfront of San Francisco.
- § Expand Online Trip Planning / Wayfinding

The park would continue to improve capabilities to enable visitor trip planning, integrated interpretive information and route planning, and other interactive tools. These ongoing improvements would be both online and at park and gateway sites. These web-based improvements would facilitate a broader understanding of park resources and the full array of transportation modes available to access them. Online trip planning would be linked or integrated with existing regional trip planning systems and other new technology encouraging use of alternative modes of access where available.

§ **Employ Tools for Congestion Management**

Congestion management or transportation demand management is a collection of management tools focused on shifting personal travel patterns to off-peak periods, more efficient modes (such as public transit and ridesharing) and alternative modes (such as cycling and walking) to offset vehicle congestion, particularly during peak periods. Tools could include improving and promoting transit options, implementing a reservation system, shifting employee work hours, and employing congestion fees (such as parking fees). In addition to parking fees included in the *Marin Headlands and Fort Baker Transportation Infrastructure and Management Plan Final Environmental Impact Statement (2009)*, the other sites where parking fees would be considered include Stinson Beach, Tennessee Valley, Lands End, Fort Mason, Fort Funston, and Muir Woods. The park staff would continue to explore a full range of these tools to offset congestion at park sites.

§ **Expand the Muir Woods Shuttle**  
The park staff would continue to collaborate with Marin County to improve the Muir Woods shuttle service.

§ **Employ Intelligent Transportation Systems**

Intelligent transportation systems use technology to improve transportation efficiency such as electronic highway message signs with up-to-date travel information or electronic bus stop signs with up-to-the-minute information about bus arrivals. These tools help travelers plan their trip and often help travelers choose alternative routes or modes to avoid congestion. As a result, the total distribution of travelers is spread more evenly across the system and the system functions more efficiently. Park managers would continue to work with Caltrans and other agencies to employ tools to support the Muir Woods shuttle service and other alternative transportation access to park sites.

§ **Implement the Marin Headlands and Fort Baker Transportation Infrastructure and Management Plan of 2009**

Continue to implement actions that provide improved access to and within the Marin Headlands and Fort Baker for a variety of users and to initiate these improvements in a way that minimizes impacts on the rich natural and cultural resources of the park.

§ **Improve Mobility, Access, Connectivity, and Collaboration**

Mobility, access, and connectivity form the keystone of the park and monument's multimodal transportation system. Although cars will

continue to be an important part of the transportation system, the park staff is committed to reducing dependence on the automobile by increasing the efficiency of other modes of travel. Creating practical transportation choices and educating the public of their viability and desirability will increase use of modes other than cars. The park staff will continue to collaborate with regional partners to achieve the vision of creating a seamless multimodal transportation system to access the park for residents and visitors in the Bay Area. This collaboration extends to applying universal design principles, which provide access for people with disabilities.

§ **Develop a Long-range Transportation Plan**

Golden Gate National Recreation Area is developing the first park-level long-range transportation plan. An important component of this process is the creation of a list of prioritized future transportation projects, or the transportation improvement plan. Together, they would articulate the transportation priorities of the park.

As a pilot project, the park staff would develop a model for park-level transportation planning in a manner that is consistent with state and metropolitan planning organizations. The project would provide NPS leaders with a replicable park-level transportation planning process, benchmarks for evaluating transportation projects, and park guidance for future planning and operational decisions.

§ **Improve Nonmotorized Transportation Access.**

Implement actions that will provide improved nonmotorized transportation access to and within park sites. The implementation of these actions will lead to a more seamless network of separated and on-road bicycle and pedestrian facilities meant to reduce vehicle trips, reduce traffic congestion, and improve safe transportation options while protecting park resources. Management tools may include road and intersection designs that improve access and safety while minimizing increased speeds and impacts on park resources; completing a system of multiuse trails and paths; improved bicycle and pedestrian facilities; improved wayfinding and signs; and implementation of traffic-calming measures, among others.

ALTERNATIVES FOR PARK LANDS IN MARIN,  
SAN FRANCISCO, AND SAN MATEO COUNTIES

4





## NO-ACTION ALTERNATIVE

### PARK LANDS IN MARIN COUNTY

#### Overview

In Marin County, Golden Gate National Recreation Area forms the southern core of a large network of regional, state, and federal protected lands and waters (many of which are recognized as part of the UNESCO Golden Gate Biosphere Reserve). Under the no-action alternative, the park would continue to manage this large expanse of preserved natural landscape, with scattered concentrations of developed facilities, to provide visitors with multiple opportunities for recreation, miles of trails, preserved historic military fortifications, and scenic and historic landscapes.

The county features some of the most varied landscapes in Golden Gate National Recreation Area, including lush woodlands, rugged coasts, sandy beaches, meadows, marshes, grasslands, and coastal shrubs. As a result, visitors can experience an array of wildlife and several different habitats in one brief hike.

Much of this area has been managed as part of Golden Gate National Recreation Area since the park was established in 1972. Management of this land would continue to be guided by the park's 1980 General Management Plan and subsequent land use and implementation plans (as described in the "Relationship of This Plan to Other Plans" section in part 1 and in appendix B).

A diverse set of park partners—many housed in historic structures—would continue to provide programs and facilities for visitor education and enjoyment. These facilities and programs currently include a hostel, environmental education and arts programming, equestrian facilities, and a marine mammal rehabilitation center. Park-

managed visitor facilities would continue to include a visitor center, scenic overlooks, trails, campsites, and parking areas at recreational beaches.

National Park Service maintenance facilities, staff housing, administrative offices, and various partner offices would also continue to be in the park.

#### Stinson Beach North to Bolinas-Fairfax Road

This developed area would continue to be managed to support intensive use as a scenic recreational beach receiving a high number of visitors. A variety of facilities would support activities that include picnicking, beach recreation, and water recreation (swimming, surfing, windsurfing, and boogie boarding). Two public bus routes currently serve this area. Easkoot Creek and the dunes would continue to be managed to preserve and enhance natural habitat. Areas of the park east of Bolinas Lagoon would be managed for their natural resource values and would have few trails or other visitor facilities.

This area would continue to be managed to protect and restore coastal ecosystems and contribute to the restoration of natural processes that affect Bolinas Lagoon. Partnerships with neighboring land managers would be strengthened to achieve these goals across the broader landscape.

#### State Route 1 and Panoramic Highway Area

Stretches of these roads pass through or alongside park lands. The roads are not under federal jurisdiction; however, as the underlying land manager, the National Park

Service would continue to cooperate with Caltrans and Marin County for management of the road infrastructure and rights-of-way to protect park resources and preserve the scenic rural character of the setting.

In general, the park land in this area would continue to be managed to preserve and enhance natural and cultural resources and offer access to park sites and recreational activities.

### Slide Ranch

This area would continue to be managed by a park partner to operate an environmental and farm education center in a natural landscape with public access to trails and the shoreline. Slide Ranch would provide day and overnight experiences for program participants and promote healthy eating, healthy living, and environmental awareness. The rocky shoreline and natural area surrounding the program site would continue to be managed by the park to protect natural and ecological values and provide access on existing trails.

### Lower Redwood Creek (formerly Banducci flower farm and surrounding area)

This area would continue to be managed to preserve and enhance natural processes in the creek, floodplain, and surrounding natural landscape. The National Park Service would work with other land managers in the restoration and preservation of the watershed and in the protection of threatened and endangered species like coho salmon and the red-legged frog. Land and water management would be consistent with the *Lower Redwood Creek Floodplain and Salmonid Habitat Restoration Plan* and the *Redwood Creek Watershed: Vision for the Future* plan. Existing residential structures could continue to provide housing for volunteers who contribute to site restoration and stewardship.

### Muir Beach

This small but popular beach lies at the mouth of Redwood Creek and at the confluence of several park trails. In the no-action alternative, the National Park Service would continue to support recreation, hiking, access to the beach. The park staff would continue extensive wetland and creek restoration of the area.

### Golden Gate Dairy and Vicinity

The developed area along State Route 1 would be managed to support a small equestrian facility and the Muir Beach Volunteer Fire Department, which would continue to be housed in historic ranch buildings. Park housing would continue to be provided in nonhistoric structures. A small buffer area protects a tributary to Redwood Creek. The surrounding uplands would be managed to provide trail connections through a natural coastal landscape. Recent trail and trailhead improvements connect this area to the Dias Ridge Trail.

### Tennessee Valley and Surrounding Parklands (from Oakwood Valley to the ocean, and northwest to Highway 1)

A major trailhead, multiple trails, Haypress Meadow hike-in campground, and an equestrian center are in the upper end of the valley. A site in the lower valley contains a nursery operation, the park's small horse patrol, an environmental education program, and the Youth Conservation Corps seasonal group campsite. This area would continue to be managed in a way that accommodates these intense and varied visitor uses. The management of equestrian facilities in this area would reflect the equestrian management environmental assessment that is underway.

The majority of the valley would be managed as a natural landscape with a trail system that provides access to a variety of destinations and landscapes. Remnants of former agricultural uses, including farm ponds, fence lines, and nonnative trees, would remain in the landscape. The creek corridor and shoreline would continue to be managed to protect sensitive natural resources. Tennessee Valley is not currently served by transit. In addition, the trail connections are poor between Tennessee Valley, Oakwood Valley, and the Tamalpais Valley community along Tennessee Valley Road.

### **Marin City Ridge and Gerbode Valley (the coastal ridges and valleys)**

General NPS regulations apply to U.S. waters within the park's legislative boundary extending 0.25 mile from the mean high tide line in Marin County. In addition, a renewable lease through 2058 from the California State Lands Commission grants the National Park Service management authority over tidelands and submerged lands within the park boundary in Marin County west of the Golden Gate Bridge.

### **Fort Barry and Fort Cronkhite**

In this area, historic structures and their settings would be preserved or adaptively reused for recreation, education, and other uses, including park operations. Adaptive use of historic structures would continue to be the foundation of the robust program of park partners who preserve buildings and offer programs that further the mission of the park. Planned road, trail, and transit projects will improve access for visitors and partners (e.g., *Marin Headlands and Fort Baker Transportation Infrastructure and Management Plan Final Environmental Impact Statement*).

Park operations in the area currently include a fire station, roads and maintenance

facilities, staff offices, and a native plant nursery.

Recreational experiences supported in the area would continue to include beach activities, hiking, bicycle riding, horseback riding, picnicking, and environmental education.

The upland areas would be managed to preserve natural resources and processes, continue habitat restoration, protect sensitive species and habitats, and allow continued trail use.

### **Capehart Housing Area**

The National Park Service would continue to manage this area of housing on the north and south side of Rodeo Creek, at the intersection of the two roads that access Rodeo Valley, to provide workforce housing for park and partner staff. This area is named Capehart after the senator who sponsored the military housing act.

### **Conzelman, Bunker, and McCullough Roads (including Battery Spencer and Hawk Hill)**

This area would continue to be managed to preserve historic and natural resources and scenic views of the Golden Gate and Pacific Ocean. The coastal defense fortifications would continue to be accessible and interpreted while protecting sensitive species and native habitats. Currently, scenic driving, bicycling, and walking the California Coastal Trail are popular activities. Planned road, trail, and transit projects will improve access for visitors and reduce congestion at scenic overlooks (e.g., *Marin Headlands and Fort Baker Transportation Infrastructure and Management Plan Final Environmental Impact Statement*).

## **Kirby Cove**

This area would continue to provide a small campground and group picnic area. The beach would be accessible on foot or by nonmotorized boats. The historic coastal fortifications and forest would be preserved.

## **Point Bonita Lighthouse Complex**

The lighthouse and several structures, including a small outbuilding, bridge, and access trail, would continue to be preserved. Visitors would be immersed in an authentic historic setting with interpretation about the site's maritime and military history. Access would continue to be highly managed.

## **Nearshore Ocean and Bay Environment**

The National Park Service has jurisdiction through a management lease with the State of California over a 1,000-foot-wide band of coastal waters immediately offshore. The area includes a variety of marine habitat. The shoreline in Point Bonita Cove would continue to be closed to public access year-round to protect the harbor seal haul-out, except for approved research. Park management of these areas would continue to accommodate public uses such as boating. The park staff would continue to encourage and support research, inventory, monitoring, and consultation and cooperation with other resource managing agencies.

## **PARK LANDS IN SAN FRANCISCO**

### **Overview**

San Francisco park lands in the planning area include Upper Fort Mason, China Beach, Lands End, East and West Fort Miley, Ocean Beach, and Fort Funston.

The following areas that have recently completed land use plans or are implementing recently completed plans are not included in this plan: Lower Fort Mason (the Fort Mason Center), the Presidio (including Crissy Field), Fort Point National Historic Site, Sutro Historic District (Sutro Heights Park, Sutro Baths, and the adjacent parking lot and trail), and Cliff House.

Park lands in San Francisco ring the northern and western shores of the City of San Francisco, preserving a greenbelt next to dense urban neighborhoods. These lands would continue to be major attractions to tourists and central to the quality of life for local citizens. They offer city dwellers places to recreate, rejuvenate, and learn about the fascinating natural and cultural history of the region. For visitors, the park lands help define San Francisco as one of the most beautiful cities in the world.

Management of these lands and marine/bay waters would continue to focus on preserving natural, cultural, and scenic resources, and providing a variety of recreational uses in the varied settings along San Francisco Bay and the Pacific coast.

### **Upper Fort Mason**

Fort Mason would continue to be managed to preserve the historic district and to adaptively use the many historic military structures for a variety of park and park partner uses, including staff offices, maintenance, community garden, and a program center for other park partners. A hostel would continue to be the primary public use in the historic structures. The National Park Service manages a leasing program that provides the opportunity for the San Francisco community to live in historic residences, much like army personnel before them, while providing a source of funds for preservation and maintenance. The Fort Mason Officers' Club would continue to be available to the public

for events such as weddings and conferences.

The “Great Meadow” would continue to provide a flexible space that accommodates a range of informal uses and occasional large special events. The San Francisco Bay Trail through Fort Mason would continue to provide a continuous waterfront multiuse promenade that links to San Francisco Maritime National Historical Park and many park destinations along the city and Presidio waterfront. Planning is underway to bring water shuttle access to a pier at Lower Fort Mason. The City of San Francisco is also evaluating Bus Rapid Transit Service along Van Ness Avenue to terminate at an improved transit hub at North Point Boulevard, immediately adjacent to Fort Mason.

## China Beach

This area would continue to be managed for the recreational enjoyment of the small secluded beach and to provide opportunities for bird watching. Park facilities such as lifeguard offices, picnicking, restrooms, and showers would continue to be provided. The area’s natural resources would be managed for native vegetation and slope stability.

## Lands End

Only the northern area of Lands End is covered in this plan. This area would continue to be managed to preserve and enhance the rugged coastal landscape and its natural appearance and to provide trail access. Public safety staff would continue to be at this site. The southern portion of Lands End (Sutro Historic District including Cliff House) is not part of this plan. This area was recently transformed by the addition of a new parking lot, promenade, scenic overlooks, and extensive renovation of the Monterey cypress forest.

## Fort Miley

Fort Miley is divided into East Fort Miley and West Fort Miley by the active Veterans Administration Medical Center hospital. Park managers would continue to preserve the historic structures and landscapes, providing for both public and park operation uses. East Fort Miley would continue to be managed as a small maintenance center housed in historic structures with public access to an unimproved landscape setting primarily through the hospital campus.

The West Fort Miley historic forest would continue to provide an outdoor skills and fitness course and a small picnic area set among historic fortifications with spectacular coastal views. The historic Marine Exchange Lookout Building (Octagon House) would remain unused.

## Ocean Beach

Ocean Beach would continue to be managed to provide a recreational beach that accommodates high levels of diverse use, while preserving its natural values, including habitat for shorebirds such as the threatened western snowy plover. It would continue to provide a long trail connection between Fort Funston and Cliff House, as well as preserve the historic O’Shaughnessy seawall and promenade. The National Park Service would continue to collaborate with the City and County of San Francisco on Ocean Beach management issues.

## Fort Funston

This park unit would continue to provide trail and beach access for a variety of recreational uses, including dog walking and hang gliding. It would also preserve important natural and cultural resources, including endangered species habitat and historic coastal defense fortifications. Former military structures support park

operations and partner programs such as environmental education and a native plant nursery.

## Nearshore Ocean and Bay Environment

General NPS regulations apply to U.S. waters within the park's legislative boundary extending 0.25 mile from the mean high tide line in San Francisco County. In addition, a renewable lease through 2058 from the California State Lands Commission grants the National Park Service management authority over tidelands and submerged lands within the park boundary in San Francisco County west of the Golden Gate Bridge. The area includes a variety of marine habitat. Park management of these areas would continue to accommodate public uses such as boating. The park staff would continue to encourage and support research, inventory, monitoring, and consultation and cooperation with other resource managing agencies.

## 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 NPS 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. 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.

### Parcels South of Fort Funston to South of Mussel Rock

The National Park Service manages approximately 30 acres in two parcels in this geologically dynamic coastline: one parcel south of Thornton State Beach and one parcel south of Mussel Rock. No improvements for public access have been made by the National Park Service, and there is no active NPS presence in this area. In the absence of a general management

plan, management is guided by the park's authorizing legislation (its purpose) and the management policies common to units of the national park system. This would continue under the no-action alternative.

### **Milagra Ridge**

This area would continue to be managed to protect and restore natural habitat (including endangered species habitat), to protect historic coastal defense fortifications, and to provide public access through a system of trails so people can enjoy the site and its scenic beauty. Recent acquisition by the park of a conservation easement on the northwest slope allows potential development of a Bay Area Ridge Trail connection to the coast.

### **Shelldance Nursery Area**

Portions of the Shelldance Nursery area were added to the park in 1988 and 1993. This small area would continue to be managed for trail access, including a trailhead and trails to Sweeney Ridge; office space and storage of park maintenance equipment; and to accommodate a commercial nursery.

### **Sweeney Ridge (including Cattle Hill and Picardo Ranch)**

Sweeney Ridge was added to the park in 1984. The area would continue to be managed for natural values and protection of historic resources such as the San Francisco Bay Discovery Site National Historic Landmark and the 20th century Nike facilities. Cattle Hill is expected to be transferred to the National Park Service by the City of Pacifica in the near future and recent collaboration has provided trail and habitat improvements on this site. Picardo Ranch and the western extension of Cattle Hill are both private lands not managed by the National Park Service at this time.

Picardo Ranch includes the lower slopes of Cattle Hill, and its trails connect to Sweeney Ridge. Currently, an equestrian facility provides horse boarding. Land and conservation easement acquisition would be a priority for the park.

### **Mori Point**

Mori Point was added to the park in 2002. This site would continue to be managed to preserve and enhance habitat for threatened and endangered species (San Francisco garter snake, California red-legged frog) and to restore natural functions to a highly degraded site. A network of hiking trails, including the California Coastal Trail, is under development to provide visitors access to the area's scenic beauty. Management of this site would be guided by the *Mori Point Restoration and Trail Plan Environmental Assessment*.

### **Point San Pedro**

These rugged coastal areas are not managed by the National Park Service. However, they will be greatly affected by the opening of the State Route 1 tunnel now under construction and may be added to the park within the planning horizon of the general management plan. The City of Pacifica manages Point San Pedro to preserve its natural features and open space. Lands in this area are in public and private ownership.

### **Rancho Corral de Tierra**

One of the largest areas of open space near San Francisco, this 4,200-acre area encompasses the majority of an 1839 Mexican Land Grant and was added to the park in 2011. The isolated and undisturbed condition of the land provides unique and productive habitat for a diverse array of plant and animal species, including several threatened and endangered species. The headwaters of four major coastal watersheds

are contained within this property, providing important riparian habitat and a scenic backdrop that visually distinguishes the San Mateo mid-coast region.

Limited public access would continue to be provided for recreation such as hiking and horseback riding. The area would be managed to provide these current uses, such as equestrian facilities, and anticipated new public uses in a way that maintains and protects resources.

### Montara Lighthouse

The site is presently managed by the U.S. Coast Guard. Under an agreement with California State Parks, a hostel is operated in several structures related to the lighthouse. Day use of the site is focused on scenic beauty and lighthouse history. Transfer of this site to the park is anticipated within the planning horizon of the general management plan. If this occurs, the site would be managed for its current uses.

### Phleger Estate

This area was added to the park in 1994. It would continue to be managed to preserve the cultural and natural resources of this 1,000-acre, second-growth redwood forest and to provide access to the regional trail system.

### San Francisco Public Utilities Commission Peninsula Watershed Easements

These 23,000 acres are managed by the San Francisco Public Utilities Commission to protect San Francisco's water supply and the scenic, ecological, and cultural resources of the watershed. Management is guided by the commission's *Peninsula Watershed Management Plan*. Golden Gate National Recreation Area manages two easements

over the peninsula watershed: a scenic easement and a scenic and recreation easement that provide 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. 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. The peninsula watershed forms the core of the UNESCO Golden Gate Biosphere Reserve, an area rich in native plant and animal life.

### Nearshore Ocean Environments

The reserve area between Ross Cove and Pillar Point Harbor has been designated as the Pillar Point Marine Conservation Area; some recreational fishing would be allowed in this area.

### COST ESTIMATES

Cost estimates for the no-action alternative are identified in table 4. The costs shown here are not for budgetary purposes; they are only intended to show a relative comparison of costs among the alternatives.

The alternatives describe the maximum potential capital improvements; lesser improvements may be implemented or built in phases if necessary. The implementation of the approved plan will depend on future funding. The approval of this plan does not guarantee that the funding and staffing needed to implement the plan will be forthcoming. Full implementation of the actions in the approved general management plan could be many years in the future. Additionally, some of the future long-term

funding needed to implement the various actions called for in the alternatives is anticipated to come from nonfederal partners, consistent with the park’s current practices.

### Annual Operating Costs

The operating budget for fiscal year 2009 was \$28.0 million. This includes operation costs for Golden Gate National Recreation Area (including Alcatraz Island) and Muir Woods National Monument.

### Staffing

The no-action alternative assumes that current staffing levels would be maintained at 335 full-time equivalent (FTE) employees. (FTE is one person working 40 hours per week for one year or the equivalent.) The FTE number does not include volunteer positions or positions funded by partners. FTE salaries and benefits are included in the annual operating cost.

### One-time Costs

The estimated costs of the no-action alternative reflect the continuation of current management. One-time costs for the no-action alternative are the costs for those projects that are currently approved and funded—any requested but unfunded projects are not considered in this analysis. Therefore, while the action alternatives contain estimates for 20 years of proposed projects, the no-action alternative assumes no new projects would take place except those projects funded in 2009. The costs include such projects as preservation of seacoast fortifications, trail realignment, and photovoltaic panel installation. Nonfacility projects currently include conservation of museum collections, visitor use management and monitoring, and restoration of native plants. Total one-time costs of the no-action alternative are \$5.3 million.

In the no-action alternative, the current level of facilities would be continued. Improvements to facilities would include deferred maintenance and rehabilitation projects.

TABLE 4. COSTS ASSOCIATED WITH IMPLEMENTATION OF THE NO-ACTION ALTERNATIVE FOR PARK LANDS IN MARIN, SAN FRANCISCO, AND SAN MATEO COUNTIES

Summary of Costs for the No-action Alternative	
<b>Annual Operational Costs</b>	
Existing Operations	\$28,030,000
Staffing (additional FTE)	334 (+0)
<b>One-time Capital Costs</b>	
<b>Total</b>	<b>\$ 5,280,000</b>

All costs in 2009 dollars

## MANAGEMENT ZONES FOR THE NO-ACTION ALTERNATIVE (FROM THE 1980 GENERAL MANAGEMENT PLAN)

### Natural Resource Zones

#### *Intensive Landscape Management Zone*

Lands within this zone occur entirely within southern reaches of the park and basically include all areas where nonnative vegetation predominates. Although all of these areas have been substantially modified through human activities, many of them still contain isolated populations of natural wildlife and vegetation, which will be carefully preserved. When choices are available in these zones they should favor native species wherever possible. Within this category the following two subzones have been recognized.

*Natural Appearance Subzone: (Ocean Beach, Fort Funston, Lands End, and Rodeo Lagoon picnic area)*—To many park users, lands in this subzone may appear to be as natural as wilderness areas at Point Reyes, but they are in fact human-created landscapes, which in many cases will require the same degree of maintenance as an urban park setting. The primary management goal in these areas will be to continue to accommodate relatively high use levels with a commitment to intensive maintenance in order to retain the appearance of a natural landscape. Examples of intensive measures that will be required in this subzone include reforestation of Monterey cypress and stabilization and maintenance of planted sand dunes.

*Urban Landscape Subzone: (Crissy Field, West Fort Mason, Fort Barry parade ground, Stinson Beach developed areas)*—This subzone is characterized by familiar elements found in traditional city parks—well-tended trees, shrubs, and flowers; irrigated and mowed lawns; and hard-surfaced areas for walking and congregating. These areas are designed

for intensive use and should look complete only when filled with people. Primary resource management activities will include mowing, irrigation, weeding, fertilization, replanting, and trash pickup.

#### *Natural Landscape Management Zone (Marin Headlands and Stinson Beach area)*

In this zone, natural resources and processes will remain as undisturbed as possible given a relatively high level of natural park uses (hiking, primitive camping, etc.). Management activities will be directed primarily at protecting wildlife and vegetation from misuse and overuse and at maintaining a variety of landscape settings conducive to recreation (open grasslands as well as forests).

#### *Special Protection Zone*

This zone includes lands that have received legislative or special administrative recognition of exceptional natural qualities requiring strict protection measures. Further analysis of park resources in the future could result in additional lands being placed in this category.

*National Monument Subzone: (Muir Woods)*—Although contained within the boundary of Golden Gate National Recreation Area, Muir Woods retains its special status as a national monument, the sole purpose of which is to protect a stand of virgin coast redwoods for public enjoyment of their scientific, scenic, and educational values.

*Biotic Sensitivity Subzone: (shoreline and stream courses)*—This subzone, derived from high sensitivity ratings in the information base, generally identifies those natural resources in the park that are particularly sensitive to human use or are especially valuable from an ecological or scientific point of view. Use and development in these areas should be either discouraged or

mitigated sufficiently to avoid substantial levels of deterioration.

Most of the areas covered by this subzone are water courses or bodies of water recognized for their importance in sustaining wildlife and vegetation. Because the lands near these resources have been and will continue to be the most attractive locations for use and minor development, mitigation measures will be particularly important. Siting of minor facilities will be crucial. For example, placing a campground directly on the bank of a stream could cause unacceptable impacts that could be avoided by shifting the facility only several hundred feet.

## Historic Resource Zones

### *Preservation Zone (Fort Point, ships, lighthouses, fortifications, historic buildings at Alcatraz Island)*

Spaces and objects placed in this category are managed and used primarily for the purpose of facilitating public enjoyment, understanding, and appreciation of their historic values. Management activities will include the protection of structures from influences and uses that could cause deterioration and the presentation of tours, exhibits, or other appropriate interpretive efforts.

Because of the unusually large number of historic structures in the parks, many that are suitable for adaptive use have been placed in this category simply because a use has not yet been specifically identified for them. Undoubtedly, some of these will be adapted for management or visitor uses in the future, but in the meantime they will be simply protected from damage and deterioration.

### *Enhancement Zone (Sutro Baths, Sutro Heights, Cliff House, Aquatic Park)*

All of the areas within this subzone were developed originally as recreation spaces and still derive their primary value from recreation use. Management practices will be directed at preserving the basic integrity of their settings and specific structures within them. Enhancement of the usability and attractiveness of these partially rundown and deteriorated areas will be accomplished through the addition of elements and the practice of maintenance activities similar to those described for the urban landscape subzone.

### *Adaptive Use Zone (Alcatraz Island grounds, north and east Fort Mason, Haslett Warehouse, East Fort Miley, areas of Marin Headlands)*

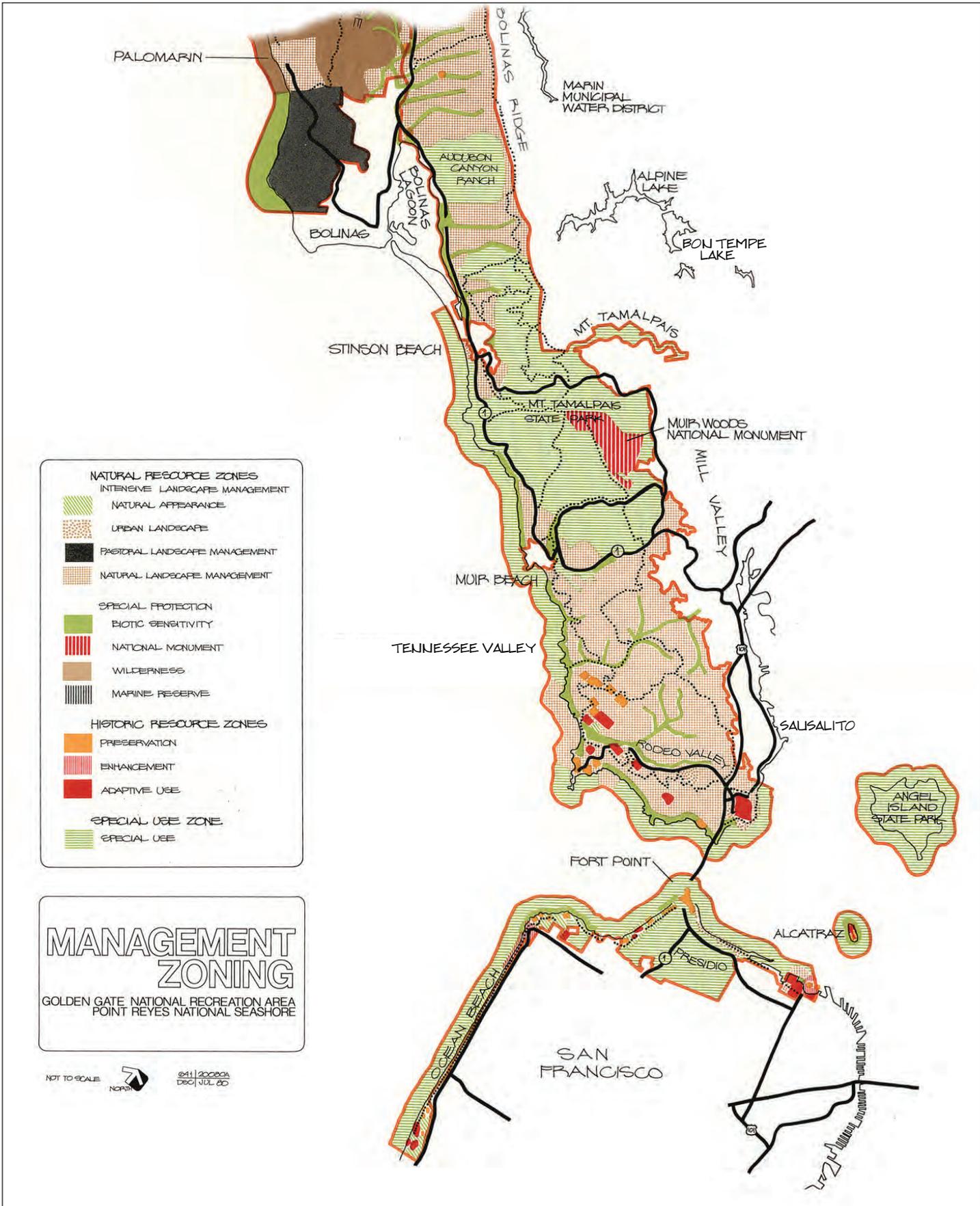
This subzone defines structures or spaces of historic value that have been or will be adapted for recreation, park management, and related activities. Although as much historic integrity as possible will be retained throughout all areas of the park, the interior spaces of structures included in this zone may be modified considerably to accommodate recreation, education, and other park-related uses. Exterior settings may also be modified to include site improvements such as landscaping in cases where modification is deemed necessary to properly accommodate public use.

### *Special Use Zone (Vedanta Society, Audubon Canyon Ranch, Zen Center, Mount Tamalpais and Angel Island State Parks, Lincoln Park and Marina Green city parks, Presidio of San Francisco)*

Lands within this zone are within the authorized boundaries of Golden Gate National Recreation Area or Point Reyes National Seashore, but are not currently or expected in the foreseeable future to come

**under the jurisdiction of the National Park Service. Management policies and practices of the agencies and organizations administering these lands appear to adequately provide the continued**

**preservation of the natural, scenic, recreational, and historic values that motivated their inclusion within the boundaries.**



**1980 General Management Plan**  
**Park Lands in Marin and San Francisco Counties, No-action Alternative**



# ALTERNATIVE 1: CONNECTING PEOPLE WITH THE PARKS— THE PREFERRED ALTERNATIVE

## PARK LANDS IN MARIN COUNTY

### Overview

In this alternative, park managers would preserve the natural, cultural, scenic, and recreational qualities that are enjoyed today and would improve access to the park for all visitors. The park would enhance the facilities that support visitor experience in what has been called “the wilderness next door.” Park managers would work to preserve and restore these interconnected coastal ecosystems through collaborative partnerships with other land management agencies in the region. A stronger national park identity and message would welcome people as they arrive, and improved orientation and information services would inform them of the variety of experiences available in the park. Important park operational uses would remain in the Marin Headlands, and visitor facilities at these sites would be improved.

The park lands in Marin County are an outdoor recreationist’s paradise, with an extensive network of trails through valleys, atop windblown coastal bluffs, along rocky shores, and among redwoods and oaks. Sustainable approaches to rehabilitating facilities that are in place today would improve trailheads and trails as well as roads, parking lots, campsites, picnic areas, restrooms, and other structures at popular destinations such as the coastal fortifications. Some new facilities would be developed to improve visitor services and support the growing stewardship programs. Park partners would continue to play important roles in preserving resources and offering programs and services to visitors in support of the park’s mission. Public

transportation and multimodal access to all park sites would be improved.

### Stinson Beach North to Bollinas-Fairfax Road

#### *Diverse Opportunities Zone (beach, dunes, and developed area)*

At Stinson Beach, the park’s only designated swimming beach with seasonal lifeguards, the setting and facilities would be improved to better support recreation, expand the creek buffer to protect endangered species habitat, and enhance the dunes. 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. A visitor contact facility could combine existing services (food service, equipment rental) and interpretive and educational programs. Visitor facilities would be removed or relocated if it becomes infeasible to maintain them because of climate change. Maintenance and public safety offices with staff housing would be retained.

The park would explore ways to improve visitor access to Stinson Beach such as increasing transit on weekends during the peak season and enhancing regional trail connections. The park would also continue to work with the community and Marin County to manage parking and reduce traffic using congestion management tools.

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 functions, water use, water quality, and wastewater treatment, and sea level rise related to climate change where these affect park resources. More detailed site planning for proposed improvements will involve working with the community to identify alternatives for vulnerable facilities, including off-site locations and increased transit service to offset reduced parking.

***Natural Zone (surrounding park land north to Bolinas-Fairfax Road, except Stinson Beach)***

This area would be managed to protect and restore the coastal ecosystems, and contribute to the restoration of natural processes that affect Bolinas Lagoon. The Bolinas Lagoon Restoration Project—Recommendations for Restoration and Management (Gulf of the Farallones National Marine Sanctuary Advisory Council 2008) identified key actions to protect and restore Bolinas Lagoon and its watershed. Three tables identify recommendations for restoration in the Locally Preferred Plan, recommendations for management (best management practices), and recommendations for adaptive management and monitoring. Each action identifies the key land managers, including Golden Gate National Recreation Area, with a vested interest in implementation of each action. Park involvement would be required to implement restoration actions in portions of the watershed, including improving floodplain function along Easkoot Creek, at the Bolinas Y, and along the east shore of Bolinas Lagoon (e.g., Stinson Gulch), and improving transitional habitat and habitat connectivity along the east shore of the lagoon. Partnerships with neighboring ocean and land managers would be strengthened to achieve these goals across the broader landscape. The park would improve trails, trailheads, and directional

signage to provide access to other nearby park lands.

**State Route 1 and Panoramic Highway Area**

***Scenic Corridor Zone***

Park lands in this area would be managed to enable visitors traveling by car, bicycle, and transit to enjoy spectacular views of the Pacific coast and natural habitats and to provide trail access to park sites.

The park would collaborate with Caltrans and Marin County, the managers of these two important access roads that pass through the park, and with California State Parks and other land management agencies to improve the roadways and trail crossings for the safety and enjoyment of park visitors while retaining the scenic rural character. New facilities could include overlooks and trailheads with parking, restrooms, interpretive exhibits, picnic areas, enhanced trail and transit connections, and a unified way-finding system. A small trailhead parking area could be developed in the vicinity of the former White Gate Ranch. Improvements east of Panoramic Highway in the vicinity of Homestead Hill could enhance trail and transit access to Muir Woods and other nearby park destinations. Improvements would fit with the rural character of the area. Park managers would seek to minimize impacts on natural resources caused by road use, maintenance, and drainage.

**Slide Ranch**

***Diverse Opportunities Zone (developed area)***

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.

***Natural Zone (land surrounding the developed area)***

The landscape that surrounds the educational programs would be managed to enhance its natural and scenic values, retain flexibility to adapt to coastal geologic processes, and provide public trail use and access to the coast.

**Lower Redwood Creek  
(formerly Banducci flower farm and surrounding area)**

***Natural Zone (majority of Lower Redwood Creek)***

Park managers would continue to restore the natural coastal ecosystem and the riparian habitat of Redwood Creek while providing improved trail connections to Mount Tamalpais State Park and other area trails, including the California Coastal Trail. All unnecessary structures would be removed.

***Evolved Cultural Landscape Zone (developed area and adjacent approximately 6-acre site)***

Park managers would preserve the rural, pastoral character of the landscape. Stewardship facilities relocated from Muir Woods National Monument could be accommodated in this zone. The stewardship center, incorporating a native plant nursery and other native plant propagation areas, would reinvigorate the horticultural traditions of the site and engage the community. Existing buildings would be rehabilitated to support park programs and operations.

The National Park Service would work with California State Parks to encourage development of a small trailhead parking and picnic area near Santos Meadow and the Frank Valley horse camp, and improve access to this zone.

A sustainable approach to providing for water supply and wastewater treatment would be identified and implemented to confirm the viability of possible uses at this site. To further protect the creek's endangered salmon, park managers could collaborate with the community to increase water storage capacity for use during the dry season.

Park managers would continue to work with Marin County and California State Parks to explore realignment of Muir Woods Road to reduce impacts on Redwood Creek and repair and reopen damaged road segments.

**Muir Beach**

***Natural Zone***

The National Park Service would manage the area to restore and sustain the wetlands, creek, dunes, and lagoon with improvements for beach and trail access that preserve the natural setting. The park would continue to collaborate with the community, Muir Beach Community Services District, and Marin County to understand and address water quality issues that impact park resources. Ongoing collaboration with Green Gulch Farm managers would continue to promote compatible management of this private parcel within the park boundary.

**Golden Gate Dairy and Vicinity**

***Evolved Cultural Landscape Zone (developed area only)***

The area would be managed to preserve the historic structures and pastoral character while continuing to support park and

community needs. Site improvements would accommodate a small trailhead and rural transit stop and enhance the creek corridor. Equestrian facilities would be retained, with site improvements made to incorporate best management practices and protect the adjacent riparian area. The National Park Service would continue to work with the operator of the equestrian facilities to expand programs that benefit the public. Nonhistoric residences along State Route 1 could be removed if they do not contribute to essential community services or park operational needs.

The National Park Service would continue to promote regularly scheduled transit service to reduce vehicle traffic. The National Park Service would also continue to work with Caltrans to improve the safety of State Route 1 for park visitors, including traffic calming and improved pedestrian crossing, and also to complete the trail connection between Dias Ridge and Redwood Creek trails.

#### *Natural Zone (surrounding uplands)*

The uplands surrounding the dairy would be managed to preserve and enhance the natural setting, protect the coastal prairie and scrub habitat, and provide connections to trails to the beach and the adjacent Mount Tamalpais State Park.

#### **Tennessee Valley and Surrounding Parklands (from Oakwood Valley to the ocean, and northwest to Highway 1)**

##### *Diverse Opportunities Zone (Tennessee Valley trailhead and the upper stables area)*

Trailhead site improvements, including potable water, restrooms, and an improved picnic and parking area, would enhance this portal to the park that supports hiking, biking, and equestrian activities. A small

food and information kiosk could be included in this area.

In collaboration with Marin County and the community, park managers would explore the feasibility of public transit service to the trailhead on peak season weekends. Park managers would also collaborate to extend and link the Tennessee Valley trail system into the surrounding community's trail network such as the Mill Valley Bike Path (San Francisco Bay Trail).

Equestrian facilities would be retained and could be expanded while protecting the historic character of the former dairy ranch. Site improvements would be made to incorporate best management practices and protect the adjacent riparian area. The National Park Service would continue to work with equestrian operators to expand programs that benefit the public.

Modest facilities could be sited within this zone that support stewardship, education, and youth programs.

##### *Diverse Opportunities Zone (Oakwood Valley)*

Visitor access improvements, including trailhead amenities, parking, picnicking, and restrooms, would be provided in this zone to support access to the trail system.

##### *Natural Zone (from the trailhead to the ocean and the surrounding uplands including Oakwood Valley)*

The main multiuse trail would be enhanced to support the ongoing use and improve accessibility. Unnecessary management roads could be converted to trails and natural processes restored.

Hike-in camping would be retained at Haypress Meadow, and primitive camping for park work groups could be retained in its current location, along with the lower restroom. All other structures in lower Tennessee Valley, including buildings,

paddocks, dams, and constructed ponds, would be removed and native habitats restored. The park horse patrol would be relocated and other existing programs could be accommodated in other park locations.

The scenic hills that surround the main trail corridor and trailhead and extend to the north and south would be managed to preserve and enhance the expanse of undeveloped coastal habitat, outstanding natural features, and the scenic beauty of a large contiguous natural area. Trail improvements would create a more sustainable trail system that would provide access to the variety of settings.

### **Marin City Ridge and Gerbode Valley**

#### ***Natural Zone (majority of the Marin Headlands extending south of Tennessee Valley)***

This area would be managed to preserve the expansive undeveloped wild character of the landscape, preserve natural resources and processes, continue habitat restoration, protect endangered and sensitive species, and improve the trail system with more sustainable trails and better connections to adjacent communities. Visitor amenities could include expanded primitive and accessible camping opportunities. The National Park Service would collaborate with other agencies and the community to develop a community trailhead in Marin City.

### **Fort Barry and Fort Cronkhite**

#### ***Diverse Opportunities Zone (lower elevations of Rodeo Valley along Bunker Road, Fort Barry, and Fort Cronkhite)***

This zone would be managed to provide visitors with a variety of recreational, educational, and stewardship activities consistent with the protection of the

nationally significant cultural resources in the area. Visitor amenities could be expanded to include improved trailheads, accessible trails, camping, picnicking, and orientation. These facilities would welcome visitors and give access to the adjacent natural areas. Fort Cronkhite would function as the visitor portal to the Marin Headlands.

This alternative would build upon the nucleus of existing programs offered by the park and its partners that contribute to the concept of a “Center for the Environment.” Rehabilitated structures and limited new construction would continue to be used by the park and its partners to provide visitors with an expanded menu of opportunities that are strongly linked to the park’s purpose. Programs would focus on environmental education, science, history and culture, recreation, healthy lifestyle activities, and special events. A native plant nursery, staff offices, and housing for staff, interns, and volunteers of the park and its partners would be provided within this zone. A visitor contact facility combining information and food service would be developed at a site near both the beach and a transit stop, replacing the existing chapel visitor center at Fort Barry.

In 1994, the National Park Service removed a national landmark World War II cantonment to restore Crissy Field, with the understanding that the cantonment at Fort Cronkhite would be preserved and interpreted. The Fort Cronkhite cantonment is not only highly representative of the once-ubiquitous 700-Series World War II mobilization cantonments; it is considered the best-preserved example of its type in the United States. Every effort will be made to enhance the historic scene while creating diverse visitor opportunities in this zone.

Fort Barry and other historic sites and structures within this zone would continue to support programs provided by the park and its partners consistent with the concept described for Fort Cronkhite. The former

motor pool site would provide for public equestrian programs and the park horse patrol, while the balloon hangar would support interim park maintenance functions. The park would incorporate essential site improvements while preserving historic resources and implementing best management practices to protect natural resources. The Fort Barry chapel visitor center could be adapted for other uses.

### *Natural Zone (uplands)*

This area of Marin Headlands would be managed as part of the extensive natural landscape, with emphasis on the protection and restoration of habitat for threatened and endangered species.

### *Evolved Cultural Landscape Zone (Rodeo Beach and seacoast fortifications)*

This zone would be managed for enjoyment of the beach, trails, and other outdoor recreation and educational opportunities. The landscape would be managed to preserve and interpret the significant military features and structures, such as Wolf Ridge and Batteries Townsley and Mendell, in the natural coastal setting.

### *Sensitive Resources Zone (Rodeo Lagoon and Rodeo Lake)*

This area would be managed to preserve and restore coastal habitat for threatened and endangered species. Visitor access would be highly controlled and restricted to designated trails.

### *Historic Immersion Zone (Nike Missile Launch Site SF88-L)*

The restored compound would continue to provide visitors with an immersion that is evocative of the military tensions during the Cold War era.

## Capehart Housing Area

### *Park Operations Zone*

A new park operational facility would be constructed within this zone south of Bunker Road. Housing lost through removal of Capehart buildings to construct this facility could be accommodated at another site, either in existing structures or through limited new construction.

### *Natural Zone*

The residences on the north side of Bunker Road would be removed to provide for creek restoration and to create a more natural and scenic entrance to Rodeo Valley.

### *Conzelman, Bunker, and McCullough Roads (including Battery Spencer and Hawk Hill)*

### *Scenic Corridor Zone*

Managers would highlight the fundamental coastal resources, endangered species habitat, military fortifications, and spectacular views of the Golden Gate Bridge, San Francisco Bay, and the urban skyline of San Francisco, primarily from the roads and trails. Pedestrian, bike, and motor vehicle access to overlooks and to interpretive and recreational opportunities would be provided. Some overlooks, such as Hawk Hill, would be improved with amenities including interpretive signs, restrooms, and benches.

## Kirby Cove

### *Evolved Cultural Landscape Zone*

This area would be managed for beach access and camping, and would support additional uses by visitors on the new San Francisco Bay Water Trail. Rustic cabin accommodations could be developed, maintaining the setting and character of this

park site. The coastal fortifications and historic forest would be preserved and interpreted.

Habitat restoration would continue outside the historic forest with removal of invasive nonnative vegetation and expansion of habitat for the endangered mission blue butterfly.

## Point Bonita Lighthouse Complex

### *Historic Immersion Zone*

The park would continue to preserve the historic structures and interpret the site's maritime and military history in partnership with the U.S. Coast Guard. The coastal environment and sensitive marine habitat would be protected.

## Nearshore Ocean and Bay Environment

### *Scenic Corridor Zone (all nearshore areas except Point Bonita Cove and Bird Rock)*

Park managers would work to preserve the integrity of the ocean and bay environment, while accommodating public uses including surfing, boating, and recreational fishing. Management actions would protect the marine habitat, rocks, sea caves, and other natural features of the area in coordination with the Monterey Bay and Gulf of the Farallones national marine sanctuaries. This zone would support the San Francisco Bay Water Trail where appropriate.

### *Sensitive Resources Zone (extending 300 feet around Point Bonita Cove and Bird Rock)*

The park would preserve sensitive marine resources—intertidal resources, seabirds, and marine mammals—in these two locations. Visitation would be highly restricted to protect resources that are easily

disturbed. Park-approved research would be the primary activity in this zone, but would be conducted in a manner that is highly protective of sensitive resources.

## PARK LANDS IN SAN FRANCISCO

### Overview

The park lands of San Francisco would continue to provide opportunities to experience nature; explore our heritage; and enjoy the company of family, friends, and fellow community members. Under this alternative, these areas would be managed to preserve and enhance a variety of settings and improve and expand the facilities that welcome and support visitors to the “National Park Next Door.”

The visibility and identity of national park system sites would be improved in settings from military to “wild,” and visitors would be introduced to Golden Gate National Recreation Area through facilities, information, and programming at popular arrival nodes and recreational destinations. As in other alternatives, the San Francisco-based Alcatraz embarkation facility would serve as a portal to Golden Gate National Recreation Area and the larger national park system.

This alternative would also emphasize the importance of education, civic engagement, and healthy outdoor recreation, including offering nature experiences to city children and their families. Existing and new facilities, including a museum collection facility, would support visitor enjoyment, learning, and community-based natural and cultural resource stewardship. Recreational and stewardship opportunities would promote healthy parks and healthy communities. Similar to Crissy Field, this alternative would engage the community to revitalize coastal park areas such as Ocean Beach, Fort Funston, and Lands End in collaboration with other land managers.

PART 4: ALTERNATIVES FOR PARK LANDS IN MARIN, SAN FRANCISCO,  
AND SAN METEEO COUNTIES



A visitor center in the historic WWII barracks supports the wide range of visitor activities and preservation goals at Rodeo Beach.



A community trailhead connects to ridgetop trails and Marin Headlands.



Valuable habitat created by removing obsolete facilities and power lines improves the ecological function and natural beauty of Tennessee Valley.

**Marin County (Conceptual Sketches for the Preferred Alternative)**

The park would continue to improve multiuse trails and trailheads throughout the San Francisco park lands to make the park accessible to the broadest array of visitors. Sites would be connected to each other and to communities by the trail system and the city's transit and multimodal access systems.

## Upper Fort Mason

### *Evolved Cultural Landscape Zone (eastern portion of the site)*

The historic district would become a portal to Golden Gate National Recreation Area, using historic structures to welcome visitors in a setting that would remain a peaceful contrast to the more bustling northern waterfront of Fisherman's Wharf and Lower Fort Mason. The park would preserve and rehabilitate select historic structures for new uses that provide orientation, information, food service, special events, and other services for visitors. With improved visibility, signs, and additional activities, this site would provide visitors with better access and understanding of the opportunities available throughout the park.

Historic residences would continue in residential use where compatible with preservation goals. Other nonresidential historic structures would be preserved for uses such as a hostel and other overnight accommodations, park headquarters, partner offices, and other programs that support the park mission.

The two neighboring national park units, Golden Gate National Recreation Area and San Francisco Maritime National Historical Park, would collaborate on unified visitor welcoming and orientation, exploring the potential to share facilities. Consistent NPS site identification and directional signs would be placed along the popular Golden Gate Promenade / San Francisco Bay Trail and at transit nodes.

An expanded stewardship program would connect the park with San Francisco through youth programs offered by the park and its partners.

The historic district's batteries and landscape would be restored and rehabilitated, including the overgrown gardens on the east and northeast slopes. The community garden would be retained in its current location. Historic Pier 4, at the foot of Van Ness Avenue, would be stabilized.

This alternative anticipates improved access to the park by the development of a water shuttle at Lower Fort Mason and improved walking paths and planned San Francisco Municipal Transportation Agency (SFMTA) projects, including both the extension of the F-Line Streetcar to Lower Fort Mason and development of the bus rapid transit on Van Ness Avenue. Visitor circulation and wayfinding improvements would be implemented in response to these new adjacent bus transit and ferry connections. These concepts would require close collaboration with San Francisco Maritime National Historical Park and the City of San Francisco to improve the experience of arriving at Fort Mason through Aquatic Park and Gashouse Cove at Laguna Street and Marina Boulevard.

### *Diverse Opportunities Zone ("Great Meadow")*

The "Great Meadow" would continue to support a variety of uses and special events with modest improvements to enhance the landscape, enhance the safety of pedestrians and bicyclists on the paths, and provide formal opportunities for picnicking.

### *Park Operations Zone*

Park operations could remain in their current locations. Adjacent structures would continue to house a conservation corps program. If the program relocates, the site and structures would serve park operational needs.

***Sensitive Resource Zone (shoreline at Black Point, including a 100-foot nearshore buffer to protect intertidal resources)***

This area would be managed to protect the rare remaining natural rocky shoreline in San Francisco inside the Golden Gate. An overlook would be developed in the adjacent zone to allow visitors to experience this small site.

**China Beach**

***Diverse Opportunities Zone***

Park managers would improve visitor facilities and access to support current uses. The park would also retain space for park operational needs, including a support office for lifeguards.

**Lands End**

***Evolved Cultural Landscape Zone***

Park managers would continue to enhance the landscape, integrating natural habitat restoration with cultural landscape preservation, and improving the trail system. This would include the California Coastal Trail and the secondary trails that access the shoreline and would enhance scenic viewpoints and opportunities for bird watching. The area would continue to be managed for the preservation of dark night skies. Trail connections and directional signage to the community and adjacent park lands would also be improved.

**Fort Miley**

***Evolved Cultural Landscape Zone (West Fort Miley)***

The historic structures and cultural landscape would be preserved and enhanced. The Marine Exchange Lookout Station

(Octagon House) and its setting would be rehabilitated and its history interpreted. It would provide for park operations, residential, or public uses. Site improvements would focus on enhancing the fort's appearance and providing better connections to the surrounding community, nearby Lands End site, and the Veterans Administration hospital campus. Improved picnicking and group camping facilities would be provided in an appropriate location, as would opportunities for outdoor learning and leadership programs. The area would continue to be managed for preservation of dark night skies.

***Park Operations (East Fort Miley)***

The historic batteries and ordnance storehouse would be preserved and would continue to support park maintenance and public safety satellite operations with potential expansion of volunteer stewardship based from this site. Group camping facilities could also be developed. Other site improvements would focus on interpreting the history of Fort Miley, improving the picnic area, and enhancing trail connections for better visitor access linking to the medical center, the community and Lands End. Safe and more direct service vehicle access could be developed.

***In Both the Evolved Cultural Landscape Zone and the Park Operations Zone***

Continued coordination with the San Francisco Veterans Affairs regarding their campus development and management will be important to ensure compatibility with park uses and historic preservation.

**Ocean Beach**

***In Both the Diverse Opportunities Zone and the Natural Zone***

The park 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 participate in multiagency planning and implementation efforts following the 2012 *Ocean Beach Master Plan*, and other more detailed planning and implementation processes that would follow.

The National 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, restore natural processes, and maximize protection of the beach for its natural and recreational values. The National Park Service could relocate park facilities from vulnerable locations and would work with municipalities to identify the most compatible and sustainable management of stormwater and wastewater facilities within their easement rights.

The California Coastal Trail and other connections would be improved to link Ocean Beach to Lands End, Fort Funston, city neighborhoods, and other park lands including Golden Gate Park and Lake Merced.

### *Diverse Opportunities Zone (along the O’Shaughnessy seawall)*

Park managers would continue to provide a diversity of recreational beach use and preserve the natural setting and resource values, including shorebird habitat. The vital community stewardship activities that are part of the successful management of the beach would be promoted.

The park would preserve the historic O’Shaughnessy seawall and collaborate with the City of San Francisco to enhance the Ocean Beach corridor with improved amenities that support enjoyment of the beach, including the promenade, parking areas, and restrooms.

### *Natural Zone (south of the O’Shaughnessy seawall)*

The area would be managed to protect shorebirds and threatened species and allow natural coastal and marine processes to occur, while providing for a variety of compatible recreational activities. Public safety and stewardship activities would be continued.

## **Fort Funston**

### *Diverse Opportunities Zone (central area and southern beach)*

This site would continue to support current recreational activities, including dog walking and the unique opportunity for hang gliding in the park, while making landscape and trail improvements and protecting and restoring natural habitat. New visitor facilities would be provided near the parking lot. These could include restrooms, group picnicking facilities, a visitor contact facility combining food service with park information, and other support structures. Battery Davis, the historic seacoast fortification, would be preserved and interpreted and its earthworks fenced and protected.

### *Natural Zone (corridors along the perimeter and northern beach)*

Fort Funston’s islands of native habitat would be extended to form a continuous habitat corridor that supports recovery of native dune habitat including endangered San Francisco *Lessingia* plants. The northern stretch of beach would be managed to protect shorebirds, coastal bluffs, and bank swallows and to allow natural coastal and marine processes to occur to the extent feasible, while providing for a variety of compatible recreational activities.

### ***Park Operations Zone (southeast corner)***

Operational facilities could be expanded to meet park needs, including public safety offices, nursery, stewardship center, satellite maintenance facilities, and staff or volunteer housing.

The existing environmental education center could remain in this zone or be relocated to another site better served by public transportation with appropriate facilities and outdoor settings.

### ***In Both the Diverse Opportunities Zone and the Natural Zone***

Trails within Fort Funston and trails connecting to adjacent park lands, such as the California Coastal Trail, would be improved.

### ***In All Zones***

The National Park Service would work with municipalities to identify the most compatible and sustainable management of their stormwater and wastewater facilities within their easement rights. Also, the National Park Service would cooperate with Caltrans and the City of San Francisco to encourage safety improvements along Highway 35 and protect high quality visitor experiences for visitors to both Fort Funston and Lake Merced along this corridor.

### **Nearshore Ocean and Bay Environment**

#### ***Scenic Corridor Zone***

The park would preserve the ocean and bay environment and accommodate public uses including surfing, boating, and recreational fishing. Park managers would protect the marine habitat, geologic resources and processes, and other natural features of the area.

### ***Sensitive Resource Zone***

The park would continue to manage the existing Crissy Wildlife Protection Area for the protection of waterbirds and other wildlife.

## **PARK LANDS IN SAN MATEO COUNTY**

### **Overview**

Under this alternative and others, park lands and ocean environments in San Mateo County would be managed 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. Park managers would emphasize connectivity, preservation, and restoration of the area's vital ecosystems through collaborative partnerships with other land management agencies.

In the spirit of the "Parks to People" movement that created Golden Gate National Recreation Area four decades ago, this alternative would focus on the importance of improving access and engaging the community in these newest park lands. Given the significant addition of park land in the county in recent years, a series of actions would be needed to enhance visitor access, enjoyment, appreciation, and stewardship.

Key efforts would include improving the visibility and identity of NPS sites. Park trails would be improved to create a sustainable system that provides opportunities to enjoy park sites, connects with local communities, and contributes to an exceptional regional trail network. Equestrian facilities would continue to have an important role in recreation and stewardship. A comprehensive trail plan would be prepared to achieve these goals.



The coastal setting of the historic Marine Exchange Lookout Station at West Fort Miley is restored.



New garden walkways and the historic streetcar connect visitors to Fort Mason and Aquatic Park.

Park managers would work with county transit providers to improve transit connections to local trailheads and east–west transit between bayside communities and the ocean beaches. Collaboration with the community and Caltrans would focus on providing safe access to park sites along State Route 1.

The addition of signs and trailhead parking would help visitors find their way to various park sites and help them gain an understanding of the park’s diverse natural and cultural resources. Equestrian needs would be incorporated in trail and trailhead design.

Equally important would be providing facilities to welcome visitors to the park. This alternative would promote visitor information and orientation centers in Pacifica and in the coastal community south of Devil’s Slide. Park improvements would be consistent with preservation of community character. 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. The National Park Service would explore community trailheads and partnerships with the San Mateo County Historical Association at the Sanchez Adobe.

### South of Fort Funston to South of Mussel Rock

#### *Natural Zone*

In this alternative, park managers would work with other land managers to preserve and enhance the natural, cultural, and scenic values of the area; allow for natural coastal geologic processes to continue; and provide modest visitor access facilities (trails, trailheads) to beaches, scenic overlooks, and along the California Coastal Trail, where feasible.

The beach, dunes, and cliffs extending from San Francisco’s Ocean Beach south to

Mussel Rock (a stretch of almost 5 miles) would be managed to protect shorebird habitat, allow natural shoreline processes to continue unimpeded, and provide improved or new trails for visitors to enjoy and view nature. Park staff would work with neighboring communities to mitigate concentrated urban runoff and landslide threat.

### Milagra Ridge (including Lower Milagra Ridge [Connemara]) Conservation Easement

#### *Natural Zone*

The area would be managed to preserve its wild character and protect habitat for endangered species. Disturbed areas would be restored. Coordinating with other land managers, the park would also make trail improvements that could include connections to Oceana Boulevard, the Pacific coast, Skyline Boulevard, and Sweeney Ridge. Historic structures would be preserved.

#### *Scenic Corridor Zone (center of ridge)*

Additional amenities would be developed to support visitors and stewardship volunteers. These could include accessibility improvements, trailhead parking, restrooms, and picnic facilities.

### Shelldance Nursery Area

#### *Diverse Opportunities Zone and Park Operations Zone*

The site would transition from its primary use as a commercial nursery to an area that provides a variety of visitor services that could include enhanced trailhead parking serving Sweeney Ridge and Mori Point, restrooms, park orientation and information, and a community stewardship/education center. The park would encourage

improved east-west connectivity between Sweeney Ridge and Mori Point as part of planned improvements to State Route 1. Safe access from State Route 1 and the trail connection to Mori Point would be improved.

In all alternatives, a portion of this park site would be dedicated to park operational needs, possibly including a satellite facility for maintenance and public safety, native plant nursery, and ranger workforce or volunteer housing.

### **Sweeney Ridge (including Cattle Hill, Picardo Ranch, and Sweeney Ridge Gateway conservation easement)**

#### ***Natural Zone (majority of the area)***

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 primitive camping. Improved trailhead facilities would enhance the connection to the community at Fassler Avenue. 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) would be developed in coordination with other land managers.

Management of the conservation easement over the 7.2-acre parcel adjacent to the Sweeney Ridge Sneath Lane Trailhead would be consistent with the 2007 easement and the restrictions of the 2005 U.S. Fish and Wildlife Service (USFWS) biological opinion for the PG&E Jefferson-Martin Project. The emphasis of management will be to preserve upland habitat for the California red-legged frog and San Francisco garter snake.

### ***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 San Andreas Trail in San Francisco Public Utilities Commission Peninsula Watershed. The San Francisco Bay Discovery Site National Historic Landmark would be preserved and interpreted. The park would continue to permit vehicular access to the discovery site for visitors with disabilities and to accommodate limited special events. A hikers' hut could be developed as part of a system of huts proposed for the Bay Area Ridge Trail. Partnership-based programs would be pursued in preparation of the upcoming 250th anniversary of the discovery of San Francisco. Actions for the Nike Missile Launch Site might include removal of buildings or retaining the shells of buildings. Under either preservation treatment, the site's history could be interpreted.

### ***Diverse Opportunities Zone (developed portion of Picardo Ranch)***

If acquired, the existing facilities could be adapted or replaced with new facilities to support visitor activities, potentially including continued equestrian use, environmental education, trailhead improvements, and park operations. Management would include strong protection for the creek corridor and other natural habitats.

### **Mori Point**

#### ***Natural Zone***

The land would be managed for ongoing restoration of natural habitats and to protect threatened and endangered species while improving the trail system for public enjoyment of the site and its exceptional views and landscapes. Access to Mori Point

would be enhanced with modest trailhead and parking improvements.

Trail connections to the community, Sweeney Ridge and the adjacent public lands, and the California Coastal Trail would be improved in partnership with other land managers. Collaboration with adjacent land managers would also contribute to expanded efforts to preserve listed species and their habitats, improving habitat connectivity across management boundaries.

## Point San Pedro

### *Natural Zone*

These lands, if acquired, would be managed to maintain natural features and scenic beauty and to continue with the habitat restoration and access improvements initiated by the community and other agencies. Trailheads and trails would be developed and enhanced to improve accessible connections to the California Coastal Trail, Devil's Slide, and adjacent lands. Public access would be managed to protect nesting seabirds and historic resources. Collaboration with adjacent land managers would be essential.

## Rancho Corral de Tierra

### *Natural Zone (majority of the area)*

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. 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 management roads could be converted to trails or removed. Exploration of the park could be facilitated by scenic overlooks, primitive camping sites, and possibly a hikers' hut in a remote setting.

### *Diverse Opportunities Zone*

Modest improvements would be created in this zone consisting of trailheads and other visitor facilities that provide for the enjoyment of this new area. This area would be considered a southern portal to the Golden Gate National Recreation Area and other public open space. Detailed planning following general management plan approval would determine the mix of uses that would share this zone. Equestrian uses would be retained at Rancho Corral de Tierra, with the exact location, type, and scale of facility improvements determined in future planning efforts. Park managers would continue to work with equestrian operators to enhance the best management practices employed to protect the environment and expand programs that welcome and benefit the public. New facilities in this zone could include trails, trailheads, a community stewardship/educational center, a group picnic area, a rustic campsite, and a horse camp. Significant constraints on availability of water will influence development and operations of facilities at this site. Any new visitor facility would be sited to preserve natural and cultural resources and where compatible with adjacent uses such as agriculture.

In addition, safe trailheads would be developed near State Route 1 to support exploration of this large, diverse landscape and the extensive adjacent public lands. The multiuse trails and trailheads would be compatible with adjacent residential uses.

Habitat restoration and community stewardship activities would have a strong presence in both zones. An area for native plant production would be established to support restoration projects in the park. The National Park Service would partner with surrounding land managers and the Fitzgerald Marine Reserve, one of the richest intertidal areas on the California coast, to improve habitat connectivity and protect sensitive habitats, to protect water quality, restore the creek corridors and reconnect them to the ocean, and to reestablish anadromous fish passage where possible.

The National Park Service would connect people to the agricultural history of Rancho Corral de Tierra through interpretation of its cultural landscape and adjacent working farms.

## Montara Lighthouse

### *Evolved Cultural Landscape Zone*

The historic lighthouse structures and other associated resources, if acquired, would be preserved and interpreted. Management would enhance the current hostel and day use programming. Trail connections from the hostel up and down the coast would better integrate this site with other park lands and open space.

The park would seek an opportunity to establish a multiagency visitor information and orientation facility in this vicinity. Safe access for vehicles, bicyclists, and pedestrians would be pursued in cooperation with Caltrans and San Mateo County and addressed prior to any substantial change in visitor use.

## Phleger Estate

### *Natural Zone*

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. 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 the Phleger Estate. Community stewardship of the site could contribute to trail and habitat improvements. The National Park Service would explore community trailheads and partnerships with the San Mateo County Historical Association's Woodside Store historic site.

## San Francisco Public Utilities Commission Peninsula Watershed Easements (not zoned)

Note: The approximately 23,000-acre San Francisco Peninsula Watershed is owned by the City and County of San Francisco and managed by the San Francisco Public Utilities Commission for watershed protection as a water supply resource with limited public access. This area is included within the Golden Gate National Recreation Area authorized boundary, and is adjacent to NPS-managed lands at the Phleger Estate, Sweeney Ridge, and Rancho Corral de Tierra.

Golden Gate National Recreation Area administers two easements encompassing the entire watershed property—a scenic easement over approximately 19,000 acres and a scenic and recreation easement over approximately 4,000 acres. The provisions of the easements include preservation of the land in its present natural state, allowing certain recreational uses, and requiring approval of the park superintendent for certain actions (see “Special Mandates” section and the appendixes).

Because NPS management responsibility over the watershed is limited to administration of the easements, this area is not included in management zoning for the park. Actions described below would be encouraged or promoted by the National Park Service for these two easement areas (see appendixes I and J). Some of these actions are already identified in the *Peninsula Watershed Management Plan* (SFPUC 2001)—the San Francisco Public Utilities Commission’s current land use plan for this area. Other actions are suggested for future consideration. Future actions would be subject to the approval of the San Francisco Public Utilities Commission and consistency with the easements. Actions could be implemented either solely by the commission or in cooperation with Golden Gate National Recreation Area and San Mateo County.

### Both Easement Areas

The National Park Service would continue to coordinate with the San Francisco Public Utilities Commission to administer the easements consistent with the easement goals and restrictions. Ongoing and regular communication with the commission to review activities and proposed projects would continue to be a key NPS responsibility. Park managers would continue to cooperate with the San Francisco Public Utilities Commission for preservation of the natural, cultural, scenic,

and recreational values of the watershed with improved public access on trails.

**Scenic Easement Area** (majority of the area—approximately 19,000 acres). Within this area, completion of the Bay Area Ridge Trail connection from the Phleger Estate to Highway 92 would be encouraged. A new trail connection between the Bay Area Ridge Trail and the California Coastal Trail using an existing management road over Whiting Ridge would also be promoted. The Whiting Ridge alignment would connect Sweeney Ridge with McNee Ranch and Rancho Corral de Tierra. Park managers would also promote preservation of the values that resulted in designating this area as the core of the UNESCO Golden Gate Biosphere Reserve.

**Scenic and Recreation Easement Area** (eastern area closest to Highway 280—approximately 4,000 acres). Implementation of trail improvements proposed in the 2001 *Peninsula Watershed Management Plan* would be promoted. These include completion of the north-south trail through the watershed in areas of low sensitivity and a new trail connecting the existing San Andreas multiuse trail to Sweeney Ridge via Sneath Lane. Improving trail access to the Phleger Estate from a new trailhead on Cañada Road and a new multiuse trail connection through the Peninsula Watershed lands between Cañada Road and Skyline Boulevard north of the Phleger Estate would also be encouraged. Preservation of scenic views along the trails, Cañada Road, Skyline Boulevard, Interstate 280, and its vista points would be promoted in cooperation with the San Francisco Public Utilities Commission and Caltrans. Additional coordination with the Juan Bautista De Anza National Historic Trail could also be provided.

The National Park Service would offer to cooperate 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 2001 *Peninsula Watershed Management Plan*.

### Nearshore Ocean Environment

Management of nearshore areas could be extended to cover new segments of the San Mateo County coast as described in the “Boundary Adjustments” section.

#### *Fitzgerald Marine Reserve (not zoned)*

In areas where the park boundary coincides with the Fitzgerald Marine Reserve, the two organizations would continue to cooperate in implementation of the provisions of the California State Marine Life Protection Act.

### COST ESTIMATES

Cost estimates for alternative 1 are identified in table 5. The costs shown here are not for budgetary purposes; they are only intended to show a relative comparison of costs among the alternatives.

The alternatives describe the maximum potential capital improvements; lesser improvements may be implemented or built in phases if necessary. Implementation of the approved plan would depend on future funding. The approval of this plan does not guarantee that the funding and staffing needed to implement the plan will be forthcoming. Full implementation of the actions in the approved general management plan could be many years in the future. Additionally, some of the future long-term funding needed to implement the various actions called for in the alternatives is anticipated to come from nonfederal partners, consistent with the park’s current practices.

The costs to implement alternative 1 focus on a diversity of facilities to attract and welcome visitors; connect people with the resources; and promote understanding, enjoyment, preservation, and health. Costs reflect all proposals of alternative 1 that could be implemented over the 20-year life of the general management plan.

### Annual Operating Costs

The annual operating costs for alternative 1 comprise the current annual operating costs, with changes made to reflect additional staffing needs. The annual operating costs of alternative 1 are estimated at \$32.0 million.

### Staffing Requirements

Total additional staff needed to support alternative 1, including staff for Alcatraz Island and Muir Woods National Monument, would be 46 FTE. Additional staff would be required to support the newly acquired lands in San Mateo County. Staff would support orientation, safety, maintenance, and resource protection in these areas.

Additional staff would be needed to carry out new functional use of the park lands. An increase in interpretive staff would support expanded interpretive programs throughout the park. A greater number of law enforcement officers would be needed to patrol and respond to increased visitor recreational activities. With the addition of new trails and facilities and rehabilitation of other facilities, maintenance responsibilities would increase, also requiring additional staff.

PART 4: ALTERNATIVES FOR PARK LANDS IN MARIN, SAN FRANCISCO,  
AND SAN MATEO COUNTIES



Visitors are welcomed to Rancho Corral de Tierra at a new trailhead portal.



The trailhead to Sweeney Ridge is enhanced as the site transitions uses.

**San Mateo County (Conceptual Sketches for the Preferred Alternative)**

The natural resources division would have a need for staff to perform additional inventory and monitoring duties, as well as enhanced management and restoration activities. The cultural resources division would need funds to conduct baseline studies to inventory and identify resources. In addition, staff would support a series of rehabilitation projects and would require technical specialists in the fields of historic architecture, landscape architecture, archeology, curation, cataloging, and compliance. The responsibilities of the planning division for project coordination, compliance, and public involvement would also expand, requiring additional staff. The business management division would require additional staff to manage additional visitor facilities, Alcatraz Island services, and equestrian operations. New staff would also manage the rigorous user capacity program at Alcatraz Island and Muir Woods National Monument.

Other divisions, including administration, environmental and safety, and public affairs would each require a few additional staff members to manage new areas and uses of the park lands.

### Proposed New Staff

- § 10 positions in visitor resources and protection
- § 12 positions in maintenance
- § 6 positions in interpretation and education
- § 2 positions in planning and compliance
- § 4 positions in cultural resources and museum management
- § 6 positions in natural resources management and science
- § 1 position in public affairs
- § 2 positions in business management
- § 2 positions in administration
- § 1 position in environmental and safety programs

### One-time Costs

One-time costs of alternative 1 reflect extensive rehabilitation to provide a diverse range of visitor activities for the park's many visitors. Total one-time costs for park lands in Marin, San Francisco, and San Mateo counties are estimated at \$49.7 million over the life of the general management plan.

**TABLE 5. COSTS ASSOCIATED WITH IMPLEMENTATION OF ALTERNATIVE 1 FOR PARK  
LANDS IN MARIN, SAN FRANCISCO, AND SAN MATEO COUNTIES**

<b>Summary of Costs for Alternative 1 (NPS Preferred Alternative)</b>	
<b>Annual Operational Costs</b>	
Annual Operational Costs	\$32,000,000
Staffing (additional FTE)	380 (+46)
<b>One-time Capital Costs</b>	
<b>Facility Rehabilitation</b>	
Fort Barry / Fort Cronkhite: visitor access improvements	\$480,000
Fort Funston: visitor facilities improvements	\$770,000
Fort Miley: improve visitor access and facilities*	\$1,500,000
Lower Redwood Creek: improve trail connections*	\$1,020,000
Lower Redwood Creek: stewardship center and landscape improvements	\$1,220,000
Oakwood, Marin City Ridge, Gerbode: improve trail connections to local communities*	\$1,090,000
Oakwood, Marin City Ridge, Gerbode: visitor access improvements	\$560,000
Other Marin County projects	\$580,000
Other San Francisco projects*	\$1,050,000
Other San Mateo County projects*	\$1,190,000
Rancho Corral de Tierra: equestrian facilities improvements	\$2,870,000
Rancho Corral De Tierra: trails system development	\$810,000
Stinson Beach: replace restrooms, showers, parking	\$1,480,000
Stinson Beach: replace visitor contact facility (warming hut)*	\$1,240,000
Tennessee Valley: improve main multiuse trail*	\$1,360,000
Tennessee Valley: stewardship center and environmental education	\$800,000

**TABLE 5. COSTS ASSOCIATED WITH IMPLEMENTATION OF ALTERNATIVE 1 FOR PARK LANDS IN MARIN, SAN FRANCISCO, AND SAN MATEO COUNTIES**

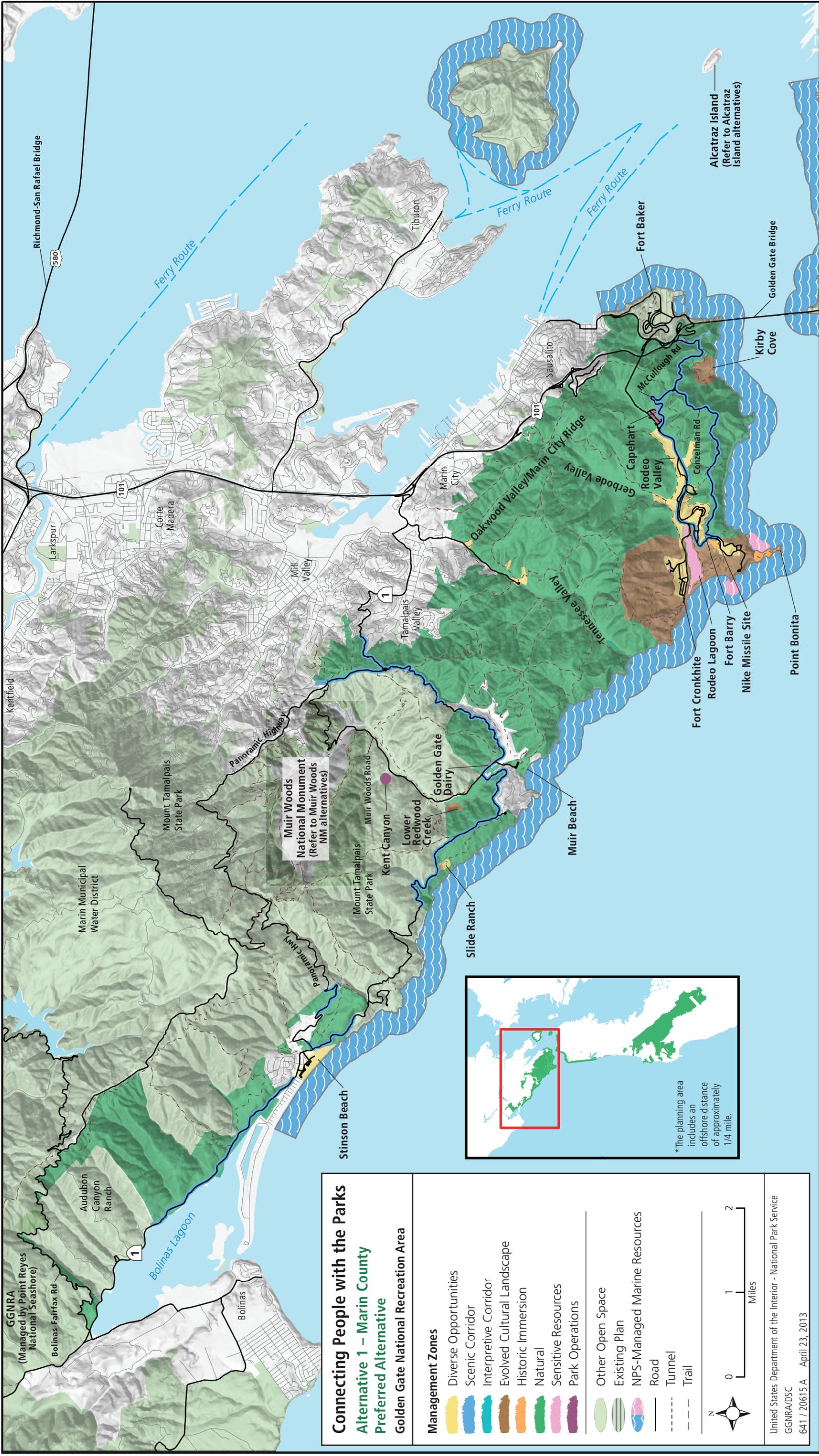
<b>Summary of Costs for Alternative 1 (NPS Preferred Alternative)</b>	
Tennessee Valley: trailhead improvements	\$1,930,000
Thornton Beach/Mussel Rock: improve trail and trailhead*	\$530,000
<b>Historic Preservation</b>	
Marin Headlands seacoast fortifications: stabilization and rehabilitation*	\$960,000
China Beach: rehabilitate structures and parking	\$2,430,000
Fort Barry/Fort Cronkhite: rehabilitate and relocate visitor contact facility (warming hut)*	\$1,920,000
Fort Mason: stabilize Pier 4*	\$3,000,000
Fort Miley: rehabilitate historic structures*	\$3,330,000
Ocean Beach: rehabilitate O'Shaughnessy seawall	\$6,000,000
Other San Mateo County historic preservation projects*	\$740,000
Shelldance Nursery: rehabilitate for park operational uses*	\$640,000
Shelldance Nursery: rehabilitate for stewardship center*	\$1,140,000
<b>Natural Resource Restoration</b>	
Marin County sites, including Stinson Beach and Tennessee Valley	\$1,710,000
San Francisco: Ocean Beach, Fort Funston, and Lands End	\$1,000,000
San Mateo County sites	\$1,510,000
<b>Facility Removal</b>	
Lower Tennessee Valley: remove roads and nonhistoric structures	\$250,000
Capehart housing: remove units north of Bunker Road	\$250,000
<b>New Construction</b>	
Fort Funston: new visitor contact facility (warming hut)*	\$1,240,000
Kirby Cove: new rustic overnight accommodations*	\$390,000

**TABLE 5. COSTS ASSOCIATED WITH IMPLEMENTATION OF ALTERNATIVE 1 FOR PARK  
LANDS IN MARIN, SAN FRANCISCO, AND SAN MATEO COUNTIES**

<b>Summary of Costs for Alternative 1 (NPS Preferred Alternative)</b>	
Other Rancho Corral de Tierra Projects: trailhead and parking	\$980,000
Rancho Corral de Tierra: new rustic overnight accommodations*	\$780,000
Rancho Corral de Tierra: new stewardship and education center*	\$960,000
<b>Total</b>	<b>\$49,710,000</b>

All costs in 2009 dollars

\*These projects are desirable/lower priority, and while important to full implementation of the alternative, may be accomplished with nonfederal funds or in later phases.



**Connecting People with the Parks**  
**Alternative 1 – Marin County**  
**Preferred Alternative**  
**Golden Gate National Recreation Area**

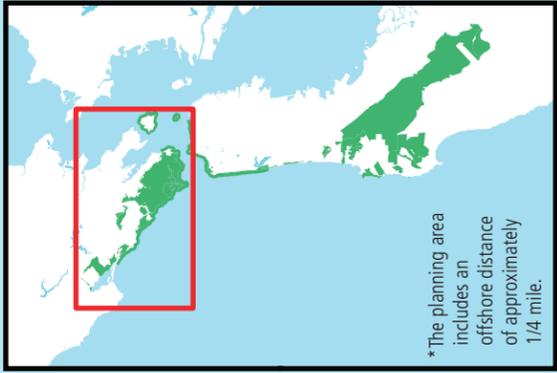
**Management Zones**

- Diverse Opportunities
- Scenic Corridor
- Interpretive Corridor
- Evolved Cultural Landscape
- Historic Immersion
- Natural
- Sensitive Resources
- Park Operations

- Other Open Space
- Existing Plan
- NPS-Managed Marine Resources
- Road
- Tunnel
- Trail

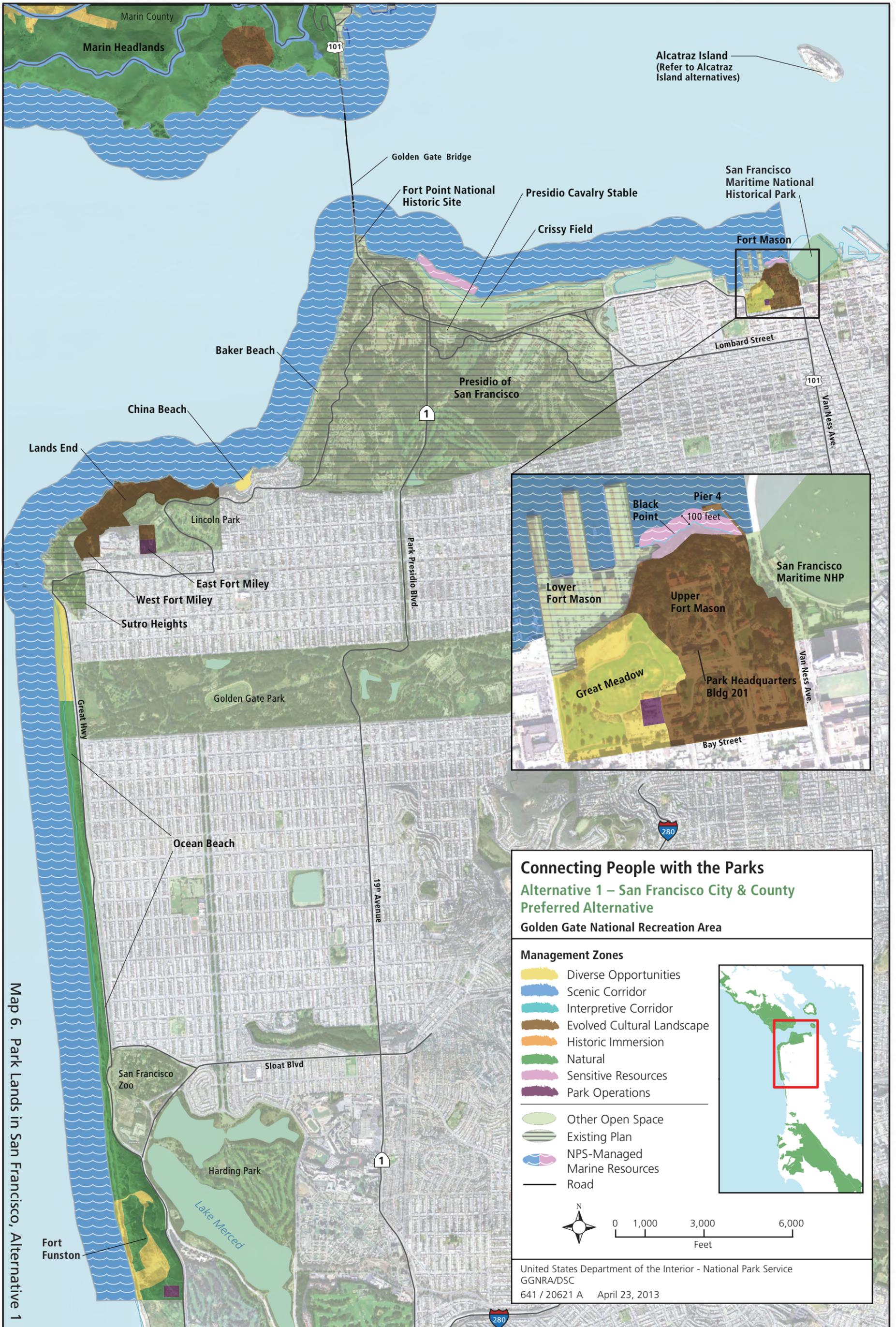


United States Department of the Interior - National Park Service  
 GGNRA/DSC  
 641 / 20615 A April 23, 2013



Map 5. Park Lands in Marin County, Alternative 1





Map 6. Park Lands in San Francisco, Alternative 1

Alcatraz Island  
(Refer to Alcatraz Island alternatives)

Marin County  
Marin Headlands  
Golden Gate Bridge  
Fort Point National Historic Site  
Presidio Cavalry Stable  
Crissy Field  
San Francisco Maritime National Historical Park  
Fort Mason  
Lombard Street  
Van Ness Ave.  
101  
1  
Baker Beach  
China Beach  
Lands End  
Lincoln Park  
East Fort Miley  
West Fort Miley  
Sutro Heights  
Golden Gate Park  
Park Presidio Blvd.  
Great Hwy.  
Ocean Beach  
19th Avenue  
Sloat Blvd  
San Francisco Zoo  
Harding Park  
Lake Merced  
Fort Funston

Black Point  
Pier 4  
100 feet  
Lower Fort Mason  
Upper Fort Mason  
San Francisco Maritime NHP  
Great Meadow  
Park Headquarters Bldg 201  
Bay Street  
Van Ness Ave.  
280



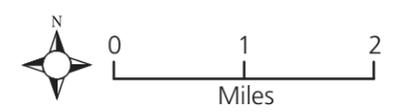
# Connecting People with the Parks

## Alternative 1 – San Mateo County Preferred Alternative

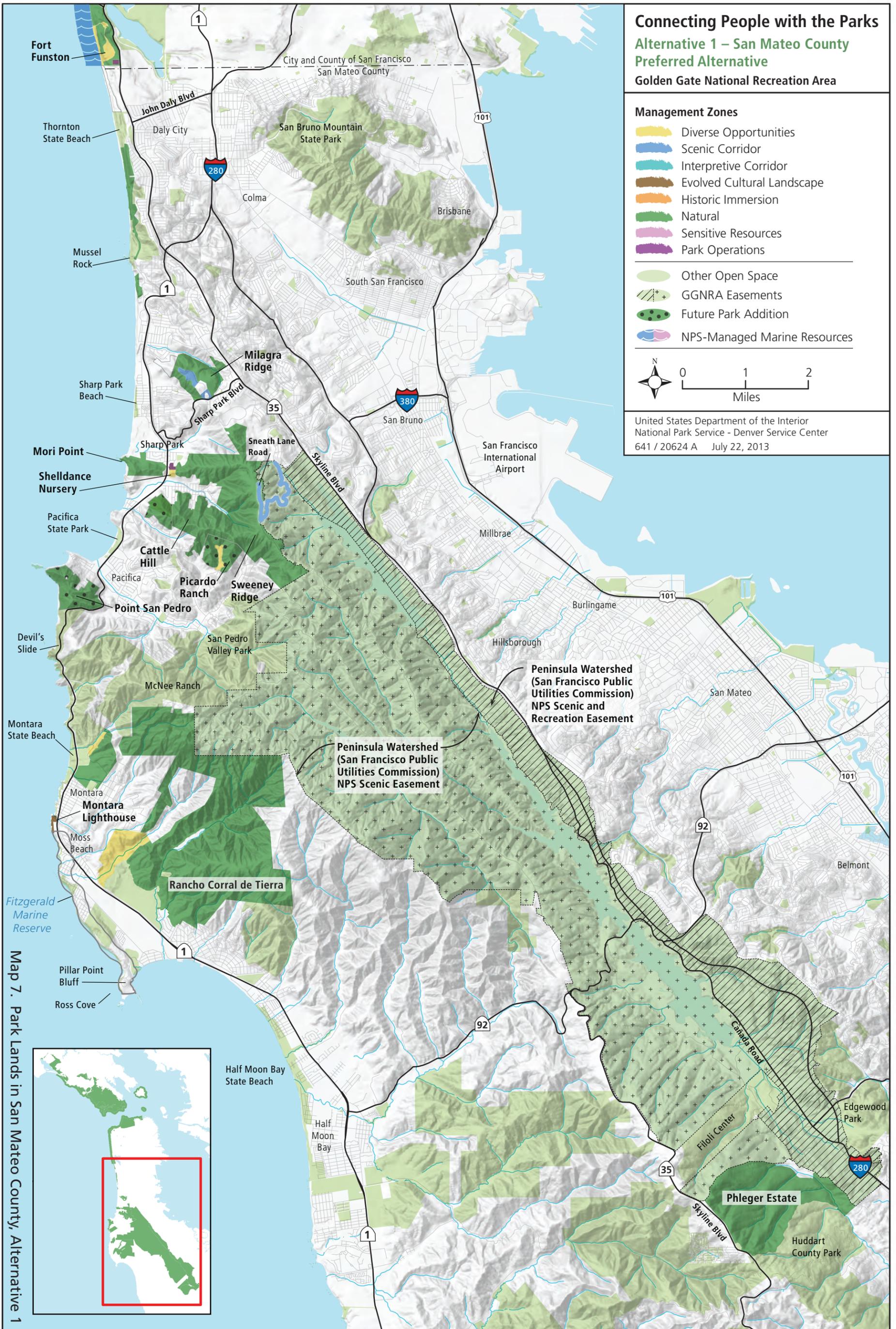
### Golden Gate National Recreation Area

#### Management Zones

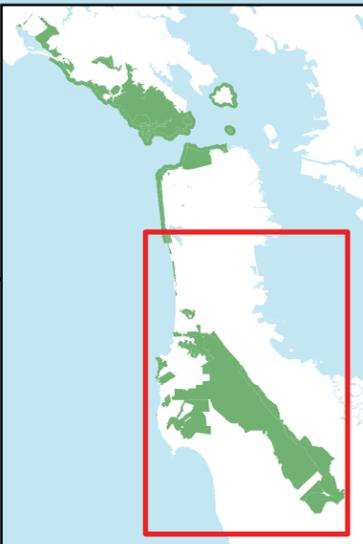
-  Diverse Opportunities
  -  Scenic Corridor
  -  Interpretive Corridor
  -  Evolved Cultural Landscape
  -  Historic Immersion
  -  Natural
  -  Sensitive Resources
  -  Park Operations
- 
-  Other Open Space
  -  GGNRA Easements
  -  Future Park Addition
  -  NPS-Managed Marine Resources



United States Department of the Interior  
National Park Service - Denver Service Center  
641 / 20624 A July 22, 2013



Map 7. Park Lands in San Mateo County, Alternative 1





## ALTERNATIVE 2: PRESERVING AND ENJOYING COASTAL ECOSYSTEMS

### PARK LANDS IN MARIN COUNTY

#### Overview

In this alternative, management would strive to further preserve and restore the dynamic, interconnected coastal ecosystems at the core of protected lands through collaborative regional partnerships. These lands provide substantial swaths of protected habitat for many of the park's sensitive, rare, threatened, and endangered species. Partners would work on common goals to sustain the area's native biodiversity, reconnect fragmented habitats and migration corridors, minimize the impact of invasive species, manage for changing fire regimes, protect threatened and endangered species, and restore naturally functioning ecosystems. Proactive management would work to build resiliency to climate change into the natural environment.

This alternative would highlight Marin County park lands and waters as living laboratories, engaging visitors in participatory science, education, and stewardship that nurture personal connections with nature and inspire advocacy.

Exploration of trails and beaches would further highlight the park's coastal natural and cultural resources. Cultural resource sites and stories would emphasize human occupation of the coastal environment, as reflected in lighthouses, coastal defense structures, archeological sites, and agricultural land uses.

### Stinson Beach North to Bolinas-Fairfax Road

#### *Diverse Opportunities Zone (beach and developed area)*

The current level of visitor services, such as restrooms, seasonal lifeguards, and food service, would continue to support beach recreation; however, park facilities such as the central restroom and its septic system would be relocated farther from the dunes and beach to better protect natural resources. 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 ones would first be evaluated for long-term viability and cost effectiveness, taking present and future climate change influences into consideration. The Easkoot Creek riparian corridor would be further enhanced by redesigning the parking lot.

As in alternative 1, park managers would explore improved weekend transit service at peak times in order to reduce congestion, minimize impacts on natural resources, and provide a way to access the beach without a car.

#### *Natural Zone (dunes, south parking lot, and surrounding park land north to Bolinas-Fairfax Road)*

The sand dunes would be restored and the south parking lot would be removed to support wetland restoration. The rest of the lands and waters in the vicinity of Stinson Beach, including the uplands, would be managed to protect and restore the coastal ecosystems and contribute to restoration of natural processes that affect Bolinas Lagoon. The Bolinas Lagoon Restoration Project—

Recommendations for Restoration and Management (Gulf of the Farallones National Marine Sanctuary Advisory Council 2008) identified key actions to protect and restore Bolinas Lagoon and its watershed. The project identifies recommendations for restoration in the Locally Preferred Plan, recommendations for management (best management practices), and recommendations for adaptive management and monitoring. Each action identifies the key land managers, including Golden Gate National Recreation Area, with a vested interest in implementation of each action. The park involvement would be required to implement restoration actions in portions of the watershed, including improving floodplain function along Easkoot Creek, at the Bolinas Y, and along the east shore of Bolinas Lagoon (e.g., Stinson Gulch), and improving transitional habitat and habitat connectivity along the east shore of the lagoon. Partnerships with neighboring land managers would be strengthened to achieve these goals across the broader landscape.

### **State Route 1 and Panoramic Highway Area**

#### *Natural Zone*

As in alternative 1, these park lands would be managed to enable visitors traveling by car, bicycle, and transit to enjoy spectacular views of the Pacific Coast and to provide access to park sites.

Under this alternative, greater emphasis would be placed on collaboration with Caltrans and other agencies to further protect and restore the coastal ecosystem. In the event of a catastrophic landslide, park managers would encourage abandonment of State Route 1 between Muir Beach and Stinson Beach in the affected segment. Interpretive exhibits could illustrate the dramatic impacts on coastal ecosystems caused by constructing and maintaining the highway.

### **Slide Ranch**

#### *Natural Zone*

The existing environmental education center and farm education program would be relocated to a more sustainable and geologically stable site in a less remote location. The area would be managed to promote restoration of coastal resources and to allow natural geologic processes to continue unimpeded. A modest trailhead near State Route 1 would be provided to support visitor access to the rugged coast, but all other structures and farm areas would be removed to allow restoration of natural conditions.

### **Lower Redwood Creek (former Banducci flower farm and surrounding area)**

#### *Natural Zone*

Park managers would continue to restore the native coastal ecosystem, including Redwood Creek and endangered salmon habitat, the riparian corridor and adjacent wetlands, and the uplands that were planted with heather and eucalyptus. Visitors would have opportunities to participate in stewardship activities in the restoration of the natural systems. All facilities and structures would be removed unless needed to support stewardship, restoration activities, and trail use. The California Coastal Trail could also connect at this park site.

Park managers would work with Marin County and California State Parks to explore realignment of Muir Woods Road to reduce impacts on Redwood Creek. To further protect the creek's endangered salmon, park managers could collaborate with the community to increase water storage capacity for use during the dry season.

## **Muir Beach**

### ***Natural Zone***

Management of this zone would be the same as that described under alternative 1.

## **Golden Gate Dairy and Vicinity**

### ***Evolved Cultural Landscape Zone (developed area and surrounding uplands)***

The area would be managed to preserve the historic structures and pastoral landscape and protect the coastal prairie and scrub habitat.

The historic structures could be adaptively reused for a science and stewardship center or for local community services that are consistent with park goals. Nearby nonhistoric residences could be removed if they do not contribute to essential community services or park operational needs. The rest of this park site could be restored to its natural condition. Equestrian use would be provided on designated trails in the area.

## **Tennessee Valley and Surrounding Parklands (from Oakwood Valley to the ocean, and northwest to Highway 1)**

### ***Evolved Cultural Landscape Zone (Tennessee Valley trailhead and the Miwok Stables area)***

This area would be managed to retain its traditional equestrian uses and provide a minimal level of visitor facilities and an improved trailhead to support visitor access to the extensive network of trails. Modest facilities that support the stewardship and restoration activities and the park horse patrol currently in the lower Tennessee Valley could be sited within this zone.

### ***Natural Zone (from the trailhead to the ocean and the surrounding uplands including Oakwood Valley)***

Park managers would preserve and enhance the native coastal ecosystem and allow visitors to experience the wild character of the valley. Nonhistoric facilities and structures would be removed. Unnecessary management roads, including Marincello Road, could be converted to trails or removed if not historic, and natural processes restored.

The main Tennessee Valley Trail would be converted to a multiuse trail, and the remaining dams and artificial ponds would be removed. Native wetland and riparian habitat would be restored in these areas.

## **Marin City Ridge and Gerbode Valley**

### ***Natural Zone (Marin City Ridge and Gerbode Valley)***

This area would be managed to restore and preserve the undeveloped coastal corridor of contiguous habitat and natural resources, and the outstanding open space and wild character of these lands. The nonhistoric facilities and infrastructure would be removed and the land restored to a natural condition. Unnecessary management roads could be converted to trails, or removed if not historic, and natural processes restored. Opportunities would be explored to provide trail connections from these park lands to local communities.

## **Fort Barry and Fort Cronkhite**

### ***Sensitive Resources Zone (Rodeo Lagoon and most of the Rodeo Valley uplands south of Bunker Road)***

This area would be managed to preserve and restore coastal habitat for threatened and endangered species. Visitor access would be

highly controlled and restricted to designated trails in this zone.

***Evolved Cultural Landscape Zone  
(Rodeo Beach, Fort Cronkhite, and  
Fort Barry)***

These areas would be managed to maintain the military identity of the area, provide for higher levels of visitor use than in surrounding areas, and provide educational programs, surfing, recreational fishing, and other outdoor recreation opportunities. The adjacent forts would be managed to protect and interpret the national register historic district while allowing reuse of the buildings for park programming and operations, possibly including a new visitor center. Habitat restoration within this zone would be consistent with preservation of the military landscape. Equestrian facilities would be accommodated in this area.

***Historic Immersion Zone (Nike  
Missile Launch Site SF88-L)***

Management of this zone would be the same as that described under alternative 1.

**Capehart Housing Area**

***Park Operations Zone***

A new park operations facility would be constructed within this zone south of Bunker Road. Residential structures and unnecessary infrastructure would be removed; riparian and upland habitats would be restored, and fragmented habitat would be reconnected where possible.

**Conzelman, Bunker, and McCullough  
Roads (including Battery Spencer  
and Hawk Hill)**

***Scenic Corridor Zone***

Same as alternative 1, except that outside the immediate road corridor, the area would be

managed to protect and restore coastal habitat that supports the threatened mission blue butterfly. Visitor access would be highly controlled and restricted to designated trails in this zone.

**Kirby Cove**

***Evolved Cultural Landscape Zone***

The park resources and history associated with coastal fortifications would be highlighted; camping would promote appreciation of views of the Golden Gate Bridge and the wild-urban interface between the park and the City of San Francisco. Facilities would provide visitors with access to the beach and new San Francisco Bay Water Trail.

Habitat restoration would continue outside the historic forest with removal of invasive nonnative vegetation and expansion of mission blue butterfly habitat.

**Point Bonita Lighthouse Complex**

***Historic Immersion Zone***

Management of this zone would be the same as that described under alternative 1.

**Nearshore Ocean and Bay  
Environment**

***Scenic Corridor Zone (nearshore  
areas except Muir Beach and Point  
Bonita)***

Management of this zone would be the same as that described under alternative 1.

***Sensitive Resources Zone (nearshore areas around Muir Beach and Point Bonita – from Bird Island to Point Bonita Cove)***

The park would preserve sensitive marine resources—intertidal resources, Redwood Creek salmonids, seabirds, and marine mammals—in these two locations. Visitation would be highly restricted to protect resources that are easily disturbed. Park-approved research would be the primary activity in this zone, but would be conducted in a manner that is highly protective of sensitive resources.

**PARK LANDS IN SAN FRANCISCO**

**Overview**

San Francisco’s national park system lands are a vital natural refuge, rich in biodiversity and native habitat. As in alternative 1, San Francisco park lands would welcome visitors to the “National Park Next Door”; however, this alternative would focus on engaging visitors, communities, and partners in participatory science, education, and stewardship focused on the coastal environment.

The local impacts of global climate change, including rising sea level, provide a focal point for individual and collective action and advocacy. The park, in collaboration with community partners, would demonstrate leadership in proactive adaptation and management in the face of accelerated sea level rise. These interpretive messages would reach visitors enjoying the coastal environment along San Francisco Bay Trail and the California Coastal Trail. Cultural resource sites and history would also highlight the human connection to the coastal environment; sites and history would include archeological sites, European exploration, maritime history, and coastal defense. As in other alternatives, the San Francisco-based Alcatraz embarkation facility would serve as a portal to Golden

Gate National Recreation Area and the larger national park system.

**Upper Fort Mason**

***Evolved Cultural Landscape Zone (Majority of the site)***

This zone would be managed similarly to alternative 1, but rehabilitation of historic structures for adaptive reuse, including Pier 4, would bring new park partners who would engage visitors, communities, and others in participatory science, education, and stewardship focused on the coastal environment. A stewardship “hub” would be based at Fort Mason to transport volunteers arriving by public transit to volunteer and stewardship activities in other park locations. Visitor circulation and wayfinding improvements would be implemented in response to new adjacent bus transit and ferry connections.

***Diverse Opportunities Zone (“Great Meadow”)***

Management of this zone would be the same as that described under alternative 1.

***Sensitive Resources Zone (shoreline at Black Point)***

Management of this zone would be the same as that described under alternative 1.

**China Beach**

***Diverse Opportunities Zone***

Management of this zone would be the same as that described under alternative 1.

## Lands End

### *Natural Zone*

Native habitat and natural processes would be restored within the coastal corridor extending from Eagle's Point (Sea Cliff neighborhood) south to the area of recent restoration and trail improvements near the new Lands End parking lot.

The trail system would be improved to provide access to the shoreline and vistas, as well as connections to the community and adjacent park areas.

## Fort Miley

### *Evolved Cultural Landscape Zone*

Same as alternative 1, except that more natural landscape enhancements would be integrated and the Marine Exchange Lookout Building (Octagon House) would be adaptively reused to engage the public in the natural and human history of the ocean environment.

## 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 National 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, restore natural processes, and maximize protection of the beach for its natural and recreational values. The

National Park Service could relocate park facilities from vulnerable locations.

### *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.

## Fort Funston

### *Natural Zone (majority of the site)*

Fort Funston's islands of native habitat would be expanded to form a continuous habitat corridor that supports recovery of native dune habitat including endangered San Francisco *Lessingia* plants.

The beach, dunes, and cliffs extending from central Ocean Beach south to Mussel Rock (a nearly continuous stretch of almost 5

miles) would be managed to protect shorebird habitat, allow natural shoreline processes to continue unimpeded, and provide improved or new trails for visitors to enjoy and view nature.

***Diverse Opportunities Zone  
(central core of existing facilities)***

This area would be managed to provide continued high levels of varied visitor use, including hang gliding and dog walking near the main parking lot, supported by parking, restrooms, and trails. Park managers would preserve Battery Davis as a structure contributing to the history of seacoast fortifications.

***Park Operations Zone  
(southeastern corner)***

Park operations, stewardship, and education support facilities would remain.

**Nearshore Ocean and Bay Environment**

***Sensitive Resources Zone (Eagle's Point near China Beach to Seal Rocks, and area at West Crissy Field)***

These areas would be designated marine reserves to protect seabirds and marine mammals.

***Scenic Corridor Zone (all other nearshore areas in San Francisco)***

Management of this zone would be the same as that described under alternative 1.

**PARK LANDS IN SAN MATEO COUNTY**

**Overview**

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 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 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.

Park lands in San Mateo County provide an extensive wildlife corridor that includes habitat for threatened and endangered species. Under this alternative, these lands would serve as living laboratories, engaging visitors in participatory science, education, and stewardship—activities that nurture personal connections with nature and inspire advocacy.

Exploration along the vast network of trails would further highlight the park's diverse ecosystems and rich cultural resources. Cultural resource sites and stories—archeological sites, European exploration, agricultural land uses, coastal defense sites, and the lighthouse—would emphasize human occupation of the coastal environment. Most cultural resources would be stabilized if not in conflict with natural resource restoration.

Land protection strategies would seek to reconnect fragmented endangered species habitat and strive to remove features that impede movement or migration of species, or disrupt ecological function.

***South of Fort Funston to South of Mussel Rock Natural Zone***

Management of this zone would be the same as that described under alternative 1.

## Milagra Ridge

### *Natural Zone*

The land would be managed to preserve the wild character of the area and protect endangered species habitat. Disturbed areas would be restored. Coordinating with other land managers, the National Park Service would also make trail improvements that could include connections to Oceana Boulevard, the Pacific coast, Skyline Boulevard, and Sweeney Ridge.

## Sheldance Nursery Area

### *Diverse Opportunities Zone and Park Operations Zone*

Management of this zone would be the same as that described under alternative 1.

## Sweeney Ridge (including Cattle Hill, Picardo Ranch, and Sweeney Ridge Gateway conservation easement)

### *Natural Zone*

This area would be managed to protect endangered species and restore the large contiguous natural landscape 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 camping. 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. 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).

The San Francisco Bay Discovery Site National Historic Landmark would be preserved and interpreted.

The National Park Service acquired a conservation easement over a 7.2-acre parcel adjacent to the Sweeney Ridge Sneath Lane Trailhead. Management of the parcel would be consistent with the 2007 easement and the restrictions of the 2005 USFWS biological opinion for the PG&E Jefferson-Martin Project. The emphasis of management would be to preserve upland habitat for the California red-legged frog and San Francisco garter snake.

## Mori Point

### *Sensitive Resources Zone*

Visitor use would be highly controlled to protect threatened and endangered species that inhabit the site. The public would continue to engage in community stewardship to preserve and restore the native coastal ecosystem.

## Point San Pedro

### *Natural Zones*

Management of this zone would be the same as that described under alternative 1.

## 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, 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.

### *Scenic Corridor Zone (existing equestrian lease area)*

These areas would accommodate visitor and equestrian facilities in sustainable locations and configurations that are compatible with natural resource management goals for the surrounding area.

### Montara Lighthouse

#### *Evolved Cultural Landscape Zone*

Similar to alternative 1, the historic resources would be preserved and adaptively used, but the site would be dedicated to stewardship and environmental education. The site would become a campus focused on enhancing understanding and stewardship of coastal resources, with hostel and overnight accommodations for program participants and staff.

### Phleger Estate

#### *Natural Zone*

Management of this zone would be the same as that described under alternative 1.

### San Francisco Public Utilities Commission Peninsula Watershed Easements (not zoned)

Note: The approximately 23,000-acre San Francisco Peninsula Watershed is owned by the City and County of San Francisco and managed by the San Francisco Public Utilities Commission for watershed protection as a water supply resource with limited public access. This area is included within the park's authorized boundary and is adjacent to NPS-managed lands at Phleger

Estate, Sweeney Ridge, and Rancho Corral de Tierra.

Golden Gate National Recreation Area administers two easements encompassing the entire watershed property—a scenic easement over approximately 19,000 acres and a scenic and recreation easement over approximately 4,000 acres (see appendixes I and J). The provisions of the easements include preservation of the land in its present natural state, allowing certain recreational uses and requiring approval of the park superintendent for certain actions.

Because NPS management responsibility over the watershed is limited to administration of the easements, this area is not included in the management zoning for the park. Actions described below would be encouraged or promoted by the National Park Service for these two easement areas. Some of these actions are already identified in the *Peninsula Watershed Management Plan* (SFPUC 2001)—the commission's current land use plan for this area. Other actions are suggested for future consideration. Future actions would be subject to the approval of the commission and consistency with the easements. Actions could be implemented either solely by the San Francisco Public Utilities Commission or in cooperation with the park and San Mateo County.

### Scenic Easement Area

In this alternative, park managers would continue to cooperate with the San Francisco Public Utilities Commission for 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 and Recreation Easement Area (Crystal Springs Regional Trail / Juan Bautista de Anza National Historic Trail corridor)**

Park managers would promote access and visitor services along the existing multiuse trail and the implementation of trail improvements proposed in the *San Francisco Watershed Management Plan (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.

### **Nearshore Ocean Environment**

Management of nearshore areas could be extended to cover new segments of the San Mateo County coast as described in the “Boundary Adjustments” section.

### **Fitzgerald Marine Reserve (not zoned)**

In areas where the park boundary coincides with the Fitzgerald Marine Reserve, the two organizations would continue to cooperate in the implementation of the provisions of the California State Marine Life Protection Act.

## **COST ESTIMATES**

Cost estimates for alternative 2 are identified in table 6. The costs shown here are not for budgetary purposes; they are only intended to show a relative comparison of costs among the alternatives.

The alternatives describe the maximum potential capital improvements; lesser improvements may be implemented or built in phases if necessary. Implementation of the approved plan would depend on future

funding. Approval of this plan does not guarantee that the funding and staffing needed to implement the plan will be forthcoming. Full implementation of the actions in the approved general management plan could be many years in the future. Additionally, some of the future long-term funding needed to implement the various actions called for in the alternatives is anticipated to come from nonfederal partners consistent with the park’s current practices.

Alternative 2 proposes to reconnect coastal ecosystems and provide visitors with recreational and educational opportunities to learn about and enjoy the coastal and marine environments. Costs to implement this alternative include funding needed for a wide range of landscape restoration activities and stewardship and science programming.

## **Annual Operating Costs**

The annual operating costs for alternative 2 comprise the current annual operating costs, with changes made to reflect additional staffing needs. The annual operating costs of alternative 2 are estimated at \$31.1 million.

## **Staffing Requirements**

Additional staffing needs were estimated to support alternative 2. While some divisions would not require changes in staff, total additional staff needed to support alternative 2 is estimated at 35 FTE employees. Most divisions would require additional staff to support the newly acquired lands in San Mateo County.

Other additional staff would be needed to carry out new uses of the park lands. An increase in interpretive staff would support expanded interpretive programs throughout the park. A greater number of law enforcement officers would provide needed evening coverage, marine patrol, and response to

increased visitor recreational activities. With the addition of new trails and facilities and the rehabilitation of other facilities, maintenance responsibilities would increase, also requiring additional staff.

The natural resources division would have additional responsibilities related to the inventory, monitoring, and restoration of natural areas and habitats.

As a result of the expanded natural areas, cultural resources would require extensive documentation and survey, as well as adaptive management. Significant cultural resources would require rehabilitation for park and partner use. Additional archeological surveys would be needed before areas were allowed to revert to their natural state. Compliance would be needed in cultural areas and also to document wild areas where buildings may be removed and archeological resources covered by vegetation. The responsibilities of the planning division for project coordination, compliance and public involvement would also expand, requiring additional staff.

Other divisions, including business and administration, environmental and safety, and public affairs would each require a few additional staff members to manage new areas and uses of the park lands. New staff would also manage the rigorous user capacity program at Alcatraz Island and Muir Woods National Monument.

### ***Proposed New Staff***

- § 8 positions in visitor resources and protection
- § 7 positions in maintenance
- § 4 positions in interpretation and education
- § 2 positions in planning and compliance
- § 3 positions in cultural resources and museum management
- § 7 positions in natural resources management and science
- § 1 position in public affairs
- § 1 position in business management
- § 1 position in administration
- § 1 position in environmental and safety programs

### ***One-time Costs***

One-time costs of alternative 2 reflect extensive restoration of the landscape and rehabilitation of facilities in concert with the goals of the alternative. Proposed facility needs in this alternative reflect the overarching goal of creating a park that preserves and promotes enjoyment of the coastal ecosystems. Total one-time costs for Marin, San Francisco, and San Mateo counties (including facility and landscape restoration costs) are estimated at \$50.3 million.

**TABLE 6. COSTS ASSOCIATED WITH IMPLEMENTATION OF ALTERNATIVE 2 FOR  
PARK LANDS IN MARIN, SAN FRANCISCO, AND SAN MATEO COUNTIES**

<b>Summary of Costs for Alternative 2</b>	
<b>Annual Operational Costs</b>	
Annual Operational Costs	\$31,090,000
Staffing (additional FTE)	369 (+35)
<b>One-time Capital Costs</b>	
<b><i>Rehabilitation Projects</i></b>	
Lower Redwood Creek: improve trail connections	\$1,020,000
Oakwood, Marin City Ridge, Gerbode: improve trail connections to local communities	\$1,090,000
Other Marin County projects	\$40,000
Other San Francisco projects	\$1,330,000
Other San Mateo County projects	\$1,570,000
Rancho Corral de Tierra: relocate equestrian facilities	\$2,500,000
Stinson Beach: replace restrooms, septic and other facilities with sustainable systems	\$1,930,000
Tennessee Valley: improve equestrian facilities	\$1,120,000
Other rehabilitation projects	\$3,210,000
<b><i>Historic Preservation</i></b>	
China Beach: rehabilitate structures and parking	\$2,430,000
Fort Mason: stabilize Pier 4	\$3,000,000
Fort Miley: rehabilitate historic structures	\$3,330,000
Ocean Beach: rehabilitate O'Shaughnessy seawall	\$6,000,000
Shelldance Nursery: rehabilitate for stewardship center	\$1,140,000

**TABLE 6. COSTS ASSOCIATED WITH IMPLEMENTATION OF ALTERNATIVE 2 FOR  
PARK LANDS IN MARIN, SAN FRANCISCO, AND SAN MATEO COUNTIES**

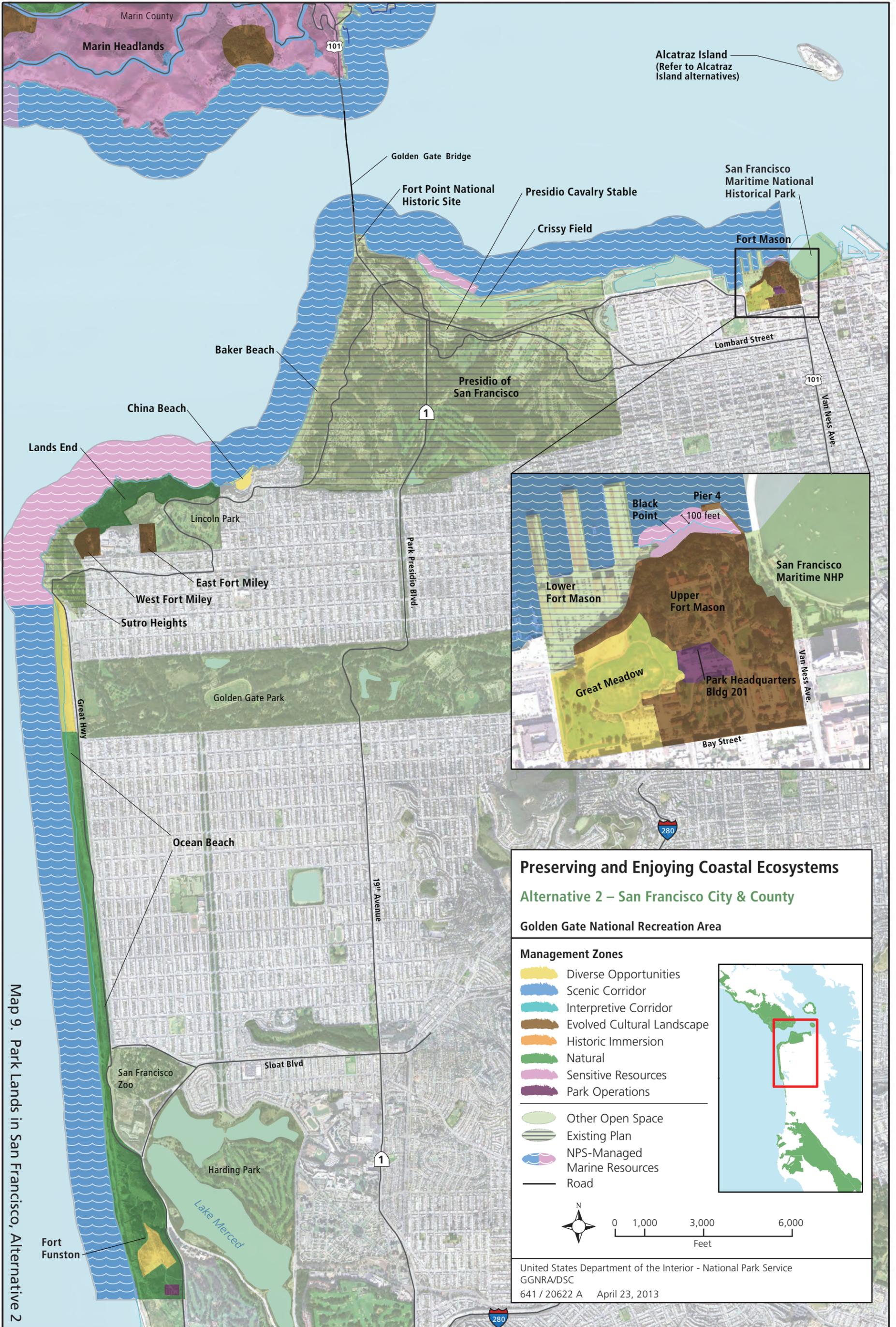
<b>Summary of Costs for Alternative 2</b>	
<b><i>Natural Resource Restoration</i></b>	
Marin County sites	\$13,400,000
San Francisco sites	\$3,060,000
San Mateo County sites	\$1,500,000
<b><i>Facility Removal</i></b>	
Facilities at various park sites	\$2,580,000
<b><i>New Construction</i></b>	
None	\$0
<b>Total</b>	<b>\$50,250,000</b>

All costs in 2009 dollars









Map 9. Park Lands in San Francisco, Alternative 2

**Preserving and Enjoying Coastal Ecosystems**  
**Alternative 2 – San Francisco City & County**  
**Golden Gate National Recreation Area**

**Management Zones**

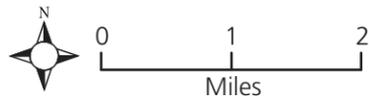
- Diverse Opportunities
- Scenic Corridor
- Interpretive Corridor
- Evolved Cultural Landscape
- Historic Immersion
- Natural
- Sensitive Resources
- Park Operations
- Other Open Space
- Existing Plan
- NPS-Managed Marine Resources
- Road

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 GGNRADSC  
 641 / 20622 A April 23, 2013

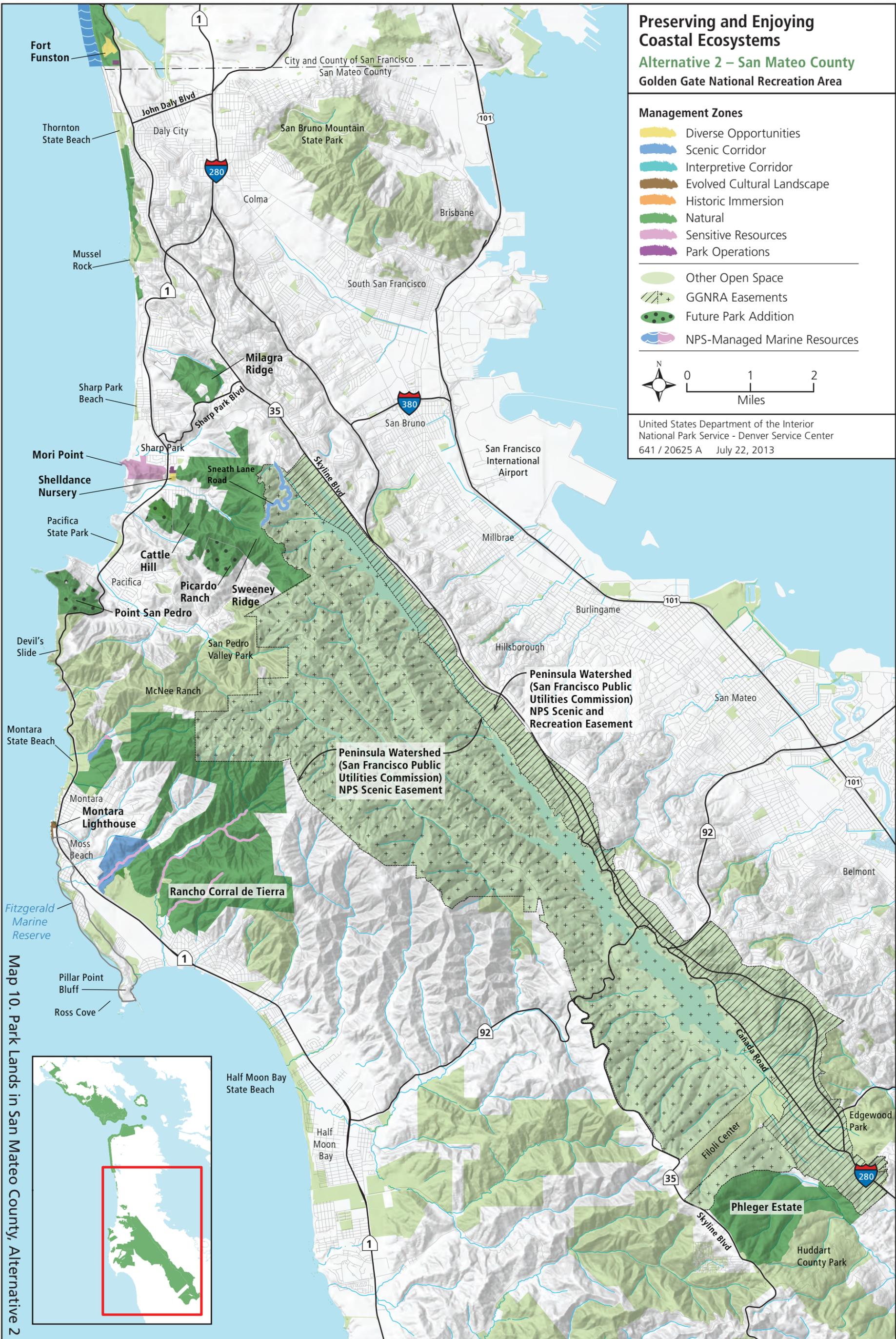


**Preserving and Enjoying Coastal Ecosystems**  
**Alternative 2 – San Mateo County**  
**Golden Gate National Recreation Area**

- Management Zones**
-  Diverse Opportunities
  -  Scenic Corridor
  -  Interpretive Corridor
  -  Evolved Cultural Landscape
  -  Historic Immersion
  -  Natural
  -  Sensitive Resources
  -  Park Operations
- 
-  Other Open Space
  -  GGNRA Easements
  -  Future Park Addition
  -  NPS-Managed Marine Resources



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 National Park Service - Denver Service Center  
 641 / 20625 A July 22, 2013



Map 10. Park Lands in San Mateo County, Alternative 2





## ALTERNATIVE 3: FOCUSING ON NATIONAL TREASURES

### PARK LANDS IN MARIN COUNTY

#### Overview

This alternative would welcome visitors to a vast network of open space that protects natural and cultural resources and offers many forms of recreation in a setting of national importance. Much of the area's undeveloped land is a legacy of the U.S. Army whose coastal defense systems remain anchored in the landscape.

The park would highlight several nationally important sites, including Muir Woods, the Golden Gate, and historic army posts on the Marin Headlands.

Although this alternative shares many characteristics of alternatives 1 and 2, the management of the Marin Headlands' historic core would be very different. Sheltering the best-preserved collection of seacoast fortifications in the United States, the Marin Headlands tell the story of two centuries of evolving weapons technology and the nation's unwavering efforts to protect the Golden Gate. As a result, this alternative would focus on immersing visitors in its compelling sites and history, using and interpreting preserved structures and landscapes ranging from Battery Spencer to the Nike Missile Launch Site.

Other important landmarks, such as the Point Bonita Lighthouse, established in 1855, would be preserved and interpreted for visitors.

#### Stinson Beach North to Bolinas-Fairfax Road

##### *Diverse Opportunities Zone (beach, dunes, and developed area)*

Management of this zone would be the same as that described under alternative 1.

##### *Natural Zone (Easkoot Creek corridor and surrounding park lands north to Bolinas-Fairfax Road)*

The natural ecosystem of Easkoot Creek riparian corridor and the uplands east of State Route 1 would be restored. The coastal defense structures in the vicinity of State Route 1 near Red Rock Beach would be preserved and interpreted.

As in alternative 1, other park lands and waters in the vicinity of Stinson Beach, including the uplands, would be managed to protect and restore the coastal ecosystems, and contribute to the restoration of natural processes that affect Bolinas Lagoon. The Bolinas Lagoon Restoration Project—Recommendations for Restoration and Management (Gulf of the Farallones National Marine Sanctuary Advisory Council 2008) identified key actions to protect and restore Bolinas Lagoon and its watershed. Three tables identify recommendations for restoration in the Locally Preferred Plan, recommendations for management (best management practices), and recommendations for adaptive management and monitoring. Each action identifies the key land managers, including Golden Gate National Recreation Area, with a vested interest in implementation of each action. Park involvement would be required to implement restoration actions in portions of the watershed, including improving floodplain function along

Easkoot Creek, at the Bolinas Y, and along the east shore of Bolinas Lagoon (e.g., Stinson Gulch), and improving transitional habitat and habitat connectivity along the east shore of the lagoon. Partnerships with neighboring land managers would be strengthened to achieve these goals across the broader landscape.

### **State Route 1 and Panoramic Highway Area**

#### *Scenic Corridor Zone*

Management of this zone would be the same as that described under alternative 1.

### **Slide Ranch**

#### *Natural Zone*

Management of this zone would be the same as that described under alternative 2.

### **Lower Redwood Creek (formerly Banducci flower farm and surrounding area)**

#### *Natural Zone*

Management of this zone would be the same as that described under alternative 2.

### **Muir Beach**

#### *Natural Zone*

Management of this zone would be the same as that described under alternative 1.

### **Golden Gate Dairy and Vicinity**

#### *Evolved Cultural Landscape Zone (developed area only)*

The area would be managed to preserve the pastoral landscape and historic structures and stories associated with past dairy ranching.

The historic structures could be adapted for use to support equestrian and other recreational uses, park operations, and local community services that are consistent with park goals. The rest of this park site could be restored to its natural coastal conditions.

#### *Natural Zone (surrounding uplands)*

Management of this zone would be the same as that described under alternative 1.

### **Tennessee Valley and Surrounding Parklands (from Oakwood Valley to the ocean, and northwest to Highway 1)**

#### *Scenic Corridor Zone (Tennessee Valley trailhead and the Miwok Stables area, including the trail to the beach)*

The area would be managed to establish a visitor facility that provides orientation and services to support the recreational and educational opportunities available in this region of large undeveloped open spaces. Equestrian, environmental education, and stewardship uses would be retained in improved, sustainable facilities.

The trail and ocean beaches would also be managed to promote hiking, biking, and equestrian touring on a “trail to the sea.” Modest and rustic facilities could be provided that support these recreational activities including overnight accommodations that complement the scenic touring experience.

***Natural Zone (surrounding uplands including Oakwood Valley)***

Outside the trail corridor, the area would be managed to protect undeveloped coastal habitat and outstanding natural features that are backdrops to the scenic corridor.

**Marin City Ridge and Gerbode Valley**

***Natural Zone***

Management of this zone would be the same as that described under alternative 1.

**Fort Barry and Fort Cronkhite**

***Historic Immersion Zone (Rodeo Valley, Fort Barry and Fort Cronkhite)***

These areas would be managed to showcase the structures of military history and the transition from Army post to national park. Infrastructure and landscapes within this area would be restored (at varying levels of historic preservation treatment) to be evocative of the military era, while protecting threatened and endangered species habitat. Structures could continue to be used for a diversity of purposes, including use by park partners, but partners would be encouraged to incorporate into their programming an association with military history and conservation of open space. Equestrian facilities would be accommodated in this zone.

Much of the visitor immersion would be interpretive, incorporating the latest technological and multimedia advances to bring history alive in new and nontraditional ways. Interpretive themes would address the various military periods. Preservation of the historic military resources would be consistent with natural resource protection.

***Historic Immersion Zone (Nike Missile Launch Site SF88-L)***

Management of this zone would be the same as that described under alternative 1.

**Capehart Housing Area**

***Diverse Opportunities Zone***

Some Capehart residences would be replaced with new facilities on the south side of Bunker Road to serve park uses and operational needs.

**Conzelman, Bunker, and McCullough Roads (including Battery Spencer and Hawk Hill)**

***Historic Immersion Zone***

The roads and adjacent park lands would be managed to focus visitors on coastal geology and the military fortifications and to engage them in historical explorations. Deteriorated military sites and features would be restored. New or improved trails throughout the area, including the California Coastal Trail, would help connect the visitor to the geologic and military resources and to follow a historic route while protecting habitat for threatened and endangered species.

**Kirby Cove**

***Historic Immersion Zone***

The park resources and history associated with coastal fortifications would be highlighted; overnight accommodations would promote appreciation of views of the Golden Gate Bridge and the wildland-urban interface between the park and city of San Francisco. Facilities would provide visitors with access to the beach and the new San Francisco Bay Water Trail.

Habitat restoration would continue outside the historic forest with removal of invasive nonnative vegetation and expansion of mission blue butterfly habitat.

## Point Bonita Lighthouse Complex

### *Historic Immersion Zone*

Management of this zone would be the same as that described under alternative 1.

## Nearshore Ocean and Bay Environment

### *Scenic Corridor Zone (all nearshore areas)*

Park managers would work to preserve the ocean and bay environment and accommodate public uses including water recreation, boating, and recreational fishing.

## PARK LANDS IN SAN FRANCISCO

### Overview

This alternative would focus on the collection of historic sites and the dynamic coastal landscape that defines San Francisco's coastline, from Fort Mason to Fort Funston. Visitors would be welcomed to the "National Park Next Door" as in alternative 1, with a focus on the nationally important sites that are connected by the San Francisco Bay Trail and California Coastal Trail, thus creating a scenic and historic corridor.

Park lands in San Francisco encompass a significant collection of historic sites, ranging from the Civil War era Black Point at Fort Mason to the military coastal fortifications at Fort Funston. These sites are amid a windswept coastal environment featuring rocky bluffs, acres of dunes, sandy beaches, and fragile native habitat.

Today, these offerings are an array of popular destinations for park lovers. Under this alternative, the National Park Service would expand interpretive programs and visitor services to enable residents and visitors to further appreciate the significant landmarks and landscapes at the Golden Gate. As in other alternatives, the San Francisco-based Alcatraz embarkation facility would serve as a portal to Golden Gate National Recreation Area and the larger national park system.

## Upper Fort Mason

### *Diverse Opportunities Zone (majority of the site)*

More of the structures at Fort Mason would be dedicated to visitor services to expand the range of park experiences. Fort Mason would serve as the primary visitor entrance to Golden Gate National Recreation Area with an orientation and information center that would introduce visitors to all Bay Area national parks, as well as to the programs offered by the park's many partners, thus enabling visitors to better plan their national park visit. Visitor circulation and wayfinding improvements would be implemented in response to new adjacent transit and ferry connections.

Park managers would preserve historic structures and landscapes that tell the story of continuous military and civilian use of the fort. Expanded overnight accommodations would provide a base for day trips to explore other areas of the park. The "Great Meadow" could have sustainable infrastructure to support special events.

### *Historic Immersion Zone (Building 201—Park Headquarters and Pier 4)*

Golden Gate National Recreation Area headquarters would share space with a museum that would showcase the military history of Fort Mason and the 20th century

port of embarkation that is the centerpiece of the historic district.

In this alternative, historic Pier 4 at the foot of Van Ness Avenue would be rehabilitated. The facility would be developed to include interpretive and educational exhibits. The pier could also be used as an additional embarkation point for ferry service to Alcatraz Island.

McDowell Road would continue to facilitate pedestrian and bicycle travel through Fort Mason and highlight scenic views of the Golden Gate and San Francisco Bay.

As in alternative 1, these proposals would require close collaboration with San Francisco Maritime National Historical Park and the City of San Francisco.

#### ***Sensitive Resources Zone (shoreline at Black Point)***

Management of this zone would be the same as that described under alternative 1.

#### **China Beach**

##### ***Diverse Opportunities Zone***

Management of this zone would be the same as that described under alternative 1.

#### **Lands End**

##### ***Evolved Cultural Landscape Zone***

Management of this zone would be the same as that described under alternative 1.

#### **Fort Miley**

##### ***Historic Immersion Zone (West Fort Miley, the USS San Francisco Memorial, and Marine Exchange Lookout Building)***

The park would preserve these structures and sites and showcase military and maritime history.

##### ***Park Operations Zone (East Fort Miley)***

Park managers would focus on providing park maintenance and public safety operations needed to support the surrounding park lands. Safer and more direct vehicle and trail access to East Fort Miley would be developed to better support this use.

#### **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 National 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, restore natural processes, and maximize protection of the beach for its natural and recreational values. The National Park Service could relocate park facilities away from vulnerable locations.

##### ***Diverse Opportunities Zone (along the O'Shaughnessey seawall)***

Management of this zone would be the same as that described under alternative 2.

### ***Natural Zone (south of the O'Shaughnessey seawall)***

Management of this zone would be the same as that described under alternative 2.

### **Fort Funston**

#### ***Natural Zone (majority of the site)***

This area would be managed to provide recreational activities in a more natural setting with limited support facilities. Access and parking would be at the edge of the site, allowing restoration of the natural dune ecosystem and providing trail access. Nonhistoric structures would be removed; existing park operation functions and the environmental education program would be relocated to suitable locations elsewhere in the park.

The historic Battery Davis would be preserved within the context of the natural setting. The coastal bluffs would be preserved for their unique geology and to allow natural processes to continue unimpeded.

#### ***Diverse Opportunities Zone (uplands, away from the edge of the Dune)***

This zone would be managed to provide for continued high levels of visitor use and current opportunities such as hang gliding and dog walking, to the extent the area remains safe from bluff erosion.

#### ***Park Operations Zone (southeast corner)***

Operational facilities could be expanded to meet park needs, including public safety offices, nursery, stewardship center, satellite maintenance facilities, and staff or volunteer housing.

### **Nearshore Ocean and Bay Environment**

#### ***Natural Zone***

Management of this zone would be the same as that described under alternative 1.

#### ***Sensitive Resources Zone***

The park would continue to manage the existing Crissy Wildlife Protection Area for the protection of waterbirds and other wildlife.

## **PARK LANDS IN SAN MATEO COUNTY**

### **Overview**

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. This alternative, however, would highlight how this “quilt” of undeveloped land has been protected by numerous organizations. Over the past 20 years, the National Park Service, local governments, private land trusts, and dedicated individuals have worked together to acquire and preserve this “wilderness” next door.

Today, these lands are a national treasure of recreational, natural, and cultural resources. Several nationally significant historic sites are in San Mateo County, along with habitat for numerous endangered species. Many of these important resources are managed by other agencies on nearby sites. This alternative would focus on protecting resources in the park while developing recreational and thematic connections between sites managed by other land managers.

This alternative also looks beyond the immediate park lands to explore the potential to stimulate regional landscape management and enhance heritage tourism.

To do so, park managers would work with communities between Pacifica and Santa Cruz to support special designations for the Pacific Coast Highway (Route 1). The highway is one of the unifying features of the rural coast and is characterized by forested hills, small-scale agriculture, and seaside communities.

***South of Fort Funston to South of Mussel Rock Natural Zone***

Management of this zone would be the same as that described under alternative 1.

**Milagra Ridge**

***Natural Zone***

Management of this zone would be the same as that described under alternative 2.

**Shelldance Nursery Area**

***Diverse Opportunities Zone and Park Operations Zone***

Management of these zones would be the same as that described under alternative 1.

**Sweeney Ridge (including Cattle Hill, Picardo Ranch, and Sweeney Ridge Gateway conservation easement)**

***Natural Zone (majority of the area)***

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 primitive camping. The area would connect visitors to the Bay Area Ridge Trail. The San Francisco Bay Discovery Site National Historical Landmark would be preserved, enhanced, and interpreted.

***Diverse Opportunities Zone (developed portion of Picardo Ranch)***

Management of this zone would be the same as that described under alternative 1.

**Mori Point**

***Natural Zone***

Management of this zone would be the same as that described under alternative 1.

**Point San Pedro**

***Natural Zone***

Management of this zone would be the same as that described under alternative 1.

**Rancho Corral de Tierra**

***Natural Zone (majority of the area)***

Management of this zone would be the same as that described under alternative 1.

***Diverse Opportunities Zone (existing equestrian lease area)***

Management of this zone would be the same as that described under alternative 1.

**Montara Lighthouse**

***Historic Immersion Zone***

As the most intact lighthouse complex in the park, the site offers an opportunity for immersion in the life of lighthouse keepers. This alternative would restore historic structures and landscape features, remove contemporary structures, and develop new visitor programs. Overnight stays would be part of the immersion experience.

## 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.

### San Francisco Public Utilities Commission Peninsula Watershed Easements (not zoned)

Note: The approximately 23,000-acre San Francisco Peninsula Watershed is owned by the City and County of San Francisco and managed by the San Francisco Public Utilities Commission for watershed protection as a water supply resource with limited public access. This area is included within the park's authorized boundary, and is adjacent to NPS-managed lands at Phleger Estate, Sweeney Ridge, and Rancho Corral de Tierra.

Golden Gate National Recreation Area administers two easements encompassing the entire watershed property—a scenic easement over approximately 19,000 acres and a scenic and recreation easement over approximately 4,000 acres. The provisions of the easements include preservation of the land in its present natural state, allowing certain recreational uses, and requiring approval of the park superintendent for certain actions.

Because NPS management responsibility over the watershed is limited to administration of the easements, this area is not included in management zoning for the park. Actions described below would be encouraged or promoted by the National Park Service for these two easement areas (see appendixes I and J). Some of these actions are already identified in the *Peninsula Watershed Management Plan* (SFPUC 2001)—the SFPUC's current land use plan for this area. Other actions are

suggested for future consideration. Future actions would be subject to the approval of the commission and consistency with the easements. Actions could be implemented either solely by the San Francisco Public Utilities Commission or in cooperation with Golden Gate National Recreation Area and San Mateo County.

### *Scenic Easement Area*

Management of this area would be the same as that described under alternative 1.

### *Scenic and Recreation Easement Area*

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.

## Nearshore Ocean Environment

Management of nearshore areas could be extended to cover new segments of the San Mateo County coast as described in the "Boundary Adjustments" section.

### Fitzgerald Marine Reserve (not zoned)

In areas where the park boundary coincides with the Fitzgerald Marine Reserve, the two organizations would continue to cooperate in the implementation of the provisions of the California State Marine Life Protection Act.

## COST ESTIMATES

Cost estimates for alternative 3 are identified in table 7. The costs shown here are not for budgetary purposes; they are only intended

to show a relative comparison of costs among the alternatives.

The alternatives describe the maximum potential capital improvements; lesser improvements may be implemented or built in phases if necessary. Implementation of the approved plan would depend on future funding. The approval of this plan does not guarantee that the funding and staffing needed to implement the plan will be forthcoming. Full implementation of the actions in the approved general management plan could be many years in the future. Additionally, some of the future long-term funding needed to implement the various actions called for in the alternatives is anticipated to come from nonfederal partners, consistent with the park's current practices.

The costs of this alternative reflect the effort to focus management of the park's resources, visitor experiences, and partnerships on the park's most significant sites.

### Annual Operating Costs

The annual operating costs for alternative 3 comprise the current annual operating costs, with changes made to reflect additional staffing needs. The annual operating costs of alternative 3 are estimated at \$31.6 million.

### Staffing Requirements

Additional staffing needs were estimated to support alternative 3. While some divisions would not require changes in staff, total additional staff needed to support alternative 3 is estimated at 43 FTE employees. Most divisions would require additional staff to support the newly acquired lands in San Mateo County.

Other additional staff would be needed to implement new uses of park lands. An increase in interpretive staff would support expanded interpretive programs throughout

the park. A greater number of law enforcement officers would provide evening coverage, marine patrol, and response to increased visitor recreational activities. With the addition of new trails and facilities and rehabilitation of other facilities, maintenance responsibilities would increase, also requiring additional staff.

The natural resources division would have additional responsibilities related to the inventory, monitoring, and restoration of natural areas and habitats.

The cultural resources division would have additional tasks associated with expanded stewardship centers throughout the park, museum collection program and outreach, and restoration of historic structures and landscapes. The responsibilities of the planning division for project coordination, compliance, and public involvement would also expand, requiring additional staff.

Other divisions, including business and administration, environmental and safety, and public affairs, would each require a few additional staff members to manage new areas and uses of park lands. New staff would also manage the rigorous user capacity program at Alcatraz Island and Muir Woods National Monument.

### Proposed New Staff

- § 10 positions in visitor resources and protection
- § 9 positions in maintenance
- § 6 positions in interpretation and education
- § 2 positions in planning and compliance
- § 4 positions in cultural resources and museum management
- § 7 positions in natural resources management and science
- § 1 position in public affairs
- § 1 position in business management

- § 2 positions in administration
- § 1 position in environmental and safety programs

**One-time Costs**

Alternative 3 proposes a high level of restoration and rehabilitation of historic resources. Total one-time costs for park lands in Marin, San Francisco, and San Mateo counties are estimated at \$78.2 million.

**TABLE 7. COSTS ASSOCIATED WITH IMPLEMENTATION OF ALTERNATIVE 3 FOR PARK LANDS IN MARIN, SAN FRANCISCO, AND SAN MATEO COUNTIES**

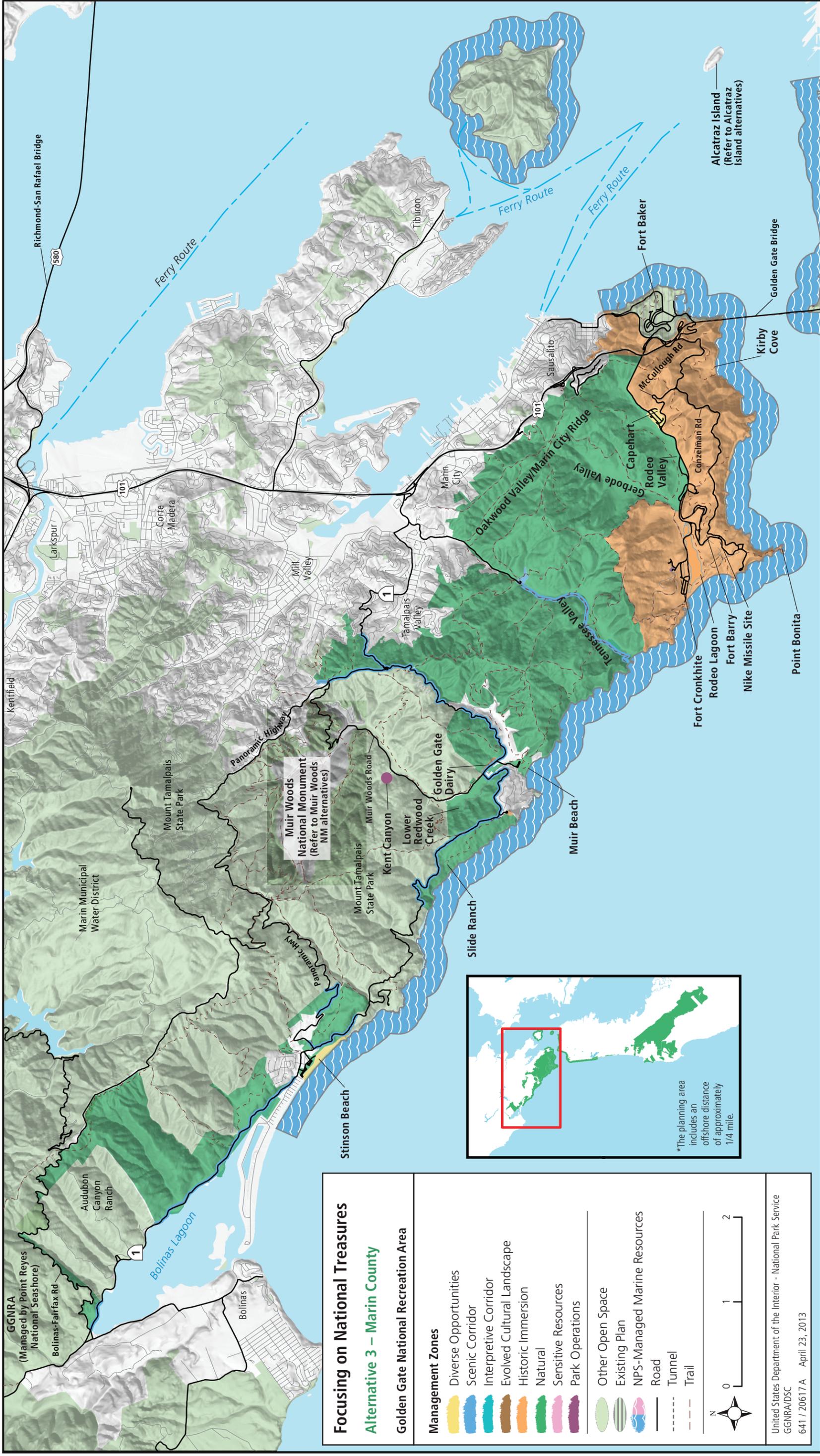
<b>Summary of Costs for Alternative 3</b>	
<b>Annual Operational Costs</b>	
Annual Operational Costs	\$31,630,000
Staffing (additional FTE)	377 (+43)
<b>One-time Capital Costs</b>	
<b><i>Facility Rehabilitation</i></b>	
Lower Redwood Creek: improve trail connections	\$1,020,000
Oakwood, Marin City Ridge, Gerbode: improve trail connections to local communities	\$1,090,000
Other Marin County projects	\$1,460,000
Other San Francisco projects	\$1,000,000
Other San Mateo County projects	\$4,190,000
Rancho Corral de Tierra: relocate equestrian facilities and make other improvements	\$2,870,000
Stinson Beach: replace restrooms, showers, parking	\$1,480,000
Stinson Beach: replace visitor contact facility (warming hut)	\$1,240,000
Tennessee Valley: trailhead improvements	\$1,930,000
<b><i>Historic Preservation</i></b>	
China Beach: rehabilitate structures and parking	\$2,430,000
Fort Barry and Fort Cronkhite: rehabilitate military structures	\$4,360,000

**TABLE 7. COSTS ASSOCIATED WITH IMPLEMENTATION OF ALTERNATIVE 3 FOR PARK LANDS IN MARIN, SAN FRANCISCO, AND SAN MATEO COUNTIES**

<b>Summary of Costs for Alternative 3</b>	
Fort Mason: rehabilitate Pier 4	\$18,850,000
Fort Miley: rehabilitate historic structures	\$3,330,000
Marin Headlands: rehabilitate military sites and features along Conzelman, Bunker, and McCullough Roads	\$4,890,000
Montara Lighthouse: rehabilitate historic structures and remove contemporary structures	\$2,250,000
Ocean Beach: rehabilitate O'Shaughnessy seawall	\$6,000,000
Other historic preservation projects	\$2,330,000
Shelldance Nursery: rehabilitate for stewardship center	\$1,140,000
<b><i>Natural Resource Restoration</i></b>	
Marin County sites	\$2,300,000
San Francisco sites	\$1,010,000
San Mateo County sites	\$190,000
<b><i>Facility Removal</i></b>	
Facilities at various park sites	\$1,430,000
<b><i>New Construction</i></b>	
Capehart visitor facility	\$6,700,000
Upper Fort Mason: construct special events facilities in the Great Meadow	\$1,540,000
Rancho Corral de Tierra: visitor contact facility	\$2,240,000
Rustic overnight accommodations at Kirby Cove and Rancho Corral de Tierra	\$940,000
<b>Total</b>	<b>\$78,210,000</b>

All costs in 2009 dollars





### Focusing on National Treasures

#### Alternative 3 – Marin County

#### Golden Gate National Recreation Area

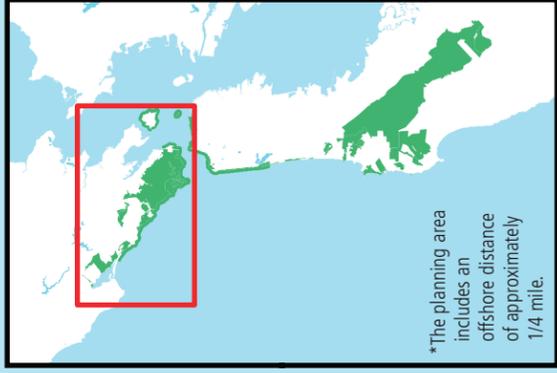
#### Management Zones

- Diverse Opportunities
- Scenic Corridor
- Interpretive Corridor
- Evolved Cultural Landscape
- Historic Immersion
- Natural
- Sensitive Resources
- Park Operations

- Other Open Space
- Existing Plan
- NPS-Managed Marine Resources
- Road
- Tunnel
- Trail



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 641 / 20617 A April 23, 2013



\*The planning area includes an offshore distance of approximately 1/4 mile.

Map 11. Park Lands in Marin County, Alternative 3







# Focusing on Natural Treasures

## Alternative 3 – San Mateo County

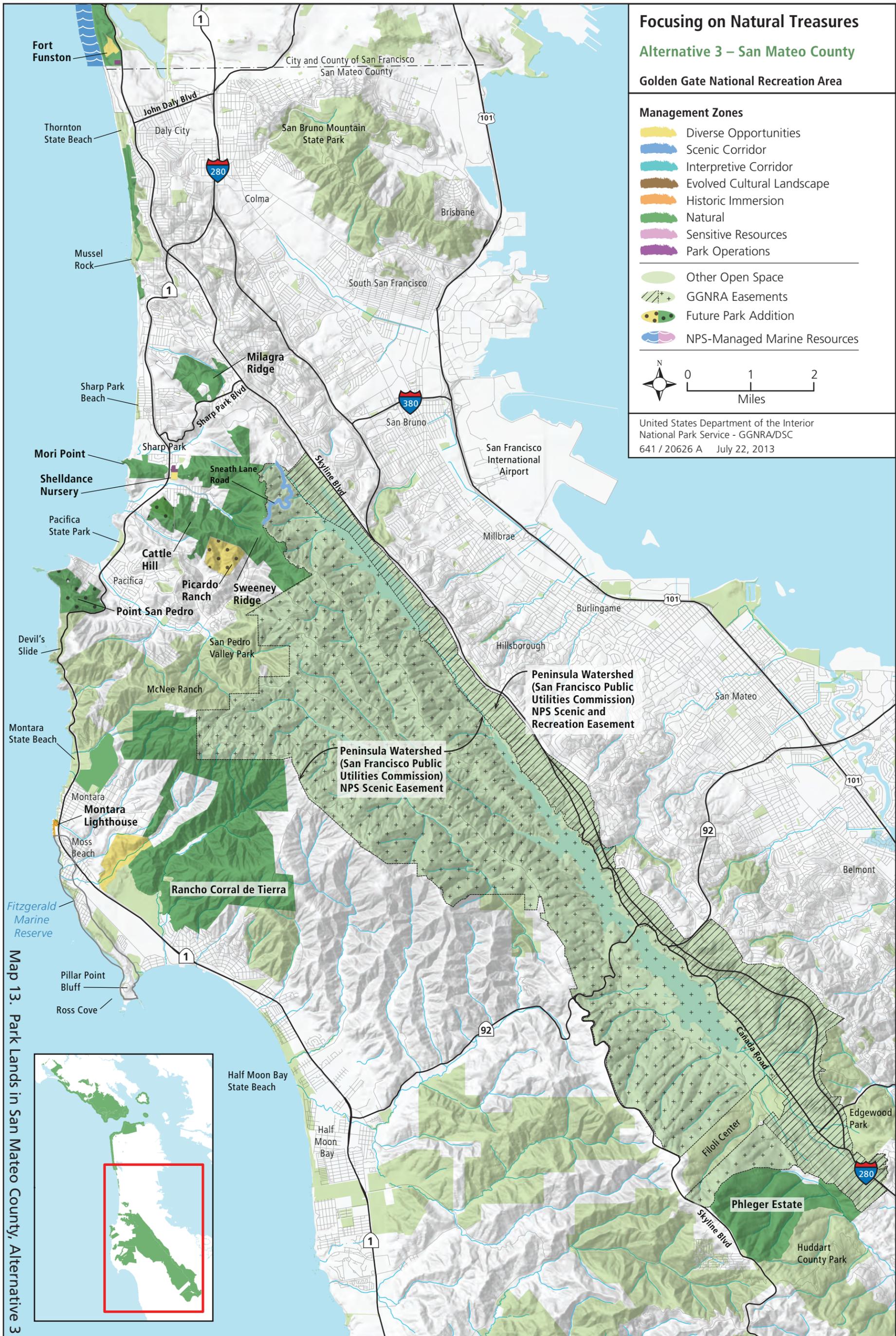
### Golden Gate National Recreation Area

#### Management Zones

-  Diverse Opportunities
  -  Scenic Corridor
  -  Interpretive Corridor
  -  Evolved Cultural Landscape
  -  Historic Immersion
  -  Natural
  -  Sensitive Resources
  -  Park Operations
- 
-  Other Open Space
  -  GGNRA Easements
  -  Future Park Addition
  -  NPS-Managed Marine Resources



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641 / 20626 A July 22, 2013



Map 13. Park Lands in San Mateo County, Alternative 3



## SUMMARY COST ESTIMATES FOR PARK LANDS IN MARIN, SAN FRANCISCO, AND SAN MATEO COUNTIES

The cost figures shown here and throughout the plan are intended only to provide conceptual costs for general comparison of alternatives. National Park Service and industry cost estimating guidelines were used to develop the costs (in 2009 dollars) to the extent possible, but the estimates should not be used for budgeting purposes. Specific costs will be determined in subsequent, more detailed planning and design exercises after considering the design of facilities, identification of detailed resource protection needs, and changing visitor expectations. Actual costs to the National Park Service will vary depending on when actions are implemented and on contributions by partners and volunteers.

The alternatives describe the maximum potential capital improvements; lesser improvements may be implemented or built in phases if necessary. Implementation of the approved plan will depend on future funding. The approval of this plan does not guarantee that the funding and staffing needed to implement the plan will be forthcoming. Full implementation of the actions in the approved general management plan could be many years in the future. Additionally, some of the future long-term funding needed to implement the various actions called for in the alternatives is anticipated to come from nonfederal partners, consistent with the park's current practices.

**TABLE 8. SUMMARY COSTS ASSOCIATED WITH IMPLEMENTATION OF THE ALTERNATIVES  
FOR PARK LANDS IN MARIN, SAN FRANCISCO, AND SAN MATEO COUNTIES**

	No-action Alternative	Alternative 1 (NPS Preferred)	Alternative 2	Alternative 3
Annual Operational Costs <sup>1</sup>	\$28,030,000	\$32,000,000	\$31,090,000	\$31,630,000
Staffing (additional FTE)	334 (+0)	380 (+46)	369 (+35)	377 (+43)
One-time Capital Costs <sup>3</sup>	\$5,280,000	\$49,710,000	\$50,250,000	\$78,210,000

**NOTES:**

1. Annual operating costs are the total costs per year for maintenance and operations associated with each alternative, including utilities, supplies, staff salaries and benefits, and leasing. Costs and staffing estimates assume that the alternative is fully implemented as described in the narrative. All annual operating costs for Muir Woods National Monument and Alcatraz Island were included in the above table, as those costs are administered by Golden Gate National Recreation Area.
2. The total number of FTEs is the number of person-years of staff required to maintain the assets of the park at a good level, provide acceptable visitor services, protect resources, and generally support the park's operations. The FTE number indicates ONPS-funded NPS staff only, not volunteer positions or positions funded by partners. (ONPS funds are funds designated for the "Operation of the National Park Service.") FTEs area from the 201- Green Book, adjusted to reflect the loss of 32 structural fire positions.
3. One-time costs for the no-action alternative only include costs associated with projects already approved and fully funded. Costs for Alcatraz Island are not included in this table. (See "Part 4: Alternatives Applied to Alcatraz Island" for these costs.)
4. Costs are in 2009 dollars

## DEFERRED MAINTENANCE

The “Actions Common to All Alternatives” section, earlier in this document, contained a discussion of facilities that could be removed to reduce maintenance funding needs. However, in addition to removing facilities, expending one-time costs on park facilities would reduce the deferred maintenance by bringing the facilities up to a sustainable condition. Deferred maintenance—or work needed to bring park assets into good condition—exceeds \$198.1 million at Golden Gate National Recreation Area, according to the 2009 *Park Asset Management Plan*.

Each alternative contains proposals that would reduce total deferred maintenance. Although the reductions in deferred maintenance are similar in amount for each alternative, the alternatives do not all contain the same proposals for reducing deferred maintenance; each alternative proposes different treatments for structures, including rehabilitation or removal.

Park staff continue to seek out additional measures to reduce deferred maintenance at the park. The *Park Asset Management Plan*, in particular, addresses strategies for reducing deferred maintenance.

**TABLE 9. REDUCTIONS IN DEFERRED MAINTENANCE ASSOCIATED WITH IMPLEMENTATION OF THE ALTERNATIVES FOR PARK LANDS IN MARIN, SAN FRANCISCO, AND SAN MATEO COUNTIES**

	No-action Alternative	Alternative 1 (NPS Preferred)	Alternative 2	Alternative 3
Parklands in Marin, San Francisco, and San Mateo Counties	\$0	\$5,210,000	\$6,370,000	\$4,450,000

## ENVIRONMENTALLY PREFERABLE ALTERNATIVE FOR PARK LANDS IN MARIN, SAN FRANCISCO, AND SAN MATEO COUNTIES

The environmentally preferable alternative is the alternative that promotes the national environmental policy expressed in the National Environmental Policy Act (section 101[b]). This includes alternatives that

1. “fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
2. ensure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;
3. attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
4. preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice;
5. achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life’s amenities; and
6. enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources” (NPS DO 12 Handbook, Section 2.7D).

The alternatives are very similar with respect to criteria 1, 2, 5, and 6. The park staff continues to work in achieving these factors as a basic course of implementing the legal mandates for Golden Gate National Recreation Area. All the alternatives equally meet the attainment for these four criteria,;

therefore, the evaluation focuses on criteria 3 and 4.

The no-action alternative is included to provide a comparison against the action alternatives. The legal foundation for managing these park lands requires the National Park Service to provide outdoor recreation opportunities while protecting the natural, historic, and scenic values of the park. The no-action alternative does not fully provide for the widest range of beneficial uses. Some of the park lands are not easily identifiable as public lands and are not very welcoming to the park visitor. Most of the recent land additions and some existing park lands are in need of natural and cultural resource restoration or stabilization. These lands lack appropriate land use planning; therefore, the desired conditions for future recreation activities and levels of resource preservation are not defined. Through this planning process, the future desired conditions have been described for each of the action alternatives.

Alternative 2 emphasizes management of these park lands for natural resource restoration and preservation, while providing for an increase in hiking and primitive recreational opportunities. This alternative identifies actions that will provide a slightly wider range of beneficial uses than the no-action alternative. But visitor opportunities would not be as diverse as those identified in alternatives 1 and 3.

In alternative 3, the focus is on preserving and strengthening those park resources and values that have national significance. This would result in a more diverse range of visitor opportunities and greater resource restoration, protection, interpretation, and stewardship for both natural and cultural

resources than is provided in the no-action alternative and alternative 2.

In alternative 1, the emphasis is to be welcoming to park visitors (improved information, facilities, and signing) while providing diverse opportunities and restoring the park's natural and cultural resources. The emphasis on visitor opportunities, education, and stewardship provides additional actions that better attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences. This is accomplished by incorporating actions for natural and cultural resources preservation and restoration from the other alternatives where there is a well-defined advantage. Implementation of alternative 1 would

provide the best means to preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.

After considering the environmental consequences of the alternatives, including consequences to the human environment, the National Park Service has concluded that the NPS preferred alternative, alternative 1 for park lands in Marin, San Francisco, and San Mateo counties, is also the environmentally preferable alternative. This alternative best realizes the full range of national environmental policy goals as stated in section 101 of the National Environmental Policy Act.

## SUMMARY TABLES OF THE ALTERNATIVES FOR PARK LANDS IN MARIN, SAN FRANCISCO, AND SAN MATEO COUNTIES

TABLE 10. COMPARISON OF ALTERNATIVES FOR PARK LANDS IN MARIN COUNTY

COMPARISON OF ALTERNATIVES FOR PARK LANDS IN MARIN COUNTY			
NO ACTION	ALTERNATIVE 1 – PREFERRED	ALTERNATIVE 2	ALTERNATIVE 3
<b>Concept</b>			
<p>§ Reflects current conditions and activities: NPS would continue to manage these areas under the 1980 General Management Plan and subsequent land use and implementation plans.</p>	<p>§ Consistent with the concept “Connecting People With the Parks,” this alternative would further the founding idea of “parks to the people,” and engage the community and other potential visitors in the enjoyment, understanding, and stewardship of the park’s resources and values. Focus park management on ways to attract and welcome people, connect people with the resources, and promote understanding, enjoyment, preservation, and health.</p>	<p>§ Consistent with the concept of “preserving and Enjoying Coastal Ecosystems,” this alternative would place an emphasis on preserving, enhancing, and promoting the dynamic and interconnected coastal ecosystems. Through recreational and educational opportunities, 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.</p>	<p>§ Consistent with the concept of “Focusing on National Treasures,” this alternative would place an emphasis on the park’s nationally important natural and cultural resources. Manage the nationally significant fundamental resources at the highest level of preservation to promote appreciation, understanding, and enjoyment of those resources.</p>
<b>Stinson Beach North to Bolinas-Fairfax Road</b>			
<p>§ Manage the developed areas to support intensive use as a scenic recreational beach.</p> <p>§ Preserve habitat at Easkoot Creek and dunes.</p> <p>§ Manage area east of Bolinas Lagoon to protect natural resources.</p>	<p>§ Improve facilities to support beach recreation, expand creek buffer, and enhance dunes.</p> <p>§ Build sustainable new facilities to replace deteriorated restrooms, showers, picnic areas, and parking lots.</p> <p>§ Work with the community to improve access to Stinson Beach through transit and congestion management.</p> <p>§ Continue to work on flooding and water issues with local community and authorities.</p> <p>§ Manage natural areas to protect and restore coastal ecosystems.</p>	<p>§ Replace central facilities with sustainable new facilities and transit support.</p> <p>§ Remove south parking lot and restore wetlands and sand dunes.</p> <p>§ Manage natural areas to protect and restore coastal ecosystems. Restore the sand dunes and wetlands and contribute to restoration of natural processes at Bolinas Lagoon.</p>	<p>§ Manage beach, dunes, and developed areas same as alternative 1.</p> <p>§ In Easkoot Creek corridor and lands north to Bolinas-Fairfax Road, restore natural ecosystem and riparian corridor.</p> <p>§ Preserve and interpret coastal defense structures along State Route 1 near Red Rock Beach.</p> <p>§ As in alternative 1, manage other lands and waters outside Stinson Beach to protect and restore coastal ecosystems and contribute to restoration of natural processes at Bolinas Lagoon.</p>
<b>State Route 1 and Panoramic Highway Area</b>			
<p>§ Manage park lands in this area to enhance resources and offer access to park sites and recreational activities and to preserve the scenic rural character.</p>	<p>§ Manage this area to enable visitors to enjoy spectacular views of the Pacific coast.</p> <p>§ Work with other governmental and nongovernmental groups to improve rural roadways and trail crossings.</p>	<p>§ Manage this area in a way similar to that in alternative 1, but with greater emphasis on collaboration with Caltrans and other agencies to protect the ecosystem.</p> <p>§ Encourage the abandonment of State Route 1 if a catastrophic landslide occurs.</p>	<p>§ Same as alternative 1.</p>
<b>Slide Ranch</b>			
<p>§ Manage the area through a park partner to operate an environmental farm and education center in a natural landscape with public access to trails and the shoreline.</p>	<p>§ Manage the area to enhance the environmental and farm education center and provide improved facilities for public day use including picnic area, trail access, and scenic overlook.</p> <p>§ Manage surrounding natural zone to enhance natural and scenic values and provide public access to trails and the coast.</p>	<p>§ Manage the area to promote restoration of coastal resources.</p> <p>§ Provide modest trailhead at State Route 1 for coastal access.</p> <p>§ Remove structures from farm and relocate environmental education center and farm education program to a less remote and more geologically stable location.</p>	<p>§ Same as alternative 2.</p>

TABLE 10. COMPARISON OF ALTERNATIVES FOR PARK LANDS IN MARIN COUNTY

COMPARISON OF ALTERNATIVES FOR PARK LANDS IN MARIN COUNTY			
NO ACTION	ALTERNATIVE 1 – PREFERRED	ALTERNATIVE 2	ALTERNATIVE 3
<b>Lower Redwood Creek (former Banducci flower farm and surrounding area)</b>			
<ul style="list-style-type: none"> <li>§ Manage this area to preserve and enhance natural processes in the creek, floodplain, and surrounding landscape, and to protect threatened and endangered species.</li> <li>§ Retain the rural character, existing buildings to support park programs and operations.</li> </ul>	<ul style="list-style-type: none"> <li>§ Manage the majority of the area to restore natural coastal ecosystem and riparian habitat and provide trail connections.</li> <li>§ Manage developed area to preserve rural pastoral character; existing buildings would support park programs and stewardship opportunities.</li> <li>§ To protect salmon, collaborate with community to increase water storage capacity for use in dry season.</li> </ul>	<ul style="list-style-type: none"> <li>§ Manage area, including Redwood Creek, to restore coastal ecosystem and endangered salmon habitat. Visitors would have opportunities to participate in these stewardship activities.</li> <li>§ Remove all facilities not needed for stewardship, restoration, or trail use. With partners, explore realignment of Muir Woods Road to reduce impacts on Redwood Creek.</li> <li>§ To protect salmon, collaborate with community to increase water storage capacity for use in dry season.</li> </ul>	<ul style="list-style-type: none"> <li>§ Same as alternative 2.</li> </ul>
<b>Muir Beach</b>			
<ul style="list-style-type: none"> <li>§ Manage the beach, creek, parking lot and picnic area as planned in the wetland and creek restoration plan.</li> </ul>	<ul style="list-style-type: none"> <li>§ Manage the area to restore and sustain wetlands and creek.</li> <li>§ Improve beach and trail access and preserve natural setting.</li> <li>§ Collaborate with community to address water quality issues impacting park resources.</li> </ul>	<ul style="list-style-type: none"> <li>§ Same as alternative 1.</li> </ul>	<ul style="list-style-type: none"> <li>§ Same as alternative 1.</li> </ul>
<b>Golden Gate Dairy</b>			
<ul style="list-style-type: none"> <li>§ Manage area to support equestrian facility and Muir Beach Volunteer Fire Department within historic ranch buildings.</li> </ul>	<ul style="list-style-type: none"> <li>§ Manage the developed area to preserve historic structures and pastoral landscape and to protect coastal prairie and scrub habitat.</li> <li>§ Manage surrounding uplands to preserve and enhance the natural setting and provide trail connections.</li> <li>§ Create site improvements including trailhead.</li> <li>§ Continue to work with Caltrans to improve the safety of Highway 1.</li> <li>§ Retain equestrian facilities with improvement to protect adjacent riparian area.</li> </ul>	<ul style="list-style-type: none"> <li>§ Manage develop area and surrounding uplands to preserve historic structures and pastoral landscape and to protect coastal prairie and scrub habitat.</li> <li>§ Reuse historic structures for science and stewardship center or local community services consistent with park goals. Remove nearby nonhistoric residences if not contributing to community services.</li> <li>§ Provide equestrian use on designated trails.</li> </ul>	<ul style="list-style-type: none"> <li>§ Manage developed area to preserve pastoral landscape and historic structures and stories associated with past dairy ranching.</li> <li>§ Manage surrounding uplands same as alternative 1.</li> <li>§ Adaptively reuse historic structures to support equestrian and other recreational uses, park operations, and local community services consistent with park goals.</li> </ul>
<b>Tennessee Valley and Surrounding Parklands (from Oakwood Valley to the ocean, and northwest to Highway 1)</b>			
<ul style="list-style-type: none"> <li>§ Manage the area to accommodate a variety of uses including trailhead, multiple trails, hike-in campground, equestrian center, nursery, horse patrol, environmental education, and campground.</li> </ul>	<ul style="list-style-type: none"> <li>§ Provide improvements at trailhead, such as potable water, restrooms, and possibly a food kiosk.</li> <li>§ Retain equestrian facilities near the main trailhead, and possibly expand them.</li> <li>§ Retain walk-in group camping.</li> <li>§ Remove structures, including the park horse patrol, from lower Tennessee Valley, and restore wetland and riparian habitat.</li> </ul>	<ul style="list-style-type: none"> <li>§ Manage Tennessee Valley trailhead and nearby stable area to retain equestrian use and provide minimal visitor facilities; improve trailhead to support visitor access to trails. Provide modest facilities to support stewardship and restoration activities.</li> <li>§ Remove nonhistoric structures and convert unneeded roads to trails.</li> <li>§ Remove dams and artificial ponds and restore wetland and riparian habitat.</li> </ul>	<ul style="list-style-type: none"> <li>§ Manage Tennessee Valley trailhead and nearby stable area to establish a visitor facility providing orientation and services to support area recreational and educational opportunities.</li> <li>§ Retain equestrian, environmental and stewardship uses with improved sustainable facilities.</li> <li>§ Modest facilities could be provided to support recreational activities and could include rustic overnight accommodations.</li> </ul>
<b>Marin Headlands: Marin City Ridge, and Gerbode Valley</b>			
<ul style="list-style-type: none"> <li>§ Manage area to preserve natural resources and processes, restore habitats, protect sensitive species and habitats and allow trail use.</li> <li>§ Provide primitive camping and a trail network with access to local communities.</li> </ul>	<ul style="list-style-type: none"> <li>§ Manage area to preserve undeveloped wilderness-like character.</li> <li>§ Could expand primitive camping opportunities that are accessible.</li> <li>§ Continue habitat restoration, protect sensitive species.</li> <li>§ Improve sustainability of trail system and explore an</li> </ul>	<ul style="list-style-type: none"> <li>§ Manage area to restore and preserve coastal corridor of contiguous habitat and natural resources.</li> <li>§ Remove nonhistoric buildings and infrastructure and restore lands.</li> <li>§ Convert unnecessary management roads to trails. Explore opportunities to provide trail connections to</li> </ul>	<ul style="list-style-type: none"> <li>§ Same as alternative 1.</li> </ul>

TABLE 10. COMPARISON OF ALTERNATIVES FOR PARK LANDS IN MARIN COUNTY

COMPARISON OF ALTERNATIVES FOR PARK LANDS IN MARIN COUNTY			
NO ACTION	ALTERNATIVE 1 – PREFERRED	ALTERNATIVE 2	ALTERNATIVE 3
	opportunity to provide a community trailhead in Marin City.	local communities.	
<b>Marin Headlands: Fort Barry and Fort Cronkhite</b>			
<ul style="list-style-type: none"> <li>§ Continue to use historic structures for a variety of education, recreation, conservation, and park operations for the park and our partners.</li> <li>§ Some visitor facilities, such as waysides, parking, and a small visitor center are provided.</li> <li>§ Equestrian programs exist but provide limited opportunities for the park visitor.</li> </ul>	<ul style="list-style-type: none"> <li>§ Manage for a variety of recreational, educational stewardship and park operational needs. Expand visitor amenities at Fort Baker and Fort Cronkhite. Rehabilitate structures and limited new construction for programs.</li> <li>§ Visitor amenities could be expanded to include trailheads, accessible trails, camping, picnicking, and park orientation.</li> <li>§ Build on existing programs with focus on environmental education, science, history, culture, recreation, healthy lifestyle activities, and special events.</li> <li>§ Native plant nursery, offices, and some housing for staff, interns, and volunteers of the park and its partners would be provided.</li> <li>§ Add a visitor contact facility at Rodeo Beach to replace the chapel visitor center at Fort Barry.</li> <li>§ Equestrian programs would be supported in the Fort Barry motor pool area.</li> <li>§ Manage upland areas to protect and restore habitat for endangered species; preserve coastal fortifications.</li> <li>§ Continue to maintain restored Nike Missile Launch Site to provide experience evocative of its historic use.</li> </ul>	<ul style="list-style-type: none"> <li>§ Manage Rodeo Beach, Fort Cronkhite and Fort Barry to maintain military identity; provide higher levels of visitor use, educational programs, and recreation. Manage forts to interpret national register historic district; allow reuse of buildings for park programming.</li> <li>§ Manage Rodeo Lagoon and uplands south of Bunker Road to preserve and restore coastal habitat for threatened/endangered species. Limit visitor access to designated trails.</li> <li>§ Accommodate equestrian use and restore habitat consistent with military landscape.</li> <li>§ Manage Nike Missile Launch Site as in alternative 1.</li> </ul>	<ul style="list-style-type: none"> <li>§ Manage Rodeo Valley, Fort Barry, and Fort Cronkhite to showcase stories and structures of military history and transition to a national park. Restore infrastructure and landscapes to military era; protect threatened/endangered species habitat. Continue to use structures for a variety of purposes, and encourage park partners to incorporate programming with military history and conservation of open space.</li> <li>§ Incorporate technology and multimedia to enhance interpretation and visitor immersion.</li> <li>§ Accommodate equestrian facilities.</li> <li>§ Manage Nike Missile Launch Site as in alternative 1.</li> </ul>
<b>Capehart Housing Area</b>			
<ul style="list-style-type: none"> <li>§ Manage area to provide workforce housing for park and partner staff</li> </ul>	<ul style="list-style-type: none"> <li>§ Construct park operations facility south side of Bunker Road, including removal of select structures.</li> <li>§ Remove residences on north side of Bunker Road to improve the entrance to Rodeo Valley.</li> </ul>	<ul style="list-style-type: none"> <li>§ Consider a new park operations facility south of Bunker Road.</li> <li>§ Remove residential structures and unnecessary infrastructure; restore riparian and upland habitats and reconnect fragmented habitat where possible.</li> </ul>	<ul style="list-style-type: none"> <li>§ Replace some residences with new visitor center and facilities on south side of Bunker Road.</li> </ul>
<b>Conzelman, Bunker, and McCullough Roads (including Battery Spencer and Hawk Hill)</b>			
<ul style="list-style-type: none"> <li>§ Manage to preserve historic and natural resources and scenic views as well as protecting sensitive species and habitats. Implement planned road, trail, and transit projects to improve access and reduce congestion at scenic overlooks.</li> </ul>	<ul style="list-style-type: none"> <li>§ Highlight fundamental coastal resources, military fortifications, and scenic views.</li> <li>§ Provide safe pedestrian, bike, and motor vehicle access to overlooks and to interpretive and recreational opportunities.</li> <li>§ Add interpretive signs, restrooms, and benches to some overlooks.</li> </ul>	<ul style="list-style-type: none"> <li>§ Same as alternative 1, except that area outside immediate road corridor would be managed to protect and restore coastal habitat to support mission blue butterfly.</li> <li>§ Limit visitor access to designated trails in area outside immediate road corridor.</li> </ul>	<ul style="list-style-type: none"> <li>§ Manage roads and adjacent park lands to focus visitors on coastal geology and military fortifications. Restore military structures and fortifications.</li> <li>§ Provide new and improved trails following historic routes and connecting visitors to geologic and military resources.</li> <li>§ Protect habitat for threatened/endangered species.</li> </ul>
<b>Nearshore Ocean and Bay Environment</b>			
<ul style="list-style-type: none"> <li>§ Maintain 0.25-mile-wide buffer in coastal waters.</li> <li>§ Manage area to accommodate public uses including water recreation and recreational fishing.</li> <li>§ Support research and cooperation with other resource managing agencies.</li> </ul>	<ul style="list-style-type: none"> <li>§ Preserve integrity of ocean and bay environment.</li> <li>§ Accommodate appropriate public uses including water recreation, boating, and recreational fishing.</li> <li>§ Protect marine habitat in coordination with Monterey Bay and Gulf of the Farallones national marine sanctuaries. At Point Bonita Cove and Bird Rock, limit access in order to preserve sensitive resources; primary use would be research.</li> </ul>	<ul style="list-style-type: none"> <li>§ Nearshore areas except Muir Beach and Point Bonita would be managed the same as in alternative 1.</li> <li>§ At nearshore areas around Muir Beach and Point Bonita, preserve sensitive marine resources including intertidal resources, Redwood Creek salmonids, seabirds, and marine animals.</li> <li>§ Restrict visitation to protect resources, primary use would be research.</li> </ul>	<ul style="list-style-type: none"> <li>§ Work to preserve the integrity of ocean and bay environment and accommodate public uses including water recreation, boating, and recreational fishing.</li> </ul>

TABLE 11. COMPARISON OF ALTERNATIVES FOR PARK LANDS IN SAN FRANCISCO

COMPARISON OF ALTERNATIVES FOR PARK LANDS IN SAN FRANCISCO			
NO ACTION	ALTERNATIVE 1 – PREFERRED	ALTERNATIVE 2	ALTERNATIVE 3
<b>Upper Fort Mason</b>			
<ul style="list-style-type: none"> <li>§ Manage the area to preserve historic district and to adaptively reuse historic structures for park and park partner uses.</li> <li>§ Provide public use through hostel and leasing of historic residences.</li> <li>§ Provide a range of uses in the Great Meadow.</li> </ul>	<ul style="list-style-type: none"> <li>§ Manage this district as a portal to the park; use selected historic structures for orientation and visitor services. Rehabilitate historic landscape and stabilize Pier 4; enhance connections to the Aquatic Park.</li> <li>§ Maintain residential uses where compatible with preservation goals.</li> <li>§ Develop an expanded stewardship program.</li> <li>§ Maintain park operations in current location.</li> <li>§ Provide modest improvements at the Great Meadow.</li> <li>§ Manage Black Point to protect natural rocky shoreline and provide a scenic overlook.</li> </ul>	<ul style="list-style-type: none"> <li>§ Manage this area similar to alternative 1, but selected historic structures, including Pier 4, would be adaptively used for new park partners to engage visitors, communities, and others in participatory science, education, and stewardship focused on coastal environment.</li> <li>§ Develop a stewardship “hub” at Fort Mason to transport volunteers arriving by transit to other work sites in the park.</li> <li>§ Improve visitor circulation and wayfinding, especially from transit arrival areas.</li> <li>§ Manage Great Meadow and shoreline at Black Point as in alternative 1.</li> </ul>	<ul style="list-style-type: none"> <li>§ Manage Fort Mason as primary visitor entrance to the park, with an orientation and information center.</li> <li>§ Preserve historic structures and landscapes.</li> <li>§ Expand overnight accommodations.</li> <li>§ Rehabilitate historic Pier 4 to provide an additional embarkation point to Alcatraz Island.</li> <li>§ Manage Great Meadow and shoreline at Black Point same as in alternative 1.</li> </ul>
<b>China Beach</b>			
<ul style="list-style-type: none"> <li>§ Manage the area to provide for enjoyment of a secluded beach and bird watching.</li> </ul>	<ul style="list-style-type: none"> <li>§ Improve visitor facilities and access to support current uses.</li> </ul>	<ul style="list-style-type: none"> <li>§ Same as alternative 1.</li> </ul>	<ul style="list-style-type: none"> <li>§ Same as alternative 1.</li> </ul>
<b>Lands End (Northern area)</b>			
<ul style="list-style-type: none"> <li>§ Manage the area to preserve and enhance the rugged coastal landscape.</li> </ul>	<ul style="list-style-type: none"> <li>§ Enhance the landscape, integrating natural habitat restoration and cultural landscape preservation.</li> <li>§ Enhance scenic viewpoints and opportunities for bird watching.</li> <li>§ Improve trail system, including connections to community and adjacent park lands.</li> </ul>	<ul style="list-style-type: none"> <li>§ Restore native habitat and natural processes within the coastal corridor from Eagle’s Point south to area of recent restoration.</li> <li>§ Improve trail system to provide access to shoreline and vistas and to connect to communities.</li> </ul>	<ul style="list-style-type: none"> <li>§ Same as alternative 1.</li> </ul>
<b>Fort Miley</b>			
<ul style="list-style-type: none"> <li>§ Manage the area to preserve the historic structures and landscapes and provide public and park operations uses.</li> </ul>	<ul style="list-style-type: none"> <li>§ Preserve and enhance historic structures and cultural landscapes. Rehabilitate Marine Exchange Lookout Station (Octagon House).</li> <li>§ Focus site improvements on appearance and connection to community and Veterans Administration hospital campus.</li> <li>§ Provide improved picnicking and group camping facilities and improved opportunities for outdoor learning and leadership programs.</li> <li>§ Park operations would remain at East Fort Miley.</li> </ul>	<ul style="list-style-type: none"> <li>§ Same as alternative 1, with more restoration of natural landscape. Adaptively reuse Marine Exchange Lookout Building (Octagon House) to engage the public in natural and human history of the ocean environment.</li> <li>§ Park operations would remain at East Fort Miley.</li> </ul>	<ul style="list-style-type: none"> <li>§ Preserve and enhance USS <i>San Francisco</i> Memorial, Marine Exchange Lookout Building, and structures and sites showcasing military and maritime history at West Fort Miley.</li> <li>§ Continue to use East Fort Miley for park operations, and provide safer and more direct vehicle and trail access.</li> </ul>
<b>Ocean Beach</b>			
<ul style="list-style-type: none"> <li>§ Manage to provide a recreational beach accommodating high levels of use while preserving natural values, including habitat for shorebirds such as the threatened western snowy plover.</li> </ul>	<ul style="list-style-type: none"> <li>§ Collaborate with City of San Francisco and other agencies to address coastal erosion, sea level rise, and redesign of the corridor.</li> <li>§ Manage area north of seawall to provide diverse recreational uses and preserve natural resources.</li> <li>§ Manage area south of seawall to protect shorebirds and allow natural coastal processes, along with compatible recreational uses.</li> <li>§ Relocate facilities out of areas vulnerable to coastal</li> </ul>	<ul style="list-style-type: none"> <li>§ As in alternative 1, support city’s efforts to redesign Ocean Beach corridor and relocate facilities out of areas vulnerable to coastal erosion.</li> <li>§ Manage northern end of beach to provide a variety of recreational opportunities. Manage area south of seawall to protect shorebirds and allow natural coastal processes while allowing compatible recreational uses.</li> </ul>	<ul style="list-style-type: none"> <li>§ Same as alternative 2.</li> </ul>

TABLE 11. COMPARISON OF ALTERNATIVES FOR PARK LANDS IN SAN FRANCISCO

COMPARISON OF ALTERNATIVES FOR PARK LANDS IN SAN FRANCISCO			
NO ACTION	ALTERNATIVE 1 – PREFERRED	ALTERNATIVE 2	ALTERNATIVE 3
	erosion.		
<b>Fort Funston</b>			
<ul style="list-style-type: none"> <li>§ Provide trail and beach access for recreational uses including dog walking and hang gliding.</li> <li>§ Preserve natural and cultural resources including historic fortifications. Maintain park operations and environmental education center.</li> </ul>	<ul style="list-style-type: none"> <li>§ Continue existing recreational activities. Provide new visitor facilities. Preserve and interpret Battery Davis.</li> <li>§ Expand islands of native habitat to form continuous native dune habitat corridor.</li> <li>§ Along northern stretch, protect shorebirds, including threatened western snowy plover.</li> <li>§ Retain and possibly expand park operational facilities.</li> </ul>	<ul style="list-style-type: none"> <li>§ Expand islands of native habitat to form continuous native dune habitat corridor.</li> <li>§ Manage southern area to protect shorebird habitat and provide new trails.</li> <li>§ In developed area, manage to provide continued levels of high use and variety of recreational activities and support facilities.</li> <li>§ Preserve Battery Davis.</li> </ul>	<ul style="list-style-type: none"> <li>§ For the majority of the site, manage to provide recreational activities with limited support facilities.</li> <li>§ Restore natural dune ecosystem and trail access, locate parking at edge of site.</li> <li>§ Remove nonhistoric buildings; relocate park operation functions and environmental education programs to suitable locations.</li> <li>§ Preserve historic Battery Davis within natural setting.</li> <li>§ Manage uplands for continued high levels of recreational use.</li> </ul>
<b>Nearshore Ocean and Bay Environment</b>			
<ul style="list-style-type: none"> <li>§ Maintain 0.25-mile-wide buffer in coastal waters.</li> <li>§ Manage this area to accommodate public uses including water recreation and recreational fishing.</li> <li>§ Support research and cooperation with other resource managing agencies.</li> </ul>	<ul style="list-style-type: none"> <li>§ Preserve integrity of ocean and bay environment.</li> <li>§ Accommodate appropriate public uses including water recreation, boating, and recreational fishing.</li> </ul>	<ul style="list-style-type: none"> <li>§ Designate Eagle's Point near China Beach to Seal Rocks and West Crissy Field as marine reserves to protect seabirds and marine mammals.</li> <li>§ Remainder of area would be managed as in the no-action alternative.</li> </ul>	<ul style="list-style-type: none"> <li>§ Work to preserve the integrity of ocean and bay environment and accommodate public uses including water recreation, boating, and recreational fishing.</li> </ul>

TABLE 12. COMPARISON OF ALTERNATIVES FOR PARK LANDS IN SAN MATEO COUNTY

COMPARISON OF ALTERNATIVES FOR PARK LANDS IN SAN MATEO COUNTY			
NO ACTION	ALTERNATIVE 1 – PREFERRED	ALTERNATIVE 2	ALTERNATIVE 3
<b>South of Fort Funston to South of Mussel Rock</b>			
§ Limited management would continue.	§ Preserve and enhance natural and scenic values; allow for coastal geologic processes. § Provide modest visitor access facilities; protect shorebird habitat.	§ Same as alternative 1.	§ Same as alternative 1.
<b>Milagra Ridge</b>			
§ Manage to protect and restore natural habitat, to protect historic coastline defenses. § Maintain limited trail access.	§ Manage area to preserve wild character and protect habitat for endangered species. Restore heavily disturbed areas. § Improve trails and trail connections in coordination with other land managers. At center of ridge, improve access and add additional visitor amenities.	§ Same as alternative 1 without additional amenities and improved access at center of ridge.	§ Same as alternative 2.
<b>Shelldance Nursery Area</b>			
§ Manage area for multiple uses including commercial nursery, trailhead, and park maintenance storage.	§ Transition area to provide visitor services including trailhead parking, restrooms, orientation, and community stewardship/education center. § Designate some portion for park operations.	§ Same as alternative 1.	§ Same as alternative 1.
<b>Sweeney Ridge (including Cattle Hill, Picardo Ranch, and Sweeney Ridge Gateway conservation easement)</b>			
§ Manage for natural values and protection of historic resources. § Cattle Hill to be transferred to National Park Service in the near future, with trail improvements underway. § Picardo Ranch is a priority for land and conservation easements for the park.	§ Manage to protect endangered species and large contiguous natural landscape. § Visitor experience would include stewardship activities, trail use, and primitive camping. Coordinate improvements in regional trail system connections, develop trail amenities. § Preserve and enhance interpretation of the San Francisco Bay Discovery Site National Historic Landmark. § If acquired, locate trailhead at Picardo Ranch with visitor use improvements.	§ Majority of area managed similar to alternative 1. § Convert Sneath Lane to a trail to connect Bay Area Ridge Trail. Remove unnecessary fire roads or convert to trails. § If acquired, locate trailhead at Picardo Ranch with modest improvements. § Preserve and interpret San Francisco Bay Discovery Site National Historic Landmark.	§ Manage majority of area to protect endangered species and the large contiguous landscape extending to San Francisco Public Utilities Commission Peninsula Watershed. § Visitor experience could include stewardship activities, improved trails, and primitive camping. § Connect to Bay Area Ridge Trail. Preserve and enhance interpretation of the San Francisco Bay Discovery Site National Historic Landmark. § If acquired, manage developed portions of Picardo Ranch the same as alternative 1.
<b>Mori Point</b>			
§ Manage to preserve and enhance habitat for threatened and endangered species and to restore natural functions. § Develop hiking trails network.	§ Manage land for ongoing restoration of natural habitats and to protect endangered species. § Improve trail system and its connections and improve access.	§ Control visitor use to protect threatened and endangered species on-site. § Continue community stewardship to restore ecosystem.	§ Same as alternative 1.
<b>Point San Pedro</b>			
§ Not currently managed by National Park Service, but could be added to the park after construction of the State Route 1 tunnel.	§ If acquired, manage to maintain natural features and scenic views, and restore habitat. § Improve trails and trailheads.	§ Same as alternative 1.	§ Same as alternative 1.

TABLE 12. COMPARISON OF ALTERNATIVES FOR PARK LANDS IN SAN MATEO COUNTY

COMPARISON OF ALTERNATIVES FOR PARK LANDS IN SAN MATEO COUNTY			
NO ACTION	ALTERNATIVE 1 – PREFERRED	ALTERNATIVE 2	ALTERNATIVE 3
<b>Rancho Corral de Tierra</b>			
<ul style="list-style-type: none"> <li>§ Manage for limited public access for recreation such as hiking and horseback riding.</li> </ul>	<ul style="list-style-type: none"> <li>§ Create trailheads and other visitor facilities that provide for enjoyment of this area.</li> <li>§ Manage areas outside equestrian centers to preserve wild, open character and offer trail-based recreation.</li> <li>§ Equestrian facilities and uses would be retained although the exact location, type, and scale will be subject to future planning efforts.</li> <li>§ Restore natural habitats with community stewards.</li> </ul>	<ul style="list-style-type: none"> <li>§ Same as alternative 1, with fewer amenities.</li> <li>§ Remove unnecessary management roads or convert to trails.</li> <li>§ Remove or relocate equestrian facilities away from creek corridors.</li> <li>§ Partner with surrounding land owners to restore creek corridors supporting fish passage.</li> </ul>	<ul style="list-style-type: none"> <li>§ Same as alternative 1.</li> </ul>
<b>Montara Lighthouse</b>			
<ul style="list-style-type: none"> <li>§ Currently managed by the U.S. Coast Guard; current uses include a hostel. Potential to be transferred to the National Park Service.</li> </ul>	<ul style="list-style-type: none"> <li>§ Preserve and interpret historic structures and associated resources.</li> <li>§ Enhance hostel and day use programming.</li> <li>§ Encourage multiagency visitor center in vicinity.</li> <li>§ Improve trail connections.</li> </ul>	<ul style="list-style-type: none"> <li>§ Similar to alternative 1, but dedicate the site to stewardship and environmental education including education related to coastal resources.</li> <li>§ Maintain hostel and overnight accommodations for use by program participants and staff.</li> </ul>	<ul style="list-style-type: none"> <li>§ Restore and interpret historic structures and landscape features to support immersion in life of lighthouse keepers, remove contemporary structures, and develop new visitor programs.</li> <li>§ Continue overnight stays as part of immersion experience.</li> </ul>
<b>Phleger Estate</b>			
<ul style="list-style-type: none"> <li>§ Manage this area to preserve cultural and natural resources of second-growth redwood forest and to provide access to regional trail system.</li> </ul>	<ul style="list-style-type: none"> <li>§ Manage this area to provide trail-based recreation in natural setting.</li> <li>§ Restore redwood forest ecosystem and pursue trail connections.</li> <li>§ Interpret logging history.</li> </ul>	<ul style="list-style-type: none"> <li>§ Same as alternative 1.</li> </ul>	<ul style="list-style-type: none"> <li>§ Same as alternative 1.</li> </ul>
<b>San Francisco Public Utilities Commission Peninsula Watershed Easements</b>			
<ul style="list-style-type: none"> <li>§ Managed by San Francisco Public Utilities Commission to protect water supply and ecological and cultural resources. The National Park Service administers a scenic easement and a recreation easement to protect natural values and limited recreational uses compatible with ongoing water operations.</li> </ul>	<ul style="list-style-type: none"> <li>§ Continue to coordinate with San Francisco Public Utilities Commission to administer the easements consistent with easement goals and restrictions. Continue to cooperate with SFPUC for preservation of natural, cultural, scenic, and recreational features of the watershed, including new trail connections.</li> <li>§ In scenic and recreation easement, promote preservation while providing improved public trail access.</li> <li>§ Collaborate with San Francisco Public Utilities Commission on a watershed visitor education center.</li> </ul>	<ul style="list-style-type: none"> <li>§ Similar to alternative 1, with emphasis on promoting natural resources preservation and supporting biodiversity values.</li> <li>§ Promote access and visitor services along existing multiuse trail and implement trail improvements proposed in San Francisco Watershed Management Plan (2002) including north-south corridor in areas of low sensitivity.</li> </ul>	<ul style="list-style-type: none"> <li>§ Manage majority of area, corresponding to scenic and recreational easement, as in alternative 1.</li> <li>§ 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.</li> </ul>
<b>Nearshore Ocean Environments</b>			
<ul style="list-style-type: none"> <li>§ Where park boundary coincides with Fitzgerald Marine Reserve, continue to cooperate on management.</li> </ul>	<ul style="list-style-type: none"> <li>§ Where park boundary coincides with Fitzgerald Marine Reserve, continue to cooperate on management.</li> </ul>	<ul style="list-style-type: none"> <li>§ Same as alternative 1.</li> </ul>	<ul style="list-style-type: none"> <li>§ Same as alternative 1.</li> </ul>

**TABLE 13. KEY POTENTIAL IMPACTS OF IMPLEMENTING THE ALTERNATIVES FOR PARK LANDS IN MARIN, SAN FRANCISCO, AND SAN MATEO COUNTIES (INCLUDING ALCATRAZ ISLAND)**

Potential Key Impacts on Park Lands				
	No-action Alternative	Alternative 1 – NPS Preferred	Alternative 2	Alternative 3
<i>Natural Resources</i>				
<b>Carbon Footprint and Air Quality</b>	<p>§ Total gross emissions would be 6,818 MTCE, resulting in long-term, minor to moderate, adverse impacts on the park's carbon footprint. Overall, when compared to background levels of air pollution and GHG emissions in the region or the nation, impacts on air quality from the no-action alternative would be long term, adverse, and negligible.</p>	<p>§ The combined effect of the actions included in alternative 1 would increase the gross emissions of the entire park by 7% to 7,292 MTCE. This would result in long-term, minor, adverse impacts on the NPS carbon footprint. As in the no-action alternative, impacts on air quality would be negligible when compared to background levels of regional and national air pollution.</p> <p>§ The preferred alternative (alternative 1 for Marin, San Francisco, and San Mateo counties and alternative 3 for Alcatraz Island) would result in total emissions of 7,166 MTCE, an increase of 5% from the no-action alternative.</p>	<p>§ The combined effect of the actions included in alternative 2 would reduce the gross emissions of the entire park by 1% to 6,758 MTCE, the lowest of all of the alternatives. This would result in long-term, minor, beneficial impacts on the park's carbon footprint. As in the no-action alternative, impacts on air quality would be negligible when compared to background levels of regional and national air pollution.</p>	<p>§ The combined effect of the actions included in alternative 3 would reduce the gross emissions of the entire park by 1%, to 6,861 MTCE. This would result in long-term, minor, beneficial impacts on the park's carbon footprint. As in the no-action alternative, impacts on air quality would be negligible when compared to background levels of regional and national air pollution.</p>
<b>Soils and Geologic Resources and Processes</b>	<p>§ Overall, the impact to geologic resources and soils from the no-action alternative would be long term, range from minor, adverse to moderate, beneficial and be localized and parkwide. Adverse impacts would occur from the presence and maintenance of existing facilities and visitor use. Beneficial impacts would occur from restoration and education and stewardship activities.</p>	<p>§ The elimination of unsustainable roads and trails would reduce soil erosion, resulting in long-term, minor, beneficial, localized impacts on 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.</p>	<p>§ The elimination of unsustainable trails and roads and the removal and restoration of unneeded management roads would reduce soil erosion, resulting in long-term, minor to moderate, beneficial, localized impacts. The removal of facilities/structures and restoration of a large number of natural areas would result in long-term, moderate, beneficial, and localized impacts.</p>	<p>§ The reduction in soil erosion and reclamation of disturbed building sites would result in long-term, minor to moderate, beneficial, localized impacts. Impacts from new recreational development would be long term, minor to moderate, adverse, and localized.</p>
<b>Water Resources and Hydrologic Processes</b>	<p>§ The continued existence of structures and facilities in some areas of the park would have long-term, minor to moderate, adverse, and localized impacts. Projects to improve natural habitat values and ecosystem function would have long-term, minor to moderate, beneficial, and localized impacts on water resources and hydrologic processes.</p>	<p>§ The removal and reclamation of facilities and structures, the re-creation of natural hydrologic regimes, and restoration of watershed processes would result in long-term, minor to moderate, beneficial impacts on water quality, while the construction, maintenance or removal of trails and facilities would have short-term, minor to moderate, adverse impacts on water quality. There would be long-term, minor to moderate, adverse, localized impacts on water quality resulting from cleaning primary visitor use areas on Alcatraz Island and increased vessel traffic in San Francisco Bay.</p>	<p>§ The removal of unsustainable trails and unneeded management roads, removal of facilities and structures, creek restorations, realignment of small sections of roadway, and the relocation of horse stables from adjacent creeks would result in long-term, minor to moderate, beneficial impacts on water resources, wetlands, floodplains, and overall hydrologic processes. However, the construction, maintenance, or removal activities associated with these changes would have short-term, minor to moderate, adverse impacts on water quality. Leaving greater portions of the island to natural reclamation and reducing the visitor use area would result in long-term, minor, beneficial, localized impacts on water quality.</p>	<p>§ The removal and natural restoration of unsustainable trails and unneeded management roads, the removal of facilities and structures, and creek restoration efforts would result in long-term, minor to moderate, beneficial impacts on water resources and hydrologic process. However, the construction, maintenance, or removal of trails and facilities would have short-term, minor to moderate, adverse impacts on water quality. The scale of historic structure rehabilitation and facility improvements on Alcatraz Island could result in impacts on water quality. The cleaning of the primary visitor use areas on Alcatraz Island and the increased vessel traffic in San Francisco Bay would result in long-term, minor to moderate, adverse, localized impacts on water quality.</p>

**TABLE 13. KEY POTENTIAL IMPACTS OF IMPLEMENTING THE ALTERNATIVES FOR PARK LANDS IN MARIN, SAN FRANCISCO, AND SAN MATEO COUNTIES (INCLUDING ALCATRAZ ISLAND)**

Potential Key Impacts on Park Lands				
	No-action Alternative	Alternative 1 – NPS Preferred	Alternative 2	Alternative 3
<b>Habitat (vegetation and wildlife)</b>	<p>§ The conditions related to existing facilities would continue to cause fragmentation of habitat and the potential for nonnative plant species to displace native species. The continuation of current recreational use also would reduce habitat integrity. The impacts would be long-term, minor to moderate, adverse, and localized but would occur throughout the park.</p> <p>§ Habitat restoration efforts and educational and participatory stewardship programs would result in long-term, minor to moderate, beneficial impacts that would occur both at the local level (habitat restoration) and parkwide (stewardship programs).</p> <p>§ Impacts on waterbirds would be long-term, minor to moderate, adverse, and localized.</p>	<p>§ 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, beneficial, localized impacts on vegetation and wildlife.</p> <p>§ The expansion of visitor access and use and the development of new or improved recreational facilities would result in long-term, minor to moderate, adverse, and localized impacts. The construction activities related to these developments would result in short-term, minor, and adverse impacts.</p> <p>§ Impacts from NPS educational and stewardship programs would generally be the same as those described in the no-action alternative. Similarly, impacts from vegetation and wildlife management and monitoring activities under alternative 1 would be the same as those described in the no-action alternative. However, the establishment of a native plant nursery would provide additional capacity to improve native vegetation and wildlife habitat and expand stewardship efforts, resulting in a beneficial impact.</p> <p>§ Habitat restoration efforts and educational and participatory stewardship programs would result in long-term, minor to moderate, beneficial impacts that would occur both at the local level (habitat restoration) and parkwide (stewardship programs). An additional beneficial impact would result from the establishment of a native plant nursery.</p> <p>§ Impacts on waterbirds of Alcatraz Island would be long term, moderate, adverse, and localized to regional; and could result in major adverse impacts to western gulls.</p>	<p>§ The development of a sustainable trail system, the elimination of unneeded roads, and the removal of a large number of structures with restoration of natural vegetation in these areas would result in long-term, moderate, beneficial, localized to parkwide impacts on vegetation and wildlife.</p> <p>§ 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. The construction activities related to these developments would result in short-term, minor, and adverse impacts.</p> <p>§ Habitat restoration efforts and educational and participatory stewardship programs would result in long-term, minor to moderate, beneficial impacts that would occur both at the local level (habitat restoration) and parkwide (stewardship programs). Additional beneficial impacts would result from the establishment of a native plant nursery and partnering with other agencies to manage visitor access and promote restoration and habitat management as part of the UNESCO Biosphere Reserve.</p> <p>§ Impacts on waterbirds on the island would be long-term, moderate, beneficial, and localized.</p>	<p>§ The development of a sustainable trail system and the elimination of unneeded roads and the restoration of natural vegetation in these areas would result in long-term, minor, beneficial, localized impacts on vegetation and wildlife.</p> <p>§ 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. The construction activities related to these developments would result in short-term, minor, and adverse impacts.</p> <p>§ Natural resource restoration would result in long-term, moderate, beneficial, and localized impacts.</p> <p>§ Habitat restoration efforts and educational and participatory stewardship programs would result in long-term, minor to moderate, beneficial impacts that would occur both at the local level (habitat restoration) and parkwide (stewardship programs).</p> <p>§ Impacts on waterbirds of Alcatraz Island would be long term, moderate, adverse, and localized to regional; and could result in major adverse impacts to western gulls.</p>
<b>Special Status Species (federal and state threatened and endangered species)</b>	<p>§ <b>California red-legged frog</b> (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.</p> <p>§ <b>Mission blue butterfly</b> (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.</p> <p>§ <b>Tidewater goby</b> (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.</p>	<p>§ <b>California red-legged frog</b> (federal threatened): "may affect, not likely to adversely affect."</p> <p>§ <b>Mission blue butterfly</b> (federal endangered): "may affect, not likely to adversely affect."</p> <p>§ <b>Tidewater goby</b> (federal endangered): "may affect, not likely to adversely affect."</p> <p>§ <b>San Francisco garter snake</b> (federal endangered): "may affect, not likely to adversely affect."</p> <p>§ <b>San Bruno elfin butterfly</b> (federal endangered): "may affect, not likely to adversely affect."</p> <p>§ <b>Coho salmon</b> (federal endangered) and <b>Steelhead trout</b> (federal threatened), central California Coast: "may affect, not likely to adversely affect."</p>	<p>§ <b>California red-legged frog</b> (federal threatened): "may affect, not likely to adversely affect."</p> <p>§ <b>Mission blue butterfly</b> (federal endangered): "may affect, not likely to adversely affect."</p> <p>§ <b>Tidewater goby</b> (federal endangered): "may affect, not likely to adversely affect."</p> <p>§ <b>San Francisco garter snake</b> (federal endangered): "may affect, not likely to adversely affect."</p> <p>§ <b>San Bruno elfin butterfly</b> (federal endangered): "may affect, not likely to adversely affect."</p> <p>§ <b>Coho salmon and Steelhead trout</b>, central California Coast (federal threatened): "may affect, not likely to adversely affect."</p>	<p>§ <b>California red-legged frog</b> (federal threatened): "may affect, not likely to adversely affect."</p> <p>§ <b>Mission blue butterfly</b> (federal endangered): "may affect, not likely to adversely affect."</p> <p>§ <b>Tidewater goby</b> (federal endangered): "may affect, not likely to adversely affect."</p> <p>§ <b>San Francisco garter snake</b> (federal endangered): "may affect, not likely to adversely affect."</p> <p>§ <b>San Bruno elfin butterfly</b> (federal endangered): "may affect, not likely to adversely affect."</p> <p>§ <b>Coho salmon</b> (federal endangered) and <b>Steelhead trout</b> (federal threatened), central California Coast: "may affect, not likely to adversely affect."</p>

**TABLE 13. KEY POTENTIAL IMPACTS OF IMPLEMENTING THE ALTERNATIVES FOR PARK LANDS  
IN MARIN, SAN FRANCISCO, AND SAN MATEO COUNTIES (INCLUDING ALCATRAZ ISLAND)**

Potential Key Impacts on Park Lands				
	No-action Alternative	Alternative 1 – NPS Preferred	Alternative 2	Alternative 3
<b>Special Status Species (federal and state threatened and endangered species) (cont.)</b>	<ul style="list-style-type: none"> <li>§ <b>San Francisco garter snake</b> (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.</li> <li>§ <b>San Bruno elfin butterfly</b> (federal endangered): “may affect, not likely to adversely affect.”</li> <li>§ <b>Coho salmon</b> (federal endangered) and <b>steelhead trout</b> (federal threatened): central California Coast “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.</li> <li>§ <b>Western snowy plover</b> (federal threatened): “may affect, likely to adversely affect.”</li> <li>§ <b>Northern spotted owl</b> (federal threatened): “may affect, not likely to adversely affect.”</li> <li>§ <b>San Francisco <i>Lessingia</i></b> (federal endangered): “may affect, not likely to adversely affect.”</li> <li>§ <b>Bank swallow</b> (federal candidate; state threatened): Long-term, beneficial impact that is minor and localized.</li> <li>§ <b>Montara Manzanita</b> (state threatened): No impact.</li> </ul>	<ul style="list-style-type: none"> <li>§ <b>Western snowy plover</b> (federal threatened): “may affect, not likely to adversely affect.”</li> <li>§ <b>Northern spotted owl</b> (federal threatened): “may affect, not likely to adversely affect.”</li> <li>§ <b>San Francisco <i>Lessingia</i></b> (federal endangered): “may affect, not likely to adversely affect.”</li> <li>§ <b>Bank swallow</b> (federal candidate; state threatened): long-term, beneficial impact that is minor and localized.</li> <li>§ <b>Montara Manzanita</b> (state threatened): long-term, adverse impact that is minor and localized.</li> </ul>	<ul style="list-style-type: none"> <li>§ <b>Western snowy plover</b> (federal threatened): “may affect, not likely to adversely affect.”</li> <li>§ <b>Northern spotted owl</b> (federal threatened): “may affect, not likely to adversely affect.”</li> <li>§ <b>San Francisco <i>Lessingia</i></b> (federal endangered): “may affect, not likely to adversely affect.”</li> <li>§ <b>Bank swallow</b> (federal candidate; state threatened): long-term, beneficial impact that is minor and localized.</li> <li>§ <b>Montara Manzanita</b> (state threatened): long-term, adverse impact that is minor and localized.</li> </ul>	<ul style="list-style-type: none"> <li>§ <b>Western snowy plover</b> (federal threatened): “may affect, not likely to adversely affect.”</li> <li>§ <b>Northern spotted owl</b> (federal threatened): “may affect, not likely to adversely affect.”</li> <li>§ <b>San Francisco <i>Lessingia</i></b> (federal endangered): “may affect, not likely to adversely affect.”</li> <li>§ <b>Bank swallow</b> (federal candidate; state threatened): long-term, beneficial impact that is minor and localized.</li> <li>§ <b>Montara Manzanita</b> (state threatened): long-term, adverse impact that is minor and localized.</li> </ul>
<b>Cultural Resources</b>				
<b>Archeological Resources</b>	<ul style="list-style-type: none"> <li>§ Because 90% of the park has not been surveyed for archeological resources, there is potential for the park to contain buried prehistoric and historic resources. Such resources could potentially be subject to loss of integrity from natural processes, ongoing agricultural and ranching operations, and inadvertent visitor activity or vandalism.</li> <li>§ Known archeological resources (Muir Beach Archeological District, Point Lobos Archeological Sites, as well as the <i>King Philip</i> and <i>SS Tennessee</i>) could also be adversely affected by natural processes and inadvertent visitor activity or vandalism. Adverse impacts would be permanent and of minor to moderate intensity.</li> <li>§ Archeological surveys and/or monitoring would precede any ground-disturbing activity. If significant archeological resources could not be avoided, an appropriate mitigation strategy would be developed in consultation with the state historic preservation officer. Any adverse impacts on archeological resources would be permanent and minor to moderate in intensity.</li> </ul>	<ul style="list-style-type: none"> <li>§ Because 90% of the park has not been surveyed for archeological resources, there is potential for buried prehistoric and historic resources. Such resources could potentially be subject to loss of integrity from natural processes, ongoing agricultural and ranching operations, and inadvertent visitor activity or vandalism.</li> <li>§ Known archeological resources (Muir Beach Archeological District, Point Lobos Archeological Sites, as well as the <i>King Philip</i> and <i>SS Tennessee</i>) could be adversely affected by natural processes and inadvertent visitor activity or vandalism. Adverse impacts would be permanent and of minor to moderate intensity.</li> <li>§ On Alcatraz Island, archeological resources would be identified, evaluated, and stabilized, provided security, or other protection commensurate with their significance and sensitivity—a beneficial impact. Such resources could be incorporated into visitor interpretive opportunities.</li> <li>§ Archeological surveys and/or monitoring would precede any ground-disturbing activity. If significant archeological resources could not be avoided, a mitigation strategy would be developed in consultation with the state historic preservation officer. Any adverse impacts on archeological resources would be permanent and minor to moderate in intensity.</li> </ul>	<ul style="list-style-type: none"> <li>§ Because 90% of the park has not been surveyed for archeological resources, there is potential for the park to contain buried prehistoric and historic resources. Such resources could potentially be subject to loss of integrity from natural processes, ongoing agricultural and ranching operations, and inadvertent visitor activity or vandalism.</li> <li>§ Known archeological resources could also be adversely affected by natural processes and inadvertent visitor activity or vandalism. Adverse impacts would be permanent and of minor to moderate intensity.</li> <li>§ On Alcatraz Island, archeological resources would be identified, evaluated, and provided stabilization, security, or other protection commensurate with their significance and sensitivity—a beneficial impact. Such resources could also be incorporated into visitor interpretive opportunities.</li> <li>§ Archeological surveys and/or monitoring would precede any ground-disturbing activity. If significant archeological resources could not be avoided, an appropriate mitigation strategy would be developed in consultation with the state historic preservation officer. Any adverse impacts on archeological resources would be permanent and minor to moderate in intensity.</li> </ul>	<ul style="list-style-type: none"> <li>§ Because 90% of the park has not been surveyed for archeological resources, there is potential for the park to contain buried prehistoric and historic resources. Such resources could potentially be subject to loss of integrity from natural processes, ongoing agricultural and ranching operations, and inadvertent visitor activity or vandalism.</li> <li>§ Known archeological resources could also be adversely affected by natural processes and inadvertent visitor activity or vandalism. Adverse impacts would be permanent and of minor to moderate intensity.</li> <li>§ On Alcatraz Island, archeological resources would be identified, evaluated, and provided stabilization, security, or other protection commensurate with their significance and sensitivity—a beneficial impact. Such resources could also be incorporated into visitor interpretive opportunities.</li> <li>§ Archeological surveys and/or monitoring would precede any ground-disturbing activity. If significant archeological resources could not be avoided, an appropriate mitigation strategy would be developed in consultation with the state historic preservation officer. Any adverse impacts on archeological resources would be permanent and minor to moderate in intensity.</li> </ul>

**TABLE 13. KEY POTENTIAL IMPACTS OF IMPLEMENTING THE ALTERNATIVES FOR PARK LANDS IN MARIN, SAN FRANCISCO, AND SAN MATEO COUNTIES (INCLUDING ALCATRAZ ISLAND)**

Potential Key Impacts on Park Lands				
	No-action Alternative	Alternative 1 – NPS Preferred	Alternative 2	Alternative 3
<b>Ethnographic Resources/ Traditional Cultural Properties</b>	<p>§ Surveys and research necessary to determine Alcatraz Island’s eligibility for listing in the National Register of Historic Places as a traditional cultural property are a prerequisite for understanding the resource’s significance, as well as the basis of informed decision-making in the future regarding how the resource should be managed. Such surveys and research would result in a negligible to minor, beneficial, long-term impact.</p>	<p>§ Surveys and research necessary to determine Alcatraz Island’s eligibility for listing in the National Register of Historic Places as a traditional cultural property are a prerequisite for understanding the resource’s significance, as well as the basis of informed decision-making in the future regarding how the resource should be managed. Such surveys and research, including those planned for Alcatraz Island, would be a negligible to minor, beneficial long-term impact.</p>	<p>§ Surveys and research necessary to determine Alcatraz Island’s eligibility for listing in the National Register of Historic Places as a traditional cultural property are a prerequisite for understanding the resource’s significance, as well as the basis of informed decision-making in the future regarding how the resource should be managed. Such surveys and research would be a negligible to minor, beneficial long-term impact.</p>	<p>§ Surveys and research necessary to determine Alcatraz Island’s eligibility for listing in the National Register of Historic Places as a traditional cultural property are a prerequisite for understanding the resource’s significance, as well as the basis of informed decision-making in the future regarding how the resource should be managed. Such surveys and research would be a negligible to minor, long-term, beneficial impact.</p>
<b>Historic Structures</b>	<p>§ The park would continue to stabilize and preserve historic structures as financial resources and opportunities become available. The park’s historic structures have generally retained their integrity but the incremental and piecemeal approach to preservation and maintenance, as well as their various adaptive uses, has resulted in long-term, minor to moderate, adverse impacts because historic buildings, fabric, and integrity have been lost. In some instances, individual projects could result in adverse effects due to the level and amount of intervention and proposed modifications to a structure or site.</p>	<p>§ Implementing the actions under alternative 1 would generally provide better opportunities for strengthening the integrity and adaptive use of historic structures that are listed in or determined eligible for listing in the National Register of Historic Places or are designated as national historic landmarks. Actions under this alternative, such as adaptive reuse of historic structures, could result in localized loss of historic fabric on some historic buildings (resulting in permanent adverse impacts of minor intensity) but would generally improve the integrity, enhance the preservation and stabilization, and halt further deterioration of the park’s historic buildings, resulting in general overall long-term, beneficial impacts.</p> <p>§ Monitoring human impacts on historic structures, increased ranger patrol, and increased historical interpretation associated with this alternative could indirectly discourage vandalism and inadvertent impacts and minimize adverse impacts. Adverse impacts would be long term and negligible to minor in intensity.</p>	<p>§ Alternative 2 would generally provide opportunities for strengthening the integrity and adaptive use of historic structures that contribute to historic properties listed in or determined eligible for listing in the national register or designated as national historic landmarks. Although actions involving stabilization and recovery could result in localized loss of some historic fabric, the actions would enhance the preservation and stabilization of historic structures in the park. The primary goals for coastal ecosystem restoration and rehabilitation of rural and pastoral landscapes could impact the integrity of some historic structures. Collectively, actions under alternative 2 would result in impacts that range from long term and beneficial (because of improved treatment to historic buildings) to permanent and adverse of minor to moderate intensity (resulting from adaptive use and the potential for future coastal erosion).</p> <p>§ Under alternative 2, more historic structures on Alcatraz Island would become managed ruins. However, a benchmark/threshold evaluation stabilization plan is needed to determine the minimum level of historic building/fabric integrity needed in order to retain the island’s national historic landmark designation.</p> <p>§ Monitoring human impacts on historic structures, increased ranger patrol, and increased historical interpretation could indirectly discourage vandalism and inadvertent impacts and minimize adverse impacts. Adverse impacts would be long term and negligible to minor in intensity.</p>	<p>§ Under alternative 3, nationally significant buildings would be rehabilitated and adaptively used to showcase the park’s military, maritime, commercial, and agricultural and ranching history themes and to support visitor programming and services. The condition of all primary buildings would be improved. This alternative would provide the greatest number of historic buildings preserved in “good” condition. It would also provide public access to the greatest number of historic buildings. Although public access and adaptive reuse could result in localized adverse impacts on historic properties or fabric, overall, alternative 3 would have major comprehensive long-term beneficial impacts on the park’s historic structures, including those on Alcatraz Island.</p> <p>§ Monitoring human impacts on historic structures, increased ranger patrol, and increased historical interpretation could indirectly discourage vandalism and inadvertent impacts and minimize adverse impacts. Adverse impacts would be long term and negligible to minor in intensity.</p>

**TABLE 13. KEY POTENTIAL IMPACTS OF IMPLEMENTING THE ALTERNATIVES FOR PARK LANDS  
IN MARIN, SAN FRANCISCO, AND SAN MATEO COUNTIES (INCLUDING ALCATRAZ ISLAND)**

Potential Key Impacts on Park Lands				
	No-action Alternative	Alternative 1 – NPS Preferred	Alternative 2	Alternative 3
<b>Cultural Landscape Resources</b>	<p>§ The park would continue to stabilize and preserve cultural landscapes as financial resources and opportunities become available. The incremental approach to preservation of cultural landscape resources has resulted in varying degrees of preservation and possible localized loss of resource integrity, but overall the park’s cultural landscape resources have retained their historic integrity.</p> <p>§ The park would continue to make incremental improvements upon existing facilities, including consolidation and participation in the Bay Area Museum Resource Center Plan for oversized objects. Conditions would be improved to meet NPS standards; impacts would be short term, minor, and beneficial</p>	<p>§ Alternative 1 would provide improved opportunities for strengthening and enhancing the integrity of cultural landscape resources. Although actions could result in localized loss of some cultural landscape features due to increasing visitor opportunities, overall, alternative 1 would improve the integrity of the cultural landscape features in the park (including Alcatraz Island). Features near all primary historic buildings would be rehabilitated. Although some localized cultural landscape features would likely deteriorate or be lost in the park (resulting in permanent adverse impacts of minor intensity), the overall effect would have a long-term, minor, and beneficial impact on cultural landscape resources.</p>	<p>§ Alternative 2 would provide opportunities for strengthening the integrity and adaptive use or interpretation of cultural landscape resources. However, some actions involving the coastal ecosystem restoration and rehabilitation of existing pastoral and rural landscapes could negatively impact the integrity of some cultural landscape resources and would likely result in long-term, adverse impacts of moderate intensity. Overall, the majority of actions in alternative 2 would have a long-term, beneficial impact on the cultural landscape resources in the park.</p> <p>§ Under alternative 2, more cultural landscape resources on Alcatraz Island would become ruins and many of the island’s cultural landscape features would only be stabilized. Thus, many could be lost over time. Recent findings indicate that cultural landscape resources on the island are deteriorating at a rapid rate, and alternative 2 would do little to reverse that trend. The impacts on Alcatraz Island would range from long term, moderate, and beneficial to long term, moderate, and adverse.</p>	<p>§ Under alternative 3, the historically significant cultural landscape resources that have integrity would be rehabilitated and adaptively used to showcase the park’s military, maritime commercial, and agricultural/ranching history themes, and support visitor programming and services. Throughout the park (including Alcatraz Island) this alternative would generally result in a comprehensive effort to improve, preserve, and rehabilitate the cultural landscape resources in “good” condition and provide public access to the greatest number of cultural landscape features. These actions would result in long-term beneficial impacts on cultural landscape resources. However, the loss of some cultural landscape resources would result in permanent adverse impacts of minor intensity.</p>
<b>Park Collections</b>	<p>§ Park collections are currently stored in 15 different facilities throughout the park. This places the collections in a vulnerable position because of potential eviction and deteriorating structural and curatorial conditions. The current conditions for collections at the park do not meet NPS standards for long-term preservation, protection, and use, resulting in long-term, moderate, and adverse impacts.</p>	<p>§ Establishing a curatorial and research facility that meets NPS standards and can accommodate the majority of the park collection will have a long-term beneficial impact to the preservation of the collections. Incorporating the park collections in ways that enhance the visitor experience and helps expose the values of the collection while still meeting NPS preservation standards would have a long-term, beneficial impact on the value of the collection.</p>	<p>§ Establishing a curatorial and research facility that meets NPS standards and can accommodate the majority of the park collection will have a long-term beneficial impact to the preservation of the collections. The increased emphasis of collecting and preserving natural resource specimen would have a long-term, negligible, and beneficial impact to the park collections.</p>	<p>§ Establishing a curatorial and research facility that meets NPS standards and can accommodate the majority of the park collection will have a long-term beneficial impact to the preservation of the collections. Incorporating the park collections in ways that enhance the visitor experience and helps expose the values of the collection while still meeting NPS preservation standards would have a long-term, beneficial impact on the value of the collection.</p>
<b>Visitor Use and Experience</b>				
	<p>§ The no-action alternative for Golden Gate National Recreation Area would result in long-term, minor to moderate, beneficial impacts from continued opportunities to access high-quality resource-dependent visitor opportunities and experience the natural, historic, and scenic qualities of the park. However, minor to moderate adverse impacts on the visitor experience from traffic congestion, use conflicts, limited facilities in San Mateo County, and restricted to access to a few desired locations would continue.</p> <p>§ The no-action alternative for Alcatraz Island would result in long-term, minor to moderate, beneficial impacts from continued opportunities to access the cell house and the immediate surrounding landscape. In addition, high quality interpretive and educational programs and materials would continue to be provided. However, minor to moderate adverse impacts on the visitor experience from conflicts with birds, limited access to areas and structures on the island, and some visitor crowding would continue.</p>	<p>§ The actions proposed in alternative 1 for Golden Gate National Recreation Area would result in long-term, moderate, beneficial impacts on visitor experience. The diversity of recreational opportunities provided, the new and enhanced visitor support facilities, and the purposeful effort to engage a more diverse audience would have a positive impact on the visitor experience to the park. Further, the emphasis on improved access, particularly transportation connections, would be a beneficial impact on the visitor experience by reducing traffic congestion and use conflicts.</p> <p>§ Alternative 1 would result in long-term, moderate, beneficial impacts on visitor experience on Alcatraz Island. The enhancements to the park setting through increased preservation of the structures; the increased access to the island’s various layers of historic resources and natural settings; and the purposeful effort to increase programming options and connect with a more diverse audience would help create this beneficial impact.</p>	<p>§ The actions proposed in alternative 2 for Golden Gate National Recreation Area would result in long-term, minor to moderate, beneficial impacts on visitor experience. The visitor experience would be improved regarding the depth and content of educational programming, interpretation, and resource stewardship; along with the preservation and promotion of visitor activities focused on immersion in the park’s natural and cultural settings. However, the regulation and restrictions on some visitor activities and access to some areas might have a long-term, moderate, adverse impact on repeat visitors.</p> <p>§ On Alcatraz Island, alternative 2 would result in long-term, minor to moderate, beneficial impacts on visitor experience given the actions that would increase understanding and appreciation of the island’s important role in the marine ecosystem. However, there would be long-term, moderate, adverse impacts due to the increased interaction and related conflicts between visitors and birds during the nesting season, and the restricted access to desired locations and structures on the island.</p>	<p>§ The actions proposed in alternative 3 for Golden Gate National Recreation Area would result in long-term, moderate, beneficial impacts on visitor experience. The most substantial beneficial effect of this alternative would be the increased opportunities for visitors to understand, appreciate, and take part in the preservation of the park’s most fundamental resources and values. In addition, this alternative would improve access and connectivity to and between key sites in the park, and reduce use conflicts and visitor frustration. However, this alternative would change visitor opportunities at a few areas, leading to long-term, minor to moderate, adverse impacts on visitors who currently frequent these locations.</p> <p>§ Alternative 3 would result in long-term, moderate to major, beneficial impacts on visitor experience on Alcatraz Island. This is primarily due to the opportunities to immerse oneself in the historic periods of Alcatraz Island, have access to more of the island’s settings and buildings in improved condition, and to participate in stewardship and education activities supported by expanded overnight programs and facilities.</p>

**TABLE 13. KEY POTENTIAL IMPACTS OF IMPLEMENTING THE ALTERNATIVES FOR PARK LANDS IN MARIN, SAN FRANCISCO, AND SAN MATEO COUNTIES (INCLUDING ALCATRAZ ISLAND)**

Potential Key Impacts on Park Lands					
No-action Alternative		Alternative 1 – NPS Preferred		Alternative 2	Alternative 3
<b>Social and Economic Environment</b>					
	<p>§ The overall impact to the social and economic environment from the no-action alternative could be long-term, minor to moderate, and beneficial for the local gateway communities and the three adjacent counties. The beneficial impacts would result from maintaining the park’s contribution to the local economy and quality of life, existing education and stewardship programs, as well as maintaining existing relationships with other local governments and land managers.</p>	<p>§ The short-term and long-term beneficial impacts of alternative 1 on the social and economic environment of the gateway communities and three adjacent counties could range from minor to moderate. These beneficial impacts on quality of life and economy could result from (1) a substantial increase in public outreach programs, orientation, and educational or stewardship opportunities, (2) considerable improvements in public accessibility, transportation options, and community trail connections, (3) enhancement of existing equestrian facilities, (4) several community-building components, (5) economic growth via many new engineering and construction contract work, (6) several new opportunities for park partners to use park facilities and expand their operations, and (7) a substantial amount of job creation from increased visitor services throughout the park.</p>	<p>§ The short-term and long-term beneficial impacts of on the social and economic environment of the gateway communities and three adjacent counties would range from minor to moderate. The beneficial impacts on quality of life and economy could result from (1) site-specific increases in public outreach programs and orientation, (2) a substantial increase in educational and stewardship opportunities, (3) some additional community trail connections, (4) NPS collaborations with several other local governments and land management agencies, (5) limited new engineering and construction contract work for restoration projects, (6) a limited number of new park partners opportunities, and (7) limited job creation from increased visitor services.</p> <p>§ The long-term adverse impacts on the social and economic conditions of the gateway communities and three adjacent counties could range from minor to moderate, resulting from: (1) a possible reduction in NPS and concession jobs at certain park sites due to closures or facility removal, (2) a possible reduction in opportunities for some park partners, (3) the recommended closure of a State Route 1 segment (Caltrans has decision authority), and (4) removal or relocation of equestrian and educational facilities (at Rancho Corral de Tierra and Slide Ranch).</p>	<p>§ The short-term and long-term beneficial impacts of alternative 3 on the social and economic environment of the gateway communities and three adjacent counties could range from minor to moderate. The beneficial impacts on quality of life and economy could result from: (1) an increase in public outreach programs, visitor orientation, educational/stewardship opportunities and additional park programs, (2) improvements in public accessibility and community trail connections, (3) enhancement of existing equestrian facilities, (4) several community-building components, (5) a moderate amount of new engineering and construction contract work for facility and restoration projects, (6) limited new opportunities for park partners to use park facilities and expand their operations, and (7) a small amount of job creation from increases in visitor services at various sites.</p> <p>§ The adverse impacts could result from removal of work force housing units at Capehart Housing Area and possible restrictions on tour boat operations (from enforcement of historic no trespass zone around Alcatraz Island). These impacts would be long-term, minor, and adverse to the gateway communities.</p>	
<b>Transportation</b>					
	<p>§ In Marin County, auto access to the most popular destinations is likely to continue to be difficult during peak periods, while bicycle and pedestrian access would improve, particularly in the Marin Headlands, because of projects outside of this planning process. Existing transit service would continue to enable access to park lands in Marin County for visitors without cars. The no-action alternative would have a long-term, minor to major, adverse impact on the access to most popular sites, and a long-term, minor, adverse effect on transportation in other areas, such as the Marin Headlands.</p> <p>§ Park sites in San Francisco in the north part of the city would see long-term, moderate, beneficial impact to access by land via improved transit implemented by the San Francisco Municipal Transportation Agency. Taking no other transportation improvement actions in San Mateo would have a long-term, minor to moderate, adverse effect on access to these park sites.</p> <p>§ The no-action alternative would have negligible impacts on transportation to or within Alcatraz Island.</p>	<p>§ In alternative 1, access by land to park sites in Marin County—including improved trails, increased transit services, and wayfinding—would result in a long-term, moderate, beneficial effect, particularly during peak and shoulder seasons, and on holiday weekends. Increased transit service and stops would have a moderately beneficial impact by relieving congestion of the land-based transportation system and by providing more ways for the public to get to park sites.</p> <p>§ In San Francisco, alternative 1 would have a long-term, moderate, beneficial impact on both visitor connections and the functioning of the transportation system through increased land and water transit and improved trails. In San Mateo County, enhanced trail systems would provide a long-term, moderate to major, beneficial effect on connections by land; there would be a long-term, moderate, beneficial effect on transportation functionality through more transit availability and a minor beneficial impact on parking.</p> <p>§ At Alcatraz Island, the slight increase in boat and ferry traffic in the Scenic Corridor zone as well as the entry dock area could result in a long-term, minor, beneficial impact by increasing access by water to the island. Re-opening improved areas of the park and increasing</p>	<p>§ For park lands in Marin County, impacts on access and connectivity for alternative 2 are negligible, with two exceptions. A 50% reduction in parking at Stinson Beach could have either a long-term, major, adverse impact on accessibility and user experience in Stinson Beach during peak periods and holiday weekends by exacerbating an already difficult traffic congestion situation, or a long-term, moderate, beneficial effect if combined effectively with other efforts such as provision of transit, marketing of transit, and enforcement of parking restrictions.</p> <p>§ Closing a segment of State Route 1 between Muir Beach and Stinson Beach may have a moderate to major, adverse impact on connectivity between these two communities.</p> <p>§ There are no transportation actions for San Francisco for alternative 2. In San Mateo, the transportation actions in alternative 2 may result in a minor to moderate, beneficial effect on connections by land through enhanced trail systems.</p> <p>§ The improved access on Alcatraz Island to previously closed areas could result in a long-term, minor, beneficial impact to connectivity by water transit, and access to sites on Alcatraz Island via enhanced trails.</p>	<p>§ In alternative 3, the relocation of parking and access to Fort Funston would have a long-term, minor effect that is both slightly beneficial for preservation of the natural environment and slightly adverse for its impact on visitor access.</p> <p>§ For Alcatraz Island, this alternative could result in a long-term, moderate, beneficial increase in connectivity through additional ferry embarkation points; and a long-term, moderate, beneficial increase in access to additional historic features over an expanded area of the island because of trail expansion and improvement.</p>	

**TABLE 13. KEY POTENTIAL IMPACTS OF IMPLEMENTING THE ALTERNATIVES FOR PARK LANDS IN MARIN, SAN FRANCISCO, AND SAN MATEO COUNTIES (INCLUDING ALCATRAZ ISLAND)**

Potential Key Impacts on Park Lands				
No-action Alternative		Alternative 1 – NPS Preferred	Alternative 2	Alternative 3
		year-round trail access would have a long-term, minor, beneficial impact on pedestrian access to park features and circulation on the island.		
<i>Park Management, Operations, and Facilities</i>				
	§ Inadequate staffing levels would result in continued long-term, moderate, and adverse impacts on operations. Continued partner and volunteer efforts would result in long-term, moderate, beneficial impacts on park operations, although these efforts would be limited by current staffing levels. Inadequate project and operational funding would result in long-term, major, adverse impacts on park facilities throughout the park including Alcatraz Island. The inadequate maintenance and public safety facilities along with their inconvenient locations would result in continued long-term, moderate, and adverse impacts on operations.	§ Increased number of park staff would result in long-term, moderate, beneficial impacts on operations if appropriate, annual base funding is available. Construction, rehabilitation, restoration, and demolition projects proposed in the alternative would result in long-term, moderate, beneficial impacts on park operations by addressing deferred maintenance. Construction activities would result in short term, minor, adverse impacts on park operations, because of closures during the work. An expanded maintenance facility at Fort Funston and the addition of three portals would result in long-term, moderate, beneficial impacts on park operations.	§ Increased staff would result in long-term, moderate, beneficial impacts on operations if appropriate, annual base funding is available. Construction, stabilization, rehabilitation, restoration, and demolition projects proposed in the alternative would result in long-term, moderate, beneficial impacts on park operations and address deferred maintenance issues. Construction and landscape restoration activities would result in minor, adverse impact in the short term, as some inefficiency would be caused by closure of buildings and lands during construction or restoration. Increased difficulty for public safety personnel to reach the more primitive areas would result in long-term, minor, adverse impacts on operations.	§ Increased staff would result in long-term, moderate, beneficial impacts on operations if appropriate, annual base funding is available. Construction, stabilization, rehabilitation, restoration, and demolition projects proposed in the alternative would result in long-term, moderate, beneficial impacts on park operations, but would also result in short-term, minor, adverse impacts while the activities are underway, due to road and building closures. Facility use and location changes would result in long-term, moderate, and beneficial impacts on park operations.

ALTERNATIVES FOR ALCATRAZ ISLAND 5





## NO-ACTION ALTERNATIVE

### OVERVIEW

Alcatraz Island is one of the most popular destinations in the park. The only former federal penitentiary open to the public, it attracts more than 1.4 million visitors each year. However, the prison era is only part of a long and fascinating history. Alcatraz Island was a fort during the Civil War, the home of the West Coast's first lighthouse, and the birthplace of the American Indian "Red Power" movement. There is also a natural and scenic side to Alcatraz Island. Plant communities, tide pools, and birdlife are among its features, and a walk on the island promises panoramic views of the city skyline, ships, bridges, and bay waters.

Under the no-action alternative, the island would continue to be managed to preserve historic and natural resources and provide public access to the variety of settings and experiences where appropriate and safe. The primary visitor experience would be day use, beginning with a ferry ride from San Francisco. The island experience would continue to be centered on the federal penitentiary; however, other periods of the island history and bird life would also be interpreted. Scheduled evening tours of Alcatraz Island would continue to provide visitors with this unique opportunity.

The deterioration of buildings and landscapes (exacerbated by the harsh island environment) and the protection of areas for bird nesting habitat (at least for part of the year) would continue to limit visitor access to much of the island, at least for part of the year. Rehabilitation of historic buildings and landscaped areas would be ongoing and subject to available funding.

The island supports one of the largest concentrations of colonial nesting waterbirds along the central coast of

California. Many areas of the island would continue to be closed during breeding season to protect the colonies from human disturbance. In areas open to the public, western gulls would be managed under an existing agreement with the U.S. Fish and Wildlife Service in accordance with the Migratory Bird Treaty Act, through the use of bird exclusion measures and other deterrents to protect visitor health and safety. Education and stewardship opportunities would inform visitors about the importance of the island to nesting birds and what the public can do to help protect them.

Management of Alcatraz Island is currently guided by the 1980 General Management Plan and the 1993 Alcatraz Island Development Concept Plan, which established zones of year-round and seasonal access and established areas that are closed year-round to visitors. See "Map 4: 1980 General Management Plan, Park Lands in Marin and San Francisco Counties (No-action Alternative)" for additional information on current management.

### FERRY EMBARKATION

Access to the island would remain at the docks on San Francisco's northern waterfront. The park would continue to provide basic orientation and visitor services at the pier. Ticketing would continue to be through a reservation system and ferries would operate daily on a year-round schedule. The length of the ferry trip between the mainland and Alcatraz Island would remain approximately 10–15 minutes.

## **ARRIVAL AREA**

(including the Dock, Building 64 [Historic Barracks], and the Sallyport)

The arrival area would continue to provide orientation, restrooms, and other support services for visitors arriving and departing Alcatraz Island. This area includes a mix of structures and landscapes that would continue to support the high volume of visitation. Portions of the first floor of Building 64, the historic barracks, would be adaptively used for administrative purposes and some visitor services, including a small gift shop, exhibits, and a theater. The upper floors have not been rehabilitated and would remain unused. All visitors would continue to pass through the Sallyport, one of the oldest structures on the island.

## **MAIN PRISON AREA**

(including the Citadel, Main Cellblock, Hospital Wing, Administration Wing, Recreation Yard, New Industries Building, Post Exchange, and Parade Ground)

The Main Prison Building and several adjacent areas, like the Recreation Yard, have been rehabilitated to represent the federal penitentiary era. They would continue to be managed as part of the central visitor experience. Visitors would have access to most of the building and yard. Several areas, like the Civil War-era Citadel (located below the Main Cellblock) and part of the building's hospital wing, would remain closed. Visiting the Main Prison Building would primarily be a self-guiding experience facilitated by an audio tour.

Many adjacent landscape areas would continue to be minimally preserved and inhabited by waterbirds, both seasonally and year-round, while other areas include the island's restored historic gardens. Before the National Park Service assumed management of the island, the Government Services Administration demolished several residential structures on the Parade Ground. The piles of ruins from these demolished

structures would remain and would be used seasonally by waterbirds.

## **LIGHTHOUSE**

The lighthouse would continue to be managed for its historic function as an early aid to navigation in San Francisco Bay. It is currently managed by the U.S. Coast Guard, but is expected to be transferred to the National Park Service. Visitor access would be highly controlled.

## **NORTH END OF THE ISLAND**

These buildings and adjacent yards were once active parts of the prison. They would continue to house the island's diesel generators that currently provide all power to the island's facilities and be used for operations and maintenance functions. The state of preservation would be minimal, and visitors would generally not be permitted in this area.

## **ISLAND PERIMETER**

The perimeter of the island, including the steep cliffs and immediate shore, would continue to be managed to preserve habitat for birds and marine wildlife. Visitor access would be on primary trails that are open year-round and on seasonal trails such as the Agave Trail. Other areas would be closed year-round for visitor safety and seabird habitat protection.

## **NEARSHORE BAY ENVIRONMENT**

The National Park Service has jurisdiction over the bay environment extending approximately 0.25 mile from the island's shore. This area would not be actively managed, although access to the island would only be through the park's ferry concessioner.

## SUSTAINABILITY

The National Park Service would continue to develop and implement sustainable approaches to meet the island’s energy, water, and wastewater needs. Actions that are being considered include replacing diesel generators with renewable (e.g., photo-voltaic panels) and grid-tied energy sources. These infrastructure technologies would be interpreted where possible.

## COST ESTIMATES

Cost estimates for the no-action alternative are identified in table 14. The costs shown here are not for budgetary purposes; they are only intended to show a relative comparison of costs among the alternatives.

The alternatives describe the maximum potential capital improvements; lesser improvements may be implemented or built in phases if necessary. The implementation of the approved plan will depend on future funding. The approval of this plan does not guarantee that the funding and staffing needed to implement the plan will be forthcoming. Full implementation of the actions in the approved general management plan could be many years in the future. Additionally, some of the future long-term funding needed to implement the various actions called for in the alternatives is anticipated to come from nonfederal partners, consistent with the park’s current practices.

## Annual Operating Costs

Operating costs and staff numbers for Alcatraz Island are included in Golden Gate National Recreation Area analysis.

## One-time Capital Costs

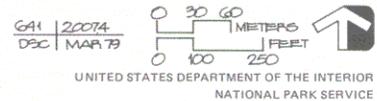
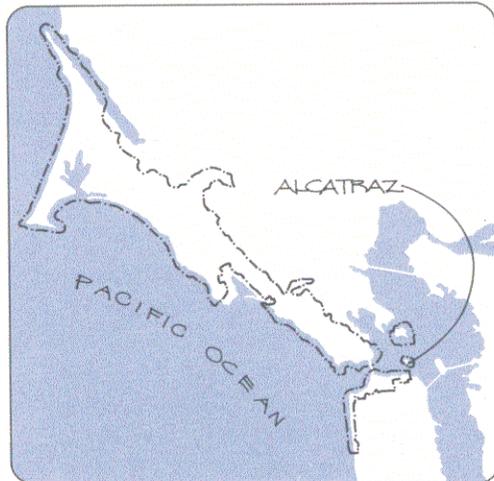
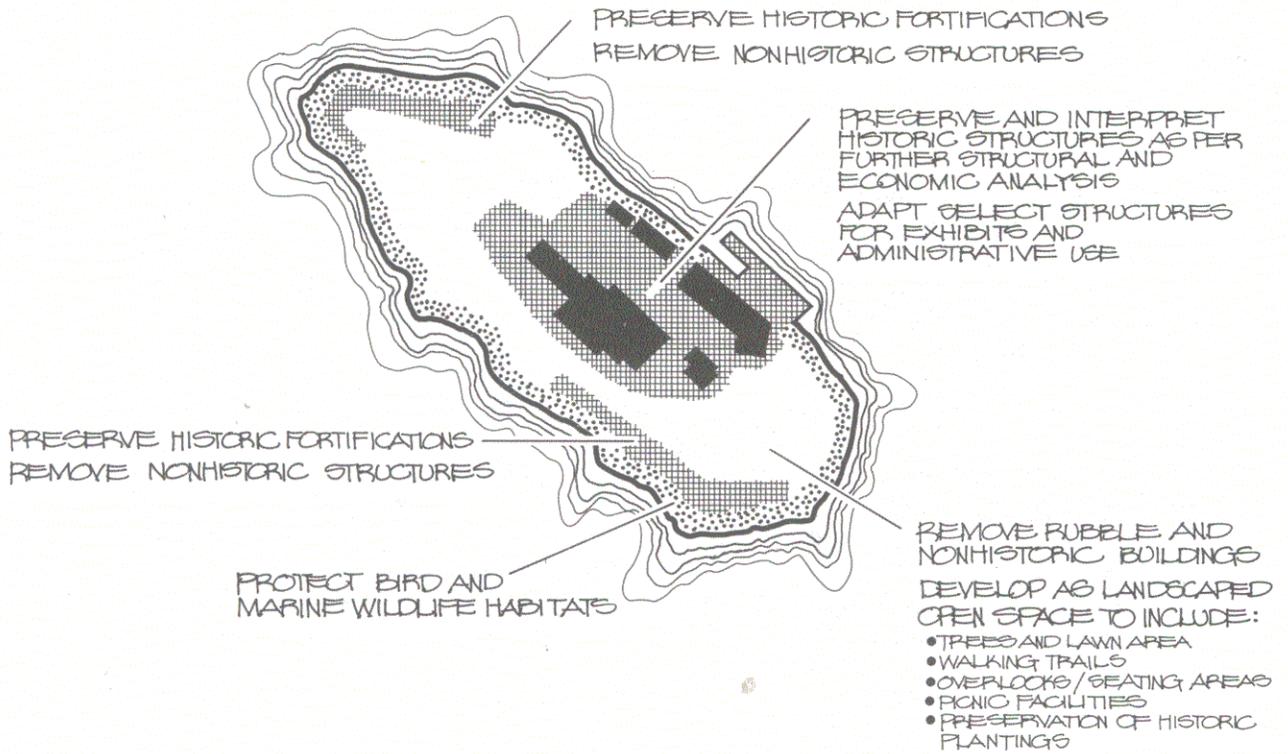
The estimated costs of the no-action alternative reflect the continuation of current management. One-time costs for the no-action alternative are the costs for those projects that are currently approved and funded—any requested but unfunded projects are not considered in this analysis. Therefore, while the action alternatives contain estimates for 20 years of proposed projects, the no-action alternative assumes no new projects would take place except those projects funded in 2009. Projects include electrical upgrades and repair of the Alcatraz Island morgue and total \$4.3 million.

In the no-action alternative, the current level of facilities would be continued. Improvements to facilities would include deferred maintenance and rehabilitation projects.

Operating costs and staff numbers for Alcatraz Island are included in Golden Gate National Recreation Area analysis.

TABLE 14. ONE-TIME COSTS FOR THE NO-ACTION ALTERNATIVE FOR ALCATRAZ ISLAND

Summary of Costs for the No-action Alternative	
One-time Capital Costs	
Total	\$ 4,260,000



# ALCATRAZ

DEVELOPMENT CONCEPT  
GOLDEN GATE NATIONAL RECREATION AREA  
POINT REYES NATIONAL SEASHORE

# ALTERNATIVE 1: CONNECTING PEOPLE WITH THE PARKS

## OVERVIEW

Many who visit Alcatraz Island are drawn by the island's notorious prison reputation. Others want to see the crumbling ruins set against the spectacular scenery of San Francisco and the Golden Gate or learn about the island's human dimension: the American Indian occupation or the gardens tended by guards and their families.

In this alternative, Alcatraz Island would be managed to provide an expanded variety of settings and experiences that will pleasantly surprise visitors attracted by the notoriety of the prison and connect them to the greater breadth of the island's resources and stories. The park would seek to enrich the scenic, recreational, and educational opportunities in the heart of San Francisco Bay.

Visitors would have access to the majority of the island's historic structures and landscapes to experience the layers of island history and its natural resources and settings. Many of the indoor and outdoor spaces currently inaccessible to visitors would be reopened to expand the range of available activities.

All historic structures would be preserved; most would be rehabilitated and adaptively reused for visitor activities and park operations. Food service, meeting room and program space, and overnight accommodations (possibly including a hostel or campsite) would be provided.

Sensitive wildlife areas, such as the shoreline, would be protected. Park managers would provide visitors with opportunities to see wildlife and nesting waterbirds and to participate in resource stewardship activities. Gulls would be managed to reduce conflicts in visitor use areas.

## FERRY EMBARKATION

The visitor's immersion in Alcatraz Island history would begin at the main embarkation site in San Francisco. The primary embarkation site would remain on San Francisco's northern waterfront where visitor services, including education about Alcatraz and orientation to Golden Gate National Recreation Area, could be enhanced. Additional ferry connections could be provided to other park sites as part of the facility's role as a portal to the park. Ticketing would continue to be through a reservation system, and ferries would operate daily on a year-round schedule. The length of the ferry trip between the mainland and Alcatraz Island would remain approximately 10–15 minutes.

### Arrival Area

**(including the Dock, Building 64 [Historic Barracks], and the Sallyport)**

### *Diverse Opportunities Zone*

This area would be managed to welcome visitors and provide orientation to the expansive opportunities on the island. Building 64 would be rehabilitated as a multipurpose facility to host an expanded variety of visitor services that could include hospitality (food service and overnight accommodations), interpretation and exhibit space, an audiovisual center, and administrative areas.

### Main Prison Area

**(including the Citadel, Main Cellblock, Hospital Wing, Administration Wing, Recreation Yard, New Industries Building, Post Exchange, and Parade Ground)**

***Historic Immersion Zone  
(Main Prison Building)***

The park would manage this area to immerse visitors in the federal penitentiary period. A variety of programming and exhibits would bring prison history alive. Rehabilitation or restoration, where appropriate, would enhance resource integrity.

***Evolved Cultural Landscape Zone  
(Guardhouse, Post Exchange, and Gardens)***

In this alternative, the park would manage the structures and landscaped areas surrounding the Main Prison Building to protect and interpret the layers of history. The Post Exchange and Warden's House ruins would be stabilized and the Guardhouse would be rehabilitated.

***Diverse Opportunities Zone  
(Hospital Wing of Main Prison Building, Recreation Yard, New Industries Building, and Parade Ground)***

These buildings and outdoor spaces would be rehabilitated to provide a range of visitor activities that could include informal gatherings, interpretive programs, and special events. The New Industries Building would be rehabilitated as a multipurpose facility. It would include flexible space that could accommodate interpretation, special events, classrooms, and meetings and would include service areas to support these uses. The perimeter trail would use the existing path on the west side of the structure with appropriate separation to protect nesting birds on the cliff below.

The building ruins on the Parade Ground could be removed and bird populations would be managed to accommodate enhanced visitor access in coordination with the management of western gulls. This rehabilitation of the parade ground could incorporate measures to support wildlife.

**LIGHTHOUSE**

***Historic Immersion Zone***

The lighthouse and surrounding area would be preserved to give visitors opportunities to learn about the maritime history of Alcatraz Island and its strategic location in the bay. Access and interpretation would be enhanced.

**NORTH END OF THE ISLAND**

***Park Operations Zone***

The historic structures in this zone, including part of the Model Industries Building, would be rehabilitated and adaptively reused for maintenance, storage, and public safety functions. They could house green, sustainable infrastructure technologies. Where appropriate, visitor access would be provided to showcase the technologies and interpret the island's energy history.

**ALCATRAZ ISLAND PERIMETER**

***Natural Zone (northeastern and southern perimeter of the island)***

This area would be managed to protect natural habitat values while providing opportunities for visitors to walk on trails around more of the island's perimeter at all times of the year to the extent feasible.

***Sensitive Resources Zone (western coastal cliffs and Little Alcatraz Island)***

Visitor access along the western coastal cliffs, rocks, and tide pools would be highly managed to protect visitors and natural habitat values. Seasonal closures would protect sensitive seabird habitat.

## NEARSHORE BAY ENVIRONMENT

### *Sensitive Resources Zone (extending 100 feet from the island's western shore)*

This area would be managed to protect marine resources. The National Park Service would prohibit boat landings in this area and exclude boat tours.

### *Scenic Corridor Zone (extending beyond the Sensitive Resources Zone and along the island's eastern shore)*

This area on the east side of the island would be managed to accommodate ferry service to the island. Boat tours around the island and some types of water-based recreation could be permitted. The area adjacent to the entry dock would be managed to expand the capacity and range of uses that may occur. This would enable the island to be part of the San Francisco Bay Water Trail, welcoming nonmotorized boats via permits or reservations.

## SUSTAINABILITY

The National Park Service would continue to develop and implement sustainable approaches to meet the island's energy, water, and wastewater needs. Actions that are being considered include replacing diesel generators with renewable (e.g., photovoltaic panels) and grid-tied energy sources. These infrastructure technologies would be interpreted where possible.

## COST ESTIMATES

Cost estimates for alternative 1 are identified in table 5. The costs shown here are not for budgetary purposes; they are only intended to show a relative comparison of costs among the alternatives.

The alternatives describe the maximum potential capital improvements; lesser improvements may be implemented, or built in phases if necessary. Implementation of the approved plan will depend on future funding. The approval of this plan does not guarantee that the funding and staffing needed to implement the plan will be forthcoming. Full implementation of the actions in the approved general management plan could be many years in the future. Additionally, some of the future long-term funding needed to implement the various actions called for in the alternatives is anticipated to come from nonfederal partners, consistent with the park's current practices.

Alternative 1 for Alcatraz Island would provide an expanded variety of settings and experiences, thereby connecting visitors to the greater breadth of the island's resources and stories. Visitors would have access to the majority of the island's historic structures and landscapes, including areas currently closed to the public.

## Annual Operating Costs

Operating costs and staff numbers for Alcatraz Island are included in Golden Gate National Recreation Area analysis.

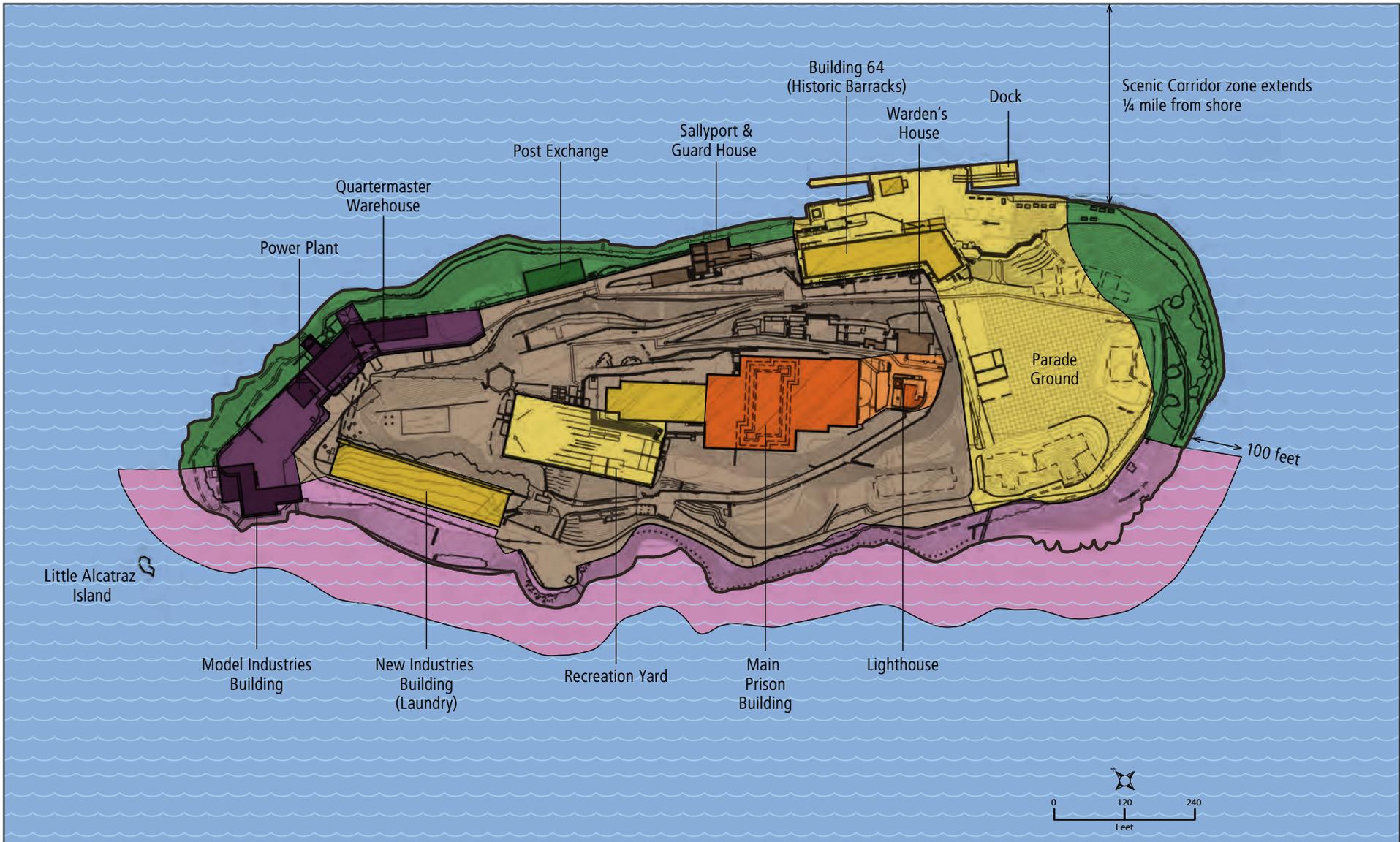
## One-time Capital Costs

One-time facility costs of this alternative reflect the extensive rehabilitation required to more fully open buildings and landscapes to the public. All buildings would be preserved, with most rehabilitated and adaptively reused for visitor activities or park operations. Many of the structures on Alcatraz Island are in a deteriorated state and the stabilization costs to ensure the continuation of national landmark status are high. Total one-time costs for alternative 1 for Alcatraz Island are estimated at \$61.2 million.

TABLE 15. ONE-TIME COSTS FOR ALTERNATIVE 1 FOR ALCATRAZ ISLAND

Summary of Costs for Alternative 1	
One-time Capital Costs	
Historic Preservation	
Building 64 rehabilitation	\$10,080,000
Guardhouse and gardens rehabilitation	\$ 4,320,000
Main Prison Building stabilization and rehabilitation	\$19,030,000
Model Industries Building rehabilitation	\$ 5,730,000
New Industries Building rehabilitation	\$10,970,000
Parade Ground rehabilitation	\$ 2,360,000
Post Exchange stabilization	\$ 780,000
Power Plant rehabilitation	\$ 1,890,000
Quartermaster Warehouse stabilization and rehabilitation	\$ 5,120,000
Recreation Yard rehabilitation	\$ 910,000
<b>Total</b>	<b>\$61,190,000</b>

All costs in 2009 dollars



**Management Zones**

Diverse Opportunities	Historic Immersion	NPS Managed Marine Resources
Scenic Corridor	Natural	Island Shoreline
Interpretive Corridor	Sensitive Resources	
Evolved Cultural Landscape	Park Operations	

Note: Buildings are shown in a darker shade in each zone.

**Connecting People with the Parks**  
**Alternative 1 – Alcatraz Island**  
**Golden Gate National Recreation Area**

U.S. Department of the Interior - National Park Service  
 GGNRA/DSC  
 641/20618 A April 23, 2013

## ALTERNATIVE 2: PRESERVING AND ENJOYING COASTAL ECOSYSTEMS

### OVERVIEW

Isolation—whether for soldiers, prisoners, birds, or plants—is a recurrent theme in the story of Alcatraz Island. In this alternative, the island’s inhospitable and isolated—yet strategic—location at the entry to the Golden Gate and San Francisco Bay would be highlighted. The island’s past and present significance to colonial nesting birds and its layers of human history—the Civil War fortress, the lighthouse, the prison, and penitentiary—all derive from its position in the bay.

The island’s changing natural and built landscape would continue to evolve, further enhancing habitat for nesting birds. Only those buildings and features necessary to maintain the island’s national historic landmark status would be preserved; the natural elements would reclaim other features as part of the “wilding” of Alcatraz Island.

Visitors would be immersed in opportunities that showcase the island’s isolation, its natural resources, and all the layers of history that can be found at the Main Prison Building. Visitor experiences would include outdoor learning and natural and cultural resource stewardship programming delivered in partnership with Bay Area nonprofits.

While access would be managed to protect sensitive resources, 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.

### FERRY EMBARKATION

The visitor’s immersion in Alcatraz Island history would begin from an embarkation site in San Francisco. The primary embarkation site would remain on San Francisco’s northern waterfront where visitor services, including education about Alcatraz and orientation to the park, could be enhanced. Additional ferry connections could be provided to other park sites as part of the facility’s role as a portal to the park. Ticketing would continue to be through a reservation system, and ferries would operate daily on a year-round schedule. The length of the ferry trip between the mainland and Alcatraz Island would remain approximately 10–15 minutes.

#### Arrival Area

**(including the Dock, Building 64 [Historic Barracks], and the Sallyport)**

#### *Evolved Cultural Landscape Zone*

This area would welcome visitors while protecting the multitude of cultural resources. Building 64 would be adaptively reused to support the science, education, and stewardship programs. It could include space for offices, classrooms, laboratories, minimal food service, and hostel-like overnight facilities for program participants. Co-locating these functions would promote interactive learning and association among the scientists, teachers, and student participants. Administrative functions would also be housed in this building.

The park would manage the structures and landscaped areas (such as the Guardhouse and gardens) between the entry dock and

the Main Prison Building to protect and interpret the various periods of history.

### **Main Prison Area**

(including the Citadel, Main Cellblock, Hospital Wing, Administration Wing, Recreation Yard, New Industries Building, Post Exchange, and Parade Ground)

#### ***Historic Immersion Zone (Main Prison Building, including the Hospital Wing and Recreation Yard)***

These historic structures would be managed to provide visitors with access to the wide range of resources in historically accurate conditions, from the military period through the Indian occupation. Rehabilitation or restoration of historic resources would enhance their historic integrity.

#### ***Natural Zone (Model Industries Building, New Industries Building, Parade Ground, and western side of island)***

The park would manage these structures and adjacent areas to enhance bird habitat and protect sensitive resources. Visitor use would be managed and controlled to support natural resource management goals. The New Industries Building would be stabilized and no efforts would be made to avoid its loss to coastal erosion. Visitor access could be provided for wildlife viewing, research, and education, but would be highly controlled. The building ruins on the Parade Ground would be retained to maintain and enhance seabird habitat. The existing Agave Trail would protect natural habitat while providing seasonal access to the shoreline for visitors. The Model Industries Building would be stabilized to allow expanded habitat for nesting birds. No efforts would be made to avoid the loss of the building to coastal erosion. Visitor access could be provided for wildlife viewing, research, and education but would be highly controlled.

### **LIGHTHOUSE**

#### ***Historic Immersion Zone***

The lighthouse and surrounding area would be preserved to give visitors opportunities to learn about the maritime history of Alcatraz Island and its strategic location in the bay. Access and interpretation would be enhanced.

### **NORTH END OF THE ISLAND**

#### ***Park Operations Zone (Post Exchange, Quartermaster Warehouse, and Power Plant)***

The interior spaces of the Post Exchange, Quartermaster Warehouse, and Power Plant would be dedicated to park operation activities. The Post Exchange would be stabilized to preserve the exterior of the structure. An interior shell could be constructed within the ruin to support park operational functions if needed. Maintenance activities and visitor access outside and close to these structures would be managed to prevent disruption of sensitive natural resources.

### **ISLAND PERIMETER**

#### ***Sensitive Resources Zone (majority of the island perimeter)***

The majority of the perimeter of Alcatraz Island would be preserved to protect natural habitat values. Visitor use and access would be highly managed.

### **NEARSHORE BAY ENVIRONMENT**

#### ***Sensitive Resources Zone (extending 300 feet from the island's western shore)***

This zone extends out 300 feet and would be managed as a marine protected area to

preserve coastal resources, including submerged resources and seabird colonies using the island's cliffs. The area would be closed to boats during seabird breeding season.

*Scenic Corridor Zone (extending beyond the Sensitive Resources Zone and along the island's eastern shore)*

This area would be managed to accommodate ferry access to the island. Some other types of water-based access could also be permitted. Enforcement of resource protection measures and visitor access regulations would be strengthened. For example, tours near the island would be regulated.

## SUSTAINABILITY

The National Park Service would continue to develop and implement sustainable approaches to meet the island's energy, water, and wastewater needs. Actions that are being considered include replacing diesel generators with renewable (e.g., photovoltaic panels) and grid-tied energy sources. These infrastructure technologies would be interpreted where possible.

## COST ESTIMATES

Cost estimates for alternative 2 are identified in table 16. The costs shown here are not for budgetary purposes; they are only intended to show a relative comparison of costs among the alternatives.

The alternatives describe the maximum potential capital improvements; lesser improvements may be implemented, or built

in phases if necessary. The implementation of the approved plan will depend on future funding. The approval of this plan does not guarantee that the funding and staffing needed to implement the plan will be forthcoming. Full implementation of the actions in the approved general management plan could be many years in the future. Additionally, some of the future long-term funding needed to implement the various actions called for in the alternatives is anticipated to come from nonfederal partners, consistent with the park's current practices.

Alternative 2 for Alcatraz Island would highlight the island's isolation, harsh environment, and strategic location in telling the story of the island. The weather, plants, and wildlife would reclaim much of the island, leaving only the historic landmark structures preserved.

## Annual Operating Costs

Operating costs and staff numbers for Alcatraz Island are included in Golden Gate National Recreation Area analysis.

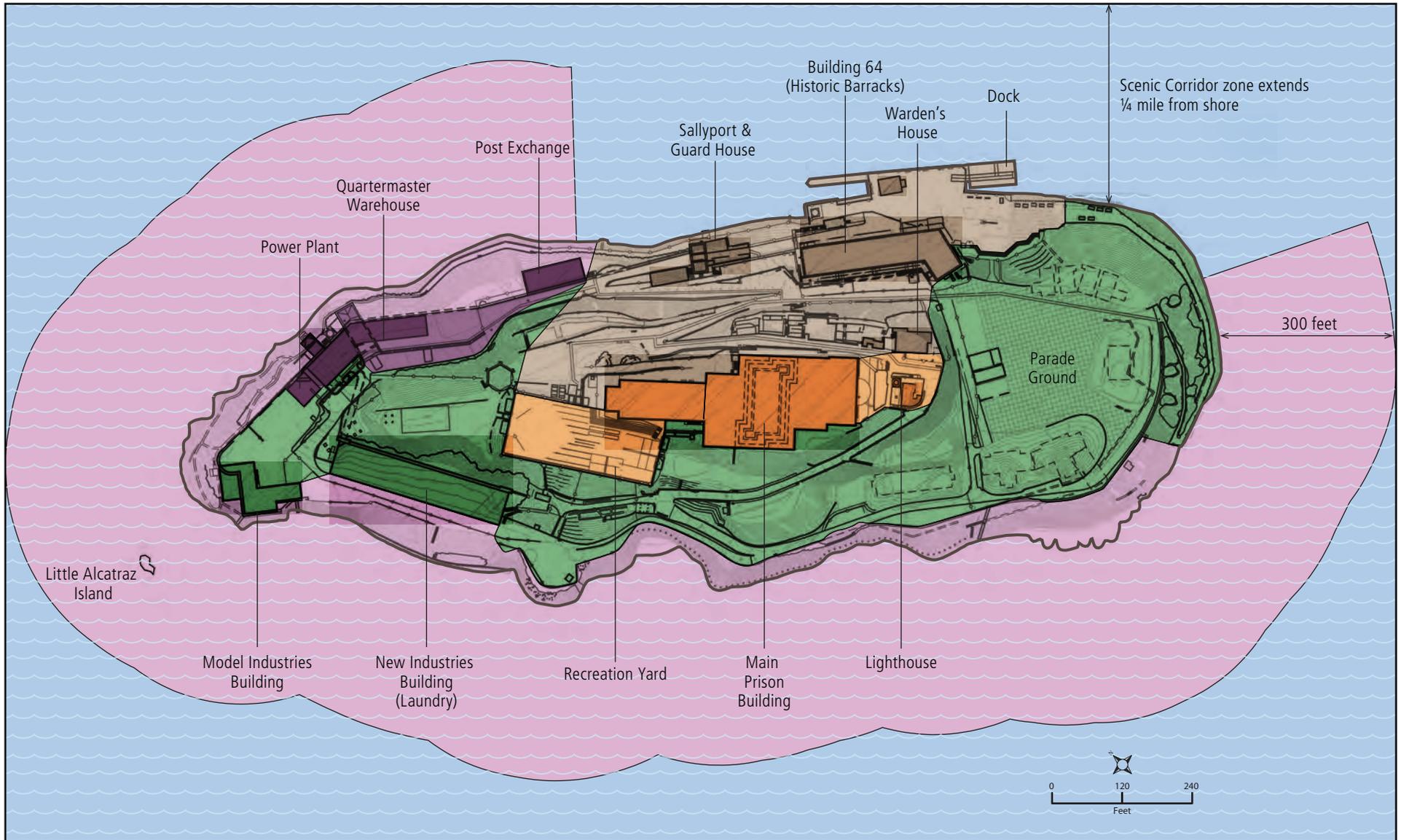
## One-time Capital Costs

One-time costs reflect the rehabilitation of select buildings for contemporary uses and limited restoration to historic conditions, allowing other buildings and areas to be managed for natural resource objectives or as ruins. Many of the structures on Alcatraz Island are in a deteriorated state and the stabilization costs to ensure the continuation of national landmark status are high. Total one-time costs for alternative 2 for Alcatraz Island are estimated at \$37.4 million.

**TABLE 16. ONE-TIME COSTS FOR ALTERNATIVE 2 FOR ALCATRAZ ISLAND**

Summary of Costs for Alternative 2	
One-time Capital Costs	
Historic Preservation	
Building 64 rehabilitation	\$10,080,000
Guardhouse and gardens stabilization	\$ 120,000
Main Prison Building stabilization and rehabilitation	\$19,030,000
Model Industries Building Habitat Enhancement	\$ 10,000
Post Exchange stabilization	\$ 780,000
Power Plant rehabilitation	\$ 1,890,000
Quartermaster Warehouse Rehabilitation	\$ 5,120,000
Recreation Yard stabilization	\$ 410,000
<b>Total</b>	<b>\$37,440,000</b>

All costs in 2009 dollars



**Management Zones**

- Diverse Opportunities
- Scenic Corridor
- Interpretive Corridor
- Evolved Cultural Landscape
- Historic Immersion
- Natural
- Sensitive Resources
- Park Operations

- NPS Managed Marine Resources
- Island Shoreline

Note: Buildings are shown in a darker shade in each zone.

**Preserving and Enjoying Coastal Ecosystems**  
**Alternative 2 – Alcatraz Island**  
**Golden Gate National Recreation Area**

U.S. Department of the Interior - National Park Service  
 GGNRA/DSC  
 641/20619 A April 23, 2013

## ALTERNATIVE 3: FOCUSING ON NATIONAL TREASURES— THE PREFERRED ALTERNATIVE

### OVERVIEW

For more than 150 years, Alcatraz Island has been reworked and altered by human activity. This alternative would immerse visitors extensively in all of Alcatraz Island's historic periods, including the Civil War military fortifications and prison, federal penitentiary, and American Indian occupation. Alcatraz Island's history would be interpreted, first and foremost with tangible and accessible historic resources, including the structures, landscape, archeological sites, and museum collection. These resources contribute to the island's national historic landmark status and its recognition as an international icon.

Most visits would begin at an enhanced ferry embarkation facility in San Francisco. On the way to the island, the ferry would pass a line of replica warning buoys. The immersive experience would continue at the island's arrival dock, with greater access to restored portions of Building 64, the historic barracks. On the island, visitors would ascend to the main prison in the summit through a landscape of preserved historic structures and features. While the primary visitor experience would focus on the federal penitentiary, visitors also would be exposed to the other periods of history, literally and programmatically.

This alternative would require excavations, extensive stabilization, rehabilitation, and/or restoration of historic buildings, small-scale landscape features, and archeological sites, as well as creative interpretative and educational programs and visitor services. Park managers would create additional opportunities for cultural resource stewardship programs.

Visitors would have opportunities to learn about the natural history of San Francisco Bay. The colonial waterbird habitat that has grown in regional importance would be protected, enhanced, and interpreted. Visitors could also explore the island perimeter, managed to protect sensitive bird populations while providing opportunities to observe them or participate in stewardship activities. The large population of gulls would be managed to reduce conflicts in primary visitor use areas like the Parade Ground. In addition, a comprehensive user capacity strategy would help the park to monitor and adaptively manage crowding, congestion, and impacts on resources.

### FERRY EMBARKATION

The visitor's immersion in Alcatraz Island history would begin from an embarkation site in San Francisco. The primary embarkation site would remain on San Francisco's northern waterfront where visitor services, including education about Alcatraz and orientation to Golden Gate National Recreation Area, could be enhanced. Additional ferry connections could be provided to other park sites as part of the San Francisco facility's role as a portal to the park. Ticketing would continue to be through a reservation system, and ferries would operate daily on a year-round schedule. The length of the ferry trip between the mainland and Alcatraz Island would remain approximately 10–15 minutes.

## ARRIVAL AREA

**(including the Dock, Building 64 [Historic Barracks], and the Sallyport)**

### *Historic Immersion Zone*

Here, the park would welcome, orient, and begin to immerse visitors in the island's prison landscape, creating an atmosphere evocative of its history. To better reveal the early military prison period, the guardhouse could be restored by removing the later boathouse addition. Selected areas of Building 64 would be restored to tell the story of its history and use. Period restoration in the building would include the post office, canteen, and a prison-era guard apartment to extend the immersive experience. Other parts of Building 64 would be rehabilitated for visitor services and administrative functions and could include modest dorm-like overnight accommodations for participants in education, conservation, and stewardship programs. The upper floors would be stabilized to preserve the structure's integrity.

## MAIN PRISON AREA

**(including the Citadel, Main Cellblock, Hospital Wing, Administration Wing, Recreation Yard, New Industries Building, Post Exchange, and Parade Ground)**

### *Historic Immersion Zone*

The many historic resources of the Main Prison Building would provide visitors with the opportunity to explore the federal penitentiary's history. Visitors would also have access to the wide range of historic structures and features in historically accurate conditions that tell stories about the different layers of island history. Park managers would look for opportunities to expose visitors to the tangible resources (including artifacts in the park's museum collection) of the federal penitentiary and military eras.

Treatments ranging from upgrades to exhibits and furnishings to more complete restoration would continue with the goal of increasing access and interpretation of the structure's history.

In this alternative, the park would also manage the adjacent areas, such as the main road, Warden's House, and the Parade Ground, to reinforce the sense of history as visitors move around the island. The Parade Ground would be rehabilitated, along with aspects of its buried archeological sites, to support year-round visitor exploration of this area in coordination with adaptive management of western gulls. The rehabilitation could incorporate measures to support natural systems with preservation of cultural resources. With potential involvement of partners, the Post Exchange would be stabilized to provide visitors with opportunities to explore and understand the building's layered history. Additional preservation could be possible with the involvement of partners to make a more complete visitor experience and interpret the building's history.

## LIGHTHOUSE

### *Historic Immersion Zone*

The lighthouse and surrounding area would be preserved to give visitors opportunities to learn about the maritime history of Alcatraz Island and its strategic location in the bay. Access and interpretation would be enhanced.

## NORTH END OF ALCATRAZ ISLAND

### *Park Operations Zone*

The Quartermaster Warehouse would be rehabilitated and used as an operational center for maintenance, public safety, and a preservation stewardship workshop.

The Power Plant would be stabilized to house green, sustainable infrastructure technologies. Where appropriate, visitor access would be provided to showcase the technologies and interpret the history of energy use on the island. The adjacent yard would support island operational needs. Access to the yard would employ measures to protect nearby seabird habitat. Visitor access to this zone would be limited.

Although this area is currently identified as the primary park operations area, the National Park Service would continue to evaluate other portions of the island that may be advantageous for operational uses such as administrative space, maintenance, and auxiliary functions.

#### ***Evolved Cultural Landscape Zone (including Model Industries Building and New Industries Building)***

The Model Industries Building and courtyard would be stabilized to the extent feasible, with only the ground floor used for park operations. Measures would be taken inside and outside the building to protect nearby sensitive natural resources. The adjacent cliffs would be closed to park operations and general visitation to protect the nearby sensitive habitat of nesting waterbirds.

The New Industries Building would be rehabilitated as a multipurpose facility. It would include flexible space that could accommodate interpretation, special events, classrooms, and meetings, and would include restrooms and a service kitchen to support these uses. The perimeter trail would connect through the building and provide bird-viewing opportunities from its interior.

## **ISLAND PERIMETER**

### ***Evolved Cultural Landscape Zone (majority of the island perimeter)***

The perimeter of the island, including the coastal cliffs, would be managed to stabilize significant historic resources, protect colonial nesting birds and intertidal habitat, and interpret the island's changing cultural and natural conditions. Opening a perimeter trail, including segments of the historic sentry walk, would provide visitors with enhanced access to much of the island. Sensitive design and seasonal closure of the trail, which could include the Agave Trail, would protect nesting bird habitat.

## **NEARSHORE BAY ENVIRONMENT**

### ***Sensitive Resources Zone (extending 300 feet around most of Alcatraz Island)***

This zone would be managed as a marine protected area to preserve coastal resources, including Little Alcatraz Island, submerged resources, and seabird colonies using the island's cliffs. The area would be demarcated by buoys and closed to boats. A formal rule-making process would consider both seasonal and year-round closures.

### ***Historic Immersion Zone (extending from the Sensitive Resources Zone out to 0.25 mile from the island's shore)***

The National Park Service would manage this area to accommodate service to the island. Park managers would mark and interpret the historic no-trespass zone that was in place during previous periods. Only approved vessels, like the visitor ferry, would be allowed to use the island's dock.

## SUSTAINABILITY

The National Park Service would continue to develop and implement sustainable approaches to meet the island's energy, water, and wastewater needs. Actions that are being considered include replacing diesel generators with renewable (e.g., photo-voltaic panels) and grid-tied energy sources. These infrastructure technologies would be interpreted where possible.

## COST ESTIMATES

Cost estimates for alternative 3 are identified in table 17. The costs shown here are not for budgetary purposes; they are only intended to show a relative comparison of costs among the alternatives.

The alternatives describe the maximum potential capital improvements; lesser improvements may be implemented or built in phases if necessary. Implementation of the approved plan will depend on future funding. The approval of this plan does not guarantee that funding and the staffing needed to implement the plan would be forthcoming. Full implementation of the actions in the approved general management plan could be many years in the future. Additionally, some of the future long-term funding needed to implement the various actions called for in the alternatives is

anticipated to come from nonfederal partners, consistent with the park's current practices.

Alternative 3 for Alcatraz Island would require extensive but focused stabilization, rehabilitation, and restoration to effectively immerse the visitor in the history of Alcatraz Island as previously described in the alternative.

## Annual Operating Costs

Operating costs and staff numbers for Alcatraz Island are included in the analysis for Golden Gate National Recreation Area.

## One-time Capital Costs

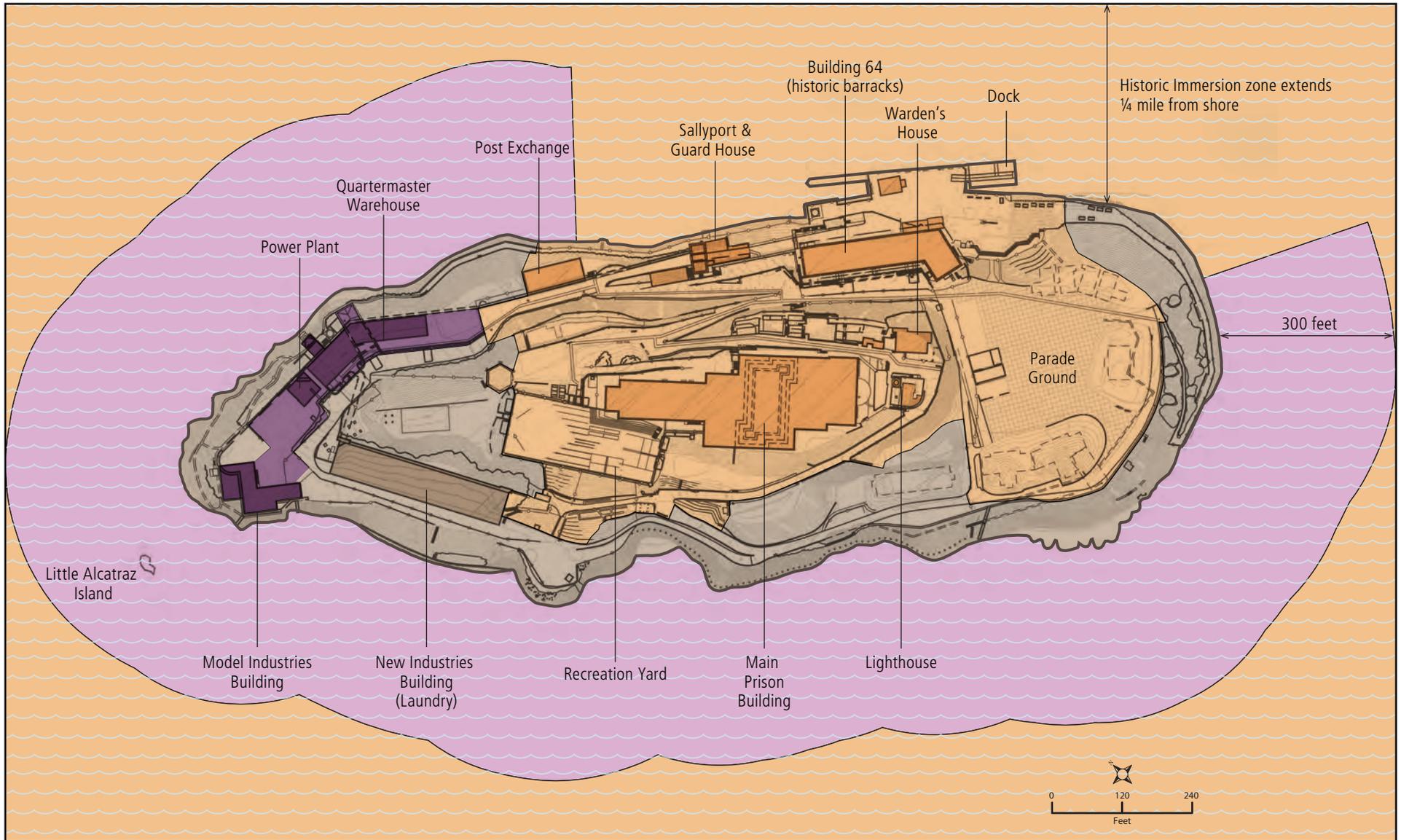
Many historic resources are in poor condition and would be stabilized to maintain the integrity of the national historic landmark district. Decisions to go beyond stabilization, including rehabilitation of a building or landscape, were based on the benefit to visitor experience, capital and operating costs, impact on sustainability of the island, and other factors such as the availability of new interpretive technologies. The estimated one-time capital costs for alternative 3 for Alcatraz Island are approximately \$54.4 million.

TABLE 17. ONE-TIME COSTS FOR ALTERNATIVE 3 FOR ALCATRAZ ISLAND

Summary of Costs for Alternative 3 (NPS Preferred Alternative)	
One-time Capital Costs	
Historic Preservation	
Building 64 stabilization	\$4,000,000
Building 64 rehabilitation: offices, overnight accommodations, exhibits*	\$6,080,000
Guardhouse stabilization	\$1,970,000
Guardhouse rehabilitation*	\$2,350,000
Main Prison Building stabilization and rehabilitation	\$19,030,000
Model Industries Building stabilization	\$1,100,000
New Industries Building stabilization	\$4,000,000
New Industries Building rehabilitation*	\$5,290,000
Parade Ground rehabilitation*	\$2,360,000
Post Exchange stabilization	\$780,000
Power Plant stabilization	\$1,890,000
Quartermaster Warehouse stabilization and rehabilitation	\$5,120,000
Recreation Yard stabilization	\$410,000
<b>Total</b>	<b>\$54,380,000</b>

All costs in 2009 dollars

\*These projects are desirable/lower priority, and while important to full implementation of the alternative, may be accomplished with nonfederal funds or in later phases.



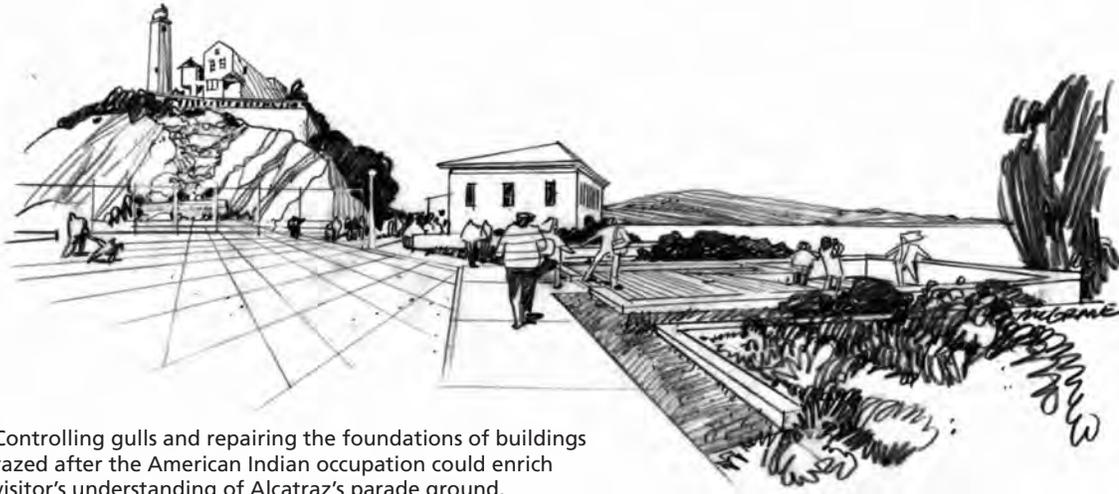
**Management Zones**

Diverse Opportunities	Historic Immersion	NPS Managed Marine Resources
Scenic Corridor	Natural	Island Shoreline
Interpretive Corridor	Sensitive Resources	
Evolved Cultural Landscape	Park Operations	

Note: Buildings are shown in a darker shade in each zone.

**Focusing on National Treasures**  
**Alternative 3 – Alcatraz Island**  
**Preferred Alternative**  
**Golden Gate National Recreation Area**

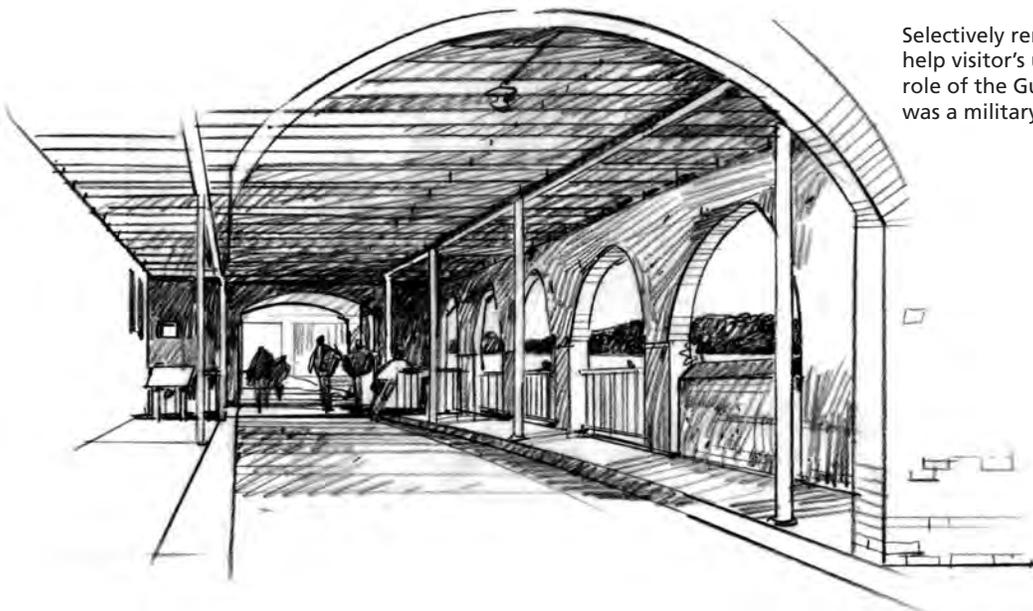
U.S. Department of the Interior - National Park Service  
 GGNRA/DSC  
 641/20620 A April 23, 2013



Controlling gulls and repairing the foundations of buildings razed after the American Indian occupation could enrich visitor's understanding of Alcatraz's parade ground.



Partial restoration of guard towers and fences, along with maintaining vegetative buffers, could balance historic preservation and waterbird habitat goals on Alcatraz.



Selectively removing later building additions could help visitor's understand the character and central role of the Guardhouse-Sallyport when Alcatraz was a military prison.

**Alcatraz Island (Conceptual Sketches for the Preferred Alternative)**

## SUMMARY COST ESTIMATES FOR ALCATRAZ ISLAND

The cost figures shown here and throughout the plan are intended only to provide conceptual costs for a general comparison of alternatives. NPS and industry cost estimating guidelines were used to develop the costs (in 2009 dollars), but the estimates should not be used for budgeting purposes. Specific costs will be determined in subsequent, more detailed planning and design exercises, identifying detailed resource protection needs and changing visitor expectations. Actual costs to the National Park Service will vary depending on when actions are implemented and on contributions by partners and volunteers.

The alternatives describe the maximum potential capital improvements; lesser improvements may be implemented or built in phases if necessary. The implementation of the approved plan would depend on future funding. The approval of this plan does not guarantee that the funding and staffing needed to implement the plan would be forthcoming. Full implementation of the actions in the approved general management plan could be many years in the future. Additionally, some of the future long-term funding needed to implement the various actions called for in the alternatives is anticipated to come from nonfederal partners, consistent with the park's current practices.

**TABLE 18. SUMMARY OF COSTS ASSOCIATED WITH THE IMPLEMENTATION OF THE ALTERNATIVES FOR ALCATRAZ ISLAND**

	No-action Alternative	Alternative 1	Alternative 2	Alternative 3 (NPS Preferred)
One-time Capital Costs <sup>1</sup>	\$4,260,000	\$61,190,000	\$37,440,000	\$54,380,000

**NOTES:**

1 One-time costs for the no-action alternative only include costs associated with projects already approved and fully funded in 2009.

## DEFERRED MAINTENANCE

The “Actions Common to All Alternatives” section earlier in this document contained a discussion of facilities that could be removed to reduce maintenance funding needs. However, in addition to removing facilities, expending one-time costs on park facilities would reduce the deferred maintenance by bringing the facilities up to a sustainable condition. Deferred maintenance—or work needed to bring park assets into good condition—exceeds \$198.1 million at Golden Gate National Recreation Area, according to the 2009 Park Asset Management Plan.

Each alternative contains proposals that would reduce total deferred maintenance. Although the reductions in deferred maintenance are similar in amount for each alternative, the alternatives do not all contain the same proposals for reducing deferred maintenance; each alternative proposes different treatments for structures, including rehabilitation or removal.

Park staff continue to seek out additional measures to reduce deferred maintenance at the park. The park asset management plan, in particular, addresses strategies for reducing deferred maintenance.

**TABLE 19. REDUCTIONS IN DEFERRED MAINTENANCE ASSOCIATED WITH IMPLEMENTATION OF THE ALTERNATIVES FOR ALCATRAZ ISLAND**

	No-action Alternative	Alternative 1	Alternative 2	Alternative 3 (NPS Preferred)
Alcatraz Island	\$0	\$16,130,000	\$16,130,000	\$15,920,000

## ENVIRONMENTALLY PREFERABLE ALTERNATIVE FOR ALCATRAZ ISLAND

The environmentally preferable alternative is the alternative that promotes the national environmental policy expressed in the National Environmental Policy Act (section 101[b]). This includes alternatives that

1. fulfill the responsibilities of each generation as trustee of the environment for succeeding generations
2. ensure for all Americans safe, healthful, productive, and esthetically pleasing surroundings
3. attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences
4. preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice
5. achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities
6. enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources (NPS Director's Order 12 Handbook, section 2.7D)

The alternatives are similar with respect to criteria 1, 2, 5, and 6. The park staff continues to work toward achieving these factors as a basic course of implementing the legal mandates for Golden Gate National Recreation Area and Muir Woods National Monument. All the alternatives equally meet the attainment for these four criteria; therefore, the evaluation focuses on 3 and 4.

The no-action alternative represents the continuation of current management and was included to provide a baseline against which to compare the effects of the other (action) alternatives. The no-action alternative is the weakest alternative in relationship to criteria 3 and 4. In this alternative, much of Alcatraz Island is not accessible to the public and therefore limits the range of beneficial uses. The primary purpose of preserving Alcatraz Island is to preserve and protect its historic resources. In the no-action alternative, minimal preservation efforts are applied to the island's historic resources. Limited visitor access and programs minimize the range of beneficial uses.

Alternatives 1 and 2 include actions to substantially improve the current conditions of the historic resources while strengthening the island's natural resources. A variety of natural and cultural resource restoration activities, improved public access to more areas on the island, and enhanced stewardship programs would greatly enhance criteria 3 and 4. Alternative 3 has an even higher standard of historic preservation and visitor programs that improves upon the other alternatives. In addition, alternative 3 is strengthened by incorporating many of the natural resource restoration actions that were identified in alternative 2.

After considering the environmental consequences of the alternatives, including consequences to the human environment, the National Park Service has concluded that the NPS preferred alternative, alternative 3 for Alcatraz Island, is also the environmentally preferable alternative. This alternative best realizes the full range of NEPA policy goals as stated in section 101.

## SUMMARY TABLES OF THE ALTERNATIVES FOR ALCATRAZ ISLAND

**NOTE:** The following table summarizes the alternatives as applied to Alcatraz Island. The potential key impacts of implementing the alternatives for Alcatraz Island are included in “Table 8 . Summary Costs Associated with Implementation of the Alternatives for Park Lands in Marin, San Francisco, and San Mateo counties (including Alcatraz Island).” The impacts on Alcatraz Island are not separated out from the rest of Golden Gate National Recreation Area.

**TABLE 20. COMPARISON OF THE ALTERNATIVES FOR ALCATRAZ ISLAND**

No Action	Alternative 1	Alternative 2	Alternative 3 (Preferred)
<b>Overview</b>			
<p>§ Management would continue to focus on the federal penitentiary.</p> <p>§ Visitors would have limited access to the island’s outdoor settings and other historic structures.</p> <p>§ Many areas would continue to be protected for nesting birds.</p>	<p>§ Expand visitor experience beyond prison focus to include human, natural, and historic aspects of Alcatraz Island.</p> <p>§ Preserve and rehabilitate more structures to share layers of history.</p> <p>§ Protect sensitive natural areas and provide more visitor opportunities to see wildlife.</p>	<p>§ Focus on how geographic isolation has impacted the natural and human experience at Alcatraz Island.</p> <p>§ Minimally preserve the built environment to maintain national historic landmark status.</p> <p>§ Visitor experience would be similar to alternative 1 in the prison, but based on self-discovery throughout the rest of the island.</p> <p>§ Emphasize natural habitat for nesting birds.</p>	<p>§ Immerse visitors in all historic periods; interpretation would be focused on tangible historic resources.</p> <p>§ Stabilize, rehabilitate, and restore historic resources, including the cultural landscape.</p> <p>§ Protect colonial waterbird populations.</p>
<b>Ferry Embarkation</b>			
<p>§ Embarkation from San Francisco’s northern waterfront would remain as the only access point.</p>	<p>§ Primary embarkation would remain on San Francisco’s northern waterfront; additional ferry connections could be provided from there.</p>	<p>§ Same as alternative 1.</p>	<p>§ Same as alternative 1.</p>

TABLE 20. COMPARISON OF THE ALTERNATIVES FOR ALCATRAZ ISLAND

No Action	Alternative 1	Alternative 2	Alternative 3 (Preferred)
<b>Arrival Area</b>			
<p>§ Adaptively use Building 64 for administrative purposes and some visitor services; majority of the structure would remain unused.</p>	<p>§ Building 64 would be rehabilitated and used as a multipurpose facility with expanded visitor services.</p>	<p>§ Building 64 would be adaptively used to support science education and stewardship programs, as well as administrative functions.</p>	<p>§ This area would be used to welcome and immerse visitors into the island’s prison landscape.</p> <p>§ Selected areas of Building 64, including the prison post office, canteen, and guard apartment, would be restored to reflect historic uses; could include modest dorm-like accommodations.</p> <p>§ Addition to the guardhouse would be removed.</p>
<b>Main Prison Area</b>			
<p>§ The Main Prison Building and several adjacent areas, like the Recreation Yard, represent the federal penitentiary era. They would continue to be managed as part of the central visitor experience.</p> <p>§ Visitors would have access to most of the building and yard. Several areas, like the Civil War-era Citadel (below the Main Cellblock) and part of the building’s hospital wing, would remain closed.</p> <p>§ Visiting the Main Prison Building would primarily be a self-guiding experience facilitated by an audio tour.</p> <p>§ The piles of ruins on the Parade Ground would remain and would be used seasonally by waterbirds.</p>	<p>§ The Main Prison Building and several adjacent areas would be managed to immerse visitors in the federal penitentiary period. A variety of programming and exhibits would bring prison history alive. Rehabilitation or restoration, where appropriate, would enhance resource integrity of the historic structures.</p> <p>§ In this alternative, the park would manage the structures and landscaped areas surrounding the Main Prison Building to protect and interpret the layers of history.</p> <p>§ The building ruins on the Parade Ground could be removed and bird populations would be managed to accommodate enhanced visitor access in coordination with management of the</p>	<p>§ Visitors would have access to Main Prison Building and features in historically accurate conditions that tell the stories of the different layers of island history.</p> <p>§ The Main Prison Building and several adjacent areas would be managed to provide visitors with access to the wide range of resources in historically accurate conditions, from the military period through the Indian occupation. Rehabilitation or restoration of historic resources would enhance their historic integrity.</p> <p>§ The park would manage these structures and adjacent areas to enhance bird habitat and protect sensitive resources. Visitor use would be managed and controlled to support natural resource management goals.</p> <p>§ The building ruins on the Parade Ground would be retained to</p>	<p>§ The Main Prison Building and several adjacent areas would provide visitors with the opportunity to explore the federal penitentiary’s history. Visitors would also have access to the wide range of historic structures and features, in historically accurate conditions that tell stories about the different layers of island history. Park managers would look for opportunities to expose visitors to the tangible resources (including artifacts in the park’s museum collection) of the federal penitentiary and military eras.</p> <p>§ Treatments ranging from upgrades to exhibits and furnishings to more complete restoration would continue with the goal of increasing access and interpretation of the prison’s history.</p> <p>§ The Parade Ground would be rehabilitated to portray its historic period and support year-round visitor exploration in coordination with adaptive management of western gulls. Rehabilitation could incorporate measures to</p>

TABLE 20. COMPARISON OF THE ALTERNATIVES FOR ALCATRAZ ISLAND

No Action	Alternative 1	Alternative 2	Alternative 3 (Preferred)
	western gulls.	maintain and enhance seabird habitat.	support natural systems.
<b>Lighthouse</b>			
§ The lighthouse would be managed for historic function with highly controlled visitor access.	§ The lighthouse would be preserved. Access and interpretation would be enhanced.	§ Same as alternative 1.	§ Same as alternative 1.
<b>North End of Island</b>			
§ Area and buildings would continue to be used for operations and maintenance. § Visitors are not permitted.	§ Historic structures including the Model Industries Building would be rehabilitated and adaptively reused for maintenance, storage, and public safety. § Some visitor access would be provided to showcase infrastructure technologies. § The New Industries Building would be rehabilitated as a multipurpose facility (both floors).	§ The interior of the Post Exchange, Quartermaster Warehouse, and Power Plant would be used for park operations. § The Model Industries Building would be stabilized to provide additional nesting bird habitat. § Visitor access would be highly controlled. § No effort would be made to avoid loss of buildings in this area due to coastal erosion.	§ The Quartermaster Warehouse would be rehabilitated for park operations and a preservation stewardship workshop; the Power Plant would be stabilized to house green, sustainable infrastructure with possible visitor access and interpretation. § The Model Industries Building would be stabilized to protect sensitive natural resources. § The Model Industries Building would be stabilized with the first floor used for park operations; measures would be employed to protect nearby sensitive natural resources. The building would be rehabilitated as a multipurpose facility (on the second floor) with a service kitchen.
<b>Island Perimeter</b>			
§ This area would continue to be managed for bird and wildlife habitat. § Year-round and seasonal trails would remain; other areas would be closed for visitor safety and seabird	§ This area would be managed for natural habitat. Trails would provide year-round visitor access. § Visitor access to western coastal cliffs and tide pools would be highly managed. Seasonal closures would protect	§ The perimeter would be preserved to protect natural resources. § Visitor use and access would be highly managed.	§ The perimeter and coastal cliffs would be managed to stabilize historic resources and protect natural resources. § Visitor access would be provided to much of the island perimeter; there could be seasonal closures.

TABLE 20. COMPARISON OF THE ALTERNATIVES FOR ALCATRAZ ISLAND

No Action	Alternative 1	Alternative 2	Alternative 3 (Preferred)
protection.	seabird habitat.		
<b>Nearshore Bay Environment</b>			
<p>§ NPS jurisdiction extends 0.25 mile from shore; no active management of this area; access would continue to be limited to the ferry.</p>	<p>§ The western shore and the area extending 100 feet beyond it would be managed to protect marine resources. Boat landings and boat tours would be prohibited.</p> <p>§ The eastern shore and the area beyond 300 feet from the western shore would be managed to accommodate ferry service and permit nonmotorized boat tours.</p>	<p>§ The western shore and the area extending 300 feet beyond it would be managed to protect coastal resources and nesting seabird colonies on the cliffs. The area would be closed to boats during breeding season.</p> <p>§ The eastern shore and the area beyond 300 feet from the western shore would be managed to accommodate ferry access.</p> <p>§ Enforcement of resource protection measures would be strengthened.</p>	<p>§ The western shore and the area extending 300 feet offshore would be managed to protect coastal resources and nesting seabird colonies on cliffs. The area would be closed to boats A formal rule-making process would consider both seasonal and year-round closures.</p> <p>§ The area extending out to 0.25 mile from the island's shore would be managed as a historic zone and would accommodate ferry service. The historic no-trespass zone would be marked and interpreted.</p>

ALTERNATIVES FOR  
MUIR WOODS NATIONAL MONUMENT

6





# NO-ACTION ALTERNATIVE

## OVERVIEW

Under the no-action alternative, Muir Woods National Monument would continue to be managed to protect the primeval redwood forest in the larger Redwood Creek watershed and to interpret the monument's natural history, as well as the establishment of the monument, which had a major role in the early U.S. conservation movement.

Muir Woods National Monument would remain a popular international destination and ecological treasure. With trees over 1,000 years old, it preserves a small yet towering vestige of the vast forests of *Sequoia sempervirens* that once graced the slopes and valleys surrounding San Francisco Bay. The monument also supports a diversity of flora and fauna.

The park staff would continue to balance preservation of the redwood ecosystem with providing access to hundreds of thousands of visitors annually. For many visitors, Muir Woods would continue to provide their initial experience with the national park system. Key park objectives would include fostering a conservation ethic among visitors, preserving and restoring habitat for threatened and endangered species, preserving cultural resources such as the Dipsea Trail, supporting public transportation as a way to reduce congestion, and promoting a watershed perspective in land management that includes Mount Tamalpais State Park, two water districts, an organic farm, equestrian stables, and local communities. These are objectives for the entire watershed as well. Overall management of the monument would continue to be guided by the 1980 General Management Plan.

## ARRIVAL

Today, most visitors arrive by personal vehicles and commercial tour buses. Since 2005, a pilot shuttle service has been used during the summer to help reduce traffic congestion. In the no-action alternative, parking areas would continue to be provided adjacent to Redwood Creek and near the main concentration of redwoods.

The entrance area would be at the edge of the redwood forest adjacent to Redwood Creek as it is now. The entrance area includes a parking area, restrooms, and a small visitor information station with a bookstore and fee collection booth. This area is a hub of activity with a mix of pedestrians, automobiles, and buses. Additional parking areas would continue to exist farther along Redwood Creek and would continue to be used during periods of peak demand. Maintenance and some other operational functions would continue to be in the Old Inn on the east side of Muir Woods Road.

## REDWOOD FOREST AND REDWOOD CREEK

The main trail system would continue to exist as a series of loops running along Redwood Creek, crossing the creek four times on footbridges. Visitors would continue to have opportunities to stroll among the groves of ancient redwoods. A variety of interpretive waysides and scheduled interpretive programs would continue in order to support the visitor's discovery of the monument's resources. Intersecting with the main trail are other trails that would provide visitors with extended hiking opportunities to adjacent public lands. The Administration-Concession Building would continue to

provide food, retail services, restrooms, and park offices. The current use of the nearby historic Superintendent's Residence and associated structures would remain.

Since the monument was established, the National Park Service has increased its understanding of a healthy redwood forest ecosystem. Past practices of allowing visitors to drive, picnic, and camp within the forest have been phased out. Natural fires have been suppressed throughout most of the 20th century, but have been slowly reintroduced through the use of prescribed burns to restore more natural conditions, reduce fuel loading, and to enhance the health of the ecosystem. This land management practice would continue. In the 1930s, the Civilian Conservation Corps lined portions of Redwood Creek with rocks as a means to stabilize and contain the flow of water within the existing channel. These actions may have protected selected redwood trees on the banks, but have also eliminated the natural meandering of the creek across a wider floodplain, constraining its role in sustaining a healthy ecosystem.

### **MUIR WOODS ADDITION (ALSO KNOWN AS CAMINO DEL CANYON, CONLON AVENUE, AND DRUID HEIGHTS)**

Over time, additional tracts of land have been acquired to support the administrative functions and visitor use of the monument. Properties in the area referred to as the Muir Woods Addition were acquired by the National Park Service between 1974 and 1984. These properties include the rustic buildings of historic Camp Hillwood (located up Conlon Avenue), Druid Heights (located at the end of Camino del Canyon), and other structures.

Some structures are used for park operations and a native plants nursery, while others are under special use permits, reservation of use and occupancy, or have been vacated and

are scheduled for removal. These uses and planned actions would continue under the no-action alternative. The valuable wildlife habitat in this area, including habitat for northern spotted owl and salmonids, would continue to be protected.

### **COST ESTIMATES**

Cost estimates for the no-action alternative are identified in the table below. The costs shown here are not for budgetary purposes; they are only intended to show a relative comparison of costs among the alternatives.

The alternatives describe the maximum potential capital improvements; lesser improvements may be implemented, or built in phases if necessary. The implementation of the approved plan will depend on future funding. The approval of this plan does not guarantee that the funding and staffing needed to implement the plan will be forthcoming. Full implementation of the actions in the approved general management plan could be many years in the future. Additionally, some of the future long-term funding needed to implement the various actions called for in the alternatives is anticipated to come from nonfederal partners, consistent with the park's current practices.

### **Annual Operating Costs**

The annual NPS portion of the Muir Woods National Monument shuttle cost is \$340,000. Shuttle costs have been shared with local transportation agencies as a joint solution to alleviating traffic congestion on the State Route 1 corridor.

Operating costs and staff numbers for Muir Woods National Monument are included in the table titled Summary of Costs Associated with the Implementation of the Alternatives for Park Lands in Marin, San Francisco, and San Mateo counties.

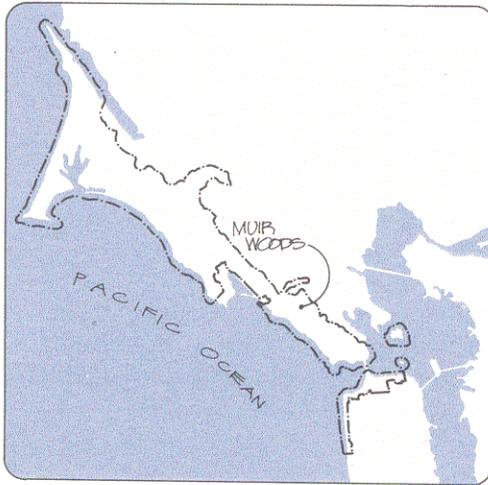
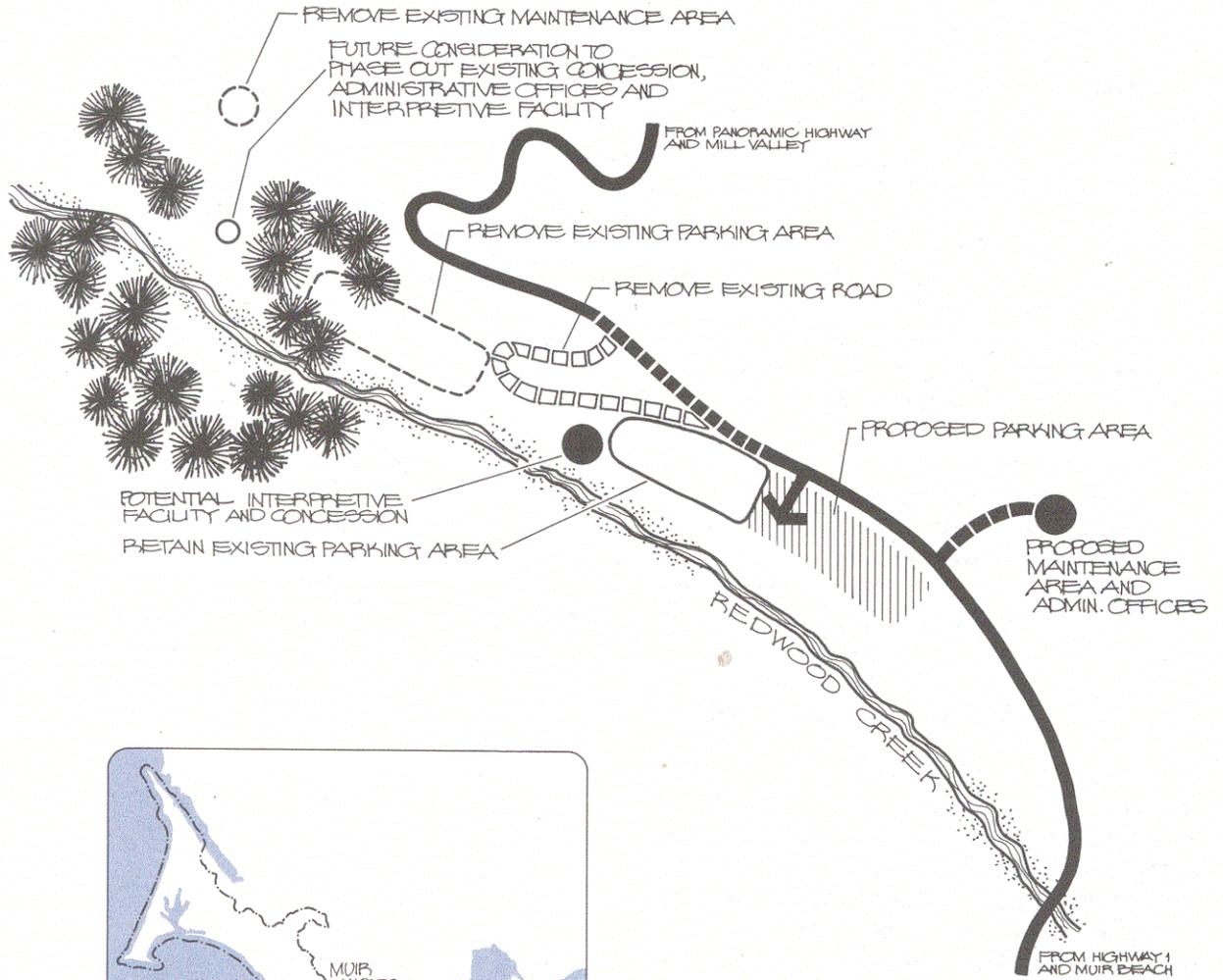
### One-time Costs

The estimated costs of the no-action alternative reflect the continuation of current management. One-time costs for the no-action alternative are the costs for those projects that are currently approved and funded—any requested but unfunded projects are not considered in this analysis. Therefore, while the action alternatives contain estimates for 20 years of proposed

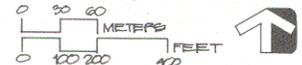
projects, the no-action alternative assumes no new projects would take place except those projects funded in 2009. Examples of currently funded projects include remodeling of the concession facilities, cyclic maintenance, and management of the fee collection program. Total funded one-time costs for the no-action alternative for Muir Woods are \$920,000.

TABLE 21. COSTS OF THE NO-ACTION ALTERNATIVE FOR MUIR WOODS NATIONAL MONUMENT

Summary of Costs of the No-action Alternative	
<b>Annual Operational Costs</b>	
Shuttle Operations	\$ 340,000
<b>One-time Capital Costs</b>	
<b>Total</b>	<b>\$ 920,000</b>



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UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

# MUIR WOODS

DEVELOPMENT CONCEPT  
GOLDEN GATE NATIONAL RECREATION AREA  
POINT REYES NATIONAL SEASHORE

**1980 General Management Plan**

**Muir Woods National Monument Development Concept, No-action Alternative**

# ALTERNATIVE 1: CONNECTING PEOPLE WITH THE PARKS

## OVERVIEW

In this alternative, the park would offer visitors the opportunity to experience and enjoy the primeval forest ecosystem and understand the monument's place in U.S. conservation history through a variety of enhanced programs, facilities, and trails that access the forest and connect local communities to the park and surrounding open space.

While retaining much of the present system of trails through the forest, some existing facilities and use areas, such as the entrance area and parking lots, would be modified or relocated to reduce their impacts on the ecosystem and improve the park experience.

The monument would continue to welcome a diversity of visitors and support a range of experiences, better serving as a gateway or stepping stone to understanding the national park system.

An off-site welcome center for the shuttle system, with parking and visitor services, would be an important first point for orientation and key to providing sustainable access to the monument.

Collaboration with other public land managers would continue to address watershed restoration and stewardship.

## ARRIVAL

### Off-site

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, created in collaboration with Marin County, California State Parks, and Caltrans. Shuttles would travel a distance of about 6 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.

### *Diverse Opportunities Zone*

The monument's existing entry area would be redesigned to enhance the visitor's arrival experience, protect resources, and improve safety. Parking at the monument would be reconfigured or relocated using sustainable design practices to reduce impacts on the creek and other sensitive resources. Capacity would meet demand during off-peak periods. Pedestrian access would be improved to offer visitors a more natural experience transitioning into the redwood forest separated from roads and parking.

A modest facility would be provided to receive visitors arriving by different modes of transportation. The services provided could include shuttle drop-off, sheltered waiting areas, orientation, restrooms, food service, and a bookstore. The existing separate structures for fee collection, a bookstore, and restrooms could be replaced as part of the new facility. The goal of the design process would be to accommodate visitor's needs while simultaneously minimizing the overall footprint of development within the old-growth forest.

Future use or removal of the Old Inn would be determined through more detailed site planning that would consider its utility for visitor services or operational needs in the redesigned entry area. To allow visitor parking to be reconfigured, the native plant nursery would be relocated to Lower Redwood Creek as part of a stewardship center. Realignment of portions of county-maintained Muir Woods Road would also be explored to improve operational safety and visitor access.

In order to improve pedestrian safety and protect Redwood Creek, the park would collaborate with Marin County to restrict shoulder parking along Muir Woods Road in nontrailhead areas as alternative transportation becomes more readily available.

## REDWOOD FOREST AND REDWOOD CREEK

### *Scenic Corridor Zone (Redwood Creek corridor including the existing wooden arch, several existing buildings, and the main loop trails)*

This area would be managed to provide a national park experience within the primeval redwood forest setting. The Administration-Concession Building would transition to support stewardship, interpretive, and educational activities, providing a flexible classroom and program space in the woods. Experiences would immerse visitors in nature (the sights, sounds, smells of the forest) where quiet would be encouraged. Improved accessibility would ensure that all visitors could have these experiences. New restrooms and drinking water would be provided near Bridge 4 to protect resources and enhance visitor comfort.

The historic Superintendent's Residence and nearby structures would be used for administrative purposes. Other structures needed to support visitor uses or park operations would be rehabilitated.

Nonhistoric or nonessential structures would be removed.

### *Natural Zone (all areas beyond the Redwood Creek corridor)*

The majority of the monument would be managed to preserve and restore natural systems and contribute to the primeval forest setting. Visitors within this zone would have opportunities for self-discovery and challenge on trails in a more dispersed and wild park setting.

To provide a diverse continuum of experiences, visitors would be introduced to ways of accessing the adjacent landscapes and the recreational opportunities of Mount Tamalpais State Park, Marin Municipal Water District, and Golden Gate National Recreation Area. The Ben Johnson, Fern Creek, Redwood Creek, and Dipsea trails would provide access to a variety of day and overnight recreational experiences.

## MUIR WOODS ADDITION (ALSO KNOWN AS CAMINO DEL CANYON, CONLON AVENUE, AND DRUID HEIGHTS)

### *Diverse Opportunities Zone (Conlon Avenue)*

Camp Hillwood and its immediate surroundings would be adaptively used for day use or overnight educational opportunities. The historic values of the camp would be preserved while the facilities would be adapted to contemporary uses.

All existing operational functions within this zone (maintenance and native plants nursery) would be relocated to the Lower Redwood Creek site (former Banducci flower farm) or in potential shared facilities with Mount Tamalpais State Park nearby at Kent Canyon.

### ***Natural Zone (other areas in Camino del Canyon and Druid Heights)***

The majority of the area would be managed to preserve the natural environment. The landscape and streams would be restored to an intact habitat. All nonhistoric structures would be removed and Camino del Canyon Road would be downgraded to a trail.

### **KENT CANYON, MOUNT TAMALPAIS STATE PARK**

The park would work with California State Parks to achieve common objectives for this area. Collaboration would focus on maintenance, parking, and trails. Most maintenance functions in the monument would be relocated to facilities potentially shared with Mount Tamalpais State Park.

### **COST ESTIMATES**

Cost estimates for alternative 1 are identified in the table below. The costs shown here are not for budgetary purposes; they are only intended to show a relative comparison of costs among the alternatives.

The alternatives describe the maximum potential capital improvements; lesser improvements may be implemented or built in phases if necessary. The implementation of the approved plan will depend on future funding. The approval of this plan does not guarantee that the funding and staffing needed to implement the plan will be forthcoming. Full implementation of the

actions in the approved general management plan could be many years in the future. Additionally, some of the future long-term funding needed to implement the various actions called for in the alternatives is anticipated to come from nonfederal partners, consistent with the park's current practices.

### **Annual Operating Costs**

The annual cost to operate the shuttle during peak periods is estimated to range from \$600,000 to \$1,400,000. This is the full cost to operate the shuttle, although historically, shuttle operation costs have been shared with local transportation agencies as a joint solution to alleviating traffic congestion on the State Route 1 corridor.

### **One-time Costs**

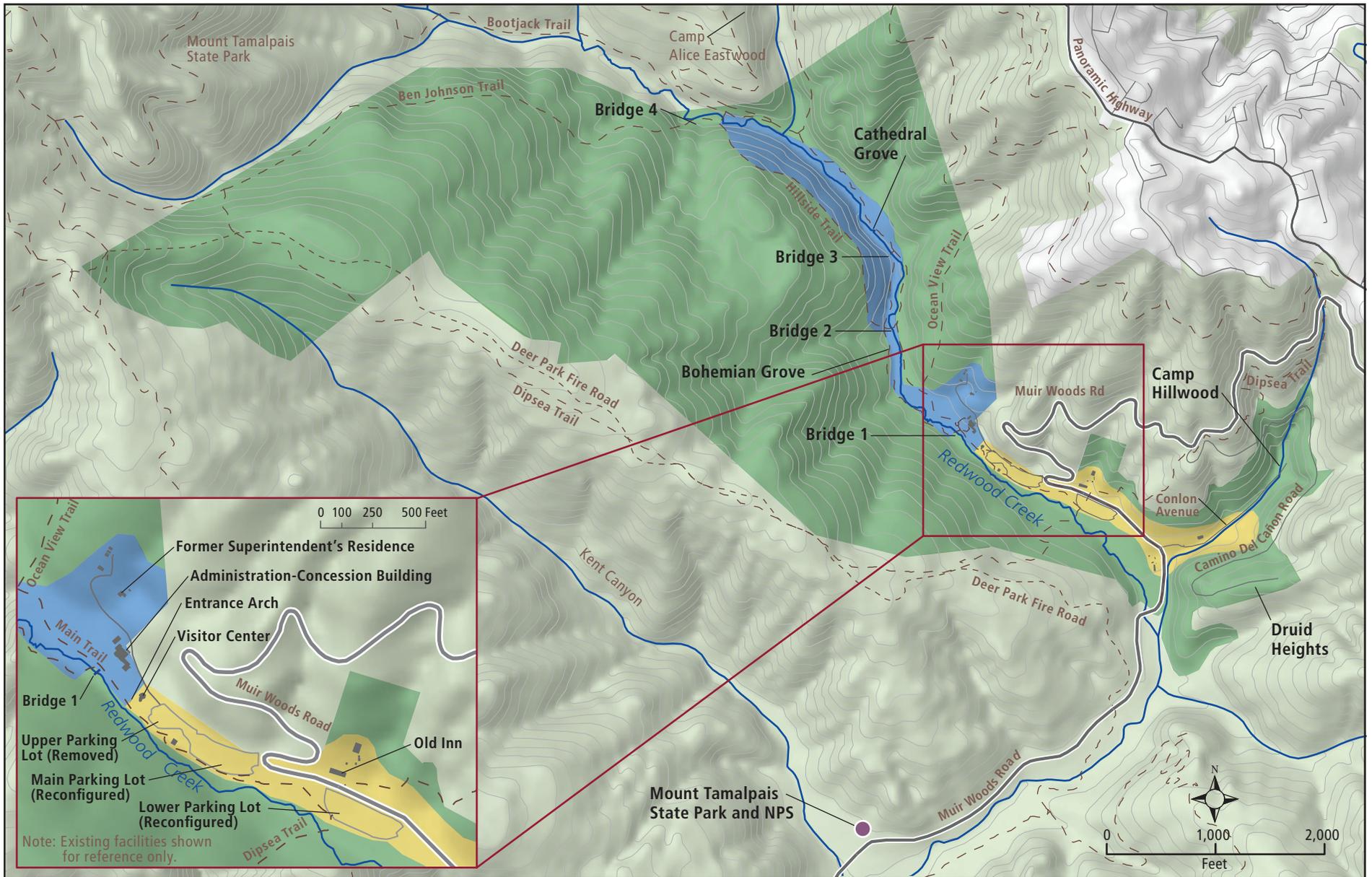
This alternative proposes a variety of enhanced programs, facilities, and trails to welcome a diversity of visitors and support a range of experiences. Many of the facilities would be relocated or modified to reduce impacts on the ecosystem and improve the park experience.

One-time costs of the alternative include a mix of projects including rehabilitation of historic structures, new construction, removal of nonhistoric facilities, and natural resource restoration. Total one-time costs for Muir Woods National Monument are estimated at \$15.9 million.

**TABLE 22. COSTS OF ALTERNATIVE 1 FOR  
MUIR WOODS NATIONAL MONUMENT**

<b>Summary of Costs of Alternative 1</b>	
<b>Annual Operational Costs</b>	
Shuttle Operations	\$ 600,000–\$1,400,000
<b>One-time Capital Costs</b>	
<b><i>Facility Rehabilitation</i></b>	
Entrance area improvements	\$7,150,000
Entry drive and parking improvements	\$1,300,000
Trail system improvements	\$500,000
<b><i>Historic Preservation</i></b>	
Administration-Concessions building: rehabilitate for stewardship and education	\$500,000
Camp Hillwood rehabilitation	\$140,000
Former Superintendent's Residence and adjacent structures: rehabilitation	\$420,000
<b><i>Natural Resource Restoration</i></b>	
Muir Woods Addition	\$2,410,000
Within the Monument	\$120,000
<b><i>Facility Removal</i></b>	
Structures in the Monument and other infrastructure	\$250,000
Nonhistoric structures in the Muir Woods Addition	\$470,000
<b><i>New Construction</i></b>	
Off-site welcome center	\$2,230,000
Bridge 4 amenities	\$410,000
<b>Total</b>	<b>\$15,900,000</b>

All costs in 2009 dollars



**Management Zones**

- Diverse Opportunities
- Scenic Corridor
- Interpretive Corridor
- Evolved Cultural Landscape
- Historic Immersion
- Natural
- Sensitive Resources
- Park Operations

Note: Buildings are shown in a darker shade in each zone.

**Connecting People with the Parks**

**Alternative 1**

**Muir Woods National Monument**

U.S. Department of the Interior - National Park Service  
 GGNRA/DSC 112/20010 A April 23, 2013

## ALTERNATIVE 2: PRESERVING AND ENJOYING COASTAL ECOSYSTEMS

### OVERVIEW

Muir Woods National Monument and the Redwood Creek watershed are part of the UNESCO Golden Gate Biosphere Reserve—one of the world’s richest reservoirs of plant and animal life. This alternative would seek to restore the primeval character of the old-growth redwood forest. Visitors would be immersed in the forest and could experience the natural sounds, smells, light, and darkness of the forest.

The experience would be more primitive than it is today; the majority of the built environment—buildings, parking lots, paved trails—would be removed and all visitors would arrive by shuttle, bicycle, or on foot. The landscape would be “messier” than it is today, but the forest would function more naturally: Redwood Creek would be allowed to meander across the floodplain, flooding the valley bottom, uprooting trees, and opening gaps in the canopy.

Where not in conflict with natural resource goals, historic trails and structures could be retained or adapted for contemporary uses. A light-on-the-land, accessible trail would reach into the heart of the forest. Visitors would engage in participatory stewardship, education, and science that further the preservation of the forest and all its parts—the creek, salmon, spotted owls, bats, natural sounds—as part of the continuing history and evolution of the land preservation and conservation movement.

An off-site welcome center for the shuttle system, with parking and visitor services, would be an important first point for orientation and a key to providing sustainable access to the monument. Restoration of the Redwood Creek watershed would be accelerated in

collaboration with other land managers. Actions would include the removal of unneeded management roads, stabilization of sediment sources, and removal of invasive vegetation, as well as removal of streambank stabilization structures in Redwood Creek, removal and possible relocation of some pedestrian bridges, and restoration of natural floodplain function.

### ARRIVAL

#### Off-site

This area would be the same as in alternatives 1 and 3, except that the shuttle service would run year-round. To the extent feasible, all visitors would come to Muir Woods National Monument either by shuttle service from the new welcome center or under their own power.

#### *Park Operations Zone (Old Inn area)*

The Old Inn and adjacent areas would be used for administration and limited maintenance operations. Only a small parking area would be available for special needs. The park entrance would be relocated to the current lower parking lot and designed to accommodate a modest transit stop for the shuttle. It would also provide basic visitor services such as light snacks and restrooms.

#### *Sensitive Resources Zone (along Redwood Creek)*

The existing main entrance area, including the entire upper parking area, restrooms, and visitor center, as well as a major portion of the lower parking lot, would be removed to restore natural conditions, including seasonal flooding.

## REDWOOD FOREST AND REDWOOD CREEK

### *Sensitive Resources Zone (majority of the monument)*

The old-growth redwood forest would be managed to achieve the highest level of natural resource integrity. The visitor experience would promote an intimate relationship with the natural resources of the primeval redwood forest. Visitor access would be highly controlled and limited to designated areas and activities. The visitor would have the opportunity to engage in participatory stewardship and educational and science activities.

The natural conditions of the redwood forest and Redwood Creek would be restored and allowed to continue unimpeded. Floodplain processes and riparian habitat would be restored by removing, realigning, or redesigning trails, bridges, and other impediments to natural processes. Woody debris would accumulate in the creek and on the forest floor.

Visitor services in the forest would be relocated to the transit stop. In consultation with the state historic preservation office and other stakeholders, the existing buildings and other major infrastructure would be removed and the sites restored to their natural conditions. All buildings, except the Old Inn, would be removed, including the former Superintendent's Residence and the Administration-Concession Building.

The trail system would be redesigned to accommodate fewer visitors in a more intimate and appropriate setting. A simple accessible trail would reach into a portion of the old-growth forest. The existing main trail along the creek would be relocated out of the floodplain, and other trails and bridges could be removed, relocated, or redesigned to allow and promote natural processes. Paved surfaces would be removed.

The trail system throughout the monument would be designed to connect to other trails that would allow it to extend from the redwood forest to the ocean, highlighting the connection between the uplands and the ocean and the role that watershed restoration plays in maintaining healthy ecosystems. A reroute of the Redwood Creek crossing of the Dipsea Trail would be explored to find a more appropriate location with less impact to the natural functions of the creek. The rest of the Dipsea Trail would be maintained along its historic alignment.

## MUIR WOODS ADDITION (ALSO KNOWN AS CAMINO DEL CANYON, CONLON AVENUE, AND DRUID HEIGHTS)

### *Natural Zone*

The area would be managed to restore native habitat and natural processes with emphasis on removal of unneeded roads and development (including portions of Druid Heights and Camp Hillwood), stabilization of sediment sources, re-establishment of natural drainage patterns, restoration of the tributary creek, and removal of invasive vegetation that has escaped from developed areas.

All existing operational functions within this zone (maintenance and native plants nursery) would be relocated to the Lower Redwood Creek site (former Banducci flower farm) or in potential shared facilities with Mount Tamalpais State Park nearby at Kent Canyon. Water and sewer systems could be relocated to appropriate sites using sustainable technologies and practices.

## KENT CANYON, MOUNT TAMALPAIS STATE PARK

The park would work with California State Parks to achieve common objectives for this area. Collaboration would focus on

maintenance, parking, and trails. Most maintenance functions in the monument would be relocated to facilities potentially shared with Mount Tamalpais State Park.

## **COST ESTIMATES**

Cost estimates for alternative 2 are identified in the table below. The costs shown here are not for budgetary purposes; they are only intended to show a relative comparison of costs among the alternatives.

The alternatives describe the maximum potential capital improvements; lesser improvements may be implemented or built in phases if necessary. The implementation of the approved plan would depend on future funding. The approval of this plan does not guarantee that the funding and staffing needed to implement the plan would be forthcoming. Full implementation of the actions in the approved general management plan could be many years in the future. Additionally, some of the future long-term funding needed to implement the various actions called for in the alternatives is anticipated to come from nonfederal

partners, consistent with the park's current practices.

## **Annual Operating Costs**

The annual costs to operate the shuttle year-round are estimated to range from \$4,000,000 to \$9,500,000. This is the full cost to operate the shuttle, although historically, shuttle operation costs have been shared with local transportation agencies as a joint solution to alleviating traffic congestion on the State Route 1 corridor.

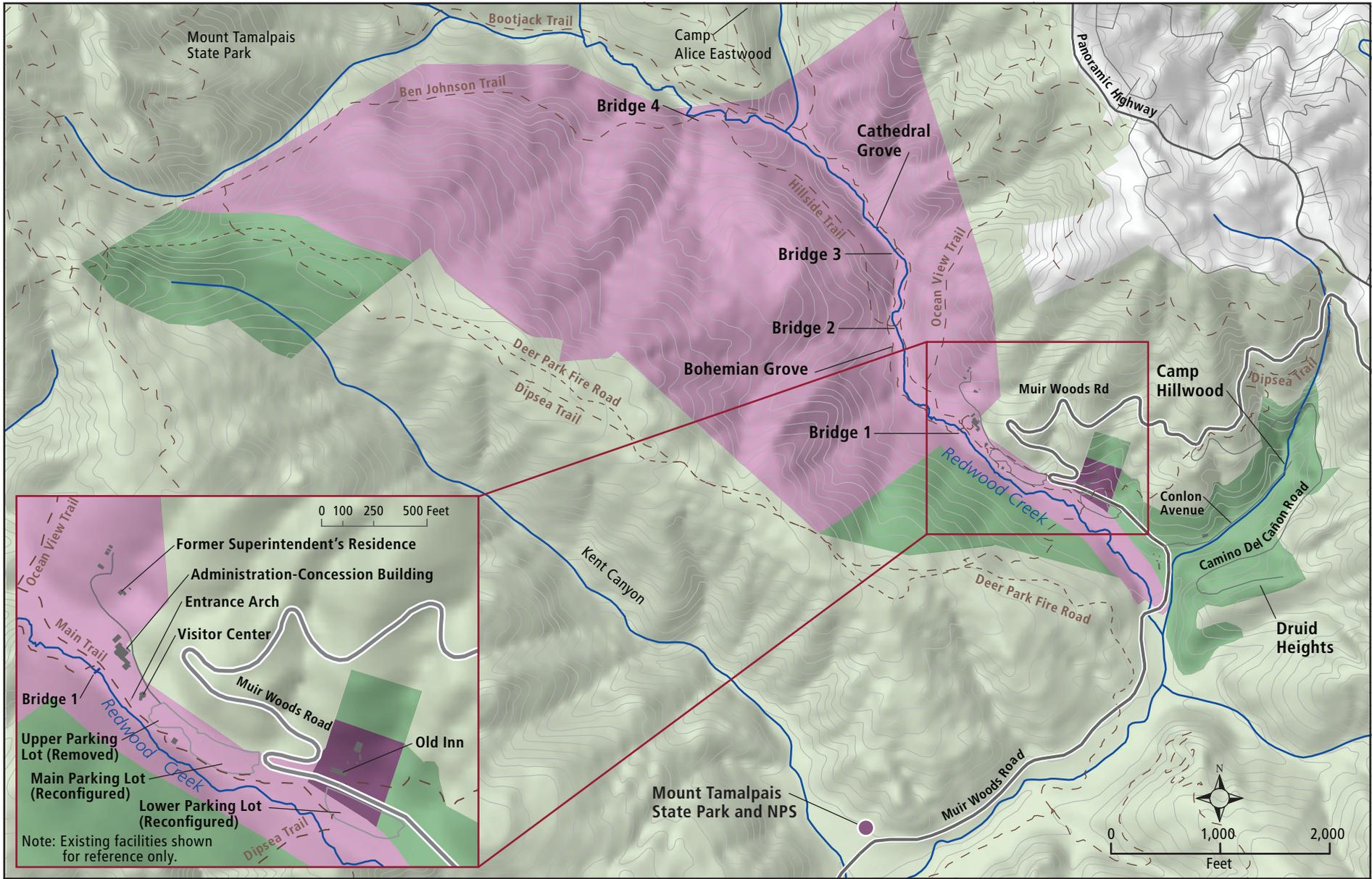
## **One-time Costs**

In order to achieve the goals of alternative 2, a large portion of the built environment would be removed from the redwood forest and addition lands; however, some trails and structures would be adapted for contemporary uses. Much of the cost of this alternative is attributable to the removal of facilities and infrastructure, new welcome centers, and landscape and natural resource restoration. Total one-time costs for alternative 2 for Muir Woods are estimated at \$16.9 million.

**TABLE 23. COSTS OF ALTERNATIVE 2 FOR MUIR WOODS NATIONAL MONUMENT**

<b>Summary of Costs for Alternative 2</b>	
<b>Annual Operational Costs</b>	
<b>Shuttle Operations</b>	<b>\$4,000,000 to \$9,500,000</b>
<b>One-time Capital Costs</b>	
<b><i>Facility Rehabilitation</i></b>	
Old Inn modifications	\$230,000
Entrance area improvements	\$300,000
Entry drive and parking improvements	\$570,000
Trail system improvements	\$190,000
<b><i>Historic Preservation</i></b>	
None	\$0
<b><i>Natural Resource Restoration</i></b>	
Muir Woods Addition	\$2,470,000
Within the Monument	\$2,800,000
<b><i>Facility Removal</i></b>	
Structures in the Monument and other infrastructure	\$4,490,000
Nonhistoric structures in the Muir Woods Addition	\$590,000
<b><i>New Construction</i></b>	
Off-site welcome center	\$5,230,000
<b>TOTAL</b>	<b>\$16,870,000</b>

All costs in 2009 dollars



**Management Zones**

- |   |  |  |
|---|--|--|
|  Diverse Opportunities |  Evolved Cultural Landscape |  Sensitive Resources |
|  Scenic Corridor       |  Historic Immersion         |  Park Operations     |
|  Interpretive Corridor |  Natural                    |  |

Note: Buildings are shown in a darker shade in each zone.

**Preserving and Enjoying Coastal Ecosystems *Alternative 2***  
**Muir Woods National Monument**

U.S. Department of the Interior - National Park Service  
 GGNRA/DSC 112/20011 A April 23, 2013

## ALTERNATIVE 3: FOCUSING ON NATIONAL TREASURES— THE PREFERRED ALTERNATIVE

### OVERVIEW

Muir Woods National Monument is a window into the complex world of nature and conservation. This alternative would present the monument as a contemplative setting where visitors discover the primeval redwood forest and the monument's place in the early U.S. conservation movement—within minutes of San Francisco.

The system of trails would continue to lead visitors into the forest to feel, see, and learn, in different ways, about the essential qualities of the forest. These include its giant trees, the ecology of Redwood Creek, and William Kent's generous donation of the forest to the American public. Rather than continue to concentrate visitation along a main trail, visitors would be encouraged to take different thematic interpretive trails, some new and some existing, to experience different parts of the park. Other trails would be enhanced to better link the monument with the surrounding Mount Tamalpais State Park.

Some existing facilities and use areas, such as the entrance area and parking lots, would be modified or relocated to reduce their impacts on the ecosystem and improve the park experience.

Shuttle service from off-site locations would be expanded and be an important first point for orientation and a key to providing sustainable access to the monument. Visitors would continue to be drawn to the monument to see the trees, but they would leave with a richer understanding of this precious ecosystem and how the saving of these few acres helped spark conservation across the United States. They would be motivated to return and learn more of the story. A comprehensive user capacity

strategy would help the park to monitor and adaptively manage crowding, user conflicts, and impacts on resources.

Building on the interagency *Redwood Creek Watershed: Vision for the Future* (2003), and a cooperative management agreement with California State Parks, the National Park Service would continue to collaborate with the public and other land managers to address watershed restoration, stewardship, and recreation.

### ARRIVAL

#### Off-site

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. The existing transit hub in the vicinity of State Route 1 and Highway 101 could continue to serve as a shuttle facility. The National Park Service would collaborate with partners including Marin County, California State Parks, and Caltrans to provide shuttle and other necessary visitor services. This could include phased improvements to parking, sheltered waiting areas, restrooms, orientation to the monument and other regional park destinations, and improved connections to regional ferry services.

#### *Diverse Opportunities Zone*

The monument's existing entry area would be redesigned to enhance the visitor's arrival experience, protect resources, and improve safety. Parking at the monument would be reduced, reconfigured, and relocated using sustainable design practices to better protect Redwood Creek and other sensitive

resources. Removal of parking would primarily be along the shoulder of Muir Woods Road. Parking supply would continue to meet demand during off-peak periods. Pedestrian access would be improved to offer visitors a more natural experience transitioning into the redwood forest separated from roads and parking.

A modest facility would be provided to receive visitors arriving by different modes of transportation. The services provided could include shuttle drop-off, sheltered waiting areas, orientation, restrooms, food service, and a bookstore. The existing separate structures for fee collection, a bookstore, and restrooms could be replaced as part of the new facility. The goal of the design process would be to accommodate visitor's needs while minimizing the overall footprint of development in the park.

Future use or removal of the Old Inn would be determined through more detailed site planning that would consider its utility for visitor services or operational needs in the redesigned entry area. To allow visitor parking to be reconfigured, the native plant nursery would be relocated to Lower Redwood Creek as part of a stewardship center.

In order to improve pedestrian safety and protect Redwood Creek, the park would collaborate with Marin County and California State Parks to restrict shoulder parking along Muir Woods Road as alternative transportation becomes more readily available.

## REDWOOD FOREST AND REDWOOD CREEK

### *Interpretive Corridor Zone (large corridor around Redwood Creek)*

This area would be managed as a setting where visitors discover and interact with the features of the primeval redwood forest. Each of the existing trails within the

monument would be managed to unveil a different story and experience using creative interpretive approaches that are appropriate to the majestic old-growth forest. The trails would be designed and managed to provide visitors with opportunities to learn, explore, and become immersed in the resources that illustrate a particular theme. Examples of thematic trails could include an ecology-themed trail that leads visitors to examine the forest structure and the dynamic habitats of the creek. Another trail would highlight a century of conservation history and quietly usher visitors into Cathedral Grove. Some trails would start at the main entrance and highlight the main redwood groves along the creek. Others would bring visitors down into the woods from higher in the canyon.

The Dipsea Trail and other trails from Mount Tamalpais State Park also would be highlighted, offering opportunities for self-discovery. The experience would be further reinforced through ranger-led activities that engage the visitor with the monument's natural and cultural resources.

Portions of the main trail and bridges could be relocated to allow for creek and floodplain restoration and improvements to the integrity of the redwood forest ecosystem.

The Administration-Concession Building would transition to support interpretive and educational activities, providing flexible classroom and program space in the woods. Nonhistoric and nonessential additions made to this structure and its surroundings would be removed to reduce development in the monument. The adjacent restroom building would be retained.

The historic structures and features that represent the conservation movement would be preserved and rehabilitated and used to support visitor programming and services. These include the former Superintendent's Residence, equipment shed, garage, trails, monuments, and named groves. The historic creek stabilization rock work could be

removed in targeted areas to restore natural creek functions important to forest health.

### ***Sensitive Resources Zone (upper north-facing slopes of the canyon)***

These areas would be managed to preserve the redwood forest and natural sounds that provide a backdrop to the adjacent interpretive corridor zone. Visitor access to this area would be carefully managed and limited to retain the pristine setting and protect its resources.

### ***Natural Zone (western portion of the national monument)***

This area of the monument would be managed to preserve natural systems and contribute to the primeval forest setting. Visitors within this zone would have opportunities for self-discovery and challenge on the Ben Johnson and Dipsea trails in a more dispersed and wild park setting.

## **MUIR WOODS ADDITION (ALSO KNOWN AS CAMINO DEL CANYON, CONLON AVENUE, AND DRUID HEIGHTS)**

### ***Natural Zone***

The area would be managed to provide low-impact trail-based day uses and restore native habitat and natural processes with emphasis on removal of roads, nonhistoric structures, stabilization of sediment sources, re-establishment of natural drainage patterns, restoration of the tributary creek, and removal of invasive vegetation that has escaped from developed areas.

Camino del Canyon would be converted to a trail with access by foot or light service vehicle. Some historic structures associated with the bohemian community at Druid Heights would be preserved to the extent practicable and consistent with limited access. Camp Hillwood could be preserved

to the extent that this would not compromise natural resource values. If retained, use of the main building could be for park operations or limited visitor programs and uses consistent with the surrounding natural zone. The segment of Conlon Avenue extending from the lift station to the camp could be realigned to restore natural processes and conditions for the tributary to Redwood Creek.

### ***Diverse Opportunities Zone (lower Conlon Avenue from Muir Woods Road to the lift station)***

A small parking area and trailhead would be situated in this zone. The park would explore a more sustainable wastewater treatment process to eventually replace the existing lift station. Other existing operational functions (maintenance and native plant nursery) would be relocated to the Lower Redwood Creek site (former Banducci flower farm) or in potential shared facilities with Mount Tamalpais State Park nearby at Kent Canyon.

## **KENT CANYON, MOUNT TAMALPAIS STATE PARK**

The park would work with California State Parks to achieve common objectives for this area. Collaboration would focus on maintenance, parking, and trails. Most maintenance functions in the monument would be relocated here to facilities shared with Mount Tamalpais State Park. This action would be subject to an agreement with California State Parks.

## **COST ESTIMATES**

Cost estimates for alternative 3 are identified in table 24. The costs shown here are not for budgetary purposes; they are only intended to show a relative comparison of costs among the alternatives.

The alternatives describe the maximum potential capital improvements; lesser improvements may be implemented, or built in phases if necessary. The implementation of the approved plan would depend on future funding. The approval of this plan does not guarantee that the funding and staffing needed to implement the plan would be forthcoming. Full implementation of the actions in the approved general management plan could be many years in the future. Additionally, some of the future long-term funding needed to implement the various actions called for in the alternatives is anticipated to come from nonfederal partners, consistent with the park's current practices.

### **Annual Operating Costs**

The annual costs to operate the shuttle at peak periods throughout the year are

estimated to range from \$600,000 to \$1,400,000. This is the full cost to operate the shuttle, although historically, shuttle operation costs have been shared with local transportation agencies as a joint solution to alleviating traffic congestion on the State Route 1 corridor.

### **One-time Costs**

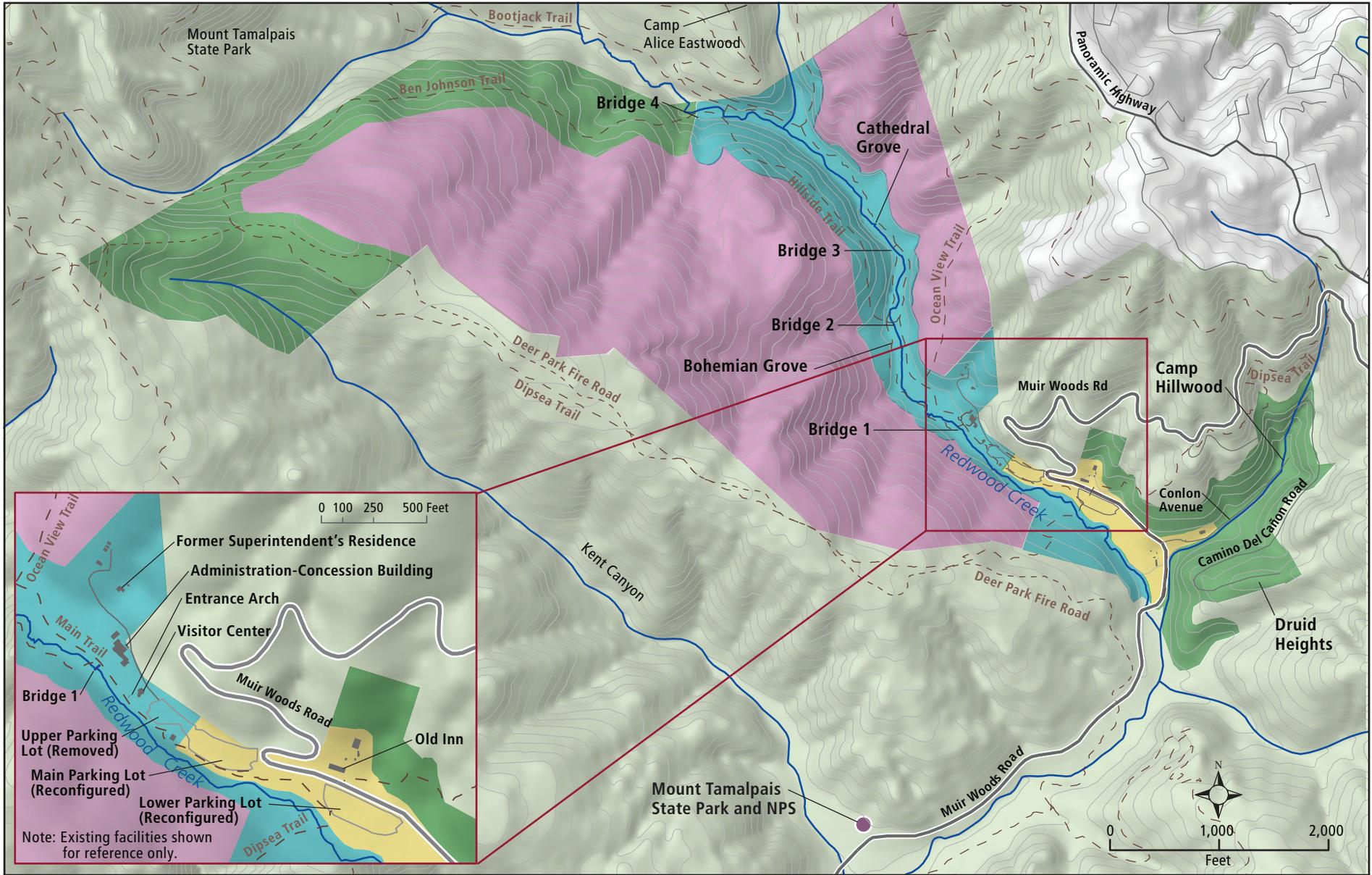
In alternative 3, Muir Woods National Monument would be presented as an outdoor museum where visitors discover the primeval forest and conservation history. Costs are largely attributable to the proposed improvements to the arrival experience, reducing congestion, rehabilitation of historic structures, and trail system enhancements. Total one-time costs for alternative 3 for Muir Woods National Monument are estimated at \$15.6 million.

**TABLE 24. COSTS OF ALTERNATIVE 3 FOR  
MUIR WOODS NATIONAL MONUMENT**

<b>Summary of Costs for Alternative 3 (NPS Preferred Alternative)</b>	
<b>Annual Operational Costs</b>	
Shuttle Operations	\$600,000 to 1,400,000
<b>One-time Capital Costs</b>	
<b><i>Rehabilitation Projects</i></b>	
Entrance area improvements	\$7,150,000
Entry drive and parking improvements	\$1,300,000
Trail system improvements	\$700,000
<b><i>Historic Preservation</i></b>	
Administration-Concessions building: rehabilitate for interpretation and education*	\$500,000
Camp Hillwood: rehabilitation*	\$150,000
Former Superintendent's Residence and adjacent structures: rehabilitation	\$340,000
<b><i>Natural Resource Restoration</i></b>	
Muir Woods Addition	\$2,500,000
Within the Monument boundary	\$2,200,000
<b><i>Facility Removal</i></b>	
Minor structures and infrastructure removal	\$250,000
Nonhistoric structures in the Muir Woods Addition	\$470,000
<b>TOTAL</b>	<b>\$15,560,000</b>

All costs in 2009 dollars

\*These projects are desirable/lower priority, and while important to full implementation of the alternative, may be accomplished with nonfederal funds or in later phases.



**Management Zones**

- |                       |                            |                     |
|-----------------------|----------------------------|---------------------|
| Diverse Opportunities | Evolved Cultural Landscape | Sensitive Resources |
| Scenic Corridor       | Historic Immersion         | Park Operations     |
| Interpretive Corridor | Natural                    |                     |

Note: Buildings are shown in a darker shade in each zone.

**Focusing on National Treasures**  
**Alternative 3 - Preferred Alternative**  
**Muir Woods National Monument**

U.S. Department of the Interior - National Park Service  
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A meadow-like pedestrian entrance to the monument is created by reorganizing vehicular circulation and support facilities.



Restored banks of Redwood Creek along with redesigned segments of the main trail improve ecological functions and conditions for visitors in the forest.

**Muir Woods National Monument (Conceptual Sketches for the Preferred Alternative)**

## SUMMARY OF COST ESTIMATES FOR MUIR WOODS NATIONAL MONUMENT

The cost figures shown here and throughout the plan are intended only to provide conceptual costs for general comparison of alternatives. National Park Service and industry cost estimating guidelines were used to develop the costs (in 2009 dollars) to the extent possible, but the estimates should not be used for budgeting purposes. Specific costs would be determined in subsequent, more detailed planning and design exercises, and after considering the design of facilities, identification of detailed resource protection needs, and changing visitor expectations. Actual costs to the National Park Service would vary depending on when actions are implemented, and on contributions by partners and volunteers.

The alternatives describe the maximum potential capital improvements; lesser improvements may be implemented, or built in phases if necessary. The implementation of the approved plan will depend on future funding. The approval of this plan does not guarantee that the funding and staffing needed to implement the plan would be forthcoming. Full implementation of the actions in the approved general management plan could be many years in the future. Additionally, some of the future long-term funding needed to implement the various actions called for in the alternatives is anticipated to come from nonfederal partners, consistent with the park's current practices.

**TABLE 25. SUMMARY OF COSTS ASSOCIATED WITH IMPLEMENTATION OF THE  
ALTERNATIVES FOR MUIR WOODS NATIONAL MONUMENT**

	No-action Alternative	Alternative 1	Alternative 2	Alternative 3 (NPS Preferred)
Annual Operational Costs (Shuttle Operations) <sup>1</sup>	\$340,000	\$600,000 – \$1,400,000	\$4,000,000 – \$9,500,000	\$600,000 – \$1,400,000
One-time Capital Costs <sup>2</sup>	\$920,000	\$15,900,000	\$16,870,000	\$15,560,000

NOTES:

- 1 The cost of operating the shuttle was estimated by Nelson and Nygaard in 2009 dollars. This is the full cost to operate the shuttle, although historically the shuttle operations have been a shared cost with local transportation agencies. Marin County and the National Park Service share costs for this as a joint solution to alleviating traffic congestion on the State Route 1 corridor.
- 2 One-time costs of the no-action alternative only include costs associated with projects already approved and fully funded.
- 3 All costs are in 2009 dollars.

## DEFERRED MAINTENANCE

The “Actions Common to All Alternatives” section, earlier in this document, contained a discussion of facilities that could be removed to reduce maintenance funding needs. However, in addition to removing facilities, expending one-time costs on park facilities would reduce deferred maintenance by bringing the facilities up to a sustainable condition. Deferred maintenance—or work needed to bring park assets into good condition—exceeds \$198.1 million at Golden Gate National Recreation Area and Muir Woods National Monument according to the 2009 *Park Asset Management Plan*.

Each alternative contains proposals that would reduce total deferred maintenance. Although the reductions in deferred maintenance are similar in amount for each alternative, the alternatives do not all contain the same proposals for reducing deferred maintenance; each alternative proposes different treatments for structures, including rehabilitation or removal.

Park staff continue to seek out additional measures to reduce deferred maintenance at the park. The *Park Asset Management Plan*, in particular, addresses strategies for reducing deferred maintenance.

**TABLE 26. REDUCTION IN DEFERRED MAINTENANCE ASSOCIATED WITH IMPLEMENTATION OF THE ALTERNATIVES FOR MUIR WOODS NATIONAL MONUMENT**

	No-action Alternative	Alternative 1	Alternative 2	Alternative 3 (NPS Preferred)
Muir Woods National Monument	\$0	\$1,650,000	\$2,080,000	\$1,650,000

## ENVIRONMENTALLY PREFERABLE ALTERNATIVE FOR MUIR WOODS NATIONAL MONUMENT

The environmentally preferable alternative is the alternative that promotes the national environmental policy expressed in the National Environmental Policy Act (section 101[b]). This includes alternatives that

1. fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
2. ensure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;
3. attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
4. preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice;
5. achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and
6. enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources" (NPS DO 12 Handbook, Section 2.7D).

The alternatives are very similar with respect to criteria 1, 2, 5, and 6. The park staff continues to work in achieving these factors as a basic course of implementing the legal mandates for Muir Woods National Monument. All the alternatives equally meet the attainment for these four criteria; therefore, the evaluation focuses on criteria 3 and 4.

The no-action alternative represents continuation of the existing management strategy in order to provide a baseline against which to compare the effects of the other (action) alternatives. The no-action alternative is the weakest alternative when considering criteria 3 and 4. In this alternative, the visitor experience is based primarily on self-discovery with some scheduled interpretive programs. The natural and historic resources of the national monument are protected but continue to be impacted by past human disturbance such as streambank stabilization, locating parking facilities adjacent to Redwood Creek, and locating concession services within the old-growth redwood forest. The new land additions to Muir Woods National Monument lack any planning and guidance regarding the type of visitor opportunities and the level of natural and cultural resource preservation that should be implemented. In the no-action alternative, visitor access to the national monument would continue to be by individual vehicles, tour buses, and the park's shuttle bus during the summer season—which contribute to social and environmental problems.

Alternative 2 provides for substantial improvements to the natural environment through restoration work that addresses past human disturbances such as removing bank stabilization, narrowing trails, eliminating the majority of parking, and providing a year-round shuttle system. In consideration of criteria 3, the alternative limits the range of beneficial uses to those visitors looking to experience a more primitive and natural setting with a focus on education. The no-action alternative provides a greater variety of visitor opportunities than alternative 2. With regard to criteria 4, alternative 2 proposes to remove important historic and cultural features of our national heritage.

The actions associated with implementation of alternative 1 improve upon the no-action alternative and alternative 2 by enhancing recreational opportunities such as picnicking, interpretation, and stewardship programs. The social and environmental impacts associated with parking and other past human disturbances would be improved as well. Alternative 1 provides a good balance of addressing past human disturbances and providing a range of beneficial uses with minimal impacts.

Alternative 3 is similar to alternative 1 in balancing the restoration of past human disturbances and providing a wider range of beneficial uses. Alternative 3 is better at accomplishing criteria 3 and 4 with the

implementation of a comprehensive education and interpretive program, incorporating thematic trails that would help visitors to easily learn about and explore the natural and cultural resources of the national monument.

After considering the environmental consequences of the alternatives, including consequences to the human environment, the National Park Service has concluded that the NPS preferred alternative, alternative 3 for Muir Woods National Monument, is also the environmentally preferable alternative. This alternative best realizes the full range of environmental policy goals as stated in section 101 of the National Environmental Policy Act.

# SUMMARY TABLES FOR MUIR WOODS NATIONAL MONUMENT

TABLE 27. COMPARISON OF ALTERNATIVES FOR MUIR WOODS NATIONAL MONUMENT

No Action	Alternative 1	Alternative 2	Alternative 3 (Preferred)
<b>Overview</b>			
<p>§ Management of the monument would continue to provide visitors with self-guiding opportunities to explore the primeval forest. Scheduled interpretive opportunities would continue to be provided.</p> <p>§ Existing facilities would remain in their current locations.</p>	<p>§ Alternative 1 would offer visitors the opportunity to experience and enjoy the primeval forest ecosystem and understand the monument's place in U.S. conservation history through a variety of enhanced programs, facilities, and trails that access the forest and connect local communities to the park and surrounding open space.</p> <p>§ The monument would continue to welcome a diversity of visitors and support a range of experiences, better serving as a gateway or stepping stone to understanding the national park system.</p> <p>§ Some existing facilities and uses would be modified or relocated to reduce their impacts on the ecosystem and improve the park experience.</p>	<p>§ Alternative 2 would restore the primeval character of the old-growth redwood forest. Visitors would immerse themselves in the forest to experience the natural sounds, smells, light, and darkness of the forest.</p> <p>§ The experience would be primitive; buildings, parking lots, and paved trails would be removed, and all visitors would arrive by shuttle, bicycle, or on foot.</p> <p>§ The landscape would be less controlled, and the forest would function more naturally. Redwood Creek would meander across the floodplain, flooding the valley bottom, uprooting trees, and opening gaps in the canopy.</p>	<p>§ Alternative 3 would present the monument as a contemplative outdoor museum where visitors could discover and learn about the primeval redwood forest and the monument's place in the U.S. conservation movement.</p> <p>§ A system of interpretive trails would lead visitors into the forest to touch, see, and learn, about the essential qualities of the forest, including the monument's place in U.S. conservation history.</p> <p>§ Several existing facilities would be modified or relocated to reduce their impacts on the redwood forest ecosystem.</p>

TABLE 27. COMPARISON OF ALTERNATIVES FOR MUIR WOODS NATIONAL MONUMENT

No Action	Alternative 1	Alternative 2	Alternative 3 (Preferred)
<b>Arrival</b>			
<p>§ The monument entrance would remain at the edge of the redwood forest near Redwood Creek and continue to include parking, restrooms, and a small visitor information station. Parking lots farther down Redwood Creek would remain.</p> <p>§ Visitors would continue to arrive by personal vehicle or tour bus, with a shuttle service provided in the summer.</p> <p>§ Maintenance and operational functions would remain at the Old Inn.</p>	<p>§ The entrance would be redesigned to enhance visitor experience, protect resources, and improve safety. The parking lot would be reconfigured using sustainable design practices.</p> <p>§ A welcome center would be provided in the vicinity of State Route 1 and Highway 101 with visitor services including parking, shelter, restrooms, food service, and orientation to the monument and regional park destinations.</p> <p>§ Shuttle service from off-site locations would be expanded and a key to providing sustainable access to the monument.</p>	<p>§ The entrance would be relocated to the lower parking lot area and designed to accommodate a year-round shuttle service. The majority of parking would be removed.</p> <p>§ Along Redwood Creek, the main entrance, upper parking lot, restrooms, and visitor center would be removed to restore the area to natural conditions.</p> <p>§ The Old Inn and adjacent area would be used for administration and maintenance.</p> <p>§ A welcome center would be provided as described in alternative 1.</p>	<p>§ The entrance would be redesigned to enhance visitor experience, protect resources, and improve safety. The parking lot would be reconfigured using sustainable design practices.</p> <p>§ Shuttle service would be provided during peak periods. Express transit and connections with regional and local transportation systems would be explored.</p>
<b>Redwood Forest and Redwood Creek</b>			
<p>§ The main trail system would continue as a series of loops running along Redwood Creek with connections to other trails. Visitors would have opportunities to stroll through the groves of ancient redwoods. Interpretive waysides and scheduled interpretive programs would support the visitor's discovery of the monument's resources.</p>	<p>§ The Redwood Creek corridor and main loop trails would be managed to provide a national park experience within a primeval redwood forest setting.</p> <p>§ The Administration-Concession Building would be used to support interpretive, educational, and stewardship activities.</p> <p>§ Improve accessibility of trails; add new restrooms and drinking water near bridge 4.</p> <p>§ Use historic Superintendent's Residence for</p>	<p>§ The old-growth forest would be managed to achieve the highest level of natural resource integrity.</p> <p>§ The majority of the built environment would be removed including the Administration-Concession Building.</p> <p>§ Visitor access to designated areas and activities would be controlled. Visitors would be encouraged to engage in stewardship, education, and science activities.</p> <p>§ Floodplain processes would be restored by</p>	<p>§ The corridor around Redwood Creek would be managed to allow visitors to discover and interact with the primeval redwood forest.</p> <p>§ Portions of trails and bridges would be relocated to allow for creek and floodplain restoration and ecosystem improvements.</p> <p>§ The Administration-Concession Building would be used for interpretive and educational activities. Nonhistoric additions to the structure would be removed.</p>

**TABLE 27. COMPARISON OF ALTERNATIVES FOR MUIR WOODS NATIONAL MONUMENT**

No Action	Alternative 1	Alternative 2	Alternative 3 (Preferred)
<p>§ The Administration-Concession Building would continue to provide food, retail services, restrooms, and park offices. The current use of the nearby historic Superintendent's Residence and associated structures would remain. While many past practices have already been phased out, others would continue to affect the healthy functioning of the ecosystem.</p>	<p>administrative purposes. Rehabilitate other structures for park uses and remove nonhistoric nonessential structures.</p> <p>§ The area beyond Redwood Creek corridor would be managed to preserve and restore natural systems. Dispersed trails in a wild park setting would provide opportunities for self-discovery and challenge.</p>	<p>removing, realigning, or redesigning trails, bridges, and other impediments to natural processes.</p> <p>§ The trail system would be redesigned to accommodate fewer visitors in a more intimate setting; an accessible trail would provide access to a portion of the old-growth forest. Trails would connect to other trails from ocean to uplands and highlight watershed restoration.</p>	<p>§ Structures representing the conservation movement would be preserved and rehabilitated.</p> <p>§ The upper north-facing slopes of the canyon would be preserved to protect redwood forest and natural sounds. Visitor access would be carefully managed to protect the pristine natural setting and resources.</p> <p>§ The western portion would be managed to preserve natural systems and contribute to a primeval forest setting. Ben Johnson and Dipsea trails would allow self-discovery in a more dispersed and wild park setting.</p>
<b>Muir Woods Addition (Camino Del Canyon, Conlon Avenue, and Druid Heights)</b>			
<p>§ Structures on these lands would continue to be used for park operations and a native plants nursery; others are under special use permits, reservation of use and occupancy, or have been vacated and are scheduled for removal. These uses and planned actions would continue.</p> <p>§ The valuable wildlife habitat in this area would continue to be protected.</p>	<p>§ Camp Hillwood would be adaptively used for day use or overnight educational programs.</p> <p>§ Operational functions at Conlon Avenue would be relocated to other areas.</p> <p>§ The majority of Camino Del Canyon and Druid Heights would be managed to preserve the natural setting. The natural landscape and streams would be restored and all nonhistoric structures would be removed.</p>	<p>§ These areas would be managed to restore native habitat and natural processes.</p> <p>§ All operational functions would be relocated.</p> <p>§ Water and sewer systems would be relocated.</p>	<p>§ Some structures of Camp Hillwood could be preserved to the extent that this would not compromise natural resource values. If retained, the main building could be used for park operations or limited visitor programs and uses consistent with the surrounding natural zone.</p> <p>§ Conlon Avenue would have a modest parking area and trailhead.</p> <p>§ The National Park Service would continue to explore a sustainable wastewater treatment solution to replace the existing lift station. Other operational functions would be relocated.</p>

TABLE 27. COMPARISON OF ALTERNATIVES FOR MUIR WOODS NATIONAL MONUMENT

No Action	Alternative 1	Alternative 2	Alternative 3 (Preferred)
			§ Some historic structures and landscape features at Druid Heights would be preserved. Access would be by foot or light service vehicle. § Camino Del Canyon and Druid Heights would be managed to provide trails and restore native habitat and natural processes.
<b>Kent Canyon, Mount Tamalpais State Park</b>			
	§ Collaboration with California State Parks would focus on maintenance, parking, and trails. § Most maintenance functions would be relocated to shared facilities.	§ Same as alternative 1.	§ Same as alternative 1.



TABLE 28. SUMMARY OF POTENTIAL KEY IMPACTS OF IMPLEMENTING THE ALTERNATIVES FOR MUIR WOODS NATIONAL MONUMENT

Potential Key Impacts on Muir Woods National Monument				
	No Action	Alternative 1	Alternative 2	Alternative 3 – NPS Preferred
Natural Resources				
<b>Carbon Footprint and Air Quality</b>	Total gross emissions for Muir Woods National Monument would be estimated at 2,257 MTCE, resulting in long-term, minor, adverse impacts on the monument's carbon footprint. Overall, when compared to background levels of air pollution and GHG emissions in the region or the nation (estimated at 6 billion in 2007), impacts on air quality from the no-action alternative would be long term, adverse, and negligible.	The combined effect of the actions included in alternative 1 is estimated to decrease the gross emissions of Muir Woods National Monument by 20% to 1,812 MTCE. This would result in long-term, minor, beneficial impacts on the monument's carbon footprint. As in the no-action alternative, impacts on air quality (when compared to background levels of air pollution in the region and nation) would be negligible.	The combined effect of the actions included in alternative 2 is estimated to decrease the gross emissions of Muir Woods National Monument by 82% to 401 MTCE. This would result in long-term, major, beneficial impacts on the monument's carbon footprint. As in the no-action alternative, impacts on air quality (when compared to background levels of air pollution in the region and nation) would be negligible.	The combined effect of the actions included in alternative 3 is estimated to decrease the gross emissions of Muir Woods National Monument by 20% to 1,813 MTCE. This would result in long-term, minor, beneficial impacts on the monument's carbon footprint. As in the no-action alternative, impacts on air quality (when compared to background levels of air pollution in the region and nation) would be negligible.
<b>Soils and Geologic Resources and Processes</b>	Overall, the impact to geologic resources and soils from the no-action alternative would be long-term, range from minor to moderate adverse to minor beneficial, and be localized and monument-wide. Adverse impacts would occur from the presence and maintenance of existing facilities and visitor use. Beneficial impacts would occur from restoration and education and stewardship activities.	Overall, the impact to soils and geologic resources and processes from alternative 1 would be short- and long-term, range from negligible adverse to minor beneficial, and be localized. Adverse impacts would occur from new recreational development and expanded visitor use. Beneficial impacts would occur from trail relocation, the restoration of disturbed sites, and improved resource understanding and public support.	Overall, the impact to soils and geologic resources and processes from alternative 2 would be short- and long-term, range from minor adverse to moderate beneficial, and localized. Adverse impacts would occur from visitor use and construction. Beneficial impacts would occur from the removal of facilities and structures and restoration of disturbed sites.	Overall, the impact to soils and geologic resources and processes from alternative 3 would be short and long term, range from negligible adverse to moderate beneficial, and be localized. Adverse impacts would occur from new recreational development and visitor use. Beneficial impacts would occur from the removal of facilities and structures and restoration of the upper parking lot and disturbed sites, as well as creek restoration activities.
<b>Water Resources and Hydrologic Processes</b>	Overall, the impact to water resources and hydrologic processes from the no-action alternative would be long-term, range from minor adverse to minor beneficial, and be localized and monument-wide. Adverse impacts would occur from the presence and maintenance of existing facilities (including rock revetment), and visitor use. Beneficial impacts would occur from education and stewardship activities.	Overall, the impact to water-related resources from alternative 1 would be short- and long-term, range from negligible adverse to minor beneficial, and be localized and parkwide. Adverse impacts would occur from the presence and maintenance of existing facilities (including rock revetment), new recreational development and expanded visitor use. Beneficial impacts would occur from trail and road maintenance and the restoration of disturbed sites and removal of the upper parking area.	Overall, the impact to water-related resources from alternative 2 would be short and long term, range from minor adverse to moderate-major beneficial, and be localized. Adverse impacts would occur from expanded visitor use and restoration activities. Beneficial impacts would occur from the restoration of disturbed sites, removal of structures, facilities, roads, and asphalt parking areas and substantial creek and floodplain restoration.	Overall, the impact to water-related resources from alternative 3 would be short and long term, range from negligible adverse to moderate beneficial, and be localized. Adverse impacts would occur from the presence and maintenance of existing facilities (including rock revetment), new recreational development and expanded visitor use and construction, and restoration activities. Beneficial impacts would occur from the restoration of disturbed sites, removal of the upper parking area, improvements to Redwood Creek, and restoration in the Camino del Canyon and Druid Heights areas.
<b>Habitat (vegetation and wildlife)</b>	Overall, the impact to vegetation and wildlife habitat from the no-action alternative would be long-term, range from minor-moderate adverse to minor beneficial, and be localized and monument-wide. Adverse impacts would occur from the presence and maintenance of existing facilities and visitor use. Beneficial impacts would occur from restoration and ongoing management and monitoring activities.	Overall, the impact to vegetation and wildlife habitat from alternative 1 would be short and long term. They would range from negligible adverse to minor or moderate beneficial and would be localized and monument-wide. Adverse impacts would occur from new recreational development and expanded visitor use. Beneficial impacts would occur from the restoration of disturbed sites.	Overall, the impact to vegetation and wildlife habitat from alternative 2 would be short and long term. They would range from minor adverse to moderate or major beneficial and would be localized and monument-wide. Adverse impacts would occur from visitor use and construction activities. Beneficial impacts would occur from the restoration of disturbed sites and creeks.	Overall, the impact to vegetation and wildlife habitat from alternative 3 would be short and long term, range from minor adverse to moderate beneficial, and be localized and monument-wide. Adverse impacts would occur from visitor use and construction activities. Beneficial impacts would occur from the restoration of disturbed sites and creeks.

TABLE 28. SUMMARY OF POTENTIAL KEY IMPACTS OF IMPLEMENTING THE ALTERNATIVES FOR MUIR WOODS NATIONAL MONUMENT

Potential Key Impacts on Muir Woods National Monument				
	No Action	Alternative 1	Alternative 2	Alternative 3 – NPS Preferred
<b>Special Status Species (federal and state threatened and endangered species)</b>	<p>§ <b>Coho salmon</b> (federal endangered) and <b>steelhead trout</b> (federal threatened), central California Coast: “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.</p> <p>§ <b>Northern spotted owl</b> (federal threatened): “may affect, not likely to adversely affect.”</p> <p>§ <b>Marbled murrelet</b> (federal threatened): “may affect, not likely to adversely affect.”</p>	<p>§ <b>Coho salmon</b> (federal endangered) and <b>steelhead trout</b> (federal threatened), central California Coast: “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.</p> <p>§ <b>Northern spotted owl</b> (federal threatened): “may affect, not likely to adversely affect.”</p> <p>§ <b>Marbled murrelet</b> (federal threatened): “may affect, not likely to adversely affect.”</p>	<p>§ <b>Coho salmon</b> (federal endangered) and <b>steelhead trout</b> (federal threatened), central California Coast: “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.</p> <p>§ <b>Northern spotted owl</b> (federal threatened): “may affect, not likely to adversely affect.”</p> <p>§ <b>Marbled murrelet</b> (federal threatened): “may affect, not likely to adversely affect.”</p>	<p>• <b>Coho salmon</b> (federal endangered) and <b>steelhead trout</b> (federal threatened), central California Coast: “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.</p> <p>• <b>Northern spotted owl</b> (federal threatened) “may affect, not likely to adversely affect.”</p> <p>• <b>Marbled murrelet</b> (federal threatened) “may affect, not likely to adversely affect.”</p>
<b>Cultural Resources</b>				
<b>Archeological Resources</b>	<p>Because much of the monument has not been surveyed for archeological resources, there is potential for the monument to contain buried prehistoric and historic resources. Such resources could potentially be subject to loss of integrity from natural processes, ongoing agricultural and ranching operations, and inadvertent visitor activity or vandalism. Adverse impacts would be permanent and of minor to moderate intensity.</p> <p>Archeological surveys and/or monitoring would precede any ground-disturbing activity. If significant archeological resources could not be avoided, an appropriate mitigation strategy would be developed in consultation with the state historic preservation officer. Any adverse impacts on archeological resources would be permanent and minor to moderate in intensity.</p>	<p>Because much of the monument has not been surveyed for archeological resources, there is potential for the monument to contain buried prehistoric and historic resources. Such resources could potentially be subject to loss of integrity from natural processes, ongoing agricultural and ranching operations, and inadvertent visitor activity or vandalism. Adverse impacts would be permanent and of minor to moderate intensity.</p> <p>There would be more opportunities to identify and evaluate archeological resources, and provide stabilization, security, or other protection commensurate with their significance and sensitivity—a beneficial impact. Such resources could also be incorporated into visitor interpretive opportunities.</p> <p>Archeological surveys and/or monitoring would precede any ground-disturbing activity. If significant archeological resources could not be avoided, an appropriate mitigation strategy would be developed in consultation with the state historic preservation officer. Any adverse impacts on archeological resources would be permanent and minor to moderate in intensity.</p>	<p>Because much of the monument has not been surveyed for archeological resources, there is potential for the monument to contain buried prehistoric and historic resources. Such resources could potentially be subject to loss of integrity from natural processes, ongoing agricultural and ranching operations, and inadvertent visitor activity or vandalism. Adverse impacts would be permanent and of minor to moderate intensity.</p> <p>Archeological surveys and/or monitoring would precede any ground-disturbing activity. If significant archeological resources could not be avoided, an appropriate mitigation strategy would be developed in consultation with the state historic preservation officer. Any adverse impacts on archeological resources would be permanent and minor to moderate in intensity.</p>	<p>Because much of the monument has not been surveyed for archeological resources, there is potential for the monument to contain buried prehistoric and historic resources. Such resources could potentially be subject to loss of integrity from natural processes, ongoing agricultural and ranching operations, and inadvertent visitor activity or vandalism. Adverse impacts would be permanent and of minor to moderate intensity.</p> <p>There would be more opportunities to identify and evaluate archeological resources, and provide stabilization, security, or other protection commensurate with their significance and sensitivity—a beneficial impact. Such resources could also be incorporated into visitor interpretive opportunities.</p> <p>Archeological surveys and/or monitoring would precede any ground-disturbing activity. If significant archeological resources could not be avoided, an appropriate mitigation strategy would be developed in consultation with the state historic preservation officer. Any adverse impacts on archeological resources would be permanent and minor to moderate in intensity.</p>
<b>Ethnographic Resources/ Traditional Cultural Properties</b>	<p>Surveys and research are necessary to determine whether resources within the monument are eligible for listing as a traditional cultural property and are a prerequisite for understanding the resource’s significance, as well as the basis of informed decision making in the future regarding how the resource should be managed. Such surveys and research would be a negligible to minor, beneficial long-term impact.</p>	<p>Surveys and research are necessary to determine whether resources within the monument are eligible for listing as a traditional cultural property and are a prerequisite for understanding the resource’s significance, as well as the basis of informed decision making in the future regarding how the resource should be managed. Such surveys and research would be a negligible to minor, beneficial long-term impact.</p>	<p>Surveys and research are necessary to determine whether resources within the monument are eligible for listing as a traditional cultural property are a prerequisite for understanding the resource’s significance, as well as the basis of informed decision making in the future regarding how the resource should be managed. Such surveys and research would be a negligible to minor, beneficial long-term impact.</p>	<p>Surveys and research are necessary to determine whether resources within the monument are eligible for listing as a traditional cultural property and are a prerequisite for understanding the resource’s significance, as well as the basis of informed decision making in the future regarding how the resource should be managed. Such surveys and research would be a negligible to minor, beneficial long-term impact.</p>
<b>Historic Structures</b>	<p>The monument would continue to stabilize and preserve historic structures as financial resources and opportunities become available. The monument’s historic structures, such as Muir Woods National Monument Historic District and historic buildings at Camp Hillwood, have generally retained their integrity, but the incremental and piecemeal approach</p>	<p>Historic buildings in the Muir Woods National Monument Historic District and at Camp Hillwood would be rehabilitated and adaptively used for interpretive, educational, recreational, administrative, and stewardship activities/purposes. This would result in long-term, beneficial impacts because their historical and</p>	<p>To fully restore the primeval character and natural conditions of the monument, all historic structures in the monument (including unevaluated properties in the Muir Woods Addition area) would be removed under this alternative. These actions would result in permanent adverse impacts of major intensity because historic</p>	<p>Actions under alternative 3 would result in long-term, beneficial impacts on historic buildings in the Muir Woods Historic District because their historical and architectural values would be preserved. Some historic structures of Camp Hillwood could be stabilized and adaptively used, resulting in long-term beneficial</p>

TABLE 28. SUMMARY OF POTENTIAL KEY IMPACTS OF IMPLEMENTING THE ALTERNATIVES FOR MUIR WOODS NATIONAL MONUMENT

Potential Key Impacts on Muir Woods National Monument				
	No Action	Alternative 1	Alternative 2	Alternative 3 – NPS Preferred
	to preservation and maintenance, as well as their various adaptive uses, has resulted in long-term, minor to moderate, adverse impacts because historic buildings, fabric, and integrity have been lost.	architectural values would be preserved. Plans for evaluating other historic buildings under National Register of Historic Places criteria in the Muir Woods Addition would afford preservation treatment to determined-eligible structures and thus result in long-term, beneficial impacts on potentially eligible buildings. Although increased visitation could accelerate the deterioration of historic structures, monitoring human impacts on historic structures, increased ranger patrol, and increased historical interpretation could indirectly discourage vandalism and inadvertent impacts and minimize adverse impacts. Adverse impacts would be long term and negligible to minor in intensity.	structures would be lost.	impacts. However, other structures could be removed, resulting in permanent adverse impacts of minor intensity. Buildings in the Muir Woods Addition area would be evaluated against National Register of Historic Places criteria, and those determined eligible would be stabilized, resulting in long-term beneficial impacts. Although increased visitation could accelerate the deterioration of historic structures, monitoring human impacts on historic structures, increased ranger patrol, and increased historical interpretation could indirectly discourage vandalism and inadvertent impacts and minimize adverse impacts. Adverse impacts would be long term and negligible to minor in intensity.
<b>Cultural Landscape Resources</b>	Overall, the cultural landscape at the monument retains its historic natural appearance, and preservation treatment of cultural landscape features is ongoing as opportunities arise. This continuing management under the no-action alternative would result in mostly long-term, negligible, and beneficial impacts, and some individual impacts that are minor and adverse.	Actions under alternative 1 would result in long-term, beneficial impacts on cultural landscape resources because much of the monument’s cultural landscape, including historic trails and associated facilities, would be preserved. The introduction of new elements into the cultural landscape, such as restrooms and drinking water facilities, would result in some long-term adverse impacts of minor intensity.	To more fully restore the primeval character and natural conditions of the monument, virtually all cultural landscape features, including the historic structures, would be removed under alternative 2. Although some cultural landscape features would be preserved if not in conflict with natural resource goals, many features would be lost and some would be redesigned or relocated. Thus, actions under alternative 2 would result in permanent and long-term adverse impacts of major intensity to the monument’s cultural landscape resources.	Alternative 3 would provide the most comprehensive retention, rehabilitation, and preservation of cultural landscape resources in the monument, resulting in overall long-term, beneficial impacts. However, construction of new trails and the relocation or redesign of others, as well as the removal of portions of the CCC-constructed erosion-control stone revetments in Redwood Creek, would result in some permanent and long-term, adverse impacts of minor intensity because some cultural landscape resources would be lost and the cultural landscape’s integrity would be diminished. Therefore, the combined impacts of alternative 3 on the monument’s cultural landscape resources would be long term and beneficial; although there would be some permanent and long-term adverse impacts of minor intensity.
<b>Park Collections</b>	The alternatives for the monument’s collections are covered under the environmental consequences in the “Actions Common to All Actions Alternatives” section and by each alternative for Golden Gate National Recreation Area.	The alternatives for the monument’s collections are covered under the environmental consequences in the “Actions Common to All Actions Alternatives” section and by each alternative for Golden Gate National Recreation Area.	The alternatives for the monument’s collections are covered under the environmental consequences in the “Actions Common to All Actions Alternatives” section and by each alternative for Golden Gate National Recreation Area.	The alternatives for the monument’s collections are covered under the environmental consequences in the “Actions Common to All Actions Alternatives” section and by each alternative for Golden Gate National Recreation Area.
Visitor Use and Experience				
	The no-action alternative would result in long-term, minor to moderate, beneficial impacts from continued opportunities to experience the unique and highly valued characteristics of the primeval forest via hiking trails and educational programs. However, minor to moderate adverse impacts on visitor experience from crowding, noise, and informal parking during peak times would continue.	Under alternative 1, impacts on visitor experience would be long term, minor to moderate, and beneficial. The improvements to the arrival experience to the park, along with enhanced educational and interpretive opportunities, directly address the primary interests and concerns of most visitors to the monument.	Alternative 2 would result in long term, minor to moderate, beneficial impacts on visitor experience, primarily due to enhancements to the monument’s natural setting and the promotion of a more authentic and connected visitor experience with the primeval forest. However, long-term, minor to moderate, adverse impacts on visitor experience would also occur, since some visitors would likely find it challenging to visit given the lack of parking and support facilities, and the increased regulation of visitor access.	Actions proposed in the NPS preferred alternative would result in long term, minor to moderate, beneficial impacts on visitor experience. This alternative contributes to the purpose of the monument by providing high quality recreation and education opportunities that welcome a wide audience to experience and understand the most important resources and stories of Muir Woods National Monument.

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Potential Key Impacts on Muir Woods National Monument				
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<b>Social and Economic Environment</b>				
In the context of the local gateway communities and the three adjacent counties, the beneficial impacts on the social and economic environment from the no-action alternative would be long term and minor to moderate. The beneficial impacts could result from maintaining the park's contribution to the local economy and quality of life, existing education and stewardship programs, as well as maintaining collaborative efforts with several local governments and land managers to maintain and expand open land protection in the region.	The beneficial impacts on the quality of life and economy from alternative 1 would be short term to long term and range from minor to moderate for the gateway communities and three adjacent counties. The beneficial impacts would result from: (1) a substantial increase in public outreach programs, visitor orientation, and new welcoming facilities; (2) improved connections to local and regional transportation systems and reduced traffic congestion; (3) new engineering and construction contracts for facility improvements; and (4) job creation from visitor service increases in the park and from shuttle service expansion.	The beneficial impacts on the quality of life and economy from alternative 2 would be short term to long term and minor for the gateway communities and three adjacent counties. The beneficial impacts could result from (1) increased cooperation with other local governments and land managers to pursue preservation of additional public lands in the area, (2) contract work created by various reclamation projects, (3) possible new jobs created by the substantial expansion in the shuttle service for the park, and (4) the expanded shuttle service that would allow more local residents to access the park and reduce traffic congestion.  The adverse impacts from alternative 2 could be long term, ranging from minor to moderate for the gateway communities and three adjacent counties. The adverse impacts could result from a reduction in local business activity from park visitors who would need to use public transit to visit the park.	The beneficial impacts on the quality of life and economy from alternative 3 could be long term, ranging from minor to moderate for the gateway communities and three adjacent counties. The beneficial impacts could result from (1) a moderate increase in public outreach, visitor orientation, and new welcoming facilities at the park; (2) improved connections to local and regional transportation systems and less traffic congestion; (3) a modest number of jobs created by expanded visitor welcoming services and expanded shuttle service; and (4) the community's improved awareness, pride, and appreciation of the national significance of the monument.  The adverse impacts of alternative 3 could be long term and minor for the gateway communities. The adverse impacts could result from a reduction in local business activity due to park visitors using public transit instead of personal vehicles.	
<b>Transportation</b>				
With no further action taken, visitor connections to Muir Woods National Monument and the functionality of the transportation system to the monument could experience a long-term, minor to moderate, adverse impact. Access roads and intersections on State Route 1 between Highway 101 and Muir Woods National Monument would continue to be congested, slowing shuttle service, and making it difficult at peak times for emergency vehicles to travel in the area. The existing parking lots at the monument are likely to continue to fill early in the day from May to September, particularly on the weekends, and the unsafe roadside parking situation could also continue. On a positive note, shuttle service can be expected to see continued increases in ridership, helping reduce road congestion.	The transportation measures included in this alternative are likely to have a long-term, major, beneficial impact on connections between both ferry and regional bus transit and Muir Woods National Monument and the Muir Woods Shuttle. The shuttle would be key to providing sustainable access to the monument. A much larger proportion of visitors could be expected to park remotely and take the shuttle or express service from San Francisco.  The reduction in the number of cars on the roads approaching Muir Woods National Monument would have a long-term, moderate, beneficial impact on the functionality of the transportation system by reducing congestion. The reduction in visitor-related congestion would allow the shuttles to stay on schedule, and would allow emergency vehicles improved access to the area. This alternative could have a long-term, minor to moderate, beneficial impact on pedestrian and bicycle access by making the access roads safer for these visitors due to reduced traffic and congestion and reduction of road shoulder parking, and by re-designing the walkways from the entry area to the monument so they are separated from auto traffic. Even with a 33% reduction in parking, and a projected increase in demand, there would still be adequate parking during the off-season (October through April) when the shuttle is not running. During the peak season, the reduction in parking would be offset by an increase in transit service. The reduction in parking could have a long-term,	Alternative 2 proposes actions which would substantially alter the transportation system serving Muir Woods National Monument. Redesign of pedestrian access to the monument entrance is likely to have a long-term, moderate, beneficial impact on visitor access and safety.  In conjunction with the parking provided at the off-site welcome center and other remote parking lots and the greatly increased transit service to the monument, this alternative would have a long-term, major, beneficial, impact on availability of transit, improved traffic flow, and number and capacity of transit connections.  Removing parking from Muir Woods National Monument is likely to result in a reduction in the number of cars on the roads in southwest Marin, allowing transit to run on schedule and emergency vehicles to have access, and offering less auto congestion to residents. However, while expanded transportation options may increase visitation, from the point of view of the visitor who arrives at the monument by car and is unable to park, the impact would be long-term, moderate, and adverse, limiting the ability of some visitors to visit the monument.  The increase in transit services from San Francisco and the Sausalito Ferry, if fully funded through points in south Marin, is likely to have long-term, major, beneficial effects on the transportation system to the monument as well as throughout the southwest Marin County area, by increasing multimodal opportunities to get to the monument and increasing connectivity to regional	The transportation measures included in this alternative are likely to have a long-term, major, beneficial impact on connections between both ferry and regional bus transit and Muir Woods National Monument and the Muir Woods Shuttle. The shuttle would become the primary mode of access to the monument during peak demand periods. A much larger proportion of visitors could be expected to park remotely and take the shuttle or express service from San Francisco.  The reduction in the number of cars on the roads approaching Muir Woods National Monument would have a long-term, moderate, beneficial impact on the functionality of the transportation system by reducing congestion. The reduction in visitor-related congestion would allow the shuttles to stay on schedule, and would allow emergency vehicles improved access to the area. This alternative could have a long-term, minor to moderate, beneficial impact on pedestrian and bicycle access by making the access roads safer for these visitors due to reduced traffic and congestion and reduction of road shoulder parking, and by re-designing the walkways from the entry area to the monument so they are separated from auto traffic. Even with a 33% reduction in parking, and a projected increase in demand, there would still be adequate parking during the off season (October through April) when the shuttle is not running. During the peak season, the reduction in parking would be offset by an increase in transit service. The reduction in parking could have a long-term,	

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		moderate, adverse impact on parking availability on those days when the shuttle is not running.	transportation. Auto access may experience a long-term, minor to moderate, beneficial impact since there may be much less auto traffic on Muir Woods Road, while bus traffic on State Route 1 would increase considerably.	moderate, adverse impact on parking availability on those days when the shuttle is not running.
Park Management, Operations, and Facilities				
	Continued long-term, moderate, beneficial impacts on operations would result from partner and volunteer efforts. The continued impact of low staffing levels on park operations is moderate, long-term, and adverse. Inadequate project and operational funding would result in major, long-term, adverse impacts on park facilities. Inappropriate space for staff would also result in continued long-term, minor to moderate, adverse impacts on monument operations.	Increased staff would result in moderate, long-term, beneficial impacts, if funded. If funding is available for construction, rehabilitation, restoration, and demolition projects, these projects would result in moderate, long-term, beneficial impacts on park operations.  Construction and landscape restoration activities would also result in short-term, minor, adverse impacts while they are underway. However, if funding and needed staffing levels are not made available when these actions are implemented, the proposed actions would have long-term, moderate, adverse effects on park operations.	Increased staff would result in moderate, long-term, beneficial impacts, if funded. If fully funded, construction, rehabilitation, restoration, and demolition projects proposed in the alternative would result in major, long-term, beneficial impacts on park operations.  Construction and landscape restoration activities also would result in short-term, minor, adverse impacts on park operations. Removal of much of the development from inside the monument could make public safety responses more difficult, and would result in a minor to moderate, long-term, adverse impact to park operations. However, if funding and needed staffing levels are not made available when these actions are implemented, the proposed actions would have long-term, moderate, adverse effects on park operations.	Increased staff would result in a moderate, long-term, beneficial impact if adequate funding is available. If funding is available, construction, rehabilitation, restoration, and demolition projects proposed in the alternative would result in moderate, long-term, beneficial impacts on park operations.  Construction and landscape restoration activities also would result in short-term, minor, adverse impacts on park operations while the activities are underway. However, if funding and needed staffing levels are not made available when these actions are implemented, the proposed actions would have long-term, moderate, adverse effects on park operations.







## INTRODUCTION

General management plans for national park units are required by law to identify and address implementation commitments for user capacity, also known as carrying capacity. The National Park Service defines user capacity as the types and levels of visitor use that can be accommodated within a particular national park area while sustaining the quality of park resources and visitor experience consistent with the purpose of that national park. Managing user capacity in national parks is inherently complex and depends not only on the number of visitors, but also on where the visitors go, what they do, and the “footprints” they leave behind. In managing for user capacity, the park staff and partners rely on a variety of management tools and strategies, rather than relying solely on regulating the number of people in a park area. In addition, the ever-changing nature of visitor use in parks requires a deliberate and adaptive approach to user capacity management.

The foundations for making user capacity decisions in this general management plan are the purpose, significance, special mandates, and management zones associated with the national park and monument. The purpose, significance, and special mandates define why the park was established and identify the most important resources and values—including visitor opportunities—that are to be protected and provided. The management zones in each alternative describe the desired resource conditions and visitor experience, including appropriate types of activities and general use levels, for different locations throughout the two parks—Golden Gate National Recreation Area and Muir Woods National Monument. The zones, as applied in the alternatives, are consistent with, and help achieve, the specific purpose, significance, and special mandates for each park. As part of the NPS commitment to the implementation of user capacity,

the park staff would use these directives to guide the types and levels of visitor use that would be accommodated while sustaining the quality of park resources and visitor experience consistent with the purposes of both parks.

In addition to these directives in areas where use and past research and study have demonstrated a need, this plan also includes specific indicators and standards for Alcatraz Island in the Golden Gate National Recreation Area and for Muir Woods National Monument. Indicators and standards are measurable variables that would be monitored to track changes in resource conditions and visitor experience. The indicators and standards help the National Park Service ensure that desired conditions are being attained, supporting the fulfillment of the legislative and policy mandates of the park and the monument. The general management plan also identifies the types of management actions that would be taken to achieve desired conditions and related legislative and policy mandates.

Tables 1 and 2 include the indicators, standards, and potential future management strategies allocated by management zones for Alcatraz Island and Muir Woods National Monument that would be implemented as a result of this planning effort. The planning team considered many potential issues and related indicators that would identify impacts of concern, but those described were considered the most salient and feasible given the importance and vulnerability of the resource or visitor experience affected by visitor use. Standards that represent the minimum acceptable condition for each indicator were then assigned, taking into consideration the qualitative descriptions of the desired conditions, data on existing conditions, relevant research studies, staff management experience, and scoping on

public preferences. A range of management strategies have been identified that would be implemented if needed in response to changing conditions to ensure that standards are maintained and desired conditions are protected. If new strategies are needed, an analysis would be completed to identify the most effective and feasible action for implementation. Implementation of some of these management strategies in the future may require additional compliance and public involvement

User capacity decision making is a form of adaptive management (see the following figure). It is an iterative process in which management decisions are continuously informed and improved by monitoring the indicators and standards. Adjustments are made as appropriate. As monitoring park conditions continues, managers may decide to modify or add indicators if better ways are found to measure important changes in resource and social conditions. Information on the NPS monitoring efforts, related visitor use management actions, and any changes to the indicators and standards would be available to the public.

## MONITORING

Some of the issues and related indicators noted for both Golden Gate National Recreation Area and Muir Woods National Monument, such as impacts on bird populations, invasive species, and wear on cultural resources, are also highly influenced by regional and global threats such as pollution, disease, and climate change. Isolating visitor use impacts on these resources is not easy and may seem less significant than these other serious threats.

However, there are visitor management actions that can help minimize these impacts and reduce the stress on park resources, providing tangible resource and social benefits.

The park staff would continue general monitoring of use levels and patterns throughout the park and monument. In addition, the park staff would monitor these user capacity indicators. The rigor of monitoring the indicators (e.g., frequency of monitoring cycles, amount of geographic area monitored) may vary considerably depending on how close existing conditions are to the standards. If the existing conditions are far from exceeding the standard, the rigor of monitoring may be less than if the existing conditions are close to or trending toward the standard.

In addition, the initial phases of monitoring for the indicators and standards defined above would help the National Park Service determine if any revisions are needed. The initial application of the indicators and standards would determine if the indicators are accurately measuring the conditions of concern and if the standards truly represent the minimally acceptable condition of the indicator. Park staff may decide to modify the indicators or standards and revise the monitoring program if better ways are found to measure changes caused by visitor use. If use levels and patterns change appreciably, the park may need to initiate additional monitoring of new indicators to ensure that desired conditions are protected. This iterative learning and refining process is the strength of the NPS user capacity management program, in that it can be adapted and improved as knowledge grows.

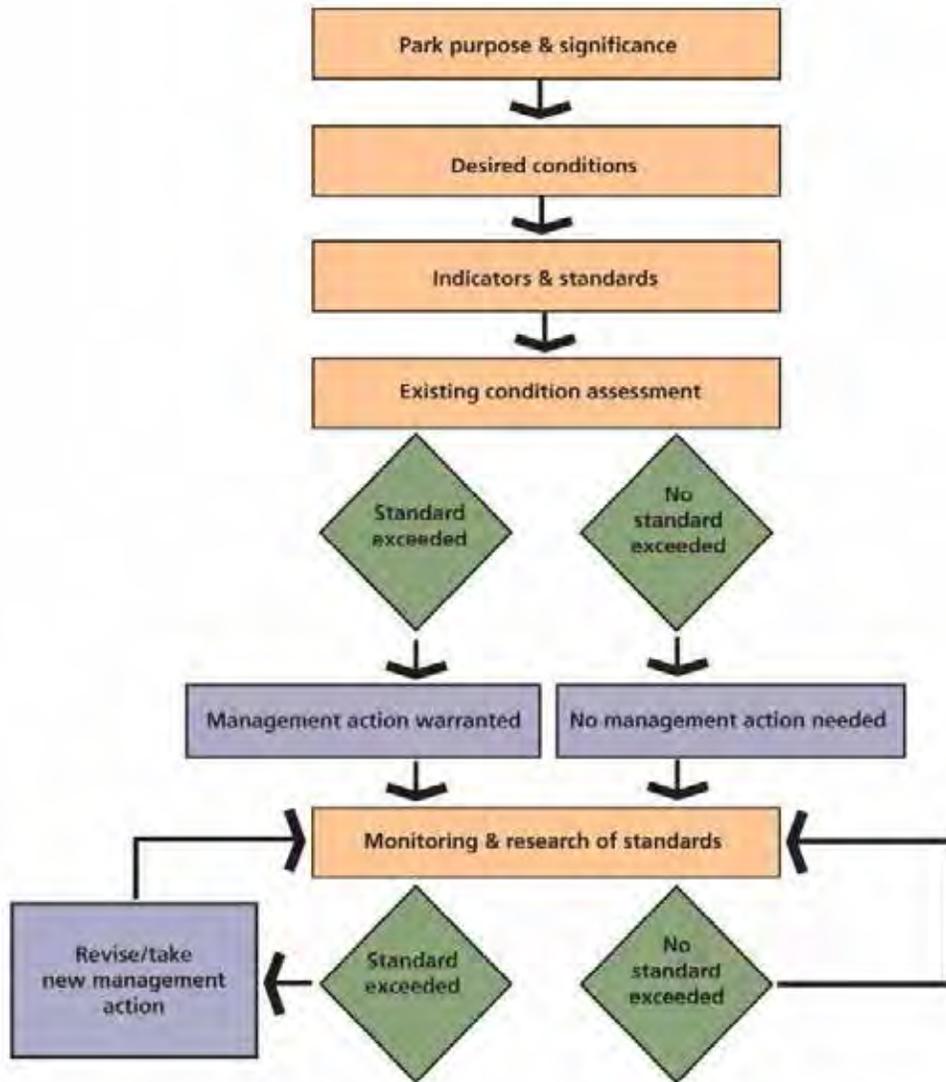


FIGURE 3. USER CAPACITY FRAME WORK

## GOLDEN GATE NATIONAL RECREATION AREA

Golden Gate National Recreation Area is a popular, heavily visited national park with extensive and diverse visitor opportunities that are in great demand. In addition, the park contains unique resources, some of which are highly vulnerable to visitor use impacts. Further, visitor use opportunities occur over an extensive area with many access points and use areas that make regulating use levels, activities, and patterns complex. Managing user capacity in this unique setting is highly challenging.

Given these challenges and limited staff and budgets, user capacity management must be strategic through the efficient use of staff time and funding, targeted focus on areas of most concern within the park, and creative approaches to monitoring and developing management strategies. For all areas of Golden Gate National Recreation Area, the management zones provide the most important implementation commitment for user capacity because they describe the desired resource conditions and visitor experience—including appropriate types and levels of use, visitor services, and development—for all sites within the planning area. These management zones are consistent with and help achieve Golden Gate National Recreation Area’s purpose, significance, and special mandates. Further, there are many existing visitor use management strategies already in use that will continue to be implemented to help the park staff achieve these desired conditions. Examples of some of these existing management strategies include the following:

- § providing visitor education materials on low-impact practices (e.g., informational signs about off-trail impacts)
- § establishing maximum group size limits (e.g., the number of bicyclists in a group)
- § managing sites (e.g., closure of informal trails and active restoration)
- § closing sensitive resource areas (e.g., no visitor access to the tide pools at Point Bonita)
- § establishing regulations on visitor activities (e.g., hiking restricted to on-trail travel on the Coastal Trail)
- § requiring permits (e.g., all special events require a special use permit)

The management strategies for some specific visitor use activities have recently been the focus of separate public planning processes. These activities include the management of beach fires at Ocean Beach, equestrian activities in the Marin Headlands, dog walking throughout Golden Gate National Recreation Area, and transportation within and outside park boundaries. The decisions that have been made or are being considered on appropriate visitor use management strategies for these activities are consistent with desired conditions outlined in this plan and will help the National Park Service achieve these conditions.

In addition to the implementation commitments for the desired conditions (identified in the zone descriptions), the park staff selected user capacity indicators and standards for Alcatraz Island, given the popularity of the site, the specialized visitor experience objectives, and the sensitivity of some natural and cultural resources. In the future, as the need presents itself and other planning opportunities arise, indicators and standards will be identified for other areas within Golden Gate National Recreation Area. Some of the topics for future consideration as indicators will likely

include traffic congestion, parking in locations not designated for parking, informal trails, invasive plants, and encounter rates on trails.

The park staff considered many potential resource and social indicators that would represent visitor use influences on resource and social conditions at Alcatraz Island. The indicators selected for inclusion in the general management plan were those that were considered to be the most important, as well as feasible, for long-term evaluation.

### PRIORITY RESOURCE INDICATORS

The priority resource indicators for Alcatraz Island are associated with the issues of disturbance to birds, vandalism, and disturbance and wear on cultural resources. The conditions of these resources are already being monitored in various forms, but the indicators identified will help the park staff track specific influences to these resources as a result of visitor use.

Impacts on bird populations from visitor activities can include unintentional disturbance, harassment, and feeding. These types of impacts can have substantial effects on the health, abundance, and diversity of targeted bird species. Alcatraz Island serves as one of the few estuarine breeding sites for many marine birds (Saenz et al. 2006). Disturbance to Brandt's cormorants was selected as the user capacity indicator because the island is home to San Francisco Bay's only Brandt's cormorant colony. The populations of Brandt's cormorants on Alcatraz Island have been the focus of study by the Point Reyes Bird Observatory since 1996, as part of their annual seabird monitoring program. The bird disturbance trend data collected by the observatory, along with the long-term desired conditions for marine bird habitat within the different zones on Alcatraz Island, served as the basis for selection of the standards for this indicator. Some of the existing management activities the National Park Service has

already been employing in relation to this issue include visitor education via signs, staff and docents, barriers in specific areas, and area and seasonal closures.

Visitor use impacts on cultural resources include general wear on historic structures and some occurrences of unintentional disturbance and vandalism to archeological resources, historic structures, and the recently restored historical gardens. The specific indicators focus on existing monitoring protocols, including tracking incidences of graffiti and vandalism, and assessing site conditions as affected by visitor use. The standards are set at a low threshold since cultural resources are nonrenewable, so impacts, especially those that represent depreciative behavior, must be minimized to the extent possible. Visitor use impacts can disturb significant features of these resources, which may cause a loss of site integrity over time. Some management activities that the National Park Service has already been employing in relation to this issue include visitor education via signage, interpretive programs and roving patrols, barriers in specific areas, and area closures.

### PRIORITY SOCIAL INDICATORS

The priority social indicators selected for Alcatraz Island are associated with the issues of crowding and congestion. Given the popularity of Alcatraz Island as a tourist destination within San Francisco, the issues of crowding and congestion have been the focus of management efforts. In addition, these topics have been addressed in long-term visitor use studies conducted by the Park Studies Laboratory at the University of Vermont in cooperation with the National Park Service (Manning et al. 2007). The visitor activities within the cell house have been, and will continue to be, the highest priority area for some of these issues. Crowding and congestion problems may affect visitors' ability to experience high-quality educational opportunities and could on occasion, affect visitor health and safety.

The importance of the indicators selected, which include the number of people per view, the number of people at one time in the cell house, and the wait times for the ferry, are supported by the visitor survey research (Manning et al. 2007) along with ongoing feedback provided to park staff by the visiting public. The standards set for these indicators were based on specific data collected regarding the levels of use experienced or observed, as well as visitors' evaluations of acceptability for different levels of use. Many of these concerns are already tracked to some degree through periodic monitoring of visitor use levels in the cell house, tracking wait times for the ferry, recording visitor complaints, and law enforcement incident reporting. The selected indicators will increase the degree of systematic monitoring and assessment of these issues. Some of the management activities the National Park Service has already been employing in relation to these issues include pre-trip planning information to encourage voluntary redistribution of use, reservation systems, and on-site education and programming to direct the flow of visitor use once on the island.

## MANAGING USE LEVELS

Currently, Alcatraz Island receives about 4,400 visitors per day during the peak season and up to 5,000 visitors per day if evening programs are being offered. This level of use is—and will continue to be—closely regulated through the number of tickets that are offered each day for ferry access to the island. Given NPS existing knowledge of resource and social conditions on the island, this amount of use allows the National Park Service and its partners to protect resources and provide high-quality visitor experiences, including meeting specific standards. In this plan, all of the alternatives for Alcatraz Island provide new visitor opportunities that would allow the National Park Service and its partners to better distribute and manage visitor use on the island. In the future, incremental increases in the levels of visitor use may be considered. However, increases in use levels would be approached carefully and in an incremental and experimental process using monitoring data and related research to ensure that the National Park Service implementation commitments to the park's legislative and policy mandates, desired conditions, and related standards are always being achieved.

TABLE 29. ALCATRAZ ISLAND: USER CAPACITY INDICATORS, STANDARDS, MONITORING STRATEGIES, AND MANAGEMENT STRATEGIES

Indicator	Assigned Zone/Area	Standard	Monitoring Strategy	Potential Management Strategies
<b>Topic: Visitor-caused Bird Disturbance</b>				
Number of incidents of visitor disturbance to Brandt's cormorants that result in impacts on individual birds during nesting season.	Evolved cultural landscape zone.	No more than an average seasonal rate of 0.02 major/moderate/minor island-based visitor-induced disturbances per hour to Brandt's cormorants during nesting season. In addition, if observers note more than one	Continue monitoring based on Point Reyes Bird Observatory (PRBO) protocol.	<ul style="list-style-type: none"> <li>§ Increase visitor education on low-impact practices and park regulations.</li> <li>§ Increase staff patrols and use of docents.</li> <li>§ Increase signage.</li> <li>§ Increase fencing, barricades, visual barriers, vegetative buffers.</li> <li>§ Restrict access to ranger/docent led only.</li> </ul>

**TABLE 29. ALCATRAZ ISLAND: USER CAPACITY INDICATORS, STANDARDS, MONITORING STRATEGIES, AND MANAGEMENT STRATEGIES**

Indicator	Assigned Zone/ Area	Standard	Monitoring Strategy	Potential Management Strategies
		disturbance per monitoring session (=6.5 hours), additional management could be considered.		<ul style="list-style-type: none"> <li>§ Restrict visitor access to targeted areas.</li> <li>§ Relocate visitor activities.</li> <li>§ Alter gull management areas.</li> </ul>
Number of incidents of visitor disturbance to Brandt's cormorants that result in subcolony abandonment.	Evolved cultural landscape zone.	No visitor-induced disturbances to Brandt's cormorants that result in subcolony abandonment.	Continue monitoring based on PRBO protocol.	<ul style="list-style-type: none"> <li>§ Increase visitor education on low-impact practices and park regulations.</li> <li>§ Increase staff patrols and use of docents.</li> <li>§ Increase signage.</li> <li>§ Increase fencing, barricades, visual barriers, vegetation buffers.</li> <li>§ Restrict access to ranger/docent led only.</li> <li>§ Restrict visitor access to targeted areas.</li> <li>§ Relocate visitor activities.</li> <li>§ Alter gull management areas.</li> </ul>
Number of incidents of visitor disturbance to Brandt's cormorants that result in impacts on individual birds during nesting season.	Sensitive resource zone (after marine-protected area is designated).	No more than an average seasonal rate of 0.03 major/moderate/minor water-based visitor-induced disturbances to Brandt's cormorants during nesting season. Additional management could be considered if a single water-based disturbance was observed.	Continue monitoring based on PRBO protocol.	<ul style="list-style-type: none"> <li>§ Boat patrols in collaboration with other agencies.</li> <li>§ Target outreach to user groups.</li> <li>§ Increase signage visible from water.</li> <li>§ Use of buoys.</li> <li>§ Collaborate with the Seabird Protection Network for coordinated outreach, education, enforcement.</li> </ul>

**TABLE 29. ALCATRAZ ISLAND: USER CAPACITY INDICATORS, STANDARDS, MONITORING STRATEGIES, AND MANAGEMENT STRATEGIES**

Indicator	Assigned Zone/ Area	Standard	Monitoring Strategy	Potential Management Strategies
Number of incidents of visitor disturbance to Brandt’s cormorants that result in subcolony abandonment.	Sensitive resource zone (after marine-protected area is designated).	No visitor-induced disturbances to Brandt’s cormorants that result in subcolony abandonment.	Continue monitoring based on PRBO protocol.	§ Boat patrols in collaboration with other agencies. § Targeted outreach to user groups. § Increased signage visible from water. § Use of buoys. § Collaborate with the Seabird Protection Network for coordinated outreach, education, enforcement.
<b>Topic : Vandalism of Cultural Resources</b>				
Number of incidents of graffiti/vandalism.	Historic immersion zone (cell house tour route, areas open to public).	No more than one minor incident* per month. No major incidents.** <b>* Minor Incident:</b> Small, easily repairable damage (e.g., new ink/paint graffiti over paintable surface). <b>** Major Incident:</b> Irreparable damage resulting in major resource loss and significant recovery cost (e.g., new graffiti over historic graffiti).	Ongoing monitoring as part of regularly scheduled staff and volunteer patrols and collection of visitor comments. More rigorous comparison of existing conditions to the baseline on a periodic basis.	§ Increase in visitor education on low-impact practices and park regulations. § Increase staff presence. § Increase monitoring. § Temporarily close area while undergoing conservation treatment. § Close problem area except under supervision.
<b>Topic: Visitor-caused Disturbance To Cultural Resources</b>				
Disturbance of plants in restored gardens.	All zones with restored gardens.	No more than a 20% loss/major disturbance to the plants in areas that are open to the public.	Ongoing monitoring as part of regularly scheduled staff and volunteer patrols and collection of visitor comments. More rigorous comparison of existing conditions to the	§ Increase visitor education on low-impact practices and park regulations. § Increase fences and barriers. § Increase staff presence. § Regulate or restrict access.

**TABLE 29. ALCATRAZ ISLAND: USER CAPACITY INDICATORS, STANDARDS, MONITORING STRATEGIES, AND MANAGEMENT STRATEGIES**

Indicator	Assigned Zone/ Area	Standard	Monitoring Strategy	Potential Management Strategies
			baseline on a periodic basis.	§ Increase monitoring.
Disturbance of rock walls, brickwork, exposed cultural resources.	All zones.	No more than a 5% loss/major disturbance of the feature (rock wall, brickwork, exposed cultural resources).	Ongoing monitoring as part of regularly scheduled staff and volunteer patrols and collection of visitor comments. More rigorous comparison of existing conditions to the baseline on a periodic basis.	§ Increase visitor education on low-impact practices and park regulations. § Increase fences or barriers. § Increase staff presence. § Regulate or restrict access. § Increase monitoring.
Disturbance/loss of ground cover on known archeological sites.	All unpaved areas.	No trampling on known archeological sites, as evidenced by footprints and compaction of soil compared to similar and immediately adjacent soils.	Ongoing monitoring as part of regularly scheduled staff and volunteer patrols and collection of visitor comments. More rigorous comparison of existing conditions to the baseline on a periodic basis.	§ Increase visitor education on low-impact practices and park regulations. § Create or widen existing paths. § Install temporary or permanent signs. § Increase fences/barriers.
<b>Topic: Visitor-caused Wear on Cultural Resources</b>				
Number of incidents regarding wear, tear, or damage on cultural resources from special events.	Historic immersion zone (cell house, VIP tours, SPUG).	No more than two minor incidents per event.  No major incidents.	Continue existing assessment protocols of conditions after each special event.	§ Revise standard operating procedure for VIPs/SPUG events. § Increase in visitor education on low-impact practices and park regulations. § Increase staffing ratio. § Increase physical barriers. § Restrict or reduce access.
<b>Topic: Crowding and Congestion</b>				
People Per View (PPV) on Michigan Avenue.  People at one time (PAOT) on C-D Street.	Historic immersion zone.	No more than 0–43 PPV on Michigan Avenue, 90% of the time.  No more than 0–74 PAOT on C-D Street, 90% of the time.	Periodic photo monitoring and/or observations and visitor surveys.	§ Adjust flow of visitors (for example: timed audio tickets, reconfiguration of tour flow, or scheduling dockside programming). § Adjust boat ticket distribution (e.g., more in the a.m. or p.m.). § Reduce the number of visitors to the island. Increase monitoring to determine and readjust to standard.

**TABLE 29. ALCATRAZ ISLAND: USER CAPACITY INDICATORS, STANDARDS, MONITORING STRATEGIES, AND MANAGEMENT STRATEGIES**

Indicator	Assigned Zone/ Area	Standard	Monitoring Strategy	Potential Management Strategies
Number of times a vessel departs Alcatraz Island leaving visitors in line for more than 15 minutes.	Evolved cultural landscape zone.	No more than two times per month or 12 times annually, excluding emergencies.	Continue existing monitoring and documentation of wait times and visitor comments regarding ferry access.	§ Increase education on the timing of ferries. § Add more boats and/or higher capacity boats. § Adjust programming (for example: close facilities early or cancel programs at certain times). § Limit the number of island visitors (limit tickets sold).

## MUIR WOODS NATIONAL MONUMENT

Similarly to Golden Gate National Recreation Area, the management zones provide the most important implementation commitment for user capacity for Muir Woods National Monument because they describe the desired resource conditions and visitor experience (including appropriate types and levels of use, visitor services, and development) for all sites within the monument. These zones are consistent with and help achieve the monument's purpose, significance, and special mandates. Further, there are many existing visitor use management strategies already in use that would continue to be implemented to help the park staff achieve these desired conditions. Examples of some of these existing management strategies include:

- § visitor education on low-impact practices (e.g., quiet zones and quiet days)
- § management of visitor access (e.g., dedicated park shuttle access during peak season)
- § closure of sensitive resource areas (e.g., no recreational fishing or swimming in Redwood Creek)
- § regulations for visitor activities (e.g., hiking restricted to on-trail travel on the main trail through the woods)
- § permit requirements (e.g., all special events require a special use permit)

In addition to implementation commitments for the desired conditions, the park staff has selected user capacity indicators and standards for Muir Woods National Monument. The park staff considered many potential resource and social indicators that would represent visitor use influences on resource and social conditions within the monument. Similarly to Alcatraz Island, the indicators selected for inclusion in the

general management plan were those that were considered to be the most important, as well as feasible, for long-term evaluation.

### PRIORITY RESOURCE INDICATORS

The priority resource indicators for Muir Woods National Monument are associated with the issues of informal trails (i.e., trails created by visitors leaving designated trails), impacts on soundscapes from human-caused noise, evidence of visitor-caused wear or disturbance to the redwood trees, and the amount and distribution of invasive species.

The proliferation of informal trails in Muir Woods National Monument is not currently a serious problem because the NPS staff has greatly increased efforts to clearly delineate designated trails and to educate visitors to stay on trails. Although conditions have improved and informal trails are not a significant concern currently, any future expansion of informal trails was still considered a high priority issue given the related impacts of vegetation loss; soil erosion; fragmentation of wildlife habitats; and disturbance to rare flora, fauna, and archeological sites (Marion 2008). The indicator for informal trails is based on a modified version of a trail condition classification system developed by Jeff Marion of the U.S. Geological Survey (Marion 2008). Given the associated resource concerns and limited extent of informal trails currently, the standard was set at zero tolerance for new informal trails in order to perpetuate existing conditions over the long term. As mentioned, some management activities the National Park Service has been employing in relation to this issue include educating visitors to stay on trails and clearly marking designated trails. Further, the National Park Service has placed barriers and actively restored informal trails to minimize

continued use. Roving patrols and other education and enforcement techniques have also been used.

Given the high levels of use in the woods, including use by families and groups, noise levels and the frequency of human-introduced sound can affect the natural soundscape, disrupting wildlife and impacting visitor experience. These changes can sometimes influence normal wildlife activities, leading to altered behavior and productivity in individuals and possible modifications in the abundance and distribution of populations (Knight and Gutzwiller 1995). Baseline conditions for monument soundscapes were established through comprehensive noise monitoring in 2006 and 2007. These data, along with visitor surveys, were used to identify the best metrics for soundscape indicators and establish associated standards. There is more discussion below on the studies conducted and how they were used in the planning process. Some of the management activities the National Park Service has been employing in relation to this issue have focused on education regarding low-impact practices, including introducing “quiet days” and “quiet zones” within the woods to encourage visitors to voluntarily modify their behavior and better protect the natural soundscape.

Although visitor use is not the only or even the primary source of invasive species, these species can be introduced and spread through visitor and vehicle activity within the monument. The NPS Inventory and Monitoring program has been monitoring the number of detections and the extent of cover of invasive species as part of the Vital Signs Program. The goal of the program is to target new or expanding infestations (NPS 2006a). The indicators and standards included in table 29 are consistent with those being pursued by the NPS Inventory and Monitoring program. If monitoring detects a change in the number or extent of invasive species, then a problem analysis would be needed to isolate the causal factors. If visitor

use were determined to be a contributor to the observed change in conditions, then the necessary visitor use management strategies would be implemented. Some of the management activities the National Park Service has been employing in relation to this issue include educating visitors to stay on trails, clearly marking designated trails, and restricting activities that may increase the introduction of invasive species.

## PRIORITY SOCIAL INDICATORS

The priority social indicators for Muir Woods National Monument are associated with the issues of crowding and use conflicts. The Park Studies Laboratory at the University of Vermont has conducted a program of social science research at the monument from 2003 to the present (Manning et al. n.d.). These studies collected baseline data on visitor use and users (including detailed travel patterns throughout the park), potential indicators of visitor experience quality, potential standards of quality for specific types of crowding and use conflicts, and visitor attitudes toward alternative management practices. The research resulted in recommended potential indicators that included the number of people within a person’s view, noise impacts, and arrival delays, which contributed to a visitor’s perception of crowding and conflict while visiting Muir Woods (Manning et al. n.d.).

Additional visitor studies were targeted to collect data on visitor preference and acceptability of various use densities (people per view) along trails in the woods, the current number of encounters between groups along secondary trails, as well as number of people at one time in key interpretive areas, which contributed to selection of the standards for the interpretive corridor zone (Manning et al. n.d.). This zone contains both the primary use areas in the redwood forest (including the valley primary trails and interpretive areas such as the redwood cross-section and Pinchot Tree)

and secondary trails. Based on the desired conditions for the interpretive corridor zone and the need to manage the primary use areas in a different manner from the secondary trails, the approach for setting standards varied across these two areas. The primary use areas are managed to accommodate the highest levels of use in the monument—visitors have an expectation of seeing others in these areas. Given these expectations, the planning team assigned the level of use that was deemed acceptable by visitors in the visitor study as the standard for this area (a level that does not affect visitor experience to the extent that a visitor would not return). The secondary trails within the interpretive corridor zone are not intended for high use and there is an expectation for solitude and quiet in these areas, so the planning team assigned the level of use that was deemed preferred by visitors in the visitor study as the standard for this area (a level that does not require action by park management) (Manning et al. n.d.).

In addition, visitor reactions to visitor-caused noise were studied using a series of audio clips simulating a range of visitor-caused noise in the park; these findings contributed to the standards selected for this indicator. The indicators of the percentage of time human sounds are audible and sound pressure level were considered the most meaningful and measurable indicators related to visitor-caused noise (Newman and McCusker 2009).

Finally, the visitor studies evaluated visitor perceptions on acceptable waiting times to find parking and walking times from the parking area. This information, in combination with other national standards for wait times at high-use areas and attraction

sites, contributed to the selection of a standard for this indicator for both auto and shuttle visitors (Manning et al. n.d.; Orca Consulting 2008). Some of the existing management activities that the National Park Service has been employing in relation to these various social issues include educating visitors regarding low-impact practices, providing pre-trip planning information to encourage voluntary redistribution of use to less busy times, and employing the park shuttle system during peak periods to help modify the flow of visitor use to the woods.

## MANAGING USE LEVELS

The level of use at Muir Woods National Monument is not as regulated as it is at Alcatraz Island, but it is currently constrained during the peak season by the amount of parking available and the frequency and size of shuttle buses. All of the alternatives for Muir Woods National Monument call for visitation to be better distributed and managed. However, it is uncertain at this time whether the amount of use per day, if better distributed and managed, would need to be further regulated in order to achieve the desired conditions and related standards identified for the monument. In order to better assess those needs, the National Park Service would continue to conduct analysis of visitor use patterns as part of planning for the redesign of the monument's entrance and parking areas, which is proposed in this plan's action alternatives. The implementation plan would closely examine the need for further regulation of the amount and timing of use as part of the alternatives for reduced parking and an increased emphasis on shuttle access.

**TABLE 30. MUIR WOODS NATIONAL MONUMENT: USER CAPACITY INDICATORS, STANDARDS, MONITORING STRATEGIES, AND MANAGEMENT STRATEGIES**

Indicator	Assigned Zone/Area	Standard	Monitoring Strategy	Potential Management Strategies
<b>Topic: Visitor-created Informal Trails</b>				
<p>Increase in the number of informal trails and change in the condition class of existing informal trails in the redwood forest.*</p> <p>*Problem analysis would be needed to isolate visitor-caused impacts.</p>	<p>Interpretive corridor zone – surrounding Redwood Creek.</p> <p>Sensitive resources zone – the upper slopes.</p> <p>Natural zone – western end of the monument at Mount Tamalpais State Park.</p>	<p>No increase in the number of informal trails, and no increase in the condition class* of existing informal trails from the previously monitored baseline. No class III trails.</p> <p><b>* Trail Condition Classification System:</b> <i>Adapted from descriptive system by Jeff Marion, USGS.</i></p> <p><b>Class I</b> Trail is barely visible. Minimal disturbance of organic litter or vegetation. Very little bare soil is evident along the tread.</p> <p><b>Class II</b> Trail is obvious. Organic litter is disturbed or diminished in places. Slight loss or damage to vegetation. Bare soil is evident along the center of the tread.</p> <p><b>Class III</b> Serious erosion is obvious. Nearly complete loss of organic litter and/or vegetation cover. Bare soil is widespread in a widening tread.</p>	<p>Periodic assessments would be conducted inside monument boundaries and possibly beyond if they are critical to forest health, e.g., areas in Mount Tamalpais State Park adjacent to Redwood Creek. Assessments would take place at the point where the informal trail begins, i.e., where it departs from an existing authorized trail.</p>	<p>§ Formal review of possible causes (including determining whether the informal trail is visitor use or animal related) and to determine most appropriate management response.</p> <p>§ Increase visitor education on low-impact practices and park regulations.</p> <p>§ Place border logs or other barriers along formal trails at the junction with informal trails.</p> <p>§ Restore informal trails by decompacting soils and moving organic debris onto the visible portion of the informal trails to hide them (for class II and III trails, natural topography would be restored prior to any addition of organic matter/litter).</p> <p>§ Add formal trailhead signs explaining the problem and asking visitors to remain on formal trails.</p> <p>§ Enhance marking of the official trail and/or improve adjacent designated trails.</p> <p>§ Formalize an informal trail, possibly on a new alignment, to accommodate visitor interest.</p> <p>§ Install temporary or permanent signs.</p> <p>§ Consider more substantial restoration work (after all foot traffic has been removed from the</p>

**TABLE 30. MUIR WOODS NATIONAL MONUMENT: USER CAPACITY INDICATORS, STANDARDS, MONITORING STRATEGIES, AND MANAGEMENT STRATEGIES**

Indicator	Assigned Zone/Area	Standard	Monitoring Strategy	Potential Management Strategies
				informal trail). § Increase enforcement or presence of rangers or volunteers. § Area closures. § Reduce use levels.
<b>Topic: Impacts on Soundscapes from Human Noise</b>				
Sound pressure level.  Percent time human sounds are audible.	Interpretive corridor zone.	Daytime (0700–1900) L50 dBA: 34 (note: L50 is the sound level that is exceeded 50% of the time).  Percent time human sounds audible: 45%.	Monitoring would be conducted on a periodic basis using digital recordings and/or on-site listening protocol as appropriate. If a standard is exceeded, the type and location of each contributing noise source would be identified.	§ Increase visitor education on low-impact practices and park regulations. § Designate more quiet zones and days. § Redistribute visitor flow and/or reduce use levels. § Increase education for organized groups. § Change in the regulations of organized groups (e.g., group size limits).
Difference between Lnat and existing ambient L50.	Natural and sensitive resources zones.	Difference between Lnat and existing ambient (L50) is 2 dBA or less during the daytime (0700–1900).	Monitoring would be conducted on a periodic basis using digital recordings and/or an on-site listening protocol as appropriate. If a standard is exceeded, the type and location of each contributing noise source would be identified.	§ Increase visitor education on low-impact practices and park regulations. § Designate more quiet zones and days. § Redistribute visitor flow and/or reduce use levels.

**TABLE 30. MUIR WOODS NATIONAL MONUMENT: USER CAPACITY INDICATORS, STANDARDS, MONITORING STRATEGIES, AND MANAGEMENT STRATEGIES**

Indicator	Assigned Zone/Area	Standard	Monitoring Strategy	Potential Management Strategies
<b>Topic: Invasive Plant Species</b>				
<p>Number of priority invasive plant species detections.*</p> <p>Extent of invasive plant cover.*</p> <p>*Problem analysis would be needed to isolate visitor-caused impacts.</p>	<p>All zones.</p>	<p>No increase in the number of new priority invasive plant species.*</p> <p>No increase in the percent cover.*</p>	<p>Continue monitoring per the Inventory and Monitoring Program.</p>	<p>§ Increase visitor education on low-impact practices and park regulations.</p> <p>§ Require the cleaning of gear that is capable of transferring plant material.</p> <p>§ Temporarily or permanently close areas.</p> <p>§ Reduce use levels.</p> <p>§ Removal of invasives and restoration of disturbed areas.</p>
<b>Topic: Crowding and Congestion</b>				
<p>PPV along valley primary trails.</p> <p>PAOT at the Pinchot Tree and Redwood Crosscut.</p>	<p>Interpretive corridor zone: primary visitor areas in the redwood forest including the valley trails, redwood cross-section, and Pinchot Tree.</p>	<p>No more than 18 PPV per 50-meter trail section along valley primary trails, 90% of the time during park operating hours.</p> <p>No more than 30 PAOT at the Pinchot Tree and Redwood Crosscut, 90% of the time during park operating hours.</p>	<p>PPV and PAOT would be measured by still photography from a few fixed positions at various times through the year. Visitor counts taken from the photographs would be used to determine the appropriate management actions. The standard for crowding and congestion (acceptability of PPV and PAOT range) would be updated by a focused survey every five years or when major changes are implemented.</p>	<p>§ Encourage voluntary redistribution of use across the day.</p> <p>§ Change the timing and availability of transit and tour bus access.</p> <p>§ Direct visitor flow to other areas and trails.</p> <p>§ Reduce use levels.</p>
<p>Number of encounters along secondary trails with other visitor groups (one or more people) traveling in the opposite direction.</p>	<p>Interpretive corridor zone: secondary trails including Hillside and Fern Creek.</p>	<p>No more than 40 encounters with other visitor groups traveling in the opposite direction, 90% of the time during park operating hours.</p>	<p>Encounter rates would be measured by an observer hiking along principal secondary trails at various times of day and days of week throughout the year. The data would be used to determine the appropriate management actions.</p>	<p>§ Encourage voluntary redistribution of use across the day.</p> <p>§ Change the timing and availability of transit and tour bus access.</p> <p>§ Direct visitor flow to other areas and trails.</p> <p>§ Reduce use levels.</p>

**TABLE 30. MUIR WOODS NATIONAL MONUMENT: USER CAPACITY INDICATORS, STANDARDS, MONITORING STRATEGIES, AND MANAGEMENT STRATEGIES**

Indicator	Assigned Zone/Area	Standard	Monitoring Strategy	Potential Management Strategies
			The standard for crowding and congestion (preference for encounter rates) would be updated by a focused survey every five years or when major changes are implemented.	
<p>Approximate arrival experience time (from arrival* to entering the interpretive corridor zone).</p> <p>*Arrival for auto visitors begins when vehicles turn off Muir Woods Road and into a parking lot at the monument.</p> <p>*Arrival for shuttle visitors begins when the shuttle bus pulls into the designated bus loading/unloading zone.</p>	Diverse opportunities zone.	Maximum arrival time of 20 minutes per individual or group, 90% of the time during park operating hours.	Regular observations of the arrival experience time would be conducted. This indicator and standard will be further tested and adjusted as part of implementation planning for increased shuttle access and the redesigned entrance to the monument.	<ul style="list-style-type: none"> <li>§ Encourage voluntary redistribution of use.</li> <li>§ Redesign the arrival experience.</li> <li>§ Institutionalize intelligent transportation systems with Caltrans.</li> <li>§ Increase efficiencies at fee station.</li> <li>§ Improve shuttle service.</li> <li>§ Implement a reservation system for parking.</li> <li>§ Provide advance trip planning information to encourage voluntary redistribution of use.</li> </ul>







## IMPLEMENTATION PLANNING

After the approval of this general management plan, the park staff would complete other more detailed studies before specific actions would be implemented. These studies would investigate the baseline condition of resources and visitor use in the park as required by NPS management policies and fulfill the requirements of the National Environmental Policy Act, National Historic Preservation Act, and other relevant laws and policies. These would inform the detailed site-specific improvement plans that would be prepared for different parts of the park. Where appropriate, these studies and plans would be completed with substantial public involvement and environmental compliance. The additional studies and improvement plans could include the following:

- § Sea level rise vulnerability study
- § Vegetation management plans, including nonnative species
- § Forest inventories and condition assessments
- § Water resources availability studies
- § Earth materials management plans
- § Geotechnical evaluations of shorelines
- § Field surveys for presence of threatened and endangered species
- § Regional studies of wildlife species of special interest
- § Pest control and eradication plans

### DETAILED SITE IMPROVEMENT PLANS

- § Stinson Beach
- § Muir Woods
- § Muir Woods Off-site Welcome Center
- § Lower Redwood Creek
- § Tennessee Valley
- § Fort Cronkhite / Rodeo Valley
- § Alcatraz Island
- § Ocean Beach
- § Fort Funston
- § Picardo Ranch
- § Rancho Corral de Tierra

### NATURAL RESOURCES

- § Resource stewardship strategy
- § Ocean stewardship action plan
- § Climate vulnerability assessment

### CULTURAL RESOURCES

- § Collections condition surveys
- § Resource stewardship strategy
- § Historic resource studies
- § Archeological surveys and investigations
- § Cultural landscape inventories and reports
- § Historic structure reports
- § Fortification preservation and management plans
- § Lighthouse preservation and management plans
- § Updates to national historic landmark nominations
- § Determinations of eligibility for the National Register of Historic Places
- § Updates to national register nominations
- § Historic American Buildings Survey (HABS), Historic American Engineering Record (HAER),

**Historic American Landscapes Survey  
(HALS) documentation**

- § **Equestrian facilities management plans**
- § **Accessibility action and transition plan**

**VISITOR USE**

- § **Educational and interpretive program plans**
- § **Visitor satisfaction surveys**
- § **Trails development and management plans**
- § **Social trail inventories and management plans**
- § **Transportation and transit plans**

**GENERAL**

- § **Land protection plan**
- § **Business plans**
- § **Visual impact assessments**

## MITIGATION MEASURES

National Park Service staff routinely evaluate and implement mitigation measures whenever conditions occur that could adversely affect the sustainability of national park system resources.

To ensure that implementation of the action alternatives applies appropriate levels of protection to natural and cultural resources and provides a quality visitor experience, a consistent set of mitigation measures would be applied to actions proposed in this plan. The National Park Service would prepare implementation plans with appropriate environmental compliance (i.e., those required by the National Environmental Policy Act and the National Historic Preservation Act, as amended, and other relevant legislation) for these future actions. These implementation plans would include more detailed mitigation measures for specific projects. As part of the environmental compliance, the National Park Service would avoid, minimize, and mitigate adverse impacts when practicable. The implementation of a compliance-monitoring program would be within the parameters of the National Environmental Policy Act and the National Historic Preservation Act, compliance documents, U.S. Army Corps of Engineers Clean Water Act, section 404 permits, and other compliance requirements. The compliance-monitoring program would oversee these mitigation measures and would include reporting protocols.

The following mitigation measures and best management practices would be applied to avoid or minimize potential impacts from implementation of the action alternatives included in this general management plan.

## NATURAL RESOURCES

### General

The park and monument resources, including air, water, soils, vegetation, and wildlife, would be periodically inventoried and monitored to provide information needed to avoid or minimize impacts of future development. Any museum collections related to natural resources generated by such activities would be managed according to NPS policies.

Whenever possible, new facilities would be built in previously disturbed areas or in carefully selected sites with as small a construction footprint as possible and with sustainable design. 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.

- § Fencing or other means would be used to protect sensitive resources adjacent to construction areas.
- § Construction materials would be kept in work areas, especially if the construction takes place near streams, springs, natural drainages, or other water bodies.
- § Visitors would be informed of the importance of protecting natural resources and leaving them undisturbed for the enjoyment of future generations.

## Air Quality

A dust abatement program would be implemented. Standard dust abatement measures could include watering or otherwise stabilizing soils, covering haul trucks, employing speed limits on unpaved roads, minimizing vegetation clearing, and revegetating after construction.

- § detailed mitigation measures for potential fire impacts, including current best practices
- § a “Step-Up Plan” that provides more detailed protocols to address use restrictions during high fire danger periods

## Fire

Fire management for NPS-managed lands, including Sweeney Ridge, is addressed in the Golden Gate National Recreation Area Fire Management Plan. The Golden Gate National Recreation Area Fire Management Plan Update, scheduled for 2013, would address park-managed lands in San Mateo County, that were not included in the (2008) fire management plan, including Rancho Corral de Tierra. Owned by the Peninsula Open Space Trust, the Gregerson property would not be included in the fire management plan update at that time, but could be added in a later update, following a boundary change and acquisition, if approved and funded. The fire management plan would address fire risk, prevention, and management on NPS-managed lands, including:

- § analysis of existing fire hazard conditions
- § fuels management projects
- § fire preparedness and suppression
- § fire danger and visitor use restrictions (such as restricted activities or access on fire danger days)
- § strategies to reduce risk and prevent wildfires, including maintenance activities such as mowing and vegetation management as well as monitoring, communications, and protocols (patrols and enforcement) during periods of high fire danger

## Lightscape

Mitigation measures to preserve natural ambient lightscapes would include the following:

- § limiting the use of artificial outdoor lighting to that which is necessary for basic safety requirements
- § shielding all outdoor lighting to the maximum extent possible
- § keeping light on the intended subject and out of the night sky to the greatest degree possible
- § working with park partners and visitors on education and best management practices to minimize impacts on lightscapes

## Nonnative Species

Special attention would be devoted to preventing the spread of nonnative and invasive plants. Standard measures could include the following elements: ensure that construction-related equipment arrives at the work site free of mud or seed-bearing material, certify all seeds and straw material as weed-free, identify areas of nonnative plants before construction, treat nonnative plants or nonnative infested topsoil before construction (e.g., topsoil segregation, storage, herbicide treatment), and revegetate areas with appropriate native species.

## Scenic Resources

Mitigation measures that would be used to minimize visual intrusions could include the following:

- § Where appropriate, facilities such as boardwalks and fences would be used to route people away from sensitive natural and cultural resources while still permitting access to important viewpoints.
- § Facilities would be designed, sited, and constructed to avoid or minimize visual intrusion into the natural environment or landscape.
- § Vegetation screening would be provided, where appropriate.

## Soils

New facilities would be built on soils suitable for development. Soil erosion would be minimized by limiting the time soil is left exposed and by applying other erosion-control measures such as erosion matting, silt fencing, and sedimentation basins in construction areas to reduce erosion, surface scouring, and discharge to water bodies. Once work was completed, construction areas would be revegetated with native plants.

To minimize soil erosion on new trails, best management practices for trail construction would be used. Examples of best management practices could include installing water bars, check dams, and retaining walls; contouring to avoid erosion; and minimizing soil disturbance.

## Soundscapes

Mitigation measures to preserve natural ambient soundscapes would include the following:

- § Facilities would be sited and designed to minimize objectionable noise.
- § Standard noise abatement measures would be followed during construction, including a schedule that minimizes impacts on adjacent noise-sensitive resources, the use of the best available noise control techniques wherever feasible, the use of hydraulically or electrically powered tools when feasible, and the position of stationary noise sources as far from sensitive resources as possible.

## Threatened and Endangered Species and Species of Concern

Conservation measures would occur during normal operations as well as before, during, and after construction to minimize long-term, immediate impacts on rare species, and threatened and endangered species where they are identified in the two parks. These measures would vary by specific project and the affected area of the two parks. Many of the measures listed above for vegetation and wildlife would also benefit rare, threatened, and endangered species by helping to preserve habitat. Conservation measures specific to rare, threatened, and endangered species would include the following actions:

- § Surveys would be conducted for special status species, including rare, threatened, and endangered species, before deciding to take any action that might cause harm. In consultation with the U.S. Fish and Wildlife Service and NOAA-National Marine Fisheries Service, appropriate measures would be taken to protect any sensitive species, whether identified through surveys or presumed to occur. Any actions expected to impact threatened and endangered species would be subject to consultation with the U.S. Fish and

Wildlife Service and NOAA-National Marine Fisheries Service, leading to the development of necessary protective measures.

- § If breeding or nesting areas for threatened and endangered species were observed in the park or monument, these areas would be protected from human disturbance.
- § New facilities and management actions would be located and designed to avoid adverse effects on rare, threatened, and endangered species. If avoidance of adverse effects on these species were infeasible, appropriate conservation measures would be taken in consultation with the appropriate resource agencies.
- § 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.

Measures would be taken to reduce adverse effects of nonnative plants and wildlife on rare, threatened, and endangered species.

## Vegetation

Areas used by visitors (e.g., trails) would be monitored for signs of native vegetation disturbance. Public education, revegetation of disturbed areas with native plants, erosion control measures, and barriers would be used to control potential impacts on plants from trail erosion or social trailing.

Proposed sites for new trails and other facilities would be surveyed for sensitive species before construction. If sensitive species were present, new developments would be relocated to avoid impacts.

Revegetation plans would be developed for disturbed areas. Revegetation plans should specify such features as seed/plant source, seed/plant mixes, soil preparation, fertilizers, and mulching. Salvage vegetation, rather than new planting or seeding, would be used to the greatest extent possible. To maintain genetic integrity, native plants that grow in the project area or the region would be used in restoration efforts whenever possible. Use of nonnative species or genetic materials would be considered only where deemed necessary to maintain a cultural landscape or to prevent severe resource damage, and would be approved by the NPS resource management staff. Restoration activities would be instituted immediately after construction was completed. Monitoring would occur to ensure that revegetation was successful, plantings were maintained, and unsuccessful plant materials were replaced.

## Water Resources

To prevent water pollution during construction, erosion control measures would be used, discharges to water bodies would be minimized, and construction equipment would be regularly inspected for leaks of petroleum and other chemicals.

Best management practices, such as the use of silt fences, would be followed to ensure that construction-related effects were minimal and to prevent long-term impacts on water quality, wetlands, and aquatic species.

Caution would be exercised to protect water resources from activities with the potential to damage water resources, including damage caused by construction equipment, erosion, and siltation. Measures would be taken to keep fill material from escaping work areas, especially near streams, springs, natural drainages, and wetlands.

For new facilities, and to the extent practicable for existing facilities, stormwater management measures would be

implemented to reduce nonpoint source pollution discharge from parking lots and other impervious surfaces. Such actions could include use of oil/sediment separators, street sweeping, infiltration beds, permeable surfaces, and vegetated or natural filters to trap or filter stormwater runoff. As directed by the Clean Water Act, all projects disturbing more than 5 acres require a stormwater discharge permit and specific mitigation measures would be developed as needed.

The NPS spill prevention and pollution control program for hazardous materials would be followed and updated on a regular basis. Standard measures could include (1) procedures for hazardous materials storage and handling, spill containment, cleanup, and reporting, and (2) limitation of refueling and other hazardous activities to upland/nonsensitive sites.

Wetlands would be avoided if possible, and protection measures would be applied during construction. Wetlands would be identified by qualified NPS staff or certified wetland specialists and clearly marked before construction work. Construction activities would be performed with caution to prevent damage caused by equipment, erosion, siltation, or other construction-related effects.

## Wildlife

To the extent possible, new or rehabilitated facilities would be sited to avoid sensitive wildlife habitat, including foraging and resting areas, major travel corridors, nesting sites, and other sensitive areas.

Construction activities would be timed to avoid sensitive periods, such as nesting or spawning seasons. Ongoing visitor use and NPS operational activities could be restricted if their potential level of damage or disturbance warranted doing so. Park staff and contractors would be trained to avoid impacts on threatened and

endangered species during construction or rehabilitation efforts.

Measures would be taken to reduce the potential for wildlife having access to human food. Wildlife-proof garbage containers would be required in developed areas (including visitor centers, picnic areas, trails, and interpretive waysides). Signs would continue to educate visitors about the need to refrain from feeding wildlife.

Other visitor impacts on wildlife would be addressed through visitor education programs, restrictions on visitor activities, and ranger patrols.

## CULTURAL RESOURCES

All projects with the potential to affect historic properties and cultural landscapes would comply with section 106 of the National Historic Preservation Act, as amended, to ensure that potential effects are adequately addressed. All reasonable measures would be taken to avoid, minimize, or mitigate adverse effects in consultation with the California state historic preservation office and, as necessary, the Advisory Council on Historic Preservation and other concerned parties, including American Indian tribal officials. In addition to adhering to the legal and policy requirements for cultural resources protection and preservation, the National Park Service would also undertake the measures listed below to further protect park and monument resources.

All areas selected for construction (including any trail improvements) would be surveyed and evaluated to ensure that cultural resources (i.e., archeological, historic, ethnographic, and cultural landscape resources) in the area of potential effect are adequately identified and protected by avoidance or, if necessary, mitigation.

Compliance with the Native American Graves Protection and Repatriation Act of

1990 would occur in the unlikely event that human remains believed to be American Indian were discovered inadvertently during construction. Prompt notification and consultation with the tribes traditionally associated with Golden Gate National Recreation Area and Muir Woods National Monument would occur in accordance with the act. If such human remains were believed to be non-Indian, standard reporting procedures to the proper authorities would be followed, as would all applicable federal, state, and local laws.

In accordance with section 110 of the National Historic Preservation Act, strategic archeological surveys would be conducted of portions of the 90% un-inventoried park lands, considered under this general management plan, that are most vulnerable from resource stressors such as visitor use, management zone policies, climate change, and other factors. These surveys are distinct from resource actions resulting from section 106 undertakings and are designed to correct material deficiencies in the park's archeological resource identification process. Archeological documentation would be completed in accordance with *The Secretary of the Interior's Standards for Archeology and Historic Preservation* (1983, as amended and annotated).

If, during construction, previously unknown archeological resources were discovered, all work in the immediate vicinity of the discovery would be halted until the resources could be identified and documented and, if the resources could not be preserved in situ, an appropriate mitigation strategy would be developed in consultation with the state historic preservation officer and, if necessary, associated Indian tribes.

The National Park Service would consult with tribal officials before taking actions that could affect ethnographic resources. The National Park Service would continue to abide by existing cooperative agreements and would pursue additional agreements

with culturally affiliated tribes to avoid resource impacts, allow access for traditional gathering and other approved activities, and minimize potential use conflicts in culturally sensitive areas. The National Park Service would develop and accomplish their programs in a manner respectful of the beliefs, traditions, and other cultural values of the affiliated tribes.

A proactive program of identification and evaluation of the full range of cultural resources, including archeological and landscape resources will be implemented well in advance of individual park projects having the potential to affect these resources. The priorities of this research program will be informed by the park's implementation priorities.

Prior to demolition of any structure listed in or eligible for listing in the national register, a survey for archeological resources in the general vicinity of the affected structure would be conducted. The excavation, recordation, and mapping of any significant cultural remains, if present, would be completed prior to demolition to ensure that important archeological data is recovered and documented.

To appropriately preserve and protect national register-listed or national register-eligible historic structures, cultural landscape features, or archeological sites, all surveys, assessments, stabilization, preservation, rehabilitation, data recovery and restoration efforts would be undertaken in accordance with *NPS Management Policies 2006*, and *The Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995). Any materials removed during rehabilitation efforts would be evaluated to determine their value to the park's museum collections and/or for their comparative use in future preservation work at the sites.

Design guidelines for new construction would be prepared by the National Park Service and would be reviewed for

compatibility with the cultural landscape or historic setting and for compliance with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. Additional coordination and consultation would be carried out with the California state historic preservation office, the Advisory Council on Historic Preservation, and if necessary, American Indian tribal officials to assess and mitigate any adverse effects of new construction on designated or potential national historic landmark districts. All new buildings, additions, and landscape features would be designed and sited to harmonize with their historic settings.

Visitors would be educated on the importance of protecting the historic properties of the park and monument and leaving them undisturbed.

National register eligible and listed properties would be monitored on a regular basis to ensure their preservation.

## VISITOR SAFETY AND EXPERIENCES

Measures to reduce adverse effects of construction on visitor safety and experience would be implemented, including project scheduling and best management practices.

Visitor safety concerns would be integrated into NPS educational programs. Directional signs would continue to orient visitors and education programs would continue to promote understanding among visitors.

Every reasonable effort would be made to make the facilities, programs, and services of the National Park Service and its park partners accessible to and usable by all people, including those who are disabled. This policy is based on the commitment to provide access to the widest cross section of the public and to ensure compliance with the intent of the Architectural Barriers Act (42 USC 4151 et seq.) and the Rehabilitation Act (29 USC 701 et seq.). Specific guidance for

implementing these two laws is found in the Secretary of the Interior's regulations regarding "Nondiscrimination in Federally Assisted Programs" (43 CFR 17). Special, separate, or alternative facilities, programs, or services would be provided only when existing ones cannot reasonably be made accessible. The determination of what is reasonable would be made after consultation with disabled persons or their representatives.

Through Director's Order 42, the National Park Service is required to update and repair existing facilities to remove physical barriers; design new facilities and programs; and modifying existing programs and media, to ensure that all visitors without regard to a disability, have access to these programs and facilities. It is recognized that this goal will require detailed condition assessments for accessibility, short- and long-range planning, and action over a number of years.

While a general management plan is not the most appropriate mechanism for addressing the details of a park's accessibility needs, this plan does establish the goals and objectives for accessibility at Golden Gate National Recreation Area, and does prepare for the important follow-up work that may be needed to comply with accessibility laws, regulations, and policies. Park managers shall make every attempt to evaluate their programs and facilities for accessibility. General management plans should, as this one does, identify a full range of park experiences and opportunities to make available to the visitor. Through the action and transition planning process, park staff would ensure that key representative experiences and opportunities throughout the park would be made available to people with disabilities.

## PARK OPERATIONS

In order to provide facilities that are functional, code compliant, and sustainable, the following strategies would be used:

- § Energy efficient strategies would be applied to new and rehabilitated structures through the establishment of performance standards to address the building envelope, mechanical systems, electrical systems, and lighting systems.
- § Water conservation strategies for use in buildings and for irrigation would be implemented through performance standards designed to meet or exceed federal requirements.
- § Alternative strategies for energy production would be evaluated and incorporated into the final design as appropriate, including photovoltaic systems for generating peak electrical energy demand. Photovoltaic systems, if determined to be feasible based on further evaluation, would be subject to design review and establishment of design guidelines to ensure compatibility with natural or historic settings. Guidelines would identify appropriate locations, such as flat plate modules on rear roofs of historic structures or parking carports and/or pole-mounted tracking arrays located in visually unobtrusive places within the developed footprint of the site.

## **SOCIAL AND ECONOMIC ENVIRONMENT**

During the future planning and implementation of the approved management plan for the two park units, NPS staff would work with local communities and county governments to further identify potential impacts and mitigation measures that would best serve the interests and concerns of both the National Park Service and local communities. Partnerships would be pursued to improve the quality and diversity of community amenities and services.

## **TRANSPORTATION**

To determine the success of measures implemented to encourage alternative modes of travel, the National Park Service would periodically collect data on traffic volumes and vehicle occupancy; use of transit services; and amount of pedestrian and bicyclist use to, from, and within the park and monument. Based on this data, the National Park Service would expand or modify existing facilities and services for alternative transportation modes or implement other measures to increase the use of those modes.

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NPS 641/108779 B; NPS 112/108782 B; January 2014

