



GOLDEN GATE NATIONAL RECREATION AREA MUIR WOODS NATIONAL MONUMENT

DRAFT GENERAL MANAGEMENT PLAN/ENVIRONMENTAL IMPACT STATEMENT

VOLUME III

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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 experiences 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 experiences, 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 National Park Service’s commitment to the implementation of user capacity, the park staff will use these directives to guide the types and levels of visitor use that will be accommodated while sustaining the quality of park resources and visitor experiences consistent with the purposes of both parks.

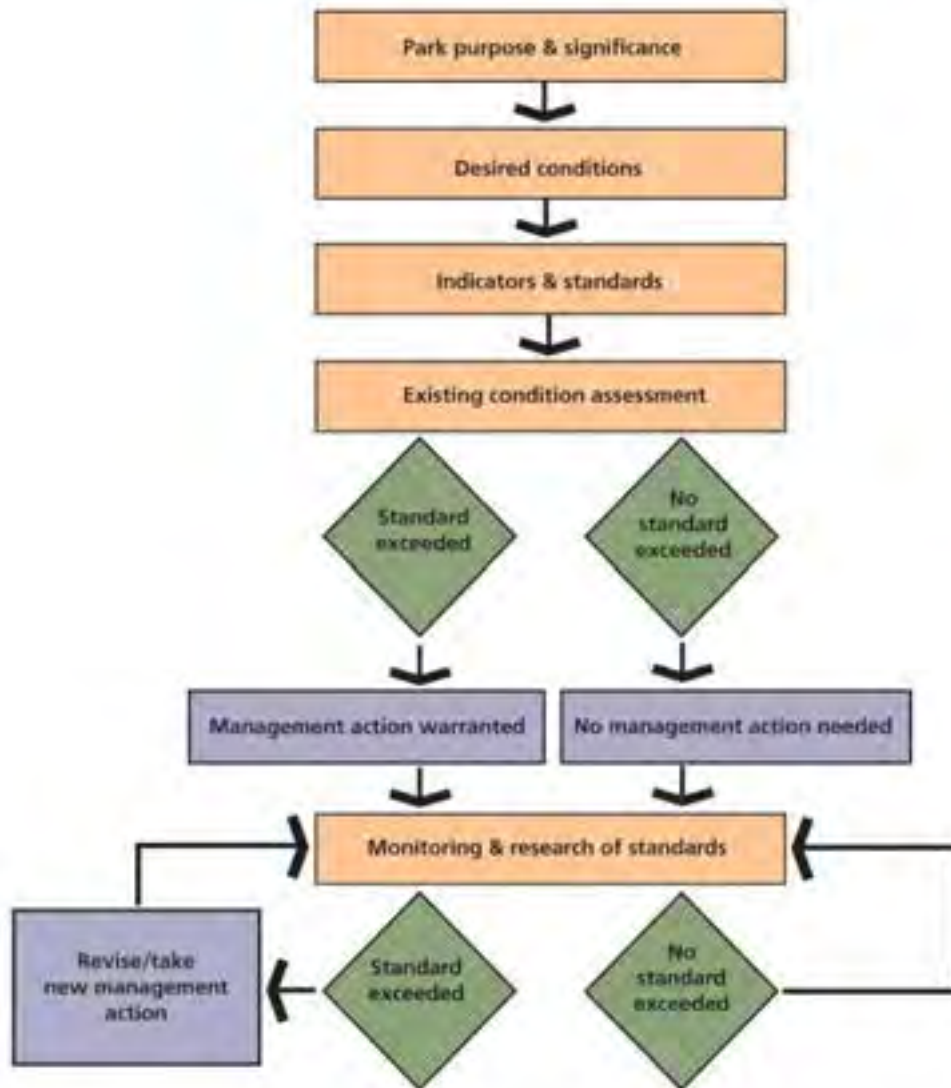
In addition to these directives, in areas where use and past research and study have demonstrated a need, this plan also includes specific indicators and standards for Alcatraz Island in the Golden Gate National Recreation Area and for Muir Woods National Monument. Indicators and standards are measurable variables that will be monitored to track changes in resource conditions and visitor experiences. 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.

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 of the park's 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.

Figure 1: User Capacity Framework



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 experiences—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 to bird populations from visitor activities can include unintentional disturbance, harassment, and feeding. These types of impacts can have significant 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 to 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 protocol, 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 of the 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 cellhouse 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 cellhouse, and the wait times for the ferry, are supported by the visitor survey research (Manning et al. 2007) along with on-going 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 cellhouse, tracking of wait times for the ferry, the recording of 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 onsite 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 the National Park Service's 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 for new visitor opportunities that will 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 very carefully, and in an incremental and experimental way using monitoring data and related research, to ensure that the National Park Service's implementation commitments to the park's legislative and policy mandates, desired conditions, and related standards are always being achieved.

Table 1: Alcatraz Island: User Capacity Indicators, Standards, Monitoring Strategies, and Management Strategies

| Indicator | Assigned Zone/ Area | Standard | Monitoring Strategy | Potential Management Strategies |
|--|---------------------------------|--|--|---|
| TOPIC: VISITOR CAUSED BIRD DISTURBANCE | | | | |
| Number of incidents of visitor disturbance to Brandt's cormorants that result in impacts to 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 disturbance per monitoring session (=6.5 hours), additional management could be considered. | Continue monitoring based on PRBO protocol | <ul style="list-style-type: none"> • Increase visitor education on low impact practices and park regulations • Increase staff patrols and use of docents • Increase signage • Increase fencing, barricades, visual barriers, vegetative buffers • Restrict access to ranger/docent led only • Restrict visitor access to targeted areas • Relocate visitor activities • Alter gull management areas |
| 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"> • Increase visitor education on low impact practices and park regulations • Increase staff patrols and use of docents • Increase signage • Increase fencing, barricades, visual barriers, vegetative buffers • Restrict access to ranger/docent led only • Restrict visitor |

| Indicator | Assigned Zone/ Area | Standard | Monitoring Strategy | Potential Management Strategies |
|--|---|---|--|---|
| | | | | access to targeted areas <ul style="list-style-type: none"> • Relocate visitor activities • Alter gull management areas |
| Number of incidents of visitor disturbance to Brandt's cormorants that result in impacts to 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"> • Boat patrols in collaboration with other agencies • Target outreach to user groups • Increase signage visible from water • Use of buoys • Collaborate with the Seabird Protection Network for coordinated outreach, education, enforcement |
| 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 | <ul style="list-style-type: none"> • 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 |
| TOPIC: VANDALISM OF CULTURAL RESOURCES | | | | |
| Number of incidents of graffiti/vandalism | Historic Immersion Zone (cellhouse) | No more than 1 minor incident* per month | On-going monitoring as part of regularly scheduled staff and volunteer patrols | <ul style="list-style-type: none"> • Increase in visitor education on low impact practices and park |

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| Indicator | Assigned Zone/ Area | Standard | Monitoring Strategy | Potential Management Strategies |
|--|-----------------------------------|---|---|--|
| | tour route, areas open to public) | No major incidents** * Minor Incident: Small, easily repairable damage (e.g., new ink/paint graffiti over paintable surface) ** Major Incident: Irreparable damage resulting in major resource loss and significant recovery cost (e.g., new graffiti over historic graffiti) | and collection of visitor comments. More rigorous comparison of existing conditions to the baseline on a periodic basis. | regulations <ul style="list-style-type: none"> • Increase staff presence • Increase monitoring • Temporarily close area while undergoing conservation treatment • Close problem area, except under supervision |
| TOPIC: VISITOR CAUSED DISTURBANCE TO CULTURAL RESOURCES | | | | |
| 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 | On-going 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. | <ul style="list-style-type: none"> • Increase visitor education on low impact practices and park regulations • Increase fences and barriers • Increase staff presence • Regulate or restrict access • 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 | On-going monitoring as part of regularly scheduled staff and volunteer patrols and collection of visitor comments. More rigorous comparison of | <ul style="list-style-type: none"> • Increase visitor education on low impact practices and park regulations • Increase fences or barriers |

| Indicator | Assigned Zone/ Area | Standard | Monitoring Strategy | Potential Management Strategies |
|---|--|---|---|--|
| | | cultural resources) | existing conditions to the baseline on a periodic basis. | <ul style="list-style-type: none"> • 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 | On-going 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. | <ul style="list-style-type: none"> • Increase visitor education on low impact practices and park regulations • Create or widen existing paths • Install temporary or permanent signs • Increase fences/barriers |
| TOPIC: VISITOR CAUSED WEAR ON CULTURAL RESOURCES | | | | |
| Number of incidents regarding wear, tear, or damage on cultural resources from special events | Historic Immersion Zone (cellhouse, VIP tours, SPUG) | No more than 2 minor incidents per event No major incidents | Continue existing assessment protocols of conditions after each special event. | <ul style="list-style-type: none"> • 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 |
| TOPIC: CROWDING AND CONGESTION | | | | |
| 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 | Periodic photo monitoring and/or observations and visitor surveys | <ul style="list-style-type: none"> • Adjust flow of visitors (for example: timed audio tickets, reconfiguration of tour flow, or scheduling dockside |

PART 9: USER CAPACITY

| Indicator | Assigned Zone/ Area | Standard | Monitoring Strategy | Potential Management Strategies |
|--|---------------------------------|--|--|--|
| | | on C-D Street, 90% of the time | | programming) <ul style="list-style-type: none"> • Adjust boat ticket distribution (e.g., more in the AM or PM) • Reduce the number of visitors to the island • Increase monitoring to determine and readjust to standard |
| Number of times a vessel departs Alcatraz Island leaving visitors in line for more than 15 minutes | Evolved Cultural Landscape Zone | No more than 2 times per month or 12 times annually, excluding emergencies | Continue existing monitoring and documentation of wait times and visitor comments regarding ferry access | <ul style="list-style-type: none"> • 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

Similar 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 experiences—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 will 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 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); and
- permit requirements (e.g., all special events require a special use permit).

In addition to the 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. Similar 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 to 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 United States Geological Survey (Marion 2008). Given the associated

resource concerns and the 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 of the 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 their 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 experiences. 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 much of the monument's soundscape were established through comprehensive noise monitoring in 2006 and 2007. These data, along with visitor surveys, were used to identify the best metrics for the 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 2006). The indicators and standards included in Table 25 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 quality of the visitor experience, 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 visitors' 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 and 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 the experience to the extent a visitor would not come back). 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 will continue to conduct analysis of visitor use patterns as part of the planning for the redesign of the monument's entrance and parking areas, which is proposed in this plan's action alternatives. The implementation plan will 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.

MONITORING

Some of the issues and related indicators noted for both Golden Gate National Recreation Area and Muir Woods National Monument, such as impacts to 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 to 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 will continue general monitoring of use levels and patterns throughout the park and monument. In addition, the park staff will 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 towards the standard.

In addition, the initial phases of monitoring for the indicators and standards defined above will help the National Park Service determine if any revisions are needed. The initial application of the indicators and standards will 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.

Table 2: Muir Woods National Monument: User Capacity Indicators, Standards, Monitoring Strategies, and Management Strategies

| Indicator | Assigned Zone/Area | Standard | Monitoring Strategy | Potential Management Strategies |
|--|--|---|--|---|
| TOPIC: VISITOR CREATED INFORMAL TRAILS | | | | |
| <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>* Trail Condition Classification System: <i>Adapted from descriptive system by Jeff Marion, USGS</i></p> <p>Class I Trail is barely visible. Minimal disturbance of organic litter or vegetation. Very little bare soil is evident along the tread.</p> <p>Class II 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>Class III Serious erosion is obvious.</p> | <p>Periodic assessments would be conducted inside the 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> | <ul style="list-style-type: none"> • Formal review of possible causes (including determining whether the informal trail is visitor use or animal related) and to determine most appropriate management response • Increase visitor education on low impact practices and park regulations • Place border logs or other barriers along formal trails at the junction with informal trails • 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 |

PART 9: USER CAPACITY

| Indicator | Assigned Zone/Area | Standard | Monitoring Strategy | Potential Management Strategies |
|-----------|--------------------|---|---------------------|---|
| | | <p>Nearly complete loss of organic litter and/or vegetative cover. Bare soil is widespread in a widening tread.</p> | | <p>restored prior to any addition of organic matter/litter)</p> <ul style="list-style-type: none"> • Add formal trailhead signs explaining the problem and asking visitors to remain on formal trails • Enhance marking of the official trail and/or improve adjacent designated trails • Formalize an informal trail, possibly on a new alignment, to accommodate visitor interest • Install temporary or permanent signs • Consider more substantial restoration work (after all foot traffic has been removed from the informal trail) • Increase enforcement or presence of rangers or volunteers • Area closures • Reduce use levels |

| Indicator | Assigned Zone/Area | Standard | Monitoring Strategy | Potential Management Strategies |
|--|--|--|---|--|
| TOPIC: IMPACTS TO SOUNDSCAPE FROM HUMAN NOISE | | | | |
| <p>Sound pressure level</p> <p>Percent time human sounds are audible</p> | <p>Interpretive Corridor Zone</p> | <p>Daytime (0700–1900) L50 dBA: 34 (note: L50 is the sound level that is exceeded 50% of the time)</p> <p>% time human sounds audible: 45%</p> | <p>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.</p> | <ul style="list-style-type: none"> • 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) |
| <p>Difference between Lnat and existing ambient L50</p> | <p>Natural and Sensitive Resources Zones</p> | <p>Difference between Lnat and existing ambient (L50) is 2 dBA or less during the daytime (0700–1900)</p> | <p>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.</p> | <ul style="list-style-type: none"> • Increase visitor education on low impact practices and park regulations • Designate more quiet zones and days • Redistribute visitor flow and/or reduce use levels |

| Indicator | Assigned Zone/Area | Standard | Monitoring Strategy | Potential Management Strategies |
|---|--|--|--|--|
| TOPIC: INVASIVE PLANT SPECIES | | | | |
| <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 % cover*</p> | <p>Continue monitoring per the Inventory and Monitoring Program</p> | <ul style="list-style-type: none"> • Increase visitor education on low impact practices and park regulations • Require the cleaning of gear that is capable of transferring plant material • Temporarily or permanently close areas • Reduce use levels • Removal of invasives and restoration of disturbed areas |
| TOPIC: CROWDING AND CONGESTION | | | | |
| <p>People Per View (PPV) along valley primary trails</p> <p>People At One Time (PAOT) in a defined interpretive space such as Pinchot Tree or 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 0-18 PPV along valley primary trails, 90% of the time</p> <p>No more than 0-30 PAOT in a defined interpretive space, 90% of the time</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.</p> <p>The standard for crowding</p> | <ul style="list-style-type: none"> • Encourage voluntary redistribution of use across the day • Change the timing and availability of transit and tour bus access • Direct visitor flow to other areas and trails • Reduce use levels |

| Indicator | Assigned Zone/Area | Standard | Monitoring Strategy | Potential Management Strategies |
|---|---|--|--|--|
| | | | and congestion (acceptability of PPV and PAOT range) would be updated by a focused survey every 5 years or when major changes are implemented. | |
| Number of encounters along secondary trails with one or more people in opposite direction | Interpretive Corridor Zone: secondary trails including Hillside and Fern Creek. | No more than 0-40 encounters with one or more people in the opposite direction along secondary trails, 90% of the time | <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>The standard for crowding and congestion (preference for encounter rates) would be updated by a focused survey every 5 years or when major changes are implemented.</p> | <ul style="list-style-type: none"> • Encourage voluntary redistribution of use across the day • Change the timing and • availability of transit and tour bus access • Direct visitor flow to other areas and trails • Reduce use levels |
| Approximate arrival experience time | Diverse Opportunities Zone | Maximum arrival time 20–30 minutes per | Regular observations of the arrival | <ul style="list-style-type: none"> • Encourage voluntary redistribution of |

PART 9: USER CAPACITY

| Indicator | Assigned Zone/Area | Standard | Monitoring Strategy | Potential Management Strategies |
|---|--------------------|---------------------|--|--|
| <p>(from arrival* to entrance fee purchase)</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> | | individual or group | 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. | <p>use</p> <ul style="list-style-type: none"> • Redesign the arrival experience • Institutionalize Intelligent Transportation Systems with Caltrans • Increase efficiencies at fee station • Improve shuttle service |

Implementation Planning and Mitigative Measures 10



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:

Detailed Site Improvement Plans

- Stinson Beach
- Muir Woods
- Muir Woods Offsite 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
- Vegetation management plans, including exotic 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

Cultural Resources

- Collections management plan
- Resource stewardship strategy
- Historic resource studies
- Archeological surveys and investigations
- Cultural landscape inventories and reports
- Historic structures 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
- HABS, HAER, HALS documentation

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
- Equestrian facilities management plans
- Accessibility action and transition plan

General

- Land protection plan
- Business plans
- Visual impact assessments

MITIGATIVE MEASURES

Congress charged the National Park Service with managing the lands under its stewardship “in such manner and by such means as will leave them unimpaired for the enjoyment of future generations” (NPS Organic Act, 16 USC 1). As a result, NPS staff routinely evaluate and implement mitigative measures whenever conditions occur that could adversely affect the sustainability of national park system resources.

To ensure that implementation of the action alternatives leaves natural and cultural resources unimpaired and provides quality visitor experiences, a consistent set of mitigative 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 mitigative 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 mitigative measures and would include reporting protocols.

The following mitigative 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.

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 the natural resources and leaving these 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.

Lightscape

Mitigative measures to preserve natural ambient lightscares 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 their impacts on lightscares.

Nonnative Species

Special attention would be devoted to preventing the spread of exotic 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 exotic plants or exotic infested topsoil before construction (e.g., topsoil segregation, storage, herbicide treatment), and revegetate areas with appropriate native species.

Scenic Resources

Mitigative 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.
- Vegetative 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.

Soundscape

Mitigative measures to preserve natural ambient soundscapes would include the following:

- Facilities would be located 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 location 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, 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 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 mitigative 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 delineated by qualified NPS staff or certified wetland specialists and clearly marked before construction work. Construction activities would be performed in a cautious manner 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 habitats, including feeding and resting areas, major travel corridors, nesting areas, and other sensitive habitats.

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.

Measures would be taken to reduce the potential for wildlife to get food from humans. 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 such techniques as 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 be carried out in compliance with Section 106 of the National Historic Preservation Act, as amended, to ensure that the 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 the 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 Native American 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

PART 10: IMPLEMENTATION PLANNING AND MITIGATIVE MEASURES

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.

Archeological documentation would be done 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 mitigative 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.

No property listed in or eligible for listing in the National Register of Historic Places would be removed or allowed to decay naturally ("molder") without prior review by NPS cultural resource specialists and consultation with the state historic preservation office, and, if necessary, associated American Indian tribal officials. Before such a property is removed or allowed to molder, appropriate documentation recording the property would be prepared in accordance with Section 110 (b) of the National Historic Preservation Act, as amended, and the documentation submitted, as appropriate, to the Historic American Buildings Survey / Historic American Engineering Record / Historic American Landscapes Survey program and associated American Indian tribal officials.

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 that otherwise would be lost is recovered and documented.

To appropriately preserve and protect national register listed or national register-eligible historic structures, all stabilization, preservation, rehabilitation, and restoration efforts would be undertaken in accordance with 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 these undisturbed for the enjoyment of future visitors.

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 made available to the visitor. Through the action and transition planning process, park staff will ensure that key

representative experiences and opportunities throughout the park will be 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 locations 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 parks, NPS staff would work with local communities and county governments to further identify potential impacts and mitigative measures that would best serve the interests and concerns of both the National Park Service and the 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.



INTRODUCTION AND METHODOLOGY

This part of the document discusses other impact analyses required by NEPA and the Council on Environmental Quality. It includes discussions regarding the potential for cumulative impacts, natural or depletable resource requirements and conservation potential, effects on energy requirements and conservation potential, irretrievable or irreversible commitments of resources, unavoidable adverse impacts, and the relationship between short-term uses and long-term productivity of the environment.

CUMULATIVE IMPACT ANALYSIS AT GOLDEN GATE NATIONAL RECREATION AREA, INCLUDING ALCATRAZ ISLAND

METHODOLOGY

The National Environmental Policy Act requires an environmental impact statement to identify and analyze cumulative impacts. A cumulative impact is described in the CEQ regulation 1508.7 as follows:

Cumulative impacts are the impacts that result from incremental impacts of the action when added to other past, present, and reasonably foreseeable actions, regardless of what agency (federal or nonfederal) or person undertakes such other action. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over time.

The analysis of cumulative impacts must also evaluate the proposed project's potential to contribute to the significant cumulative impacts identified and it must discuss feasible options for mitigating or avoiding any contributions assessed as cumulatively considerable. The discussion of cumulative impacts is not required to provide as much detail as the discussion of the project's *individual impacts*, or the effects attributable to the project alone. Rather, the level of detail should be guided by what is practical and reasonable. The analysis of cumulative impacts uses the same concepts of type, duration, timing, and intensity as described for individual impacts.

The action area for assessing cumulative impacts on the resources retained for detailed analysis is the three-county area (Marin, San Francisco, and San Mateo) where the park lands are located.

To determine the potential cumulative impacts on the resources, other projects and actions within the three-county area were identified (see appendix B in volume 1: "Description of Management Plans Related to this Plan" for a detailed listing of plans with actions that could have cumulative impacts). Projects were identified by discussions with NPS staff, other public land managers, and representatives of city and county governments. Potential projects identified as possible contributors to cumulative impacts included any planning or development activity that was currently being implemented, or is expected to be implemented in the future. Impacts of past actions were also considered in the analysis. A summary of the selected plans and projects that were determined to be relevant to each of the impact topics is included at the beginning of each cumulative impacts section.

These projects and actions were evaluated in conjunction with the impacts of each alternative to determine if they would result in any cumulative impacts on a particular natural or cultural resource, visitor use and experience, the social and economic environment, transportation, or NPS operations and management. The evaluation of cumulative impacts is qualitative and based on a general description of the project. Cumulative impacts at Golden Gate National Recreation Area and Muir Woods National Monument are discussed independently.

NATURAL RESOURCES

A number of plans and projects, if implemented, could contribute to cumulative impacts on natural resources. Plans and projects that have a relationship to this general management plan are identified and described in appendix B. Those plans and projects that are most relevant to natural resources and could contribute to cumulative impacts on this topic include the Redwood Creek Watershed Vision and various restoration projects in the watershed; county transportation plans; management plans for various California state parks; the Point Reyes National Seashore draft general management plan and fire management plan; other plans and projects at Golden Gate National Recreation Area, such as the fire management plan, dog management plan, and the redevelopment of Fort Baker; the Gulf of the Farallones National Marine Sanctuary plan; beach nourishment activities; regional land protection plans and activities such as Golden Lands, Golden Opportunities; the management of lands adjacent to the park; and past land use practices in the region.

Carbon Footprint and Air Quality

Implementation of the plans and projects mentioned in the opening paragraph of this section would contribute to cumulative impacts on carbon footprint and air quality. County transportation plans and projects aimed at reducing personal automobile use and improving alternative transportation would have beneficial cumulative impacts by reducing transportation-related emissions. Projects aimed at improving ecosystems and enhancing natural resources would result in adverse cumulative impacts in the short term, but these would be outweighed by long-term reductions in emissions and the resultant improvement in air quality. The same would be true for the actions related to the management of adjacent public lands, where near-term projects would have short-term adverse impacts on carbon footprint and air quality, but the actions associated with long-term objectives to reduce energy use and emissions and improve the condition of natural systems would have long-term beneficial cumulative impacts. Regional land protection efforts would continue to preserve open space. This would reduce the amount of land available for development and would provide air quality benefits. The actions associated with the management of private lands in the region would likely continue to result in adverse impacts to carbon footprint and air quality, as these actions would likely continue to be sources of energy use and air quality emissions that could increase over time as densities increase.

While the no-action alternative and action alternative 1 would have adverse impact to the park's carbon footprint, alternatives 2 and 3 would have beneficial effects on the carbon footprint. All action alternatives would have a negligible effect on air quality. When the likely effects of implementing the actions contained in the GMP alternatives are added to the effects of other past, present, and reasonably foreseeable actions described above, there would be a minor, adverse cumulative impact on carbon footprint and air quality in the short term, and a minor, beneficial, cumulative impact on carbon footprint and air quality over the long term. The actions contained in the GMP alternatives would contribute a very small increment to this cumulative impact.

Soils and Geologic Resources and Processes

Implementation of the plans and projects mentioned in the opening paragraph of this section would have cumulative impacts on soils and geologic resources and processes. Implementation of county transportation plans and projects that would modify roadways would likely result in adverse impacts to roadside soils and geologic resources and would contribute to changes in the functionality of geologic processes in the area. Beach nourishment activities would continue to provide essential sources of sand to off-shore and shoreline environments, resulting in a beneficial impact; however, the continuation of dredging and alteration of off-shore sand deposits would continue to cause adverse impacts to natural sand transport processes. Projects aimed at improving ecosystems and enhancing natural resources could result in adverse cumulative impacts in the short term, but these would be outweighed by long-term improvements to function and integrity of soils and natural geologic processes. The same would be true for actions associated with the management of adjacent public lands, where near-term projects could have short-term adverse impacts on soils and geologic resources, but actions to achieve long-term objectives to improve natural systems would have long-term beneficial cumulative impacts on soils and geologic processes. Regional land protection efforts would continue to preserve open space and protect soils and geologic resources. The actions associated with the management of private lands in the region would continue to have both adverse and beneficial impacts on soils and geologic processes, depending on the nature of land use and stewardship practices.

The existing recreation facilities and new recreation development actions in all GMP alternatives would have localized adverse effects on soils and geological resources. However, action alternatives 1, 2, and 3 would also have beneficial effects on soil conditions in other areas, by eliminating unsustainable roads and trails, removing facilities and structures, and restoring the respective sites. Alternative 2 would have the least amount of adverse effect from new recreation and the most beneficial effect from natural restoration. When the likely effects of implementing the actions contained in the GMP alternatives are added to the effects of other past, present, and reasonably foreseeable actions described above, there would be a long-term, minor, beneficial cumulative impact on soils and geologic resources and processes.

Water Resources and Hydrologic Processes

Implementation of the plans and projects mentioned in the introduction to this section would have cumulative impacts on water resources and hydrologic processes. County transportation plans and projects would modify roadways that could modify surface water flow and drainage. Roadway projects would also likely result in soil erosion and generate urban pollutants that would adversely impact water quality. Conversely, certain projects would reduce sedimentation and improve the conveyance of water—beneficial impacts. Projects aimed at improving ecosystems and enhancing natural resources (i.e., Big Lagoon restoration, Lower Redwood Creek floodplain restoration, Fern Creek riparian fencing, Coast Trail habitat enhancement projects, sediment reduction projects) could result in adverse cumulative impacts to water resources and water quality in the short term, but these impacts would be outweighed by long-term improvements to the integrity and function of water resources, especially for wetlands, floodplains, and natural creek processes. The same would be true for actions associated with the management of

adjacent public lands, where near-term projects could have short-term adverse impacts on water resources (including water quality and quantity), but actions to achieve long-term objectives of improved natural systems would have long-term beneficial cumulative impacts on water resources and hydrologic processes. Regional land protection efforts would continue to preserve open space and protect water resources. Actions associated with the management of private lands in the region would continue to have both adverse and beneficial impacts on water resources and hydrologic processes, depending on the nature of land use and stewardship practices.

All GMP alternatives include actions that provide for the restoration of natural areas and ecological processes, which directly and indirectly help restore the natural hydrologic regime. When the likely effects of implementing the actions contained in the GMP alternatives are added to the effects of other past, present, and reasonably foreseeable actions previously described, there would be a long-term, minor to moderate, beneficial cumulative impact on water resources and hydrologic processes.

Habitat (Vegetation and Wildlife) and Special Status Species (Federal and State Threatened and Endangered Species)

All of the plans and projects mentioned in the introduction to this section would have cumulative impacts on vegetation and wildlife habitat, if implemented. County transportation plans and projects would modify roadways that could alter the integrity of native habitat, increase habitat fragmentation, and introduce exotic plants and animals that could displace and adversely affect native species, including special status species. Roadway projects would also likely result in soil erosion and generate urban pollutants that would adversely impact aquatic habitats. Conversely, certain projects would reduce impacts from roadways and improve migration corridors. Restoration projects aimed at improving ecosystems and enhancing natural resources could result in adverse cumulative impacts to native habitat in the short term, but these impacts would be outweighed by long-term improvements to the integrity and function of habitat. The same would be true for actions associated with the management of adjacent public lands, where near-term projects could have short-term adverse impacts on habitat, but actions implemented to achieve long-term objectives to improve natural systems would have long-term beneficial cumulative impacts on habitat integrity and function. Regional land protection efforts would continue to preserve open space and protect a variety of habitat types. Actions associated with the management of private lands in the region would continue to have both adverse and beneficial impacts on vegetation and wildlife habitat, depending on the nature of land use and stewardship practices.

All of the GMP alternatives include actions that provide for natural restoration, education, and stewardship that would have beneficial effects on wildlife habitat. Action alternatives 1, 2, and 3 include actions that would provide additional habitat benefits by eliminating unsustainable or unneeded roads, trails, or facilities, and restoring the respective sites. However, action alternatives 1, 2, and 3 would also yield some adverse effects by expanding visitor access and recreation development in some areas. As for the waterbird habitat at Alcatraz Island, the no-action alternative and action alternatives 1 and 3 would have adverse effects, while alternative 2 would have beneficial effects.

When the likely effects of implementing the actions contained in the GMP alternatives are added to the effects of other past, present, and reasonably foreseeable actions previously described, there would be a long-term, minor to moderate, beneficial cumulative impact on vegetation and wildlife habitat. Although impacts on local special status species and their habitat in the project area would be mitigated to minimize potential impacts, and impacts of other projects in the area would generally be beneficial, the adverse impacts from urbanization of the region would continue to result in habitat loss; the cumulative impact to most special status species and their habitat would be adverse.

CULTURAL RESOURCES

A number of past, present, and ongoing plans, programs, and projects, if implemented, could contribute to cumulative impacts on cultural resources. Plans, programs, and projects that have a relationship to this general management plan are described in the section “Relationship of This Plan to Other Plans” in Part 1 and in volume 1, appendix B. Those plans and projects that are most relevant to and could contribute to cumulative impacts on cultural resources include the following:

- National Park Service plans currently being prepared such as the *Extension of San Francisco Municipal Railway’s Historic Streetcar Draft Environmental Impact Statement*
- National Park Service trails and transportation plans and programs such as the *Marin Headlands and Fort Baker Transportation Infrastructure and Management Plan Final Environmental Impact Statement* [2009]
- National Park Service restoration plans such as the *Alcatraz Island Historic Preservation and Safety Construction Program Environmental Impact Statement* [2001], and restoration plans for Redwood Creek and Big Lagoon
- National Park Service program implementation plans such as the *Bay Area Museum Resource Center Plan*, and the redevelopment plan for Fort Baker
- State and regional plans such as the California Department of Parks and Recreation – *Angel Island State Park Resource Management Plan / General Development Plan / Environmental Impact Report* [1979]
- County and local plans such as the *Marin Countywide Plan* [2007] and amended [2009], Pacific Gas and Electric *Jefferson-Martin 230 KV Transmission Line Proposed Settlement and Environmental Assessment* [2004], *San Francisco Public Utilities Commission Peninsula Watershed Management Plan* [2002], and the *San Francisco General Plan* [2004]

Past human use and practices and management of lands in and around Golden Gate National Recreation Area, such as agricultural operations and construction associated with urban, suburban, military, and recreational development, have also contributed to cumulative impacts on cultural resources.

Archeological Resources

The actions in the plans, programs, and projects that are listed above, as well as past human use and management of lands in and near the park would have cumulative impacts on archeological resources. Development projects, NPS trails and transportation programs, NPS restoration and redevelopment projects, and county and local plans could result in adverse cumulative impacts to archeological resources as a result of ground disturbance operations; however, NPS projects and plans implemented on park lands would include every effort to preserve archeological resources or mitigate sites that could not be avoided. National Park Service restoration and redevelopment plans would have beneficial cumulative impacts on archeological resources because they would emphasize cultural resource protection and preservation as well as mitigation if sites could not be avoided. Similarly, state and regional plans would have beneficial cumulative impacts on archeological resources because they would emphasize cultural resource protection and preservation.

Past human use and management of lands in and around the park, such as agricultural operations, ranching, and construction associated with urban, suburban, military, and recreational development, may have already resulted in adverse cumulative impacts to archeological resources because these resources could have been lost or degraded as a result of ground disturbing operations and the lack of understanding and appreciation of these resources.

When the likely impacts of implementing the actions contained in the GMP alternatives are added to the impacts of other past, present, and reasonably foreseeable actions previously described, there would be cumulative, long-term, minor to moderate, adverse impacts on archeological resources on lands in and near the park. The actions contained in the GMP alternatives would generally contribute a small beneficial increment to the overall adverse cumulative impacts on archeological resources.

Ethnographic Resources

National Park Service restoration plans associated with Alcatraz Island would provide for repair, stabilization, and rehabilitation of cultural resources on the island, resulting in long-term, minor to moderate, beneficial cumulative impacts to the island's ethnographic resources and contributing to the island's ethnographic significance for American Indian tribes and organizations. Past human use and management of Alcatraz Island, such as agricultural operations and construction associated with military, penitentiary and recreational development, may have resulted in the lost or degradation of ethnographic resources, adding to the adverse cumulative impacts.

When the likely effects of implementing the actions contained in the GMP alternatives are added to the impacts of other past, present, and reasonably foreseeable actions previously described, there would be long-term, minor, adverse cumulative impacts to ethnographic resources on Alcatraz Island. However, the actions contained in the GMP alternatives would generally contribute a small beneficial increment to the overall adverse cumulative impacts on ethnographic resources.

Historic Structures

Past human use and management of lands that are in and near the park (such as construction associated with urban, suburban, and recreational development and other activities) have resulted in the loss or deterioration of historic buildings in the San Francisco Bay area. The park's seacoast fortifications today comprise what is widely considered to be the most comprehensive collection of military architecture and coastal defense systems and the finest surviving examples of military engineering for coastal defense in the United States. National Park Service trails and transportation plans and programs, NPS restoration and redevelopment plans, NPS program implementation plans, state and regional plans; and county and local plans, all provide for the protection and preservation of historic buildings and their architectural values and therefore the implementation of these plans would contribute to beneficial cumulative impacts on historic buildings.

When the likely effects of implementing the actions contained in the GMP alternatives are added to the impacts of other past, present, and reasonably foreseeable actions previously described, there would be a cumulative, long-term, moderate, beneficial impact to historic buildings. The actions contained in the GMP alternatives would contribute a relatively large beneficial increment to the overall cumulative impacts on historic buildings.

Cultural Landscape Resources

Implementation of NPS trails and transportation plans and programs and county and local plans, such as the *Marin Countywide Plan* and the *San Francisco General Plan*, would have beneficial cumulative impacts on cultural landscape resources because of their emphasis on preservation of cultural landscapes and minimization of adverse effects on cultural landscapes. Implementation of NPS plans currently being prepared, such as the Extension of San Francisco Municipal Railway's Historic Streetcar, and county and local plans, such as the Pacific Gas and Electric Jefferson-Martin 230 KV Transmission Line Proposed Settlement, would result in the introduction of new elements to the cultural landscapes of the San Francisco Bay area and thus potentially compromise the integrity of those cultural landscapes. Implementation of NPS restoration plans, such as those for Redwood Creek and Big Lagoon, could result in the loss of some cultural landscape resources and thus compromise their cultural landscape values.

Implementation of NPS restoration and program plans, state and regional plans, and county and local plans would result in beneficial cumulative impacts on cultural landscape resources because of their emphasis on protection, preservation, and rehabilitation of cultural landscape resources and values. Past human use and management of lands in and near the park, such as agricultural operations, ranching, and construction associated with urban, suburban, military, and recreational development, have compromised the integrity of cultural landscapes, and have resulted in the loss of many of the region's cultural landscape resources and values.

When the likely impacts of implementing the actions contained in the GMP alternatives are added to the effects of other past, present, and reasonably foreseeable actions previously described, there would be a long-term, minor to moderate, adverse cumulative impact on cultural landscape resources. The actions contained in the GMP alternatives

would contribute to beneficial impacts on cultural landscape resources, but they would contribute only a small increment to the overall cumulative impacts on cultural landscape resources.

Park Collections

None of the past, present, or ongoing plans, programs, and projects described in the “Relationship of This Plan to Other Plans” section in Part 1 of this document or in appendix B would have any appreciable cumulative impacts on park collections. Ongoing actions in the park, in conjunction with the *Bay Area Museum Resource Center Plan*, will have appreciable beneficial cumulative impacts. The actions contained in the GMP alternatives would contribute to cumulative, long-term, moderate, beneficial impacts on the park collections.

VISITOR USE AND EXPERIENCE

The cumulative impacts on visitor use and experience resulting from the actions described in the GMP alternatives in combination with actions resulting from related projects and policies of other entities within the Bay Area are identified in this section. In preparing the cumulative impacts analysis, the actions of the past, present, and foreseeable future were estimated at a qualitative level given the visionary nature of the general management plan. In estimating the impacts of other actions in combination with the GMP alternatives the team relied on the actions or potential actions from various local, state, and federal plans and projects as well as the knowledge of the park staff. A summary of these other plans can be found in the sections in volume 1 titled “Relationship to Other Plans” and in “Appendix B: Description of Management Plans Related to this Plan.”

The actions from plans and projects that are most relevant to visitor use and experience and could contribute to cumulative impacts include: county comprehensive plans; local open space and transportation plans and projects; area park plans such as those for Angel Island State Park, Mount Tamalpais State Park, San Francisco Maritime National Historical Park and Point Reyes National Seashore; the Redwood Creek Watershed Vision; plans and projects at Golden Gate National Recreation Areas such as the Trails Forever Initiative, a dog management plan, equestrian planning in Marin County, and the redevelopment of Fort Baker; as well as several other educational, stewardship, and recreation plans and projects taking place in the Bay Area. These various other actions would generally have beneficial impacts on visitor use and experience in the area by providing an increased diversity of recreation opportunities, additional educational and stewardship programs, and improved connectivity between public lands and open space in the region.

Diversity of Recreation Opportunities and Availability of Other Visitor Support Services and Facilities

The GMP alternatives provide for a wide variety of recreational opportunities for park visitors, as well as a network of other visitor support services and facilities. The variety of existing and new recreational opportunities provided by the no-action alternative and action alternatives 1 and 3, respectively, would all have notable beneficial effects on visitor use and experience. Although each alternative has a similar mix of visitor opportunities, the alternatives differ in the number and type of opportunities provided. In the no-action alternative and alternative 1, the emphasis is on providing visitors with a greater mix of options and a choice of opportunities and self-guiding exploration. In alternative 2, there is a greater emphasis on providing more primitive types of visitor opportunities within a natural and wild setting. Finally, alternative 3 provides visitors with the opportunity to be immersed in the settings of those natural and cultural resources that are nationally significant. This alternative relies upon park educational and interpretive programs to help visitors learn about and explore these resources.

In addition to the impacts resulting from the actions of implementing the GMP alternatives (discussed previously in the environmental consequences section), the various other actions described below collectively contribute to visitor use and experience in the park. The actions resulting from implementation of the comprehensive plans for each county, the master plans for gateway municipalities, along with their respective specific community plans for parks, trails, open space, and transportation, would all have a long-term, minor to moderate, beneficial impact on visitor experiences in and around the park. Many of these recreational opportunities occur outside the park and other activities cross back and forth of the park boundary such as hiking, running, and horseback riding. The Bay Area contains many local, states, and federal park lands that provide a wide variety of complementary day-use and overnight recreation opportunities; this further provides choices for visitors and local residents in the recreational opportunities and outdoor settings that they participate in. The combination of these managed open space lands provide for long-term, moderate, beneficial cumulative effects on the visitor use and experience.

The National Park Service has completed or is in the process of preparing plans with actions that combined with those of the GMP alternatives will enhance recreational opportunities for park visitors. For example, a dog management plan is currently under development and will designate appropriate locations and management strategies for dog-walking activities in the park. A plan to address equestrian activities and facilities in Marin County is being developed. The recent renovation of historical Fort Baker into the Cavallo Point Lodge and the expansion of the Headlands Institute and other park partner programs all complement the actions in the GMP alternatives and contribute to the diversity of visitor opportunities.

Finally, several other projects and initiatives are being undertaken throughout the Bay Area by a variety of other public, private, and nonprofit organizations. These projects and initiatives include preserving additional open space, renting recreational equipment, providing connections to a larger regional trail network, and promoting other outdoor recreation activities such as hiking, running, surfing, biking, touring, scenic driving, wildlife viewing, and equestrian opportunities. The past, present, and reasonably foreseeable actions of other entities, public and private, combined with those actions

resulting from the GMP alternatives will have a long-term, moderate, beneficial cumulative impact on the availability and diversity of outdoor recreational opportunities.

Education, Interpretation, and Stewardship Programs and Opportunities

The GMP alternatives include several actions that would also expand and enhance education, interpretation, and stewardship programs and opportunities. Thus, all GMP alternatives would have a beneficial effect on visitor use and experience in this regard. The actions included in alternatives 2 and 3 would provide the greatest level of education and stewardship programs compared with the no-action alternative and alternative 1, where programs are provided but the emphasis is more on self-guided exploration. Additionally, alternative 3 would improve the depth and content of available interpretive information and would encourage visitors to actively immerse themselves in the resource-based experiences (whether natural or cultural). Park partners—such as the Institute at the Golden Gate, Slide Ranch, Crissy Field Center, Headlands Center for the Arts, and numerous others—also play an integral role in all GMP alternatives by complementing and expanding beyond NPS programs. The contribution from a variety of park partners provides educational, interpretive, and stewardship opportunities for all ages from toddlers to the elderly.

In addition to the NPS and park partner programs, there are additional environmental education, interpretive, and stewardship opportunities provided by Bay Area educational institutions, environmental education and open space organizations, and the many local, state, and other federal parks that promote an understanding of the region's important and diverse ecological systems and cultural history.

The past, present, and reasonably foreseeable actions of other entities, public and private, combined with those actions resulting from the GMP alternatives will have a long-term, moderate, beneficial cumulative impact on the availability and diversity of educational, interpretive, and stewardship programs.

Access and Connectivity to Parks and Open Space in the Bay Area

All of the GMP alternatives include actions that would expand or enhance access to the park and its connectivity with other parks, trails, and communities in the Bay Area, and thus, all alternatives would have a beneficial effect on visitor use and experience. These expansions and enhancements would primarily come in the form of improved connections with public transportation networks, multimodal access, and increased trail connections with local communities and parks.

These various other actions, projects, and initiatives would also contribute to visitor use and experience. For example, most of the comprehensive plans and master plans for the surrounding counties and cities include elements that promote connections with surrounding parks and communities (i.e., transportation connections, pedestrian/bicycle connection, and even parkland connections). Several communities also have issue-specific plans that guide connectivity development, such as public trail plans, transportation plans, and open space plans. Other local, state, and federal parks and open space programs in the Bay Area also implement management plans and projects that

improve park land-to-park land trail connections or land connections. This also includes the actions associated with enhancing ferry access throughout the Bay Area and those of the Golden Gate Bridge Highway and Transportation District, that provide connections for hikers and bikers—in addition to vehicles—between Marin and San Francisco counties. The contribution of other public transportation agencies also beneficially impact visitor use and experience in combination with the GMP alternatives by providing more diverse and efficient options for access to major units of Golden Gate National Recreation Area.

Some specific projects at Golden Gate National Recreation Area (independent of the GMP action alternatives) will also contribute to the cumulative impacts on visitor use and experience. The Trails Forever Initiative, launched in 2003 by the Golden Gate National Parks Conservancy, provides a systematic approach to connecting a world-class system of trails throughout the park. The Muir Woods National Monument shuttle improves access to Muir Woods National Monument and the backcountry of Mount Tamalpais State Park when parking is in short supply. In addition, the park continues to coordinate with local and regional land and water transportation services and their links to the greater Bay Area to provide alternative visitor access to open spaces including the park. These programs, in combination with the GMP alternatives, will provide enhanced recreation opportunities along with better travel connections between park sites, and between communities and the park.

The past, present, and reasonably foreseeable actions of other entities, public and private, combined with those actions in the GMP alternatives will have a long-term, moderate, beneficial cumulative impact on access and connectivity to parks and open spaces in the Bay Area.

SOCIAL AND ECONOMIC ENVIRONMENT

Along with the actions identified in this general management plan, the actions identified in a number of plans and projects in the local gateway communities, the three adjacent counties, and the overall San Francisco Bay Area could contribute to cumulative impacts to the social and economic environment in the area. Plans and projects that have a relationship to this general management plan are identified and described in the “Relationship of This Plan to Other Plans” section in Part 1, and in “Appendix B: Description of Management Plans Related to this Plan.” The proposed actions in these plans and other management actions all have effects on the social and economic environment, both individually and collectively. These effects mainly relate to the quality of life of area residents and the economy of the area. The cumulative contributions to the quality of life and economy could extend throughout the gateway communities, the three adjacent counties, and the overall Bay Area.

Quality of Life

The quality of life for residents living in proximity of park lands could be influenced by the actions proposed in the alternatives of this general management plan in addition to those that are proposed or implemented by other local and regional entities.

Golden Gate National Recreation Area and Point Reyes National Seashore make up a large open space adjacent to many other state and local parks and open spaces within close proximity to San Francisco Bay cities and communities. The area's open space is integral to the quality of life for its residents. As described in the part 8 of this document, the location of Golden Gate National Recreation Area at the urban-wildland interface makes it particularly important for residents' physiological and psychological health, community identity, landscape aesthetics, and community building. As other private land continues to be developed and urbanized, the park will become more valuable to the community and to the quality of life of its residents. All GMP alternatives would maintain and expand the park's role in contributing to the quality of life of Bay Area residents.

Similarly, the mosaic of other park and open space lands in the Bay Area contribute to quality of life. These other park lands, which are owned and managed by various cities, counties, the state, and other preservation organizations, complement Golden Gate National Recreation Area in providing many benefits relating to resident health, recreation, landscape aesthetics, and community-building. These other land management agencies and preservation organizations also will continue to manage their existing park lands in a way that supports programs and opportunities that contribute to quality of life of Bay Area residents. In addition, these agencies will continue to work individually and to coordinate with each other to seek out new lands to acquire, with the collective goal of expanding the network of open space and urban recreation lands in the Bay Area.

When the likely effects of implementing the actions contained in each of the GMP alternatives are added to the effects of these other past, present, and reasonably foreseeable open space preservation actions, a long-term, minor to moderate, beneficial cumulative impact on the quality of life for residents in the Bay Area could result. The impacts that could result from implementing the actions in the GMP alternatives would constitute a significant contribution to this overall cumulative effect in the local gateway communities near the park, but constitute a small contribution to the overall cumulative effect in the other communities throughout the Bay Area. This difference would be due to the existence of other park lands in closer proximity to these other communities.

The no-action alternative and action alternatives 1, 2, and 3 emphasize outreach, welcoming efforts, and community building that would help foster a new relationship between the park and the diverse residents of the Bay Area. As discussed in the part 9: "Potential Environmental Consequences," when the GMP action alternatives are compared with the no-action alternative, there are notable variations in community outreach actions. However, when considered in the context of all other similar actions and projects in the surrounding communities and throughout the Bay Area, the differences between the park GMP action alternatives become minimal. The actions proposed in the various alternatives include community outreach programs, maintaining or adding group facilities, developing new park programs that reach out to new and underserved residents, and establishing new welcome/orientation facilities in key locations in the park.

Likewise, there are many local and regional entities, including social service organizations and church groups, that reach out to many different communities and provide programs and access to the area's open spaces. Local educational institutions facilitate community outreach programs and outdoor and environmental clubs. Local,

county, and state parks offer additional programs and access to open spaces. These programs and opportunities create a diverse choice for Bay Area residents that contribute to healthy communities, related amenities, and access to outdoor recreation opportunities.

When the likely effects of implementing the actions contained in each of the GMP alternatives are added to the effects of these other past, present, and reasonably foreseeable outreach actions, a long-term, minor to moderate, beneficial cumulative impact on the quality of life for residents in the respective local communities could result. The impacts of implementing the actions in the GMP alternatives would constitute a significant contribution to this overall cumulative effect in the local gateway communities, but would constitute only a small contribution to the overall cumulative effect in the communities that are farther from the park.

Another important attribute to quality of life in the Bay Area is visitor's access to education and resource stewardship opportunities. All the GMP alternatives contain a strong component on education and stewardship that includes improving facilities and enhancing programs at park sites throughout the three gateway counties. Similarly, our park partners, educational institutions, and most local and state government park and open space programs throughout the Bay Area offer active and diverse education and stewardship opportunities for residents in the respective communities. The Bay Area is home to numerous nonprofit organizations with missions to improve community awareness and engagement through education and resource stewardship activities and programs. Various local school districts also provide such opportunities and programs to their students, often by using local parks and open space lands as "natural classrooms" to give students hands-on learning and stewardship experiences.

When the likely effects of implementing the actions contained in each of the GMP alternatives are added to the effects of these other past, present, and reasonably foreseeable education and stewardship actions, a long-term, minor to moderate, beneficial cumulative impact on the quality of life for residents in the respective local communities could result. The impacts of the GMP actions on the quality of life of the local residents would contribute to this overall cumulative effect in the local gateway communities relatively close to the park, but would constitute only a small contribution to the overall cumulative effect in the communities that are farther from the park.

The accessibility and connectivity of park land is another key contributor to quality of life. As previously described, park and open space lands in and around a densely populated area are important for the following reasons: 1) they provide enjoyable recreation opportunities for residents; 2) they offer opportunities for diverse members of the community to gather and interact in a common setting; and 3) they help encourage local residents to exercise and stay active, which yields innumerable health benefits (individually, and collectively as a community). Thus, providing easy access and connection to these parks is equally important to a community's quality of life. All alternatives for the general management plan include distinct actions that would expand public accessibility to the park and improve connectivity with other local and regional parks and trails. However, action alternatives 1 and 3 would accomplish this to a greater extent. Under all alternatives, improvements to park accessibility and connectivity would be accomplished by two means: improved local and regional connections to other trails and parks; and improved public transportation facilities that better serve the park and other open space lands and communities in the area.

Along with these actions of the GMP alternatives, various other plans, projects, and actions in the Bay Area would contribute to quality of life by improving park land accessibility and connectivity. For example, the park management plans for most local government parks and open spaces in the region charge the respective land managers with the task of identifying and pursuing new and better connections to other regional trails or parks. Some of the city and county comprehensive plans also include regional trail planning elements (e.g., San Francisco Bay Trail and the California Coastal Trail) that highlight key connection corridors and include community connectivity as an integral goal or objective in land use planning. These elements and goals will enable urban planners to ensure that local and regional trail connections are both retrofitted to existing developments and included in future developments as the communities grow.

Also, some of the local governments and nonprofit groups throughout the Bay Area (e.g., Association of Bay Area Governments, Bay Area Open Space Council, Golden Gate National Parks Conservancy) have adopted specific trail plans that promote accessibility and connections to local parks and identify regional trail corridors for pedestrians and bicyclists. These plans will likely give way to future local and regional trail construction actions as funding and trail development partners become available. Also, in addition to local and regional trail planning efforts, various local governments have taken on local and regional transportation system planning projects that could serve to improve park land access, and thus improve quality of life in the area. The actions set forth by these transportation plans could improve park access by expanding public transit opportunities (via road, rail, or water) and by minimizing traffic congestion, which could reduce drive times to and from park sites.

When the likely effects of implementing the actions contained in each GMP alternatives are added to the effects of these other past, present, and reasonably foreseeable accessibility and connectivity actions, a long-term, moderate, beneficial cumulative impact on the quality of life for residents in the respective local communities could result. The impacts of the park's GMP alternative actions on the quality of life of the local residents would constitute a small to moderate component of this overall cumulative effect in the local gateway communities that abut the park, but would constitute only a small component of the overall cumulative effect in the communities that are farther from the park.

The availability of equestrian facilities is also considered an important quality of life attribute for many in the Bay Area. The GMP action alternatives 1 and 3 would maintain and expand the available equestrian facilities and programs in the park. Action alternative 2 would maintain the use of the existing facilities, but might result in the removal of some equestrian facilities within the park. Beyond the park, other private equestrian facilities exist in the Bay Area on private lands. These other equestrian facilities contribute to the overall supply of equestrian opportunities and therefore to the quality of life for local residents.

When the likely effects of implementing the actions contained in the GMP no-action alternative and alternatives 1 and 3 are added to the effects of these other past, present, and reasonably foreseeable actions and trends related to equestrian opportunities, a long-term, moderate, beneficial cumulative impact on the quality of life for residents in the nearby communities could result, based upon the continuation of the current availability of non-Park Service equestrian facilities. When the effects of alternative 2 are combined

with the impacts of these other actions and trends, a long-term, minor, beneficial cumulative impact on the quality of life could result. If non-Park Service equestrian facilities decline in the Bay Area, then the cumulative impacts on the quality of life could be long term, moderate, and adverse. The impacts of the GMP alternatives on the quality of life of the local residents would constitute a moderate contribution to this overall cumulative effect in the local gateway communities but would constitute a small contribution to the overall cumulative effect in the communities that are farther from the park.

Quality of life is also indirectly affected by outcomes from interagency relationships and from collaboration between the National Park Service, park partners, other local land managers, and surrounding local governments. If public, private, and nonprofit entities maximize their cooperation in providing natural, cultural, educational, and recreational opportunities for the public, the quality and quantity of the resulting opportunities also will be maximized. Cost sharing, idea sharing, facility interconnectedness, and program coordination are just a few of the benefits that stem from interagency collaboration. Collectively, the actions that result from regional collaboration can provide a range of benefits; all contributing to improving the quality of life for residents. The focus and prioritization of the collaboration efforts may vary slightly across all GMP alternatives; however, all alternatives include actions that aim to improve and expand relationships with park partners, other land managers, local recreation, environmental, and historic organizations, and surrounding local and state governments.

Likewise, many of the Bay Area public land managers and local governments that are in proximity to the park also place a high priority on interagency coordination and partnership development. Such priorities are set forth in most of the comprehensive plans and park management plans for these communities and open space programs. Just as all GMP alternatives would charge NPS staff with working closely with other land managers, municipalities, and park partners, these other city plans, county plans, and park management plans charge their respective staff to do the same. In addition, several nonprofit and private sector organizations in the Bay Area include the development of public-private partnerships as a key to their organizational missions. Given the large number of government jurisdictions, nonprofit organizations, and other park-related interests that exist in the Bay Area, interagency collaboration and partnership development have become an integral part of most planning efforts in this relatively small geographic area.

When the likely effects of implementing the actions contained in each of the GMP alternatives are added to the effects of these other past, present, and reasonably foreseeable relationship-building actions, a long-term, minor to moderate, beneficial cumulative impact on the quality of life for residents in the respective local communities could result. The impacts of the GMP alternative actions would constitute a moderate contribution of this overall cumulative effect in the local gateway communities, but would constitute a small contribution to the overall cumulative effect in the communities that are farther from the park.

Economy

Actions that are proposed in the GMP alternatives would contribute to the economy of the local gateway communities and the overall Bay Area. The breadth and intensity of the park's economic influence varies considerably among economic sectors and locations in

the Bay Area. However, given the multiplier effect of economic activity (as explained in “Part 9: Affected Environment”), money spent or earned in one locality or economic sector typically circulates to and from other localities or sectors. Therefore, just as regional economic activity can contribute to local economic conditions, the reverse is true as well. Given the interactions and relationships of local and regional economies, the cumulative effects that are discussed below should be considered holistically, with overlaps expected. For the purpose of identifying and explaining these effects, this section separates the economic impacts discussion into three categories: local economy of the gateway communities and adjacent three counties, tourism industry economy of San Francisco, and regional economy of the overall Bay Area.

Local Economy of the Gateway Communities and Adjacent Tree Counties

The economy of the gateway communities, the three adjacent counties, and the overall Bay Area would be influenced by the GMP alternatives and the other plans and management actions identified in the above discussions. Actions and policies in all of these plans have the potential to generate economic activity via visitation increases, planning and project contracting, construction and restoration, implementation of new programs, facility development and expansion, job creation, expenditures by NPS staff living in local communities, or other sources.

As discussed in the impact analysis of the GMP alternatives, alternatives 1, 2, and 3 all include substantial construction, site restoration, and reclamation projects that would create and accommodate new or restored historic structures or park facilities, and would restore the park’s natural resources. Alternatives 1 and 3 would provide the highest level of historic structure restoration and new or expanded park facilities and programs. Many of these construction and restoration projects would generate economic activity in the region via NPS contracts awarded to local planning, design, and construction firms in future years. The implementation of these actions would also result in an expansion of programs and services that would generate more attractions for visitors (and the potential for increased visitation), more park concession business opportunities, more tourist revenue for gateway community businesses (e.g., hotels, restaurants), and more opportunities for park partners. For example, alternatives 1 and 3 include various facility and visitor service expansions at park sites throughout the three counties and on Alcatraz Island. Many of these expansions would necessitate the hiring of new employees by park partners, concessioners, or the National Park Service.

In addition, the increased community outreach efforts associated with alternatives 1 and 3 would likely generate an increase in park visitation (e.g., by reaching out to the diverse population of the Bay Area). This potential increase in visitation could yield economic activity by generating additional revenues for the park and the tourism businesses that support park visitors.

Many of the employees of park partners, concessions, and the National Park Service reside in the gateway communities around the park in all three adjacent counties. These employees contribute to the local economy directly by spending their earned salaries at local businesses and paying local taxes. New jobs with park partners, concessions, and the National Park Service that result from implementing actions in the GMP alternatives would also yield such economic contributions to the local economy. The actions that prompt economic activity would not only support these businesses and their employees

directly, but the economic multiplier effect would also circulate this generated money through the local and regional economy.

In addition to Golden Gate National Recreation Area, there are other major contributors to the economic conditions of the area. Many of the local small businesses support park visitors with sports equipment and hospitality services. Changes in park visitation can influence the success of these businesses. Most of the local gateway communities are also dependent upon nontourism businesses that generate substantial economic benefits and community support. These businesses include those associated with residential, commercial (retail), educational, medical, governmental, and industrial sectors of these communities. The continuous operation of and improvement to the infrastructure of local communities also contribute economically in addition to allowing for economic growth. The construction of several infrastructure projects that would serve these communities would have direct effects on the local economy. Roadway projects, water utility projects, and gas and electric supply projects are just a few examples of other actions that would generate economic activity in the area. Management actions at the other local, state, and federal lands in the Bay Area would include actions that would contribute to economic activity associated with transportation and regional services (e.g., ferry service, schools, social services, airports, waste disposal). Future economic growth can be guided by the visions that the communities develop through city and county comprehensive plans, land use policies, zoning ordinances, and other community economic and redevelopment efforts. These plans and policies can guide and encourage direct economic activity such as commercial business growth (e.g., retail, professional, and hotel/restaurant), housing growth, tourism, and industrial growth.

When the likely effects of implementing the actions contained in each GMP alternative are added to the effects of these other past, present, and reasonably foreseeable economic development actions, a long-term, minor to moderate, beneficial cumulative impact on gateway community economies could result. However, the impacts of the GMP actions on the local economy would constitute only a small component of this overall cumulative effect in the local gateway communities and a negligible portion of the overall cumulative effect on the Bay Area economy.

Tourism Industry Economy of San Francisco

The implementation of the actions in each of the GMP alternatives will contribute to the San Francisco tourism industry by providing many natural, cultural, educational, and recreational opportunities for visiting tourists. The tourists who visit the park play an important role in sustaining the tourism industry of the area by generating more business for San Francisco area hotels, restaurants, bars, retail shops, boat tours, and other tourism support businesses (e.g., bike rentals and tour companies).

San Francisco provides an abundant supply of tourist attractions that include, but are not limited to, music and art events, culinary adventures, ethnic neighborhoods, sporting events, historic sites, conventions, city tours, cable cars, world class shopping, unique neighborhoods, and community parks. These attractions all contribute to a critical mass of opportunities that makes San Francisco one of the premier tourist attractions in the country. Adding to the attractions of San Francisco is the natural openness and space of San Francisco Bay, the surrounding wild character of Golden Gate National Recreation Area, and the views of historic Alcatraz Island. Together these features create a unique setting that both contrasts and complements the urban feel of a great city—making the

city a national and international travel destination. In other words, a synergistic effect of tourist attractions is present. For example, a large number of the out-of-state and international tourists will visit Alcatraz Island, the Marin Headlands, and Muir Woods National Monument in addition to the many urban sites and activities that are abundant in and around San Francisco. This combination or “package” of attractions and tourist opportunities in and around San Francisco results in a sustainable, thriving tourist industry. This industry directly contributes to the local and regional economy.

When the likely effects of implementing the actions contained in each of the GMP alternatives are added to the effects of other past, present, and reasonably foreseeable tourism industry actions and attractions, a long-term, moderate, beneficial cumulative impact on the economy would result. The impacts of each GMP alternative on the overall cumulative economy would contribute a long-term, minor, beneficial effect to the overall economy of San Francisco.

Regional Economy of the Overall Bay Area

As noted in the subsection on quality of life, the implementation of actions in each GMP alternative would continue to provide open space preservation, numerous recreation opportunities, facilities, and park settings for organized group activities, and other amenities that make the park an intrinsic, attractive component of the Bay Area community. This quality of life contribution also has an effect on the economy. By providing aesthetic, community, and recreational values, the park would continue to help make the Bay Area an attractive place for companies and talented professionals to call home. The Bay Area’s quality of life becomes a draw for business and economic growth because of places like the park. The economic growth and success of Silicon Valley is a prime example of how economic growth can occur in a quality business location with a natural landscape backdrop. Similarly, the other city, county, and state parks and open spaces throughout the Bay Area contribute to making this region an attractive place to do business and to live. The region’s cultural diversity and abundance of urban attractions also complement the parks and help to attract business growth.

When the likely effects of implementing the actions contained in each GMP alternative are added to the effects of these other past, present, and reasonably foreseeable actions and trends, a long-term, minor to moderate, beneficial cumulative impact on the economy would result. The impacts of the GMP alternative actions on the economy would contribute a small to medium component of this overall cumulative effect in the gateway communities and counties near the park, and would contribute an even smaller component to the overall cumulative effect when the overall Bay Area is considered.

TRANSPORTATION

The cumulative impacts on transportation resulting from the actions described in the GMP alternatives in combination with actions resulting from transportation projects and policies of other entities within the Bay Area are identified in this section. In preparing the cumulative impacts on transportation, the actions of the past, present, and foreseeable future were estimated. Input into these cumulative impacts included actions by others within the areas around the park, or potential actions that are described in various park

plans already underway or recently completed. Transportation projects external to the park may result in an increase in visitation to the park by improving access for any of the travel modes discussed; or conversely, they may impede movement or burden transportation systems and reduce access. Cumulative transportation impacts of both external and park-originated projects are described below.

The transportation actions in the general management plan include expanding regional park ferry access to primary park sites in San Francisco Bay, new embarkations for Alcatraz Ferry, developing strategies for congestion management, and improving the intelligent transportation system and wayfinding applications. Throughout the park, improvements will be made to better connect the park trail system to the regional trail network and to local communities. In addition, improvements will be made to the trail system in Marin and San Francisco counties that include sustainable alignments and design, improved accessibility, and wayfinding signs. In San Mateo, work will begin on a comprehensive trail plan that will guide the development of a trail network on park lands and will identify logical trail connections to strengthen the regional trail network.

These GMP actions, when combined with major past, present, and foreseeable future transportation actions of others, will have a cumulative impact to the transportation system that influences visitor access and circulation. At the Marin Headlands and Fort Baker area, there will be enhanced multimodal access to park sites. The roadway infrastructure would be rehabilitated or reconstructed without altering the historic character, and parking facilities would be improved. Additional transit options would be provided to and within the Marin Headlands and Fort Baker to improve access to the area. Pedestrian and bicycle access would be improved by closing and rerouting existing trails and constructing new trails. Connectivity—access to the park by all nonmotorized modes, and access to sites within the park by all modes—is likely to be improved. Hiking and biking across the Golden Gate Bridge to the Marin Headlands and Fort Baker will grow as a popular recreational activity; continued coordination between the National Park Service and the Golden Gate Bridge, Highway and Transportation District is required to address increased demands and safety issues. The cumulative impacts of implementing these actions could be long term, moderate to major, and beneficial.

In Marin County, the transportation element of the *Marin Countywide General Plan Update* of 2007 guides the list of transportation projects underway or already approved. Projects focus on increasing capacity of arterials and Highway 101; by reducing congestion in the eastern part of the county, these measures may make some park sites at Golden Gate National Recreation Area more easily accessible. Completion of these projects would represent a long-term, minor, beneficial cumulative impact on auto and transit access to Marin park lands, which are primarily located in more rural west Marin County.

The *Marin Countywide General Plan* includes an explicitly stated policy to maintain West Marin's rural character, so roads in that area will continue to be two-lane only, with turning lanes, pullouts, and bicycle paths allowable. Muir Beach, Muir Woods National Monument, and Stinson Beach are accessed by these small roads, so congestion during peak periods can be expected to continue or to get worse if there are no programs to provide public transportation or improve bicycle routes. This scenario would have a long-term, minor to moderate, adverse cumulative impact on auto travel to West Marin sites.

Many of Golden Gate National Recreation Area's park sites in Marin and San Francisco counties are located along San Francisco Bay. To improve visitor connection and circulation, planners are working to develop a Golden Gate National Recreation Area Water Shuttle Terminals Plan. Although only at the conceptual stage, the plan proposes a water shuttle system to connect park sites on the shore of the San Francisco Bay—Angel Island, Sausalito, Fort Baker, Crissy Field, Fort Mason—as well as the Ferry Building. Routes and destinations have not been finalized, yet. The system itself could be a significant attraction, unique within the national park system. Some visitors could be expected to take the water shuttle from one location to another without disembarking until reaching their point of origin, as a form of recreation in itself. If implemented, this system could have a long-term, moderate to major, beneficial cumulative effect on the connectivity of bayside sites, access to park sites by water, and an increase in the modes of travel.

In San Francisco County, the San Francisco Municipal Transportation Authority is implementing a Bus Rapid Transit system for Van Ness Avenue, which is a collection of measures to provide rapid and reliable transit on Van Ness Avenue. The north end of this service terminates within two blocks of Upper Fort Mason and San Francisco Maritime National Historical Park. Given that this part of the city is already served by some transit operations, this project could have long-term, moderate, beneficial cumulative effects on visitor access and on connectivity to the park, allowing visitors to get to the north part of the city without driving and parking a vehicle.

A plan is being developed for the E-Line Streetcar Extension that proposes to extend streetcar service from the Embarcadero through San Francisco Maritime National Historical Park and a tunnel under Upper Fort Mason. The E-line Streetcar Extension connects Fisherman's Wharf to Lower Fort Mason and someday it could extend to Crissy Field. If this project were to go forward, it could have a long-term, major, beneficial cumulative effect on both connectivity and access to this area of Golden Gate National Recreation Area.

The Doyle Drive project will rehabilitate a major artery along the northern waterfront of San Francisco through several Golden Gate National Recreation Area sites. The purpose of the proposed project is to improve the seismic, structural, and traffic safety of Doyle Drive and its approach to the Golden Gate Bridge. The project is intended to significantly reduce the adverse effects of the current structure, including noise, visual impacts, and air pollution. The project would place portions of the low viaduct structure below grade or underground, thus removing it from the landscape and restoring visual connections between areas of the Presidio of San Francisco. The results of the project, a safer parkway with some segments underground, is likely to have long-term, major, beneficial cumulative impacts on access to this part of Golden Gate National Recreation Area by all modes, motorized and nonmotorized. Planned modifications in the Presidio of San Francisco, currently behind Doyle Drive, reconnect it to the shoreline, making it much more accessible by bicycle and foot.

In San Mateo County, the California Department of Transportation is working to reroute State Route 1 at Devil's Slide. This project involves boring two tunnels (one in each direction of traffic flow) beneath an unstable portion of a steep Pacific Coast hillside. This section of road has a long history of rockslides and land slippage, causing lengthy closures and millions of dollars in repair costs. This section of State Route 1 lies between

two Golden Gate National Recreation Area's park sites: the Mori Point / Cattle Hill area and Corral de Tierra. It is likely that Pedro Point and lands adjacent to State Route 1 in this area will be added to the park in the foreseeable future. The completion of this project should expedite traffic, reduce traffic congestion, and make travel in the area more reliable, enabling a greater number of people to visit these areas of Golden Gate National Recreation Area. This would likely have a long-term, minor, beneficial cumulative impact on travel in the area. This improvement may also encourage more people to drive in the area, and therefore could trigger a need for more parking accommodation in the future.

The trail system of Golden Gate National Recreation Area and Muir Woods National Monument contribute to a larger county and regional trail network. For example, the Association of Bay Area Governments adopted the *San Francisco Bay Trail Plan* that proposes to create a trail encircling the San Francisco Bay. A portion of the trail connects with park sites within Golden Gate National Recreation Area in Marin and San Francisco counties. In addition, the California Coastal Trail, a 1,200-mile-long trail between Oregon and Mexico, is integrated with the park's trail network in Marin, San Francisco, and San Mateo counties. The sections of the San Francisco Bay trail and the California Coastal Trail could increase pedestrian and bicycle access to areas throughout the park. These developments would result in a long-term, minor, beneficial cumulative effect on pedestrian and bicycle access to this area, and connectivity to regional transportation.

The Golden Gate National Parks Conservancy developed a trail initiative, "Trails Forever," to establish a world-class trail system and protect park resources. Trails Forever is likely to increase pedestrian access (and bicycle access as permitted) to all areas of Golden Gate National Recreation Area by establishing and repairing trails that connect to surrounding areas, as well as those that connect sites within each park area. As the Trails Forever efforts continue, they are likely to have a long-term, moderate, beneficial cumulative effect on safe, expanded access, connectivity, and circulation to more parts of Golden Gate National Recreation Area.

The wide variety of past, present, and foreseeable future transportation actions resulting from the management of the park and actions of other entities throughout Marin, San Francisco, and San Mateo counties, combined with the actions described in the GMP alternatives would have long-term, moderate to major, beneficial cumulative impacts on the transportation and trail systems.

PARK MANAGEMENT, OPERATIONS, AND FACILITIES

Some past, present and foreseeable future actions being undertaken outside of this general management plan would have impacts on park operations. These "outside" actions, added to the actions proposed in the GMP alternatives, would result in the cumulative impacts to park operations explored below.

Park partners engage in a wide variety of activities, including providing interpretation of the park, running concessions such as bookstores and hostels, and organizing volunteers to improve the park. One example of partner support of park operations is fundraising for the renovation of facilities. Increased park staff levels in combination with the actions

that park partners have taken and may take in the future would result in beneficial impacts to park operations, including improvements to mission critical assets, improvements to natural and cultural resources, and increased ability to reach out to the community and leverage staff work with volunteer and partner efforts. This would result in major, long-term, beneficial impacts to park operations for all action alternatives. In the no-action alternative, with staff levels remaining at current levels, the ability to further leverage partner support would be limited and would have little additional impact, although the continuing impact of staff and partner support is major and beneficial.

Agency and partner decisions to share facilities with the National Park Service, such as potentially in San Mateo County, would result in increased operating efficiencies through resource and space sharing, increased quality of working relationships with other organizations, and coordination on land uses; this would have moderate, long-term, beneficial impact to all action alternatives.

The National Park Service is pursuing new sustainability measures on Alcatraz Island, including solar power and a submarine electric line to be laid from the peninsula to the island. Those projects, in combination with the GMP policy to improve sustainability, would have moderate to major, beneficial, long-term impacts to the park operations for all action alternatives.

If the park pursues future acquisition of lands and the development of facilities not addressed in the GMP alternatives, given the estimated budget and staffing needs of the alternatives, the park budgets and staff would be adversely impacted by being diverted from planned actions. The resulting impact would be long term, minor to moderate, and adverse for all action alternatives.

The current and future expected high cost of housing in the San Francisco Bay Area could make the recruitment and retention of park and partner staff challenging. The action alternatives each propose significant numbers of new staff. Park and partner salaries are frequently lower than needed to afford adequate housing in the Bay Area. Additionally, alternatives 2 and 3 propose reductions in park and partner housing. Given these factors, potential staff may find it difficult to find adequate and affordable housing, and therefore may choose not to work at the park. Not meeting staffing needs identified in the alternatives would result in long-term, moderate to major, adverse impacts to park operations.

The major, long-term, beneficial impacts on operations of increased staffing, in combination with the impacts of partner support of park operations, would result in major, long-term, beneficial impacts to park operations in the action alternatives. In the no-action alternative, with staff levels remaining at current levels, the ability to further leverage partner support would be limited and would have little additional impact, although the continuing impact of staff and partner support is major and beneficial. Administrative and interpretive office space sharing with other agencies would have moderate, long-term, beneficial impact. Sustainable energy projects on Alcatraz Island in combination with the GMP policy on sustainability would result in moderate to major, beneficial, long-term impacts to park operations. The impact of pursuing land acquisition or facility development outside of GMP proposals would be long term, minor to moderate, and adverse. Not meeting staffing needs identified in the alternatives would result in long-term, moderate to major, adverse impacts to park operations.

CUMULATIVE IMPACT ANALYSIS AT MUIR WOODS NATIONAL MONUMENT

METHODOLOGY

See the discussion under “Cumulative Impact Analysis at Golden Gate National Recreation Area.”

NATURAL RESOURCES

A number of plans and projects could have cumulative impacts on natural resources. Plans and projects that have a relationship to this general management plan are identified and described in appendix B. Those plans and projects that are most relevant to natural resources and could contribute to cumulative impacts on this topic, a subset of those included in appendix B, include the Redwood Creek Watershed Vision and various restoration projects in the watershed; the Marin County transportation plan; the Muir Woods pilot shuttle; the Mount Tamalpais State Park management plan; the Golden Gate National Recreation Area / Muir Woods National Monument fire management plan; the management of lands adjacent to the monument; and past land use practices in the region. Cumulative impacts for Muir Woods National Monument are similar to those described for Golden Gate National Recreation Area, with a few exceptions noted below in the analysis.

Carbon Footprint and Air Quality

All of the plans and projects mentioned in the introduction to this section would have cumulative impacts on carbon footprint and air quality. County transportation plans and projects aimed at reducing personal automobile use and improving alternative transportation would have beneficial cumulative impacts by reducing transportation-related emissions. The Muir Woods National Monument pilot shuttle would continue to reduce emissions from personal automobile use, lower the carbon footprint of the monument and improving air quality. Projects aimed at improving ecosystems and enhancing natural resources would result in adverse cumulative impacts in the short term, but would be outweighed by long-term reductions in emissions and the resultant improvement in air quality. The same would be true for the management of adjacent public lands, where near-term projects would have short-term adverse impacts on carbon footprint and air quality, but long-term objectives to reduce energy use and emissions and improve the condition of natural systems would have long-term beneficial cumulative impacts. Regional land protection efforts would continue to preserve open space that removes land available for development and provides air quality benefits. The management of private lands in the region would likely continue to result in adverse impacts to carbon footprint and air quality as they would continue to be sources of energy use and air quality emissions that could increase over time as densities increase.

When the likely effects of implementing the actions contained in the GMP alternatives are added to the effects of other past, present, and reasonably foreseeable actions

previously described, there would be a cumulative adverse impact on carbon footprint and air quality in the short term and a beneficial cumulative impact on carbon footprint and air quality over the long term. The actions contained in the GMP alternatives would contribute a very small increment to this cumulative impact.

Soils and Geologic Resources and Processes

All of the plans and projects mentioned in the introduction to this section would have cumulative impacts on soils and geologic resources and processes. County transportation plans and projects would modify roadways that would likely result in adverse impacts to roadside soils and geologic resources and would contribute to changes in the functionality of geologic processes in the area. Projects aimed at improving ecosystems and enhancing natural resources could result in adverse cumulative impacts in the short term, but would be outweighed by long-term improvements to function and integrity of soils and natural geologic processes. The same would be true for the management of adjacent public lands, where near-term projects could have short-term adverse impacts on soils and geologic resources, but long-term objectives to improve natural systems would have long-term beneficial cumulative impacts on soils and geologic processes. Regional land protection efforts would continue to preserve open space and protect soils and geologic resources. The management of private lands in the region would continue to have adverse and beneficial impacts on soils and geologic processes depending on the nature of land use and stewardship practices.

When the likely effects of implementing the actions contained in the GMP alternatives are added to the effects of other past, present, and reasonably foreseeable actions previously described, there would be a cumulative beneficial impact on soils and geologic resources and processes. The actions contained in the GMP alternatives would contribute a small increment to this cumulative impact.

Water Resources and Hydrologic Processes

All of the plans and projects mentioned in the introduction to this section would have cumulative impacts on water resources and hydrologic processes. County transportation plans and projects would modify roadways that could modify surface water flow and drainage. Roadway projects would also likely result in soil erosion and generate urban pollutants that would adversely impact water quality. Conversely, certain projects would reduce sedimentation and improve the conveyance of water—beneficial impacts. Projects aimed at improving ecosystems and enhancing natural resources (i.e., Big Lagoon restoration, Lower Redwood Creek floodplain restoration, Fern Creek riparian fencing, Mission blue butterfly habitat restoration, Coast Trail habitat enhancement projects, sediment reduction projects, and the decommissioning of Muir Woods Road) could result in adverse cumulative impacts to water resources and water quality in the short term, but would be outweighed by long-term improvements to the integrity and function of water resources, especially for wetlands, floodplains, and natural creek processes. These projects would benefit water quality by reducing erosion and sediment transport and restoring Redwood Creek and the area's natural drainage patterns. The impacts of the project would be beneficial when considered with other projects in the watershed that also reduce sediment and nutrient transport and generally enhance the watershed's water quality. The same would be true for the management of adjacent public lands: short-term

projects could have short-term adverse impacts on water resources (including water quality and quantity); but would result in long-term beneficial cumulative impacts on water resources and hydrologic processes. Regional land protection efforts would continue to preserve open space and protect water resources. The management of private lands in the region would continue to have adverse and beneficial impacts on water resources and hydrologic processes depending on the nature of land use and stewardship practices.

When the likely effects of implementing the actions contained in the GMP alternatives are added to the effects of other past, present, and reasonably foreseeable actions previously described, there would be a cumulative beneficial impact on water resources and hydrologic processes. The actions contained in the GMP alternatives would contribute a small increment to this cumulative impact.

Habitat (Vegetation and Wildlife) and Special Status Species (Federal and State Threatened and Endangered Species)

All of the plans and projects mentioned in the introduction to this section would have cumulative impacts on vegetation and wildlife habitat. County transportation plans and projects would modify roadways that could alter the integrity of native habitat, increase habitat fragmentation, and introduce exotic plants and animals that could displace and adversely affect native species, including special status species. Roadway projects would also likely result in soil erosion and generate urban pollutants that would adversely impact aquatic habitats. Conversely, certain projects would reduce impacts from roadways and improve migration corridors. Restoration projects aimed at improving ecosystems and enhancing natural resources include the following:

- Big Lagoon restoration
- Lower Redwood Creek floodplain restoration
- Fern Creek riparian fencing
- Mission blue butterfly habitat restoration
- Coast Trail habitat enhancement projects
- sediment reduction projects
- decommissioning of Muir Woods Road
- park fire road rehabilitation
- Green Gulch Farm's removal of concrete lining from tributary
- Kent Canyon culvert replacement

These could result in adverse cumulative impacts to native habitat in the short term, but would be outweighed by long-term improvements to the integrity and function of habitat. These projects would improve water quality by reducing sediment inputs, prevent the trampling of vegetation, remove invasive riparian plants, improve fish passage, create pool habitat, and remove artificial bank protection. The 2003 and 2007 Lower Redwood Creek projects have direct benefits for salmonids by expanding and enhancing available winter and summer rearing habitat. Therefore, the impacts of the project, considered with the beneficial impacts of other local projects, would be cumulatively beneficial.

The same would be true for the management of adjacent public lands, where near-term projects could have short-term adverse impacts on habitat, but long-term objectives to improve natural systems would have long-term beneficial cumulative impacts on habitat integrity and function. Regional land protection efforts would continue to preserve open space and protect a variety of habitat types. The management of private lands in the region would continue to have adverse and beneficial impacts on vegetation and wildlife habitat depending on the nature of land use and stewardship practices.

When the likely effects of implementing the actions contained in the GMP alternatives are added to the effects of other past, present, and reasonably foreseeable actions previously described, there would be a cumulative beneficial impact on vegetation and wildlife habitat. Although impacts on local special status species and their habitat in the project area would be mitigated to minimize potential impacts and impacts of other projects in the area would generally be beneficial, impacts from urbanization of the region would continue to result in habitat loss and the cumulative impact to most special status species and their habitat would be adverse. The actions contained in the GMP alternatives would contribute a small increment to this cumulative impact.

CULTURAL RESOURCES

A number of past, present, and ongoing plans, programs, and projects could have cumulative impacts on cultural resources, if implemented. Plans, programs, and projects that have a relationship to this general management plan are described in the “Relationship of This Plan to Other Plans” section in part I and in “Appendix B: Description of Management Plans Related to this Plan.” Those plans and projects that are most relevant to and could contribute to cumulative impacts on cultural resources at Muir Woods National Monument include the following:

- National Park Service restoration plans such as the *Redwood Creek Watershed: Vision for the Future* [2003]
- State and regional plans such as the California Department of Parks and Recreation *Mount Tamalpais State Park General Plan* [1980]
- County and local plans such as the *Marin Countywide Plan* [2007] and amended [2009]

Past human use and practices and management of lands in and near Muir Woods National Monument, such as construction associated with urban, suburban, and recreational development, have also contributed to cumulative impacts on cultural resources.

Archeological Resources

Implementation of NPS restoration plans, state and regional plans, and county and local plans would have generally beneficial cumulative impacts on archeological resources because they emphasize protection and preservation of cultural resources and mitigation if sites cannot be avoided. Past human use and management of lands in and near the monument, such as construction associated with urban, suburban, and recreational development, have generally had adverse impacts on archeological resources because of

the unknown number of archeological sites that may have been lost or degraded as a result of ground disturbing operations.

When the likely impacts of implementing the actions contained in the GMP alternatives are added to the impacts of other past, present, and reasonably foreseeable actions previously described, there would be long-term, adverse, cumulative impacts on archeological resources on lands in and near the monument. The actions contained in the GMP alternatives, however, would generally contribute a small beneficial increment to the overall adverse cumulative impacts to archeological resources.

Historic Buildings

National Park Service restoration plans, state and regional plans, and county and local plans all provide for the protection and preservation of historic buildings and their architectural values and, therefore, would contribute to beneficial cumulative impacts on historic buildings, if implemented. Past human use and management of lands in and near the monument, such as construction associated with urban, suburban, and recreational development, have generally had adverse impacts on historic buildings, resulting in the loss of historic buildings and historic fabric.

When the likely effects of implementing the actions contained in the GMP alternatives are added to the impacts of other past, present, and reasonably foreseeable actions previously described, there would be a long-term, minor, beneficial cumulative impact to historic buildings. The actions contained in the GMP alternatives would contribute a small increment to these overall cumulative impacts.

Cultural Landscape Resources

National Park Service restoration plans, state and regional plans, and county and local plans all provide for the protection and preservation of cultural landscape resources and, therefore, would contribute to beneficial cumulative impacts on cultural landscape resources, if implemented. Past human use and management of lands in and near the monument, such as construction associated with urban, suburban, and recreational development, have generally had adverse impacts on cultural landscapes, resulting in the loss or degradation of numerous cultural landscape resources.

When the likely effects of implementing the actions contained in the GMP alternatives are added to the impacts of other past, present, and reasonably foreseeable actions previously described, there would be a long-term, minor to moderate, beneficial cumulative impact to cultural landscape resources. However, the actions contained in the GMP alternatives would contribute only a small increment to the overall cumulative impacts on cultural landscape resources.

Park Collections

The cumulative impacts to the park collections are addressed in the “Golden Gate National Recreation Area” section.

VISITOR USE AND EXPERIENCE

The cumulative impacts for visitor use and experience at Muir Woods National Monument are the same as those described for Golden Gate National Recreation Area.

SOCIAL AND ECONOMIC ENVIRONMENT

Along with the actions identified in this general management plan for Muir Woods National Monument, the actions identified in a number of plans and projects in the local gateway communities, the three adjacent counties, and the overall San Francisco Bay Area could contribute to cumulative impacts on the social and economic environment in the area. Plans and projects that have a relationship to this general management plan are identified and described in the “Relationship of This Plan to Other Plans” section in part 1 and in “Appendix B: Description of Management Plans Related to this Plan.” These other plans and management actions all have effects on the social and economic environment, both individually and collectively. These effects mainly relate to the quality of life of local residents and the economy. The cumulative contributions to the quality of life and economy could extend throughout the gateway communities, the three adjacent counties, and the overall Bay Area.

In relationship to the social and economic environment, the cumulative effect of implementing these other plans and projects and the GMP alternatives for Muir Woods National Monument would be quite similar to the cumulative effect of implementing these other plans and projects and the GMP alternatives for Golden Gate National Recreation Area. Therefore, to avoid repeating analyses and conclusions, please refer to the section titled “Cumulative Impact Analysis at Golden Gate National Recreation Area (including Alcatraz Island).” However, the transportation component of the monument’s GMP alternatives is unique to this park. The transportation actions included in the GMP action alternatives could affect traffic patterns, park accessibility, and park visitor contributions to the local economy in the gateway communities and Marin County. Thus, these actions could influence the local social and economic environment. A discussion and analysis of this topic are provided below.

The no-action alternative and alternatives 1, 2, and 3 include measures to expand shuttle services to and from the monument. The shuttle service would originate at selected transit hubs located in Marin County. Although all action alternatives would include actions that address this change, alternative 2 includes actions that would yield the greatest amount of change, because under this alternative, the majority of personal motorized vehicles would be prohibited from entering the park. Under alternative 2, all park visitors would access the park via the shuttle, by bicycle, or by foot. The primary goal for these actions is to substantially reduce the impacts of motorized vehicular use in and around the park; this would reduce motor vehicle impacts such as noise, air pollution, traffic, and overflow parking problems. While minimizing these impacts, the proposed actions would also provide an alternate, public transportation option for local residents who otherwise may not have easy access to the park. These actions also would reduce traffic on some Marin County roads that lead to the park. All of these impacts could be beneficial to the quality of life for local residents in Marin County. Alternative 2 would yield the greatest benefit

in terms of removing individual vehicles from local roads. However, because these actions could reduce the amount of vehicular traffic en route to the park, a reduction in local business activity may be noticed in the local gateway communities. Fewer people would be driving to and from the park through the local towns, and thus, fewer people would be stopping at local restaurants, stores, and other businesses. As described in the “Environmental Consequences” section, this could result in an adverse impact to the local economy.

GMP actions that would affect the local economy and the quality of life for local residents could be complemented by the transportation plan actions of the local governments in Marin County and the local and regional transit authorities. These entities will continue to improve and expand public transportation options in Marin County and beyond. As the public transportation network grows and becomes more refined, local and regional residents will have more options to visit the park, with a probable reduction in transit time. These efforts will contribute to quality of life by improving geographic accessibility and reducing traffic congestion. As for economic impacts, because local and regional transportation planning and projects would likely conform to municipal and county master plans, some commercial zoning sectors in Marin County may shift over the years to become concentrated around mass transit hubs. Thus, the initial impacts to local businesses from a reduction in vehicular traffic may eventually be offset by a gain in local business activity in and around the planned transit hub areas.

When the likely effects of implementing the actions contained in each of the GMP alternatives for the monument are added to the effects of these other past, present, and reasonably foreseeable transportation actions, a long-term, minor to moderate, beneficial cumulative impact on the quality of life for local residents could result.

The impacts of the actions of each GMP alternative on the local economy would constitute a small portion of this overall cumulative effect in the gateway communities and Marin County. When the likely effects of implementing the GMP actions are added to the effects of these other past, present, and reasonably foreseeable transportation actions, a minor, adverse cumulative impact on the local economy could result. However, over time, the cumulative impact could become negligible or beneficial as the transportation systems become predictable and local businesses adapt.

TRANSPORTATION

See the transportation discussion under “Cumulative Impact Analysis at Golden Gate National Recreation Area.”

PARK MANAGEMENT, OPERATIONS, AND FACILITIES

Staffing increases described in the analysis in combination with actions that partners may take would result in long-term, beneficial impacts to park operations, including improvements to mission critical assets and natural and cultural resources, and increased ability to reach out to the community and leverage staff work with volunteer and partner efforts. This would result in major, long-term, beneficial impact to park operations for all action alternatives. In the no-action alternative, with staff levels remaining the same as existing, the ability to further leverage partner support would be limited and would have little additional impact, although the continuing impact of staff and partner support is major and beneficial.

If the park pursues future acquisition of lands and development of facilities not addressed in the GMP alternatives, given the estimated budget and staffing needs of the alternatives, the park budgets and staff would be adversely impacted by being diverted from planned actions. The resulting impact would be long term, minor to moderate, and adverse.

The current and future expected high cost of housing in the San Francisco Bay Area could make the recruitment and retention of park and partner staff challenging. The action alternatives each propose significant numbers of new staff. Park and partner salaries are frequently lower than needed to afford adequate housing in the Bay Area. Given these factors, potential staff may find it difficult to find adequate and affordable housing, and therefore may choose not to work at the park. Not meeting staffing needs identified in the alternatives would result in long-term, moderate to major, adverse impacts to park operations.

The major, long-term, beneficial impacts on operations of increased staffing, in combination with the impacts of partner support of park operations, would result in major, long-term, beneficial impacts to park operations in the action alternatives. In the no-action alternative, with staff levels remaining at current levels, the ability to further leverage partner support would be limited and would have little additional impact, although the continuing impact of staff and partner support is major and beneficial. The impact of pursuing land acquisition or facility development outside of GMP proposals would be long term, minor to moderate, and adverse. Not meeting staffing needs due to the high cost of housing would result in long-term, moderate to major, adverse impacts to park operations.

ADDITIONAL ANALYSES

NATURAL OR DEPLETABLE RESOURCE REQUIREMENTS AND CONSERVATION POTENTIAL

None of the alternatives being considered would result in the extraction of new resources from the park or monument. In all of the alternatives, ecological principles would be applied to ensure that the natural resources of the park and monument were maintained and protected. Certain resources could continue to be collected for scientific and educational purposes, but the specimens would be stored in the NPS collection. Agricultural operations on NPS lands would continue to result in the extraction of resources through the harvesting of crops, which assist in meeting cultural landscape objectives. The fields would be managed to sustain this harvest. Implementation of the alternatives would result in the use of limited natural resources and energy for construction and operation of new recreational facilities and for restoration activities. New development would be designed to be sustainable to the maximum extent practicable. The use and consumption of fuel and other nonrenewable resources for NPS operations, activities, and development associated with the alternatives would be very small in comparison to that of the region. Overall, the impact on this topic resulting from implementation of this general management plan would likely be negligible.

EFFECTS ON ENERGY REQUIREMENTS AND CONSERVATION

The CEQ guidelines for implementing the National Environmental Policy Act require examination of energy requirements and conservation potential in environmental impact statements. Park Service staff strive to incorporate the principles of sustainable design and development into all facilities and park operations. Sustainability can be described as the result achieved by doing things in ways that do not compromise the environment or its capacity to provide for present and future generations. Sustainable practices minimize the short-term and long-term environmental impacts of developments and other activities through resource conservation, recycling, waste minimization, and the use of energy efficient and ecologically responsible materials and techniques.

The NPS *Guiding Principles of Sustainable Design* (1993) provides a basis for achieving sustainability in facility planning and design, emphasizes the importance of bio-diversity, and encourages responsible decisions. The guidebook describes principles to be used in the design and management of visitor facilities that emphasize environmental sensitivity in construction, use of nontoxic materials, resource conservation, recycling, and integration of visitors with natural and cultural settings. The National Park Service would minimize energy costs, eliminate waste, and conserve energy resources by using energy efficient and cost effective technology wherever possible. Recent examples include projects to install photovoltaic panels on the NPS Headquarters building at Fort Mason and projects to pursue alternative energy options at Alcatraz Island (both part of the no-action alternative). Energy efficiency would also be incorporated into any decision-making process during the design or acquisition of facilities, as well as all decisions affecting park operations.

The use of value analysis and value engineering, including life cycle cost analysis, would be performed to examine energy, environmental, and economic implications of proposed NPS development. Park Service staff would encourage suppliers, permittees, and contractors to follow sustainable practices and would address sustainable park and park partner practices in interpretive programs.

The energy requirements of the plan's alternatives (for Alcatraz Island, Muir Woods, and the three-county area) were examined. At Muir Woods, propane (gallons of fuel) and electricity (kilowatt hours per year) usage would be reduced under all of the action alternatives; while the use of natural gas to provide expanded shuttle service would increase substantially.

On Alcatraz Island, diesel use (gallons of fuel) and electricity use (kilowatt hours per year) would be increased under all of the action alternatives.

At park sites within the three-county area of Golden Gate National Recreation Area, diesel use (gallons of fuel) and electricity use (kilowatt hours per year) would be slightly reduced under all of the action alternatives. In San Mateo County, energy requirements would increase under all of the action alternatives because facilities would be developed where the National Park Service currently has no recreational or operational presence.

Overall, compared to energy requirements and use in the local area or the region, energy consumption by the National Park Service would be negligible. Consequently, any adverse impacts relating to energy use, availability, or conservation would be negligible.

IRRETRIEVABLE OR IRREVERSIBLE COMMITMENTS OF RESOURCES

The energy requirements identified above (for all alternatives) would result in an irreversible commitment of resources. Furthermore, construction materials, including gravel and other rock and earthen materials, would be irretrievably committed toward the construction of new recreational and operations facilities. National Park Service employee time would be committed to implementation of various elements of the plan, which would also constitute an irretrievable commitment of resources. There would be no permanent effects on park resources resulting from these actions.

UNAVOIDABLE ADVERSE IMPACTS

Unavoidable adverse impacts are defined as impacts that cannot be fully mitigated or avoided. Adverse impacts on natural and cultural resources and visitor experience could occur in some areas throughout the two parks as a result of public use (e.g., impacts to resources from concentrated visitor use or vandalism) or NPS management activities (e.g., impacts from construction activities or emergency response).

RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY OF THE ENVIRONMENT

Under the no-action alternative, short-term uses of the environment such as public use of the area would continue. Public use and new recreational development would be expanded under one or more of the action alternatives, resulting in potential temporary disturbances to vegetation communities, various species of wildlife, and visitor access and experiences. The use of construction phasing and/or implementation of mitigation measures would reduce or eliminate the potential for most of these short-term impacts.

Under all of the alternatives, most of the park lands would be protected in a natural state and would maintain their long-term productivity. Only a small percentage of the park and monument would be maintained as developed areas. Furthermore, the action alternatives include improvements to existing site conditions and the restoration of natural habitats and stream systems. These actions would improve ecological function and the long-term productivity of the environment.

COASTAL ZONE MANAGEMENT ACT CONSISTENCY

The Coastal Zone Management Act of 1972 (CZMA) was enacted by Congress to encourage states to protect, preserve, develop, and, when possible, restore or enhance valuable natural coastal resources. The program is a voluntary partnership between the federal government and the U.S. coastal states. If a proposed project is a federal action requiring NEPA review and the project is located in the coastal zone, then a CZMA consistency certification must be prepared.

The California Coastal program was approved as part of a National Coastal Zone Management Program authorized by the Coastal Zone Management Act of 1972. The California Coastal Commission was established through the adoption of the California Coastal Act of 1976 and is an independent state agency whose mission is to “protect, conserve, restore, and enhance environmental and human-based resources of the California coast and ocean for environmentally sustainable and prudent use by current and future generations.” In keeping with their mission, the California Coastal Commission is an independent state agency responsible for planning and review of activities within the coastal zone through specific policies outlined in the California Coastal Act such as shoreline public access and recreation, lower cost visitor accommodations, terrestrial and marine habitat protection, visual resources, landform alteration, agricultural lands, commercial fisheries, industrial uses, water quality, offshore oil and gas development, transportation, development design, power plants, ports, and public works”. Although federally owned lands within the coastal zone are exempt from the act, federal agencies are encouraged to coordinate and cooperate with the state to meet the purposes of the California Coastal Act and be consistent with the policies of the California Coastal Act.

Based on the analysis within this draft general management plan/environmental impact statement, the preferred alternative should, over the long term, result in beneficial effects to coastal resources by (1) providing and managing public use within coastal areas; (2)

reducing opportunities for soil disturbance and erosion that could impact water quality and aquatic habitats; and (3) protecting and conserving important and sensitive natural resources.

Based on the anticipated benefits to coastal resources the National Park Service has determined that the preferred alternative presented in this plan is consistent with the Coastal Zone Management Act. A copy of this plan will be sent to the Federal Consistency Coordinator at the California Coastal Commission requesting their concurrence with this determination. A copy of this plan will also be sent to the San Francisco Bay Conservation and Development Commission.



PUBLIC INVOLVEMENT

GENERAL

This section describes the processes employed by the National Park Service to include the public in the development of the draft general management plan / environmental impact statement for Golden Gate National Recreation Area and Muir Woods National Monument. The plan represents important contributions from not only NPS staff, but hundreds of members of the public: individuals, organizations, and a variety of local, state, and federal public agencies—all of whom are interested in the vision that will successfully guide the park in the future. To prepare this plan, the park actively sought out and regularly consulted with existing and potential visitors, neighbors, Native Americans, scientists and scholars, concessioners, neighboring communities, other partners, and government agencies. The park adhered to NPS policy by inviting the public to participate in planning and decision-making as a way to ensure that the National Park Service fully understands and considers the public's interests in the park, which is part of the public's national heritage, cultural traditions, and community surroundings.

Throughout the multi-year planning process, the National Park Service used a variety of methods to regularly communicate with the public interested in the development of the general management plan. The foundation of two-way communication was the preparation of informative newsletters and the many open house-style public meetings held by the park in neighboring communities.

PLAN DEVELOPMENT

Scoping: Public involvement in the plan began with an invitation to participate in scoping: identifying the scope, or range, of the issues that the plan would address. The legal requirement (Notice of Intent, or NOI) of informing the public that the National Park Service was beginning to prepare an environmental impact statement for a general management plan was published in the Federal Register, Vol. 71, No. 60, March 29, 2006. Immediately afterwards, a newsletter (the first of 5), was sent to more than 4,000 addresses on the park's mailing list. It described the general management plan process and invited people to describe what they value and like most about the park, what they like least, their suggestions for management, their major concerns for the future of the park, and any other comments they wanted to provide to the NPS planning team. The newsletter included a postage-paid reply form. Nearly 300 electronic and mailed comments were received in response to the newsletter.

In tandem with the newsletter, the National Park Service held five public open houses in Marin, San Francisco, and San Mateo counties to gather additional input. The Park Service also hosted focused meetings with environmental, historic, and diversity organizations, as well as meetings with Native American representatives, current park partners, and groups that included some of the park founders in order to collect broad input.

The information gathered in these outreach activities was summarized in a newsletter (#2), “What We Heard,” which was distributed in February, 2007. The newsletter also incorporated comments gathered at scoping meetings held with park staff in 2001, 2003, and 2006 as the Park Service was beginning to formulate the planning process.

With the distribution of newsletter #2 the Park Service began to routinely employ a set of tools that included the following:

- feedback sessions at quarterly open houses held in neighboring communities
- distribution of project information by email (approximately 1,000 addresses at present)
- translation of newsletters or parts of newsletters into Chinese and Spanish
- distribution of project information at other park sites such as Alcatraz Island and Muir Woods which are popular with national and international visitors
- posting of project information on the park’s website: www.nps.gov/goga
- posting of project information on the NPS planning website: <http://parkplanning.nps.gov/goga>
- briefings for park partners and interested organizations such as the Crissy Field Center’s IYELL program, People for the Parks, the City of Pacifica Golden Gate National Recreation Area Advisory Committee, and the San Francisco Planning and Urban Research Association (SPUR)

All public scoping comments and the NPS analysis of those comments were documented in a report, *Scoping Summary 2006, General Management Plan*, and made available at the two websites. The comments and analysis helped guide the Park Service to develop alternative ways to address the planning issues in the plan.

Alternatives Development: Public involvement in developing the management alternatives described in this general management plan was focused on two tasks. First, a set of “Alternative Concepts” was prepared to describe a range of different ways that the scoping issues could be addressed. These different concepts were the main subject of newsletter (#3) which was distributed in fall of 2007. Public feedback gathered in a variety of formats was generally positive.

Second, a robust description of “Preliminary Alternatives” was distributed by mail in the spring of 2008 (48-page newsletter, #4.) The alternatives described how the different concepts were leading to different park management actions. The newsletter included short narratives for each alternative describing the future conditions of resources and visitor experiences at the various park sites, along with a set of zoning maps. It invited the public to send comments to the National Park Service between April 29 and August 1, 2008.

The National Park Service employed some additional tools to share the preliminary alternatives and gather feedback. These tools included the following:

- “Planning Tables” hosted by members of the planning team at special events and park sites such as Marin City, Tennessee Valley, Rodeo Beach, Half Moon Bay State Beach, Crissy Field, and Point Reyes National Seashore
- “Planning Walks” where the public was invited to walk various sites with members of the planning team
- Hikes in the park led by NPS interpretive rangers
- Special community meetings, as with the residents of Muir Beach
- Public agency roundtable

The core public involvement activity centered on a series of five public open houses dedicated to discussion of the preliminary alternatives. These were held in June 2008, in Marin (Sausalito), San Francisco, and San Mateo communities (Princeton and Woodside). These workshops were attended by approximately 300 people.

As a result, the National Park Service gathered a substantial volume of comments. More than 200 responses were posted by individuals and groups at the park website. More than 180 letters and comment forms were received from a variety of individuals, organizations, and agencies. Overall, more than 45 people provided some 1,500 substantive comments on the preliminary alternatives. All public comments, petitions, and letters, including the planning team’s analysis of those comments, were documented in a report, *Summary of Public Comments on the Preliminary Alternatives*, and made available at the NPS planning website in 2008.

The NPS is releasing this draft general management plan / environmental impact statement for public review and comment. As is typical for a complex plan, the public review period will last for 60 days. A robust summary of the draft plan will be sent to the park’s mailing list, and a number of printed versions of the full 2-volume document will be sent to government agencies with official responsibilities for review. Some copies of the 2-volume draft will also be available upon request. In addition, digital versions of the draft will be available from the National Park Service on a CD and on the NPS planning website in PDF format. Other activities to facilitate public understanding of the draft and to collect comments during the review period will include five dedicated public open houses in neighboring communities, two “Planning Table” events, a special meeting with affected agencies, partner briefings, and promotion of the NPS planning website as a way to make commenting and analysis of comments easy and efficient.

REVIEWING THE ANALYSIS OF POTENTIAL IMPACTS

Distribution of this draft general management plan / environmental impact statement constitutes the principal opportunity for the public to review and comment on the potential impacts of the alternatives. However, the National Park Service consulted numerous experts during the preparation of the draft to help understand the likely impacts of actions in the plan. A list of the scientists, scholars, and other subject-matter experts that contributed to the plan is included in a later section of this document. Topics addressed in these consultations covered natural and cultural resource preservation, trails

planning, transportation analysis, visitor use management, and reaching new audiences in national parks.

RATIONALE FOR DECISIONS

Public comments on the preliminary alternatives were used to refine and identify the NPS preferred alternative that is described in this draft general management plan / environmental impact statement. A summary of that alternative—“The Evolving Preferred Alternative”—was first shared with the public in a newsletter (#5) in the summer of 2009. The newsletter included a summary of public comments and a description of how those comments were helping to shape the preferred alternative in the NPS “Choosing By Advantages” process. In subsequent open houses and other venues, the NPS planning team has continued to receive helpful input from the public.

Public comments on this draft will be collected, analyzed, and will help the National Park Service to further refine the preferred alternative. The result of that process will identify the “selected alternative” which will be included in the final general management plan approved for implementation. The Record of Decision (ROD), which will be published 30 days after the release of the final general management plan / environmental impact statement, will include a clear description of the rationale for this decision. The final general management plan / environmental impact statement will include a record of all public comments made on this draft.

CONSULTATION WITH OTHER AGENCIES, OFFICIALS, AND ORGANIZATIONS

SECTION 7 CONSULTATION

During the preparation of the general management plan, NPS staff contacted the Sacramento, California office of the U.S. Fish and Wildlife Service and the Santa Rosa, California office of NOAA- National Marine Fisheries Service to begin the consultation process.

In accordance with the Endangered Species Act and relevant regulations at 50 CFR Part 402, the National Park Service determined that this general management plan is not likely to adversely affect any federal listed threatened or endangered species. The National Park Service will send a copy of this draft management plan to the U.S. Fish and Wildlife Service and NOAA-National Marine Fisheries Service with a request for a written concurrence with this determination.

In addition, the National Park Service has committed to consult on future actions conducted under the framework described in this management plan to ensure that such actions are not likely to adversely affect threatened or endangered species or species of concern.

SECTION 106 CONSULTATION WITH STATE HISTORIC PRESERVATION OFFICE

Prior to implementing an “undertaking.” Section 106 of the National Historic Preservation Act requires federal agencies to consider the effects of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation (ACHP) and the State Historic Preservation Officer (SHPO) a reasonable opportunity to comment on any undertaking that would potentially affect properties listed or eligible for listing in the national register. An undertaking is defined as “a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license or approval.”

Consultation and scoping with the SHPO, other agencies, tribes, and interested parties began in 2006 and is ongoing. The NPS sent a letter on February 7, 2006 to the SHPO and the ACHP inviting their participation in the GMP planning process. In a letter dated May 29, 2008, the SHPO and ACHP were given the opportunity to provide feedback in the development of preliminary alternatives. In addition, NPS representatives held a scoping meeting with interested historic preservation groups on April 18, 2006. NPS staff also traveled to Sacramento to meet with the SHPO on March 16, 2010. Prior notification of the meeting was provided to the ACHP. Items on the meeting agenda included:

- a) review of the proposed alternatives in the GMP/DEIS
- b) discussion of the review and submittal process under Section 106

- c) discussion of the appropriate methodology for establishing the Area of Potential Effect
- d) discussion on the preparation of the Finding of Effect
- e) preparation of a park-wide Programmatic Agreement

Documentation associated with NHPA Section 106 compliance is being prepared by NPS as a separate submittal, in coordination with the NEPA process. The NPS is currently preparing a Finding of Effect as required under 36 CFR 800.4. Once the Finding of Effect has been completed, the NPS will continue to work with the SHPO, ACHP, tribes and interested parties to complete a comprehensive park-wide Programmatic Agreement (PA) for the treatment of historic resources, consistent with the proposed actions under the GMP/DEIS.

CONSULTATIONS WITH NATIVE AMERICANS

On April 26, 2006, meetings were held with Ohlone and Coast Miwok representatives to discuss issues, concerns, and opportunities related to the GMP planning process. Tribal consultation is ongoing and will continue as the National Park Service prepares the Finding of Effect and the Programmatic Agreement.

AGENCIES, ORGANIZATIONS, AND INDIVIDUALS RECEIVING A COPY OF THIS DOCUMENT

A copy of this draft general management plan / environmental impact statement has been provided to the following agencies and organizations. A notice of availability of the environmental impact statement has been sent to attendees of the public meetings, park partners, and others listed on the project mailing list.

Elected Officials and Committees

- Office of Senator Barbara Boxer
- Office of Senator Dianne Feinstein
- Office of Representative Nancy Pelosi
- Office of Representative Jackie Speier
- Office of Representative Lynn Woolsey
- Office of California State Senator Mark Leno
- Office of California State Senator Leland Yee

Federal Agencies

- Federal Emergency Management Agency, Region 9
- National Trust for Historic Preservation
- National Oceanic and Atmospheric Administration: National Marine Fisheries Service and the Gulf of the Farallones National Marine Sanctuary
- Presidio Trust
- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency: Region 9 and the Washington Office
- U.S. Fish & Wildlife Service, Sector 7
- U.S. Geological Survey

California State Agencies

- California Coastal Commission
- California Coastal Conservancy
- California Department of Fish & Game
- California Department of Forestry
- California Department of Water Resources

- California Environmental Protection Agency
- California Native American Heritage Commission
- California State Clearinghouse
- California State Parks: Angel Island State Park, Mt. Tamalpais State Park, and the Office of Historic Preservation
- State of California: Water Resources Control Board

Regional and Local Agencies

- Bay Area Air Quality Management District
- Bolinas Public Utility District
- City and County of San Francisco
- East Bay Regional Park District
- Golden Gate Bridge Highway & Transportation District
- Marin County Parks and Recreation
- Marin County Community Development Agency
- Marin Municipal Water District – Sly Oaks Headquarters
- Midpeninsula Regional Open Space District
- Montara Sanitary District
- Muir Beach Community Services District
- San Francisco Bay Conservation and Development Commission
- San Francisco Bay Regional Water Quality Control Board
- San Francisco Parks and Recreation
- San Mateo County Resource Conservation District
- San Mateo County Parks
- San Mateo County Planning and Building Department
- San Mateo County Transit District
- Santa Clara County
- Sausalito/Marin City Sanitary District
- Stinson Beach County Water District
- Tamalpais Community Services District

Cities

- City of Belmont
- City of Belvedere
- City of Burlingame
- City of Foster City
- City of Half Moon Bay
- City of Larkspur
- City of Mill Valley
- City of Millbrae
- City of Novato
- City of Pacifica
- City of San Bruno
- City and County of San Francisco
- City of San Rafael
- City of Sausalito
- City of South San Francisco
- Daly City
- Marin County Board of Supervisors
- San Francisco County Board of Supervisors
- San Mateo County Board of Supervisors

Organizations

- Bay Area Open Space Council
- California League of Conservation Voters
- California Native Plant Society
- Center for Biological Diversity
- City College of San Francisco
- Coleman Advocates for Youth
- Committee for Green Foothills
- Farallones Marine Sanctuary Association
- Golden Gate National Parks Conservancy

- Peninsula Open Space Trust

American Indians

Amah Mutsun Band of Ohlone Costanoan Indians

Amah Mutsun Tribal Band

California Native American Heritage Commission

Costanoan Ohlone Rumsen-Mutsun Tribe

Costanoan-Rumsen Carmel Tribe

Federated Indians of Graton Rancheria

Indian Canyon Mutsun Band of Costanoan

Muwekma Ohlone Tribe

Ohlone/Costanoan-Esselen Nation

The Ohlone Indian Tribe

Trina Marine Ruano Family

and other American Indian representatives

Individuals

There is an extensive list of individuals; these individuals will be notified of the availability of the draft plan and provided a summary edition of the plan.

PREPARERS AND CONSULTANTS

The GMP planning team included a steering committee made up of managers who guided the entire planning process. When developing and reviewing the issues and alternatives, the planning team included more than 50 managers and resource/technical specialists from the National Park Service and Golden Gate Parks Conservancy. In addition, the planning team included staff of the California State Parks, experts from academia, and members of consulting firms. Most of these planning team members also participated in various working groups that focused on individual issues and identified solutions that were incorporated into the GMP alternatives. Working groups were formed to address the following topics: Alcatraz Vision, Asset Management, Climate Change, Operational Facilities, Marine Resources, Native Americans, Park Boundaries, Partnerships, Trails, and Transportation.

STEERING COMMITTEE

Brian Aviles, Senior Planner, Golden Gate National Recreation Area; 11 years with the National Park Service, 16 years academic and private practice; M.A. and B.A. in Landscape Architecture

Mai-Liis Bartling, Deputy Superintendent, Golden Gate National Recreation Area (retired)

Frank Dean, General Superintendent, Golden Gate National Recreation Area; 34 years with the National Park Service, 1 year acting General Superintendent of Golden Gate National Recreation Area, Chief of the Centennial Coordination and Planning Office in Washington D.C., Superintendent of Saratoga National Historical Park, Executive Director of Erie Canalway National Heritage Corridor; Masters in Public Administration

Abby Sue Fisher, Acting Chief of Cultural Resources, Golden Gate National Recreation Area; 18 years with the National Park Service; 7 years at Keweenaw National Historical Park; Ph.D. in Textiles and Clothing, M.A. in Anthropology and Latin American Studies, B.A. in Art History, Anthropology, and Home Economics

Daphne Hatch, Chief of Natural Resource Management and Science, Golden Gate National Recreation Area; 23 years with the National Park Service, 8 years as Natural Resource Specialist, Golden Gate National Recreation Area, 5 years seasonal on trail crew, in interpretation, and as naturalist; B.S. in Botany, M.S. in Range Management

Nancy Hornor, Chief of Planning and Compliance, Golden Gate National Recreation Area; 33 years with the National Park Service, 13 years as Environmental Specialist with Golden Gate National Recreation Area, 20 years as Park Planner with Golden Gate National Recreation Area; B.S. in Conservation of Natural Resource

Susan Hurst, Administrative Officer, Golden Gate National Recreation Area (retired)

Craig Kenkel, Superintendent, San Francisco Maritime National Historical Park; 27 years with the National Park Service, 1 year acting Deputy Superintendent at Golden Gate National Recreation Area, 4 years Chief of Cultural Resources at Golden Gate National Recreation Area, 9 years with the NPS Midwest Regional Office; B.A. in Architecture

Howard Levitt, Chief of Communications and Partnerships, Golden Gate National Recreation Area; 28 years with the National Park Service: 5 years as Outdoor Recreation Planner, 5 years as Management Assistant, 18 years as Chief of Interpretation and Education; B.A. in Political Science

Brian O'Neill, General Superintendent, Golden Gate National Recreation Area, 1986 – 2009 (deceased)

Chris Powell, Legislative Specialist, NPS Office of Legislative and Congressional Affairs; 18 years with the National Park Service, 17 years as Public Affairs Specialist; two B.A. Degrees, A.A. in Nursing

Aaron Roth, acting Deputy Superintendent, Golden Gate National Recreation Area; 6 years with the National Park Service: 3 years as Chief of Business Management, Golden Gate National Recreation Area, 6 months as Management Assistant, Grand Canyon National Park, 3 years as Business Management Specialist in the NPS Intermountain Regional Office; MBA in Entrepreneurship, B.S. in Systems Engineering

TEAM MEMBERS – CALIFORNIA

(In addition to the members of the GMP Steering Committee)

Cathie Barner, Director, Park Projects, Golden Gate National Parks Conservancy; 15 years with the Golden Gate National Parks Conservancy, M.A. in Architecture

Paul Batlan, Realty Specialist with Land Resource Division, NPS Washington Office; 12 years with the National Park Service, 11 years with Presidio Project Office and Fort Baker Team with Golden Gate National Recreation Area; B.A. and M.A. in Architecture, J.D. in Law

Kim Coast, acting Chief Park Ranger, Golden Gate National Recreation Area; 26 years with the National Park Service, Operations Branch Supervisor/Visitor and Resource Protection Golden Gate National Recreation Area, 1 year with the U.S. Forest Service; B.A. in Recreational Resource Management, A.A. in Park and Grounds Maintenance Management, BLM Training Program

Martha Crusius, Outdoor Recreation Planner, Pacific West Region; 27 years with the National Park Service; B.A. in Biology, M.R.P. in Regional Planning, M.S. in Energy Management and Policy

Jay Eickenhorst, Partner Liaison; 35 years with the National Park Service, 25 years as NPS Park Ranger, 2 years as NPS Safety Officer, 2 years with U.S. Forest Service; B.S. in Marine Biology, A.A. and A.S. in Biology

Sharon Farrell, Associate Director Park Projects, Resource Conservation, and Project Implementation, Golden Gate National Parks Conservancy; 6 years with Golden Gate National Parks Conservancy, 4 years as NPS Natural Resource Specialist, 7 years as NPS Plant Ecologist, 2 years as Natural Resources Planner with Presidio Trust; M.S. in Park Management and Recreation, B.S. in Chemistry

Carey Feierabend, Lead Project Manager, Golden Gate National Recreation Area; 14 years with the National Park Service, 4 years as Planning Manager with Presidio Trust, 5

years as Planner/Historic Architecture Consultant, Golden Gate National Recreation Area; M.A. and B.A. in Architecture

Darren Fong, Aquatic Ecologist, Golden Gate National Recreation Area; 16 years with the National Park Service; M.S. in Wildland Resource Science

Sue Fritzke, Chief of Vegetation Ecology and Stewardship, Golden Gate National Recreation Area; 23 years with the National Park Service, 2 years with Peace Corps Ecuador; M.S. in Plant Ecology and Physical Geography, B.A. in Physical Geography and Environmental Studies,

Stephen Haller, Park Historian and Branch Chief for Cultural Resources, Golden Gate National Recreation Area; 35 years with the National Park Service, Ranger with Fort Point National Historic Site, San Francisco Maritime National Historical Park, and Golden Gate National Recreation Area; B.A. American History

Jim Kren, Historical Architect, Golden Gate National Recreation Area; 20 years with the National Park Service: 12 years with Golden Gate National Recreation Area, 4 years with Presidio Project Office, 4 years with NPS Denver Service Center; B.A. Environmental Design, B.A. in Architecture

Tom Lindberg, Superintendent Marin Sector California State Parks (retired)

Don Mannel, Chief of Maintenance, Golden Gate National Recreation Area

Bill Merkle, Supervisory Wildlife Ecologist, Golden Gate National Recreation Area; 7 years with the National Park Service, 15 years wildlife management and research experience; Ph.D. in Biology

Mia Monroe, Interpretive/Site Supervisor at Muir Woods, Golden Gate National Recreation Area; 34 years with the National Park Service

Yvette Ruan, Chief of Fire and Emergency Services, Golden Gate National Recreation Area; 28 years with the National Park Service: 8 Years as Chief Ranger, 7 years as Law Enforcement Ranger, 3 years as EEO Specialist; B.S Criminal Justice Administration

Michael Savidge, Director, Strategic Planning/Partnership Development, Golden Gate National Recreation Area; 21 years with the National Park Service, 6 years as Transition Manager for Presidio, 10 years with Department of Defense Armed Forces Recreation Center, Germany; Masters of Social Work in Community Administration, B.A. in Psychology, Fulbright Fellow Stockholm Sweden, Executive Development Programs with Department of Defense and Department of the Interior, Kennedy School of Government/Executive Public Policy

Jerry Scheumann, Maintenance Division Supervisor, Golden Gate National Recreation Area

Paul Scolari, Historian and American Indian Liaison, Golden Gate National Recreation Area; 16 years with the National Park Service; Ph.D in History of American Art and Architecture

Craig Scott, GIS Coordinator, Golden Gate National Recreation Area; 11 years with the National Park Service; B.A. in Geography

Emilyn Sheffield, Professor of Recreation and Parks Management, California State University, Chico; 24 years of applied research and consulting with government agencies, businesses, and nonprofit organizations; Ph.D. in Recreation and Parks Management

Ed Ueber, National Oceanic and Atmospheric Administration (retired)

Tamara Williams, Hydrologist/Physical Scientist, Golden Gate National Recreation Area; 13 years with the National Park Service; B.S. in Geology

TEAM MEMBERS – NPS DENVER SERVICE CENTER

Planning Team

Tracy Atkins, Community Planner; 2 years experience with the National Park Service, 22 years of industry experience in project management, construction management, planning and community outreach; M.S. in Civil Engineering, M.S. in Community and Regional Planning, B.S. in Architectural Engineering

Sarah Bodo, Community Planner; 3 years with the National Park Service; Master of Urban and Regional Planning, B.S. in Finance

Kerri Cahill, Visitor Use Technical Specialist; 8 years with National Park Service; Ph.D. in Recreation Ecology

Patrick Malone, Project Manager; 5 years with the National Park Service, 9 years with state and local government, and 2 years with a nonprofit land trust; M.P.A. in Environmental Policy and Public Management, B.S. in Natural Resources and Environmental Management

Stephan Nofield, Outdoor Recreation Planner and former GMP Project Manager; 9 years with the National Park Service, 8 years Denver Service Center, 1 year NPS Washington Office

Harlan Unrau, Cultural Resource Specialist (retired)

Don Wojcik, Natural Resource Specialist; 2 years with the National Park Service, 11 years as natural resource planner with county government open space programs, 5 years as environmental policy analyst with nonprofit and academic organizations, and 2 years as civil engineer with municipal government; M.P.A. in Environmental Policy and Natural Resource Management; B.S. in Civil and Environmental Engineering

Production Services

Jim Corbett, Visual Information Specialist; 7 years with the National Park Service

June McMillen, Writer/Editor; 23 years with the National Park Service, 8 years with the U.S. Forest Service; Master of Environmental Science, B.A. in Anthropology.

PLANNING SUPPORT AND SPECIALISTS

Kristen Appel, Senior District Ranger, Northern Territory Government, Australia

Laura Castellini, Sustainability Coordinator, Golden Gate National Recreation Area; 13 years with the National Park Service; M.A. in Biology, B.S. in Zoology

Lee Ann Ciancetti, Administrative Assistant, Planning and Compliance, Golden Gate National Recreation Area

Steve Griswold, Landscape Architect, Golden Gate National Recreation Area; 34 years with the National Park Service; M.A. in Landscape Architecture

Mark Grupe, GIS Specialist, NPS; 12 years with the National Park Service, 2 years with the U. S. Forest Service; M.A. in Geography, B.A. in Communication

Jan Harris, Planning Branch Chief, Denver Service Center; 30 years with the National Park Service, 2 years public involvement consulting, 4 years with Missouri Department Natural Resources; B.S. in Recreation and Park Administration

Marcus Koenen, Alcatraz Site Supervisor (acting), Golden Gate National Recreation Area; 10 years with the National Park Service: 5 years as inventory and monitoring program manager for San Francisco Bay Area network, 5 years as monitoring coordinator in Capital Region, NPS Washington Office; M.S. in Wildlife Ecology, B.A. in Cultural Anthropology

Sarah Koenen, Park Ranger, Golden Gate National Recreation Area; 11 years with the National Park Service, 2 years Compliance Coordinator, Golden Gate National Recreation Area; M.S. in Resource Interpretation

Robert Lieber, Director Retail and Product Development, Golden Gate National Parks Conservancy; 15 years with the Golden Gate National Parks Conservancy, 5 years as director for park retail operations, visitor center retail store design, product development, and park publishing, 10 years as associate director overseeing visitor center store design and product development; B.F.A. in Design

Andreau Lucas, Landscape Architect, Golden Gate National Recreation Area; 11 years with the National Park Service; M.A. in Environmental Planning , B.S. in Landscape Architecture

Roy McNamee, Staff and Park Recreation Specialist with California State Parks (CSP); 34 years with the state parks, 2 years as Superintendent, Angel Island State Park, 5 years as Special Projects Manager for CSP Marin District, 27 years in CSP Facility Management; B.A. Recreation Administration and Parks Management

Ricardo Perez, Supervisory Park Ranger, Rock Creek Park; 30 years with the National Park Service: Laborer and Maintenance Worker, Park Ranger Generalist, Interpretive Specialist, Wildland Firefighter, Incident Medical Specialist, Senior Law Enforcement Official, Supervisory Park Ranger, Acting Superintendent; Type I Commission, Federal Law Enforcement Training Center

Bruce Philips, Manager of Horse Patrol, Golden Gate National Recreation Area; 21 years with the National Park Service, 10 years with Golden Gate National Recreation Area, 8 years Horse Patrol, Golden Gate National Recreation Area; B.A. in Criminal Justice

Michelle Rios, Historical Architect Golden Gate National Recreation Area; 17 years with the National Park Service; M.A. in Architecture, B.A. in Economics

Carolyn Shoulders, Project Manager, Redwood Creek, Golden Gate National Recreation Area; 12 years with the National Park Service; M.S. in Restoration Ecology, B.A. in History and Literature

Brian Ullensvang, Chief of Environmental and Safety Programs, Golden Gate National Recreation Area; 15 years with the National Park Service, 12 years with Environmental Protection Agency, M.S. in Environmental Engineering, B.S. in Civil Engineering & Biology

Rich Weideman, Chief, Office for Partnerships and Philanthropic Support, NPS Washington Office; 29 years with the National Park Service: 18 years with Interpretation, 11 years with Public Affairs; B.S. in Resource Conservation

Betty Young, Program Director of Nurseries and Park Academy, Golden Gate National Parks Conservancy; 14 years with Golden Gate National Parks Conservancy, 13 years as director with other nurseries; B.S. in Plant Science and Nursery Management

CONSULTANTS

Jim Bacon, Planner and Visitor Use Specialist, Yosemite National Park and NPS Denver Service Center; 5 years with the National Park Service: 2 years with Resource Management, 3 years with Park Planning, returned Peace Corps Volunteer; M.S. in Natural Resource Planning

Linda Dahl, Director of Parks and Open Space in Marin County; 18 years with the National Park Service, Chief of Planning Division, Yosemite National Park

Robert Manning, Professor at Rubenstein School of Environment and Natural Resources, University of Vermont; Ph.D. in Resource Conservation, M.S. in Parks and Outdoor Recreation, B.S. in Biology

Jeff Marion, Research Biologist, Eastern Region United States Geologic Survey; Ph.D. and M.S. in Recreation Resources Management, B.S. in Biology

Vicki McCusker, National Park Service Natural Resource Specialist; 5 years with the NPS Natural Sounds and Night Skies Division; B.S. in Ornamental Horticulture, M.S. in Agronomy

Bonnie Nelson, Senior Principal for Transit Operations Management Consultants, Nelson/Nygaard; B.S. in Civil Engineering & Transportation

Peter Newman, Associate Dean of Economics for Warner College of Natural Resources; Natural Sounds Programs expert with the National Park Service; Ph.D. in Natural Resources, M.S. in Forest Resource Management, B.A. in Political Science

Diane Nicholson, Regional Curator for NPS Pacific West Region; 33 years with the National Park Service, 16 years as Chief of Museum Management, Golden Gate National Recreation Area; M.A. in Museum Science, B.S. in History

Nina Roberts, Associate Professor, San Francisco State University Department of Recreation, Parks, and Tourism; 4 years with the National Park Service (consultant since 2005), 4 years as Education and Outreach Specialist with NPS Natural Resource Program Center; Ph.D. Natural Resource Management and Outdoor Recreation, Fulbright Scholar, India 2006

Cliff Riebe, Assistant Professor of Geology and Geophysics, University of Wyoming; Ph.D. in Geology, B.S. in Civil Engineering

Alexa Viets, Program Manager for Civil War Defenses NPS Washington Office; 8 years with the National Park Service, 1 year as Transportation Planner with Golden Gate National Recreation Area; M.A. in City Planning

Don Weeks, Hydrologist, NPS Natural Resources Program Center; 20 years with the National Park Service, 5 years with Woodward-Clyde Consultants; B.S. and M.S. in Geology (emphasis on Hydrogeology)

Appendixes



APPENDIX A: LEGISLATION

National Park Service

In 1916, the National Park Service was established through the passage of the National Park Service Organic Act. The mission of the agency is contained in the following words of that act:

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

Congress supplemented and clarified these provisions through enactment of the General Authorities Act in 1970, and again through enactment of a 1978 amendment to that act (the “Redwood amendment,” contained in a bill expanding Redwood National Park), which added the last two sentences in the following provision. The key part of that act, as amended, is as follows:

Congress declares that the national park system, which began with establishment of Yellowstone National Park in 1872, has since grown to include superlative natural, historic, and recreation areas in every major region of the United States, its territories and island possessions; that these areas, though distinct in character, are united through their inter-related purposes and resources into one national park system as cumulative expressions of a single national heritage; that, individually and collectively, these areas derive increased national dignity and recognition of their superlative environmental quality through their inclusion jointly with each other in one national park system preserved and managed for the benefit and inspiration of all the people of the United States; and that it is the purpose of this Act to include all such areas in the System and to clarify the authorities applicable to the system. Congress further reaffirms, declares, and directs that the promotion and regulation of the various areas of the National Park System, as defined in section 1c of this title, shall be consistent with and founded in the purpose established by section 1 of this title [the Organic Act provision quoted above], to the common benefit of all the people of the United States. The authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress.

Golden Gate National Recreation Area

Public Law 92-589

An Act

To establish the Golden Gate National Recreation Area in the State of California, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

ESTABLISHMENT

Section 1. In order to preserve for the public use and enjoyment certain areas of Marin and San Francisco Counties, California, possessing outstanding natural, historic, scenic, and recreational values, and in order to provide for the maintenance of needed recreational open space necessary to urban environment and planning, the Golden Gate National Recreation Area (hereinafter referred to as the “recreation area”) is hereby established. In the management of the recreation area, the Secretary of the Interior (hereinafter referred to as the “Secretary”) shall utilize the resources in a manner which will provide for recreation and educational opportunities consistent with sound principles of land use planning and management. In carrying out the provisions of this Act, the Secretary shall preserve the recreation area, as far as possible, in its natural setting, and protect it from development and uses which would destroy the scenic beauty and natural character of the area.

COMPOSITION AND BOUNDARIES

Sec. 2 (a) the recreation area shall comprise the lands, waters, and submerged lands generally depicted on the map entitled “Boundary Map, Golden Gate National Recreation Area”, numbered NRA-GG-80,003A, sheets 1 through 3, and dated July, 1972.

(b) The map referred to in this section shall be on file and available for public inspection in the Offices of the National Park Service, Department of the Interior, Washington, District of Columbia. After advising the Committees on Interior and Insular Affairs of the United States House of Representatives and the United States Senate (hereinafter referred to as the “committees”) in writing, the Secretary may make minor revisions of the boundaries of the recreation area when necessary by publication of a revised drawing or other boundary description in the Federal Register.

ACQUISITION POLICY

Sec. 3 (a) within the boundaries of the recreation area, the Secretary may acquire lands, improvements, waters, or interests therein, by donation, purchase, exchange or transfer. Any lands, or interests therein, owned by the State of California or any political subdivision thereof, may be acquired only by donation. When any tract of land is only

partly within such boundaries, the Secretary may acquire all or any portion of the land outside of such boundaries in order to minimize the payment of severance costs. Lands so acquired outside of the boundaries may be exchanged by the Secretary for non-Federal lands within the boundaries. Any portion of land acquired outside of the boundaries and not utilized for exchange shall be reported to the General Services Administration for disposal under the Federal Property and Administrative Services Act of 1949 (63 Stat. 377), as amended: *Provided*, That no disposal shall be for less than fair market value. Except as herein after provided, Federal property within the boundaries of the recreation area is hereby transferred without consideration to the administrative jurisdiction of the Secretary for the purpose of this Act, subject to the continuation of such existing uses as may be agreed upon between the Secretary and the head of the agency formerly having jurisdiction over the property. Notwithstanding any other provisions of law, the Secretary may develop and administer for the purposes of this Act structures or other improvements and facilities on lands for which he receives a permit of use and occupancy from the Secretary of the Army.

(b) Fort Cronkhite, Fort Barry, and the westerly one-half of Fort Baker, in Marin County, California, as depicted on the map entitled "Golden Gate Military Properties" numbered NRAGG-20,002 and dated January 1972, which shall be on file and available for public inspection in the offices of the National Park Service, are hereby transferred to the jurisdiction of the Secretary for purposes of this Act, subject to continued use and occupancy by the Secretary of the Army of those lands needed for existing air defense missions, reserve activities and family housing, until he determines that such requirements no longer exist. The Coast Guard Radio Receiver Station, shall remain under the jurisdiction of the Secretary of the Department in which the Coast Guard is operating. When this station is determined to be excess to the needs of the Coast Guard, it shall be transferred to the jurisdiction of the Secretary for purposes of this Act.

(c) The easterly one-half of Fort Baker in Marin County, California, shall remain under the jurisdiction of the Department of the Army. When this property is determined by the Department of Defense to be excess to its needs, it shall be transferred to the jurisdiction of the Secretary for purposes of this Act. The Secretary of the Army shall grant to the Secretary reasonable public access through such property to Horseshoe Bay, together with the right to construct and maintain such public service facilities as are necessary for the purposes of this Act. The precise facilities and location thereof shall be determined between the Secretary and the Secretary of the Army.

(d) Upon enactment, the Secretary of the Army shall grant to the Secretary of the Army shall grant to the Secretary the irrevocable use and occupancy of one hundred acres of the Baker Beach area of the Presidio of San Francisco, as depicted on the map referred to in subsection (b).

(e) The Secretary of the Army shall grant to the Secretary within a reasonable time, the irrevocable use and occupancy of forty-five acres of the Crissy Army Airfield of the Presidio as depicted on the map referred to in subsection (b)

(f) When all or any substantial portion of the remainder of the Presidio is determined by the Department of Defense to be excess to its needs, such lands shall be transferred to the jurisdiction of the Secretary for purposes of this Act. The Secretary shall grant a permit for continued use and occupancy for that portion of said Fort Point Coast Guard Station necessary for activities of the Coast Guard.

(g) Point Bonita, Point Diablo, and Lime Point shall remain under the jurisdiction of the Secretary of the Department in which the Coast Guard is operating. When this property is determined to be excess to the needs of the Coast Guard, it shall be transferred to the jurisdiction of the Secretary for purposes of this Act. The Coast Guard may continue to maintain and operate existing navigational aids: *Provided*, That access to such navigational aids and the installation of necessary new navigational aids within the recreation area shall be undertaken in accordance with plans which are mutually acceptable to the Secretary and the Secretary of the Department in which the Coast Guard is operating and which are consistent with both the purpose of this Act and the purpose of existing statutes dealing with establishment, maintenance, and operation of navigational aids.

(h) That portion of Fort Miley comprising approximately one and seven-tenths acres of land presently used and required by the Secretary of the Navy for its inshore, undersea warfare installations shall remain under the administrative jurisdiction of the Department of the Navy until such time as all or any portion thereof is determined by the Department of Defense to be excess to its needs, at which time such excess portion shall be transferred to the administrative jurisdiction of the Secretary for purposes of this Act.

(i) New construction and development within the recreation area on property remaining under the administrative jurisdiction of the Department of the Army and not subject to the provisions of subsection (d) or (e) hereof shall be limited to that which is required to accommodate facilities being relocated from property being transferred under this Act to the administrative jurisdiction of the Secretary or which is directly related to the essential missions of the Sixth United States Army: *Provided, however*, That any construction on presently undeveloped open space may be undertaken only after prior consultation with the Secretary. The foregoing limitation on construction and development shall not apply to expansion of those facilities known as Letterman General Hospital or the Western Medical Institute of Research.

(j) The owner of improved property on the date of its acquisition by the Secretary under the Act may, as a condition of such acquisition, retain for himself and his heirs and assigns a right of use and occupancy of the improved property for noncommercial residential purposes for a definite term of not more than twenty-five years, or, in lieu thereof, for a term ending at the death of the owner or the death of his spouse, whichever is later. The owner shall elect the term to be reserved. Unless the property is wholly or partially donated to the United States, the Secretary shall pay to the owner the fair market value of the property on the date of acquisition minus the fair market value on that date of the right retained by the owner. A right retained pursuant to this section shall be subject to termination by the Secretary upon his determination that it is being exercised in a manner inconsistent with the purpose of this Act, and it shall terminate by operation of law upon the Secretary's notifying the holder of the right of such determination and tendering to him an amount equal to the fair market value of that portion of the right which remains unexpired.

(k) The term "improved property", as used in subsection (j), means a detached, noncommercial residential dwelling, the construction of which was begun before June 1, 1971, together with so much of the land on which the dwelling is situated, the said land being in the same ownership as the dwelling, as the Secretary shall designate to be reasonably necessary for the enjoyment of the dwelling for the sole purpose of

noncommercial residential use, together with any structures accessory to the dwelling which are situated on the land so designated.

(1) Whenever an owner of property elects to retain a right of use and occupancy as provided for in the Act, such owner shall be deemed to have waived any benefits or rights accruing under sections 203, 204, 205, and 206 of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (84 Stat. 1894), and for the purposes of those sections such owner shall not be considered a displaced person as defined in section 101 (6) of that Act.

(m) Notwithstanding any other provisions of law, the Secretary shall have the same authority with respect to contracts for the acquisition of land and interests in land for the purposes of this Act as was given the Secretary of the Treasury for other land acquisitions by section 34 of the Act of May 30, 1908, relating to purchase of sites for public buildings (35 Stat. 545), and the Secretary and the owner of land to be acquired under this Act may agree that the purchase price will be paid in periodic installments over a period that does not exceed ten years, with interest on the unpaid balance thereof at a rate which is not in excess of the current average market yield on outstanding marketable obligations of the United States with remaining periods to maturity comparable to the average maturities on the installments. Judgments against the United States for amounts in excess of the deposit in court made in condemnation actions shall be subject to the provisions of the Act of July 27, 1956 (70 Stat. 624) and sections 2414 and 2517 of title 28, United States Code.

ADMINISTRATION

Sec.4. (a) The Secretary shall administer the lands, waters and interests therein acquired for the recreation area in accordance with the provisions of the Act of August 25, 1916 (39 Stat. 535; 16 U.S.C. 1, 2-4), as amended and supplemented, and the Secretary may utilize such statutory authority available to him for the conservation and management of wildlife and natural resources as he deems appropriate to carry out the purposes of this Act. Notwithstanding their inclusion within the boundaries of the recreation area, the Muir Woods National Monument and Fort Point National Historic Site shall continue to be administered as distinct and identifiable units of the national park system in accordance with the law applicable to such monument and historic site.

(b) The Secretary may enter into cooperative agreements with any Federal agency, the State of California, or any political subdivision thereof, for the rendering, on a reimbursable basis, of rescue, firefighting, and law enforcement and fire preventive assistance.

(c) The authority of the Army to undertake or contribute to water resource developments, including shore erosion control, beach protection, and navigation improvements on land and/or water within the recreation area shall be exercised in accordance with plans which are mutually acceptable to the Secretary and the Secretary of the Army and which are consistent with both the purpose of this Act and the purpose of existing statutes dealing with water and related resource developments.

(d) The Secretary, in cooperation with the State of California and affected political subdivisions thereof, local and regional transit agencies, and the Secretaries of Transportation and of the Army, shall make a study for a coordinated public and private

transportation system to and within the recreation area and other units of the national park system in Marin and San Francisco Counties.

ADVISORY COMMISSION

Sec.5. (a) There is hereby established the Golden Gate National Recreation Area Advisory Commission (hereinafter referred to as the "Commission").

(b) The Commission shall be composed of fifteen members appointed by the Secretary for terms of three years each.

(c) Any vacancy in the Commission shall be filled in the same manner in which the original appointment was made.

(d) Members of the Commissions shall serve without compensation, as such, but the Secretary may pay, upon vouchers signed by the Chairman, the expenses reasonably incurred by the Commission and its members in carrying out their responsibilities under this Act.

(e) The Secretary, or his designee, shall from time to time, but at least annually, meet and consult with the Commission on general policies and specific matters related to planning, administration and development affecting the recreation area and other units of the national park system in Marin and San Francisco Counties.

(f) The Commission shall act and advise by affirmative vote of a majority of the members thereof.

(g) The Commission shall cease to exist ten years after the enactments of this Act.

APPROPRIATION LIMITATION

Sec.6. There are hereby authorized to be appropriated such sums as may be necessary to carry out the provisions of this of this Act, but not more than \$61,610,000 shall be appropriated for the acquisition of lands and interests in lands. There are authorized to be appropriated not more than \$58,000,000 (May 1971 prices) for the development of the recreation area, plus or minus such amounts, if any, as may be justified by reason of ordinary fluctuations in construction costs as indicted by engineering cost indices applicable to the type of construction involved herein.

Approved October 27, 1972.

**Legislation Summary,
Golden Gate National Recreation Area**

| Public Law # | Title | Summary | Date |
|---------------------|--|--|-------------|
| 92-589 | Golden Gate National Recreation Area, Calif. | This act establishes the purpose of Golden Gate National Recreation Area, delineates the composition and boundaries, describes the acquisition policy and administration, creates an advisory committee, and discusses appropriations. | 10/27/1972 |
| 93-544 | Golden Gate National Recreation Area, Calif., additional land | Amended the act of 10/27/72 to include the acquisition of contiguous lands in southern Marin, Muir, and Stinson Beaches. (Oakwood Valley, Tennessee Valley, Wolfback Ridge, and Haslett Warehouse). | 12/26/1974 |
| 95-625 | National Parks and Recreation Act of 1978 | Expanded boundaries in Marin and San Francisco (Lagunitas Creek watershed, Devils Gulch, Cheda, McIsaac, Zanardi, and Rogers ranches). Strengthened continued use and occupancy provisions for agriculture, and limited new construction. It also established the ability to obtain proceeds from rental space in the warehouse, Cliffhouse, and Louis' restaurant. It increased the park's advisory commission from 15 to 17. | 11/10/1978 |
| 96-344 | Historic Sites, Buildings and Antiquities Act, administration improvement | Added the acreage of the McFadden, Genazzi, and Martinelli ranches. Extended the terms of the advisory committee from 3 to 5 years. Recommended Sweeney Ridge for addition to Golden Gate National Recreation Area. | 9/8/1980 |
| 96-607 | National Park System, amendment | Adds Sweeney Ridge and increased membership of the advisory committee from 17 to 18. | 12/28/1980 |
| 98-28 | Golden Gate National Recreation Area, dedication to Congressman Phillip Burton | Dedicates Golden Gate National Recreation Area to Congressman Burton. | 5/10/1983 |

APPENDIXES

| Public Law # | Title | Summary | Date |
|--------------|--|---|------------|
| 102-299 | Golden Gate National Recreation Area Addition Act of 1992 | Addition of the Phleger Estate | 6/9/1992 |
| 106-113 | Consolidated Appropriations for Fiscal Year ending 9/30/2000 | Exemption of all taxes and special assessments, except sales tax. Such areas as Fort Baker shall remain under exclusive Federal jurisdiction. | 11/29/1999 |
| 106-291 | Dept of Interior appropriation | Authority for fee-based education, interpretive and visitor service functions within the Crissy Field and Fort Point areas of the Presidio. | 10/11/2000 |
| 106-350 | Golden Gate National Recreation Area Boundary Adjustment Act of 2000 | Additions as depicted on map "numbered NPS-80,076, and dated July 2000/PWR-PLRPC" | 10/24/2000 |
| 109-131 | Rancho Corral de Tierra Golden Gate National Recreation Area Boundary Adjustment Act | Amends PL 92-589 to add Rancho Corral de Tierra lands, with limitation to acquire this land only from a willing seller. | 12/20/2005 |

Muir Woods National Monument

January 9, 1908

By The President of The United States of America

A PROCLAMATION

WHEREAS. William Kent and his wife, Elizabeth Thatcher Kent, of the City of Chicago, in County of Cook in the State of Illinois, did, on December 26, 1907, pursuant to the Act of Congress entitled, "An Act for the preservation of American Antiquities," approved June 8, 1906, by their certain deed of relinquishment and conveyance, properly executed in writing and acknowledged, relinquish, remise, convey and forever quitclaim to the United States of America the following mentioned lands at that time held by them in private ownership and lying and being in township One North, of Range Six West, Mount Diablo Meridian, in the County of Marin, in the State of California, and bounded and particularly described as follows, to-wit:

Beginning at a stake "A.7" driven in the center of the road in Redwood Canon and located by the following courses and distances from the point of commencement of the tract of land, which was conveyed by the Tamalpais Land and Water Company to William Kent by a deed dated August 29th, 1905, and recorded in the office of the County Recorder of Marin County, California, Book 95 of Deeds at page 58, to-wit: North eighteen degrees thirty-two minutes East two hundred thirty two and sixty-four hundredths feet, North sixty-six degrees thirty minutes West one hundred sixty-seven and thirty-four hundredths feet, North eighty-six degrees twenty-five minutes West ninety-eight and sixty-two hundredths feet, North seventy degrees no minutes, West two hundred forty-one and seven hundredths feet, North fifty-seven degrees twenty-nine minutes West one hundred seventy-eight and three hundredths feet; North forty-six degrees twenty-two minutes West two hundred thirty-five and thirty-nine hundredths feet and North twenty-four degrees twenty-five minutes West two hundred twenty-five and fifty-six hundredths feet; thence from said stake "A.7", the point of beginning, South fifty-four degrees nineteen minutes West fourteen hundred eighty-two and seven tenths feet to Station A.8 from which Station 4 of the survey of the tract of land conveyed to William Kent as aforesaid bears south fifty-four degrees nineteen minutes west three hundred ten feet distant; thence from said Station A.8 North forty-seven degrees thirty minutes West twenty-six hundred eighty feet; thence due West six hundred fifty and eight tenths feet; thence North fifty-two degrees thirty minutes West eleven hundred feet; thence North nine-teen degrees forty-five minutes West ten hundred fifty-eight and four tenths feet to Station A.12. from which Station 16 of the Survey of the tract of land conveyed to William Kent as aforesaid bears South eighty-three degrees forty-two minutes West three hundred ten feet distant; thence North eighty-three degrees forty-two minutes East thirty-one hundred nine and two tenths feet; thence north fifty-five degrees twenty-eight minutes East fifteen hundred fifty feet to an iron bolt, three-quarters of an inch in diameter and thirty inches long, Station 14; thence South seventeen degrees eighteen minutes East twenty-eight hundred twenty and nine tenths feet; thence South four degrees ten minutes East nine hundred thirty feet to a stake "A.16" driven in the center of a graded road; and thence South forty-five degrees seventeen minutes West two

hundred ninety-eight and five tenths feet to said stake A.7. the place of beginning. Containing an area of two hundred ninety-five acres a little more or less, and,

WHEREAS, said relinquishment and conveyance has been accepted by the Secretary of the Interior in the manner and for the purposes prescribed in said Act of Congress, and

WHEREAS, and extensive growth of redwood trees (*Sequoia sempervirens*) embraced in said land is of extraordinary scientific interest and importance because of the primeval character of the forest in which it is located, and if the character, age and size of the trees,

Now, therefore, I, Theodore Roosevelt, President of United States of America, by virtue of the power and authority in me vested by Section 2 of said Act of Congress, do hereby declare and proclaim that said grove and all of the land hereinbefore described and fully delineated in the diagram hereto attached and made a part hereof, are hereby reserved from appropriation and use of all kinds under all the public land laws of the United States and set apart as a National Monument, to be known and recognized as the Muir Woods National Monument.

Warning is hereby expressly given to all unauthorized persons not to appropriate, cut, injure, destroy or take away any trees on said land and not to locate or settle upon any of said land.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the City of Washington this 9th day of January in the year of our Lord one thousand nine hundred and eight, and of the Independence of the United States the one hundred and thirty-second.

THEODORE ROOSEVELT

By the President:

ELIHU ROOT

Secretary of State

APPENDIX B: DESCRIPTION OF MANAGEMENT PLANS RELATED TO THIS PLAN

Appendix B provides an overall description of management plans from federal, state, regional and local government agencies along with their relationship to this management plan.

In addition to the overall vision and management plans described in the text of the general management plan, the National Park Service develops detailed project and program implementation plans in order to implement the goals and objectives of those broader plans. These implementation plans cover topics such as natural and cultural resource restoration and preservation, visitor use, transportation, and park operations.

FEDERAL PLANS

NATIONAL PARK SERVICE PLANS CURRENTLY BEING PREPARED

Alcatraz Embarkation and Education Center Study

Study objectives are to direct the establishment of the primary embarkation site in San Francisco that will provide for a safe, consistent, and stable visitor departure site for access to Alcatraz Island. The site will meet the following criteria:

- Allow for development of an identifiable, distinct, first-class NPS visitor welcome area with a clearly defined sense of arrival, the setting of which is in keeping with a National Park site and an authentic Alcatraz experience.
- Provide a portal to the park that begins to connect visitors to the Alcatraz story, GGNRA, NPS, and the natural and cultural history of the San Francisco Bay Area.
- Establish a long-term location for optimizing ferry berths, critical operational facilities, and logistical support requirements, available for a full and open competition of contracts.
- Ensure NPS ability to define all aspects of the visitor experience, from pre-arrival to departure, with flexibility to modify and to define interpretive materials, indoor and outdoor space, signage and other features of the site, while accommodating emerging technologies, growth, visitor needs, etc.
- Provide adequate visitor support space and facilities that offer a comfortable, fully accessible, and welcoming experience while waiting for a ferry and learning about Alcatraz and the park, accommodating the visitor flow to and through the site without confusion.
- Ensure convenient alternative access to the site through a variety of transportation modes, while providing for the opportunity to connect to other parklands.
- Avoid disruption of service when the current contract expires in 2016.

Dog Management Plan for Golden Gate National Recreation Area (draft)

Golden Gate National Recreation Area is involved a planning and public involvement process to decide how best to manage dog walking in the park. This process will result in a *Dog Management Plan / Environmental Impact Statement*. This planning process will develop a range of alternatives with clear, enforceable guidelines for the manner and extent of dog walking in appropriate areas of the park. The alternatives will specify which of the lands managed by Golden Gate National Recreation Area would be open to on-leash dog walking and off-leash dog walking, and which are closed to dog walking. The goal of the process is to allow dog walking while

- protecting park resources;
- providing a variety of visitor experiences;
- reducing visitor use conflicts;
- ensuring that park resources and values are available for future generations; and
- increasing the safety of staff and visitors.

The park will evaluate the impacts of the range of alternatives and identify a preferred alternative for the draft *Dog Management Plan/Environmental Impact Statement*. The actions of the general management plan alternatives have been continuously reviewed as the *Dog Management Plan* evolves in order to ensure consistency between the two planning efforts.

Golden Gate National Recreation Area – Long-Range Transportation Plan

The *Long-range Transportation Plan* is being developed to guide the park's transportation program. The plan tiers to the general management plan's vision for transportation and outlines the strategies for implementing the park's transportation goals for the next 20 years. This plan will reflect the vision as described in the general management plan.

Marin Equestrian Plan (draft)

Golden Gate National Recreation Area is in the process of developing the *Marin Equestrian Plan*. The plan is focused on options for the future use of three Marin County stables located within the park and will address site and facility needs, improvements, and protection of important resources at and surrounding these facilities. The plan will also identify and enhance the public outreach and equestrian program, identify best management practices and sustainable programs, increase protection of natural resources, and preserve the cultural resources that surround the stables. The actions of the general management plan alternatives have been continuously reviewed as the *Marin Equestrian Plan* evolves in order to ensure consistency between the two planning efforts.

NATIONAL PARK SERVICE TRAILS AND TRANSPORTATION PLANS AND PROGRAMS

South Access to the Golden Gate Bridge - Doyle Drive Final Environmental Impact Statement/Report

Doyle Drive is a portion of Highway 101 that winds 1.5 miles along the northern edge of San Francisco and connects the San Francisco peninsula to the Golden Gate Bridge and the North Bay. It is located within the Presidio of San Francisco and provides access to historic and cultural landmarks including Golden Gate National Recreation Area, the Presidio, the Golden Gate Bridge and the Palace of Fine Arts. Originally constructed in 1936 with narrow lanes, no median, and no shoulders, Doyle Drive is approaching the end of its useful life.

The purpose of the proposed project is to improve the seismic, structural, and traffic safety of Doyle Drive within the setting and context of the Presidio of San Francisco and its purpose as a National Park. Specific objectives of the Doyle Drive Project are to

- improve the seismic, structural, and traffic safety on Doyle Drive;
- maintain the functions that the Doyle Drive corridor serves as part of the regional and city transportation network;
- improve the functionality of Doyle Drive as an approach to the Golden Gate Bridge;
- preserve the natural, cultural, scenic and recreational values of affected portions of the Presidio, a national historic landmark district;
- be consistent with the *San Francisco General Plan* and the *General Management Plan Amendment Final Environmental Impact Statement*, Presidio of San Francisco, Golden Gate National Recreation Area (NPS 1994a and 1994b) for Area A of the Presidio and the *Presidio Trust Management Plan: Land Use Policies for Area B of the Presidio of San Francisco* (Presidio Trust 2002);
- minimize the effects of noise and other pollution from the Doyle Drive corridor on natural areas and recreational qualities at Crissy Field and other areas adjacent to the project area;
- minimize the traffic impacts of Doyle Drive on the Presidio and local roadways;
- improve intermodal and vehicular access to the Presidio; and
- redesign the Doyle Drive corridor using the parkway concept described within the *Doyle Drive Intermodal Study* (1996).

The alternatives of the general management plan are consistent with this plan.

Marin Headlands and Fort Baker Transportation Infrastructure and Management Plan Final Environmental Impact Statement (2009)

The purpose of the plan is to 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 to the rich natural and cultural resources of the Marin Headlands and Fort Baker study area. The Marin Headlands and Fort Baker are in the San Francisco Bay area at the north end of the Golden Gate Bridge, across the bay from San Francisco. The Marin Headlands span the southern tip of the Marin Peninsula, from U.S. Highway 101 to the western coastline, a 2,500-acre area. Fort Baker is a 335-acre site directly adjacent to the Headlands on the east side of Highway 101.

Implementation of this plan would provide infrastructure and access improvements in the park to meet the following plan goals:

- promote public transit, pedestrian, and bicycle travel to and within the park to improve visitor experience and enhance environmental quality;
- rehabilitate the Marin Headlands and Fort Baker road and trail infrastructure in a manner that protects resources and improves safety and circulation; and
- reduce traffic congestion and improve safety at key park locations and connecting roads.

To accomplish these goals the roadways would be rehabilitated or reconstructed/widened without altering their character defining features, and parking facilities would be improved. A greater number of transit options would be provided to and within the study area. Parking fees would be collected to fund improved transit services. Extensive pedestrian facility enhancements would be implemented, including closing and rerouting existing trails and constructing new trails. Bicycle facilities would be improved with a few new paths and bike lanes. Car-free days would be implemented on a trial basis for a maximum of seven days per year.

The goals and actions of the *Marin Headlands and Fort Baker Transportation Infrastructure and Management Plan Final Environmental Impact Statement* are appropriate for all general management plan alternatives.

Trails Forever

The mission of Trails Forever is to improve the quality of trails in Golden Gate National Recreation Area, enhance the experiences of park users, support resources preservation, and engage the community in sustaining the parks trail system in perpetuity. Trails Forever is an initiative of the Golden Gate National Parks Conservancy in partnership with the National Park Service and Presidio Trust. The signature project is to complete the California Coastal Trail corridor within Golden Gate National Recreation with trail connections to communities in Marin, San Francisco, and San Mateo. The actions of the general management plan alternatives are consistent with the goals and projects of Trails Forever.

NATIONAL PARK SERVICE RESTORATION PLANS

Alcatraz Island Historic Preservation and Safety Construction Program Environmental Impact Statement (2001)

The implementation of this plan works to protect human health and safety, stabilize deteriorating historic structures to protect the National Historic Landmark, and implement needed repairs in a manner that minimizes adverse biological effects. The repairs include replacement of badly deteriorated poles underneath the dock, seismic retrofit of the Cellhouse, and repair and stabilization of other historic structures to provide for public safety and historic preservation. The project is a construction program addressing critically needed repairs on Alcatraz Island. The actions in the general management plan alternatives are consistent with the direction of this environmental impact statement.

Easkoot Creek Restoration at Stinson Beach Environmental Assessment (2003)

The Easkoot Creek restoration addressed two important limiting factors for salmonid fish production: 1) the absence of pool habitats with associated large woody debris; and 2) the lack of natural riparian habitat. This project contributes to the other restoration effort upstream and downstream of Golden Gate National Recreation Area lands, will yield long-term beneficial effects on the steelhead trout and coho salmon habitat of Easkoot Creek. The actions in the general management plan alternatives are consistent with the goals and projects associated with Easkoot Creek restoration.

Lower Redwood Creek Floodplain and Salmonid Habitat Restoration, Banducci Site Environmental Assessment (2007)

The purpose of this project is to substantially restore natural floodplain and creek processes on lower Redwood Creek for the benefit of aquatic and terrestrial fauna and long-term natural resources conditions in the Redwood Creek watershed. The EA guided the implementation of restoration projects such as levee removal, floodplain enhancements, and protection areas for threatened and endangered species. The plan contributes to the implementation of the Redwood Creek Watershed Vision. The actions in the general management plan alternatives are consistent with the goals and projects associated with the lower Redwood Creek floodplain and salmonid habitat restoration.

Lower Redwood

This project takes place at two locations in lower Redwood Creek near Muir Beach. The purpose of the project is to improve hydrologic and geomorphic functions at the Pacific Way site and thus reduce the magnitude, frequency, and duration of flooding on Pacific Way and to reduce the risk of channel avulsion at the Pacific Way site. The project also reconnects lower Redwood Creek to its floodplain and expands riparian vegetation at the Banducci site. In addition, the project increases in-channel habitat complexity and reestablishes geomorphic processes at the Banducci site. These actions work to improve habitat for coho salmon and steelhead. The actions in the general management plan

alternatives are consistent with the goals and projects associated with the lower Redwood Creek flood reduction measures and floodplain/channel restoration.

Mori Point Restoration and Trail Plan/Environmental Assessment (2006)

The staff of Golden Gate National Recreation Area and the Golden Gate Parks Conservancy are working to restore habitat and to develop a safe and sustainable trail system at Mori Point. The goals of this project are to

- protect and enhance habitat for the federally endangered San Francisco garter snake and the federally threatened California red-legged frog at Mori Point;
- preserve and restore the ecological integrity of Mori Point habitats by reducing threats to native plant communities and natural processes; and
- develop a safe and sustainable trail system, incorporating the California Coastal Trail that improves recreational experiences and reduces impacts to park resources.

Restoration activities include actions such as

- improving hydrologic and habitat connectivity between upland and wetland areas;
- creation of San Francisco garter snake foraging habitat;
- reduction and repair of coastal erosion;
- restoration of native plant communities; and
- removal of trash, and debris.

The project develops a variety of trail experiences for different user groups and meets management objectives to protect and enhance natural resource values and provide public access. Hiker-only designations will be in effect on all segments through, or leading to, steep and erosion-prone areas. Multiuse opportunities (hiking, bicycling, and equestrian uses) were identified on the California Coastal Trail and its main connector routes. The actions of the general management plan alternatives are consistent with the goals and project work associated with this plan.

Ocean Park Stewardship Action Plan (2007–2008)

The National Park Service developed a strategy to increase its emphasis on ocean resource management and conservation. The *Ocean Park Stewardship Action Plan* identifies critical issues and ways to address them cooperatively with federal, state, tribal, and private partners. The National Park Service will work with partners under existing funding levels to implement this plan. In doing so, the Park Service has developed specific actions relating to the following major topics:

- create a seamless network of ocean national parks, national marine sanctuaries, national wildlife refuges, and national estuarine research reserves;

- discover, map, and protect ocean parks;
- engage visitors in ocean park stewardship; and
- increase NPS technical capacity for ocean exploration and stewardship.

The general management plan provides specific management guidance and objectives for addressing these topics.

Pacific Ocean Park Strategic Plan

The concerns regarding the dramatic declines in the health of the marine ecosystems has the National Park Service focusing more attention on stewardship and protection of ocean resources in the National Park System. The *Pacific Ocean Park Strategic Plan* serves to lead the NPS Pacific West and Alaska Region's coastal national parks toward implementation and achievement of the overall goal of the *Ocean Park Stewardship Action Plan* (previously described). The plan provides action items specific to the following goals:

Strategy 1: Establish a Seamless Network of Ocean Parks, Sanctuaries, Refuges, and Reserves

- Facilitate partnership opportunities among federal, state, and local agencies and non-government organizations toward enhanced marine resource conservation and education.
- Facilitate partnership opportunities with neighboring countries (specifically Canada, Mexico, and neighboring Pacific Islands), and build sister park relationships throughout the Pacific and Arctic Oceans to enhance marine resource conservation and education.
- Explore means to facilitate international travel to other countries in order to communicate and cooperate on an informal and routine basis.

Strategy 2: Inventory, Map, and Protect Ocean Parks

- Inventory and map natural and cultural resources within the submerged (includes the intertidal zone) boundaries of ocean parks.
- Expand the natural resource vital signs monitoring program to more fully address ocean and estuarine resources.
- Understand and quantify threats to natural, cultural, and subsistence resources, including those associated with climate change and land- and water-based activities and develop mitigation or restoration strategies.
- Expand understanding of ocean park boundaries, jurisdictions, and authorities.
- Increase the National Park Service's and other agencies' ocean and marine presence.
- Proactively inform park management and the public of emerging issues that could impact the status and function of marine resources. Identify strategies to address these issues.

- Ensure that park-specific ocean stewardship issues and knowledge (both natural and cultural resources) are available and synthesized for planning teams.

Strategy 3: Engage Visitors and the Public in Ocean Park Stewardship

- Create a communication strategy for the Pacific West and Alaska Region ocean parks to better inform the public on topics of ocean stewardship.
- Enhance awareness and understanding of ocean stewardship issues through the development of interpretive materials and recreational opportunities.
- Explore approaches to engage visitors, teachers, and students in the practice of ocean stewardship through experiential learning.
- Demonstrate a commitment to ocean stewardship through adoption of sustainable operations and practices at ocean parks.
- Demonstrate a commitment to ocean stewardship through adoption of sustainable tourism and recreational opportunities, operations, and practices at ocean parks.
- Maximize the existing capacity of the Pacific West and Alaska Region and ocean park units to engage in stewardship activities.

Strategy 4: Increase Technical Capacity for Ocean Exploration and Stewardship

- Increase the technical capacity for ocean exploration and stewardship.
- Evaluate the effectiveness of the Pacific West and Alaska Region Ocean Park Stewardship Strategy in conserving coastal and marine resources.
- Generate awareness among park managers of the significance of marine resources and protection responsibilities.
- Understand and anticipate the role of ocean park stewardship within the urban corridor, given changing demography, development patterns, economies, and societal preferences.
- Pursue funding opportunities to increase the technical capacity for ocean exploration and stewardship.

The general management plan provides specific management guidance and objectives for addressing the four major strategies identified in the *Ocean Park Stewardship Action Plan*.

Redwood Creek Watershed: Vision for the Future (2003)

The *Redwood Creek Watershed: Vision for the Future*, while not a binding document, was jointly prepared and agreed to in 2003 by public agencies and stakeholders in the Redwood Creek watershed. The *Vision* provides guiding principles and desired future conditions to serve as guidelines for planning and projects in the watershed. The *Vision* identifies desired future conditions for natural resources, cultural resources, visitor

experience, resident community, and infrastructure and facilities. The goals of this project help achieve numerous desired future conditions for intact watershed health, protection of natural processes such as flooding, native plant communities, a full range of hydraulic and geomorphic functions, habitat for special-status species, reduction of human-caused erosion that could impact fish or aquatic habitat, and reduction of invasion by non-native plant species. The *Vision* does not alter or override existing policies of the participating agencies. Rather, it provides guidelines to support future planning and projects in the watershed, ensuring that planning and projects within the scope of this vision strive to meet the common shared goals. The vision and goals for Redwood Creek watershed were incorporated into the alternatives for the general management plan.

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

The focus of this project is the restoration of the lower Redwood Creek watershed at Muir Beach in Marin County. The Big Lagoon site includes the wetlands, floodplain, and lagoon at the mouth of Redwood Creek at Muir Beach. The project works to restore/enhance ecological conditions and processes, reducing flooding of local infrastructure, and providing public access to the beach and restored wetland and creek. Key issues that were addressed include habitat for fish and wildlife, ecosystem conditions and processes, effects on special status plant and animal species, hydrology, flood hazards, traffic, visitor access, and visitor experience. The actions of the general management plan alternatives are consistent with the goals and project work associated with this plan.

NATIONAL PARK SERVICE PROGRAM IMPLEMENTATION PLANS

Alcatraz Development Concept Plan and Environmental Assessment (1993)

The development concept plan provides direction in management of the entire island, works to balance expansion of visitor access with habitat enhancement, wildlife protection and cultural resource protection, and hazard remediation. The development concept plan will need to be revised or amended to incorporate the changes proposed by the selected alternative in the general management plan.

Bay Area Museum Resource Center Plan (2010)

The eight San Francisco Bay Area national parks have significant long- and short-term needs for park collection storage. These parks do not have sufficient space to store their collections and for the most part, the collection storage facilities do not meet NPS standards. Many occupy substandard facilities which result in deficiencies on the NPS Checklist for the Preservation and Protection of Museum Collections. These conditions impair the ability of limited numbers of staff to provide basic preservation and protection service to NPS collections. Furthermore, the location and condition of current facilities places many of the parks' collections at risk due to climate change and rising sea levels. Wide geographic distribution of these multiple collection management facilities greatly

hampers, if not precludes, visitor access to the collections for research and interpretation. Finally, existing facilities do not have the capacity to accommodate the NPS standard growth rate of 20% over the next 25 years.

The proposal of a Bay Area Museum Resource Center seeks to establish a combined collection storage and research facility for the national parks in the San Francisco Bay Area. This partnership offers the opportunity to provide greater preservation and accessibility to NPS collections. It seeks to share a collections management facility (with a primary focus on artifacts) that would improve collection storage and maximize operational efficiency by sharing resources.

Fire Management Plan / Final Environmental Impact Statement for Golden Gate National Recreation Area (2006)

An update to the 1993 *Fire Management Plan*, this plan reflects the importance of a more concerted effort to effectively reduce wildfire risk to park resources and to private property along the wildland urban interface. The plan examines the feasibility of facilitating the role of fire where it is safe to do so and more fully addresses cultural resource concerns. The plan includes all lands within Golden Gate National Recreation Area, Muir Woods National Monument, and Fort Point National Historic Site. The plan is a strategic, operational plan intended to guide the fire management program and was prepared to meet the requirements of NPS Director's Order 18. The plan includes procedures for managing the full range of fire management activities, including wildland fire suppression and fuel reduction projects. The plan identifies areas of the park where fuel reduction actions will occur during the first five years of implementation; the five-year program will be reviewed and updated annually to reflect areas that have been treated and add other areas where treatment is needed. As park managers implement the actions of the general management plan selected alternative, the fire management plan will require a review and possible refinement as resource and public issues change.

Golden Gate National Recreation Area – Park Asset Management Plan

The major goal of the *Park Asset Management Plan* is to articulate how the park currently maintains its assets and intends to in the future. This is accomplished through a review of how the park prioritizes its assets, bundles work orders into logical projects, estimates operating and maintenance requirements, demonstrates funding gaps, and identifies techniques to manage these funding gaps. The plan was used to help guide the development of the alternatives in the general management plan. Once the general management plan is approved, the *Park Asset Management Plan* will be updated to reflect the new management direction.

NATIONAL PARK SERVICE PARK PARTNER PLANS

Headlands Center for the Arts Master Plan (1990)

The plan provides guidance for the rehabilitation and use of the historic Fort Barry for an art center. The alternatives in the general management plan are consistent with this plan.

***Marine Mammal Center Site and Facilities Improvements Project
Environmental Assessment and Finding of No Significant Impact (2004)***

The environmental assessment presents and analyzes alternatives for the upgrade and expansion of the Marine Mammal Center's facilities. These improvements will better serve the center's existing programs for the treatment and rehabilitation of injured, ill, or orphaned marine mammals.

Based on the analysis provided in the environmental assessment, the implementation of mitigation measures, and with due consideration of the nature of public and agency comments, the National Park Service has determined that the selected alternative would not have the potential to significantly adversely affect the quality of the environment. A Finding of No Significant Impact was issued in October 2004. The actions of the general management plan alternatives are consistent with the decisions and actions of the Marine Mammal Center Site and Facilities Improvements Project.

OTHER FEDERAL PLANS

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

The *General Management Plan for San Francisco Maritime National Historical Park* guides the management of resources, visitor use, and general development at the park over the next 15 to 20 years. The national historical park shares a boundary with Golden Gate National Recreation Area and the actions of one park will influence the visitor and management activities of the other. In preparing the alternatives for this general management plan, the planning team coordinated with the staff of the national historical park to ensure consistencies with current management direction.

National Oceanic and Atmospheric Administration — Joint Management Plan for Cordell Bank, Gulf of the Farallones, and Monterey Bay National Marine Sanctuaries (2004)

After nearly three years of public input, issue prioritization, and recommendations from each site's Sanctuary Advisory Council, the National Marine Sanctuary Program is preparing draft management plans and an environmental impact statement for the Cordell Bank, Gulf of the Farallones, and Monterey Bay national marine sanctuaries. The plans include a review of resource protection, education and research programs, the program's resource and staffing needs, regulatory goals, and sanctuary boundaries.

The three sanctuaries include Pacific Ocean waters that extend from Bodega Bay in the north to Cambria in the south and thus could impact or be affected by the *Golden Gate National Recreation Area General Management Plan*. The three management plans have been prepared jointly because the sanctuaries are adjacent to one another, managed by the same program, and share many of the same resources and issues as well as many overlapping interest and user groups. The alternatives in the general management plan are consistent with these plans and articulate additional NPS actions that strengthen ocean stewardship within the area of influence.

STATE AND REGIONAL PLANS

Association of Bay Area Governments: *Bay Trail Plan*

The Association of Bay Area Governments developed the *Bay Trail Plan* pursuant to California Senate Bill 100. The Bay Trail is to be a regional hiking and bicycling trail around the perimeter of the San Francisco and San Pablo bays. Senate Bill 100 mandates that the Bay Trail provide connections to existing park and recreation facilities, create links to existing and proposed transportation facilities, and avoid adverse effects on environmentally sensitive areas. All the alternatives in this general management plan are consistent with the purposes and objectives of the Bay Trail.

California Department of Parks and Recreation — *Angel Island State Park Resource Management Plan / General Development Plan / Environmental Impact Report (1979)*

This plan guides the responsible use and management of resources at Angel Island State Park. It outlines recommended actions to improve opportunities for passive recreation, boating experiences, and other appropriate forms of recreation. The alternatives in the general management plan are consistent with this plan.

California Department of Parks and Recreation — *California Outdoor Recreation Plan (2002)*

The *California Outdoor Recreation Plan* is the statewide master plan for parks, outdoor recreation, and open space for all recreation providers. The *California Outdoor Recreation Plan* provides policy guidance to all public agencies – federal, state, local, and special districts – engaged in providing outdoor recreational lands, facilities and services throughout the state. The plan includes five major goals: to provide a source of information; serve as an action guide; provide leadership; maintain funding eligibility for the Land & Water Conservation Fund; and provide project selection criteria for administering the Land & Water Conservation Fund grant program. A separate report, entitled *Public Opinions and Attitudes on Outdoor Recreation in California 2002*, which is considered part of the *California Outdoor Recreation Plan*, establishes baseline information on outdoor recreation supply and demand. The alternatives in the general management plan are consistent with this plan.

California Department of Parks and Recreation — *Gray Whale Cove State Beach General Plan Amendment (1984)*

This amendment to the *San Mateo Coast Area General Plan* was approved to change the location of the proposed 200-car parking area for public beach access to Gray Whale Cove. The alternatives in the general management plan are consistent with this plan.

California Department of Parks and Recreation — *Pacifica State Beach General Plan (1990)*

This plan provides long-range development, management, and operational guidelines for Pacifica State Beach. The plan is comprised of seven elements: resource, land use, facilities, interpretive, operations, concessions, and environmental impact. The alternatives in the general management plan are consistent with this plan.

California Department of Parks and Recreation — *Mount Tamalpais State Park General Plan (1980)*

The purpose of this general plan is to provide general guidelines for the park's management and development in accordance with the unit's classification as a state park. Because the natural resources of Mount Tamalpais State Park make it unique, development and management should focus on the preservation, interpretation, and public use of its natural and scenic values. The specific goals of the plan are as follows:

- Identify the park's natural, cultural, and recreational resources.
- Establish policies for the management, protection, use, and interpretation of these resources.
- Identify existing and future problems and provide solutions.
- Determine visitor activities and land uses that are compatible with the purpose of the park, the preservation of resources, and the surrounding land uses.
- Determine the potential environmental impact of visitor activities, land use, and related development.
- Establish guidelines for the sequence of park development.
- Provide an informational document for the public, the legislature, park personnel, and other government agencies.

Caltrans District 4 Devil's Slide Project

Carved out of the steep cliff sides, Route 1 hugs the coastline for much of the distance between Pacifica and Montara. In one part, the road crosses the aptly named Devil's Slide region, a steep, unstable geological formation. This section of road has a long history of closure due to rockslides and land slippage. Following many years of public input and careful evaluation of alternatives, Devil's Slide will be bypassed by two inland tunnels, providing a safe, dependable highway between Pacifica and Montara. This is Caltrans' Devil's Slide Tunnel project. The bypassed section of Route 1, together with 70 acres of State right-of-way, will be closed to motor vehicles and made available as a multiuse Coastal Trail segment for public access and recreational use following the planned tunnel opening in 2011, with small trailhead parking lots at the north and south ends. This land was included in the 2005 boundary expansion. Acquisition and management of this site has not been determined but has been integrated into the planning process for the general management plan.

Coastal Conservancy — *Completing the California Coastal Trail (2003)*

Senate Bill 908, passed in 2001 by the California State Legislature, directed the Coastal Conservancy to report on a proposed trail that would stretch 1,300 miles along the entire California coast. The report, completed in January 2003, analyzes the costs/benefits and opportunities and constraints of completing the trail, discusses signage and graphics standards, and outlines recommendations for statewide policy initiatives and local implementation projects.

The California Coastal Trail is a network of public trails for walkers, bikers, equestrians, wheelchair riders, and others along the entire California coastline. It is currently more than half complete. Coastwalk is a volunteer organization that advocates for completion of the trail. The California Coastal Trail is intended to provide "a continuous public right-of-way along the California coastline designed to foster appreciation and stewardship of the scenic and natural resources of the coast through hiking and other complementary modes of non-motorized transportation." The Coastal Trail runs through parts of Golden Gate National Recreation Area and provides opportunities for connections to other trails within the study area. It is focused on enhancing public access to the coastal region and providing education to visitors. These goals are completely compatible with those of Golden Gate National Recreation Area, so there may be opportunities for efficiencies in providing access to national park lands along the coastline. The alternatives in the general management plan are consistent with this plan.

Greenbelt Alliance, Bay Area Open Space Council, Association of Bay Area Governments — *Golden Lands, Golden Opportunity: Preserving Vital Bay Area Lands for all Californians (2008)*

This initiative provides a statement of regional principles to ensure a healthy future for vital Bay Area lands and residents. The initiative identifies unprotected landscapes with significant value to the Bay Area and the state. It works to coordinate priorities among a variety of organizations working together. The park staff at Golden Gate National Recreation Area participated in the identification of unprotected landscapes. The alternatives in the general management plan incorporate potential actions that contribute to this regional effort and are consistent with this initiative.

San Francisco Bay Conservation and Development Commission

The San Francisco Bay Conservation and Development Commission is the regional planning authority in the San Francisco Bay area. The commission is authorized to control Bay filling and dredging and Bay-related shoreline development. Areas within the commission's jurisdiction include the San Francisco Bay, a shoreline band 100 feet inland of the Bay, and several other distinct features in the Bay area such as salt ponds and managed wetlands. Several commission plans affect development efforts along the Golden Gate National Recreation Area shoreline. The commission is the agency responsible for reviewing and approving Coastal Consistency Determinations under the Coastal Zone Management Act in the San Francisco Bay area.

San Francisco Bay Plan (2003)

This plan quantifies how the Bay Conservation and Development Commission proposes to reach its primary goal of developing the Bay and associated shoreline to its highest potential. The plan identifies priority use areas in the Bay, including ports, water-related industry, water-oriented recreation, airports, and wildlife refuges. The plan outlines the permitting policies and procedures for activities within priority and non-priority use areas and how they will be granted.

San Francisco Bay Area Seaport Plan (2003)

The *Seaport Plan* is a second-tier document to Bay Conservation Development Commission's *San Francisco Bay Plan*. It provides specific details about facilities identified as port priority use areas in the *Bay Plan*. The data includes exact boundaries of port priority use area, cargo forecasts, policies, and planned improvements, and the plan recommends changes/upgrades at specific ports and their terminals.

The alternatives are consistent with the above plans.

San Francisco Bay Area Water Transit Authority — *Final Program Environmental Impact Report: Expansion of Ferry Transit Service in the San Francisco Bay Area* (2003)

This document outlines a comprehensive strategy for expanding water transportation services in San Francisco Bay. The San Francisco Bay Area Water Transit Authority (Water Transit Authority) is a regional agency authorized by the state of California to operate a comprehensive San Francisco Bay Area public water transit system. The Water Transit Authority's goal over the next 20 years is to develop a reliable, convenient, flexible, and cost-effective water-transit system that will help reduce vehicle congestion and pollution in the Bay Area. In 2003 the Water Transit Authority plan was approved, and when fully implemented the Water Transit Authority estimates that by 2025 commuter-based ferry ridership will triple existing ridership and grow to approximately 12 million riders annually. The primary objectives of the Water Transit Authority plan include the following:

- establish eight new ferry routes plus improved service on the existing ferry systems.
- add an additional 31 new passenger ferries over the next 10 years.
- acquire clean emission vessels.
- provide convenient landside connections to terminals.
- expand facilities at the San Francisco Ferry Building .
- construct two spare vessels .
- partner with Redwood City, Treasure Island, Antioch, Martinez, Hercules, and Moffett Field to continue planning their respective waterfronts.
- pursue funding from federal and local sources.

Statewide Historic Preservation Plan for California, 2006-2010

The current *California Statewide Historic Preservation Plan for California, 2006-2010* was developed by the Office of Historic Preservation (OHP). That office notes that it benefits from partnerships with stakeholders at federal, state, and local government levels and with numerous nonprofit and for-profit organizations who are working together to promote historic preservation. The plan highlights various areas that are relevant to the Golden Gate National Recreation Area and Muir Woods National Monument general management plan, including cultural landscapes, cultural diversity, heritage tourism, information management, outreach and education, and preservation archaeology. The National Park Service coordinates with the Office of Historic Preservation in a variety of ways, including participation in the California Cultural and Heritage Tourism Council. The existing plan is currently under revision and a new plan is anticipated in 2012.

COUNTY AND LOCAL PLANS

Central Marin Ferry Connection Project (2004)

The Central Marin Ferry Connection project calls for a new bicycle and pedestrian connection between East Sir Francis Drake Boulevard to the north and to the Redwood Highway and access roads in Corte Madera at Wornum Street and Redwood Highway to the south, thus connecting a gap in bicycle and pedestrian access in Central Marin County. Such a bike and pedestrian crossing would strengthen the interconnected bike network in Marin County, much of which leads to Golden Gate National Recreation Area sites. With such a connection, other weak points could be strengthened. With more bicycle access opportunities to Golden Gate National Recreation Area sites, more bicyclists will have an opportunity to visit. Increased bike access could also reduce vehicle traffic trying to access national recreation area sites.

Extension of San Francisco Municipal Railway's Historic Streetcar Environmental Impact Statement (Draft)

The Municipal Railway (MUNI) currently operates historic streetcar service on Market Street and along the San Francisco waterfront (F-Line) to the line's existing terminus at Jones Street and Beach (in the Fisherman's Wharf area). The proposed extension (E-Line) would begin at the terminus of the F-line and extend west to San Francisco Maritime National Historical Park and on to Fort Mason. The exact route has yet to be determined but would utilize either existing rail right-of-way routes confined to city streets or pass through San Francisco Maritime National Historical Park's Aquatic Park (at the core of the National Historic Landmark District) in order to reach the Fort Mason tunnel. It is anticipated that under all alternatives the railway line would extend through the tunnel and end in the area of Lower Fort Mason.

Fitzgerald Marine Reserve Master Plan (2002)

The James V. Fitzgerald Marine Reserve is a 402-acre natural resource area on the north coast of San Mateo County. The Reserve is under joint custodianship of the County of San Mateo Parks and Recreation Division and the California Department of Fish and

Game. The Reserve extends 3 miles south from Point Montara to the south end of Pillar Point and 1,000 feet west into the ocean from the mean high tide line. Part of the Monterey Bay National Marine Sanctuary, the Reserve includes 370 acres of intertidal and subtidal marine habitat below the high tide line and 32 acres of upland coastal bluffs with elevations up to 100 feet. The intertidal zone, which contains rocky reefs at sea level and pocket beaches, is one of the most biodiverse intertidal regions in the state, renowned for its richness and diversity. Accessible at low tide, the reefs receive high levels of use because of their close proximity to the San Francisco Bay Area's dense population centers. The reefs within the Reserve form ten distinct areas, but are generally referred to as Moss Beach Reef to the north and Frenchman's Reef to the south.

The Reserve is designated a "Marine Life Refuge" and an "Area of Special Biological Significance" by the State of California. The concept of "special biological significance" recognizes that certain biological communities, because of their value or fragility, deserve very special protection, consisting of preservation and maintenance of natural water quality conditions to the extent practicable.

The master plan has three main components: 1) Natural Resource Management Program, 2) Visitor Management Program; 3) Uses and Facilities Program. The following goals provide the foundation for the master plan concept:

- Preserve and enhance natural resources.
- Provide educational and interpretive opportunities.
- Ensure adequate and well-trained staff.
- Improve baseline information.
- Improve visitor management.
- Improve visitor facilities.
- Minimize impacts to neighbors.
- Protect cultural resources.
- Provide recreation opportunities.
- Seek funding opportunities.

The alternatives in the general management plan are consistent with the Fitzgerald Marine Reserve Master Plan.

Huddart and Wunderlich Parks Master Plan (2006)

This master plan presents a 20-year vision for the development, operation, and maintenance of Huddart and Wunderlich Parks. More specifically, the master plan is intended to achieve the following goals:

- Continue to provide multiple recreational opportunities that are consistent with the regional nature of the parks and with protection of the environmental, cultural, and historic resources of the land.

- Concentrate development of new facilities in the previously developed portions of the parks. Protect the wild character of the undeveloped portions of the parks.
- Increase the revenue generation capability of each park.
- Identify physical improvements that will decrease ongoing operation and maintenance costs.
- Make public safety a top priority in ongoing park operations and maintenance, and in new improvement projects.
- Ensure the continued equestrian use of the parks.
- Improve vehicular and pedestrian circulation within each park.

The alternatives in the general management plan are consistent with the Huddart and Wunderlch Parks Master Plan.

Marin County Bicycle and Pedestrian Master Plan (2003)

The Marin County Congestion Management Agency commissioned a bicycle and pedestrian master plan to embrace both incorporated and unincorporated jurisdictions within the county. Key recommendations of this plan include a north-south bikeway, an east-west bikeway, potential use of abandoned railroad tunnels and rights-of-way, and locating vital infrastructure improvements to promote and encourage increased bicycle and pedestrian activity.

Marin County Local Coastal Program Unit 1 (1979)

This document was prepared pursuant to the Coastal Act of 1976, which required all coastal jurisdictions to prepare a Local Coastal Program. A Local Coastal Program is “a local government’s land use plans, zoning ordinances, zoning district maps, and implementing actions which, when taken together, meet the requirement of, and implement the provisions and policies” of the Coastal Act at the local level.

Marin Countywide Plan (2007) and amended (2009)

The *Marin Countywide Plan* guides the conservation and development of Marin County. The countywide goals reflect core community values and identify what fundamental outcomes are desired.

- **A Preserved and Restored Natural Environment.** Marin watersheds, natural habitats, wildlife corridors, and open space will be protected, restored, and enhanced.
- **A Sustainable Agricultural Community.** Marin’s working agricultural landscapes will be protected, and the agricultural community will remain viable and successfully produce and market a variety of healthy foods and products.
- **A High-Quality Built Environment.** Marin’s community character, the architectural heritage of its downtowns and residential neighborhoods, and the

vibrancy of its business and commercial centers will be preserved and enhanced.

- **More Affordable Housing.** Marin's members of the workforce, the elderly, and special needs groups will have increased opportunities to live in well-designed, socially and economically diverse affordable housing strategically located in mixed-use sites near employment or public transportation.
- **Less Traffic Congestion.** Marin community members will have access to flexible work schedules, carpools, and additional transportation choices for pedestrians, bicyclists, and transit users that reduce traffic congestion.
- **A Vibrant Economy.** Marin's targeted businesses will be clean, be prosperous, meet local residents' and regional needs, and provide equal access to meaningful employment, fair compensation, and a safe, decent workplace.
- **A Reduced Ecological Footprint.** Marin residents and businesses will increasingly use renewable energy, fuel efficient transportation choices, and green building and business practices similar to the level of Western Europe.
- **Collaboration and Partnerships.** Marin public agencies, private organizations, and regional partners will reach across jurisdictional boundaries to collaboratively plan for and meet community needs.
- **A Healthy and Safe Lifestyle.** Marin residents will have access to a proper diet, health care, and opportunities to exercise, and the community will maintain very low tobacco, alcohol, drug abuse, and crime rates.

The alternatives in this general management plan work to address many of the goals listed above including preserved natural environments, less traffic congestion, vibrant economy, reduced ecological footprint, collaboration, and healthy and safe lifestyles.

Midcoast Action Plan for Parks and Recreation: Planning Team Report (2007)

This plan, prepared by the Midcoast Recreation Planning Team, is an action plan for providing neighborhood and community recreation services and facilities on the Midcoast. The action plan outlines near and long-term objectives and a strategy for implementation. This plan focuses on actions that finally implement recommendations from three assessments conducted over the past 30 years beginning with the adopted *Midcoast Community Plan* from 1978. Preparation of this plan for a Midcoast park and recreation system also meets the *Shared Vision 2010 The Promise of the Peninsula* prepared by the County Board of Supervisors. Six commitments and eleven goals outlined in the County's shared vision are directly applicable to implementing a Midcoast park system. The alternatives in the general management plan are consistent with the planning team report.

City of Pacifica Pedro Point Headlands Coastal Trail Connection

The City of Pacifica proposes to construct a multiuse Coastal Trail connection west of State Route 1 through this site prior to its transfer to Golden Gate National Recreation Area. This trail segment would connect with the future north trailhead and Coastal Trail on the abandoned State Route 1 segment that will become a multiuse trail when the

Devil's Slide Tunnel Project is complete. The City of Pacifica has constructed paved multiuse paths along State Route 1, connecting, or with potential to expand and connect, to national recreation area sites.

San Francisco Public Utilities Commission (SFPUC) — *Peninsula Watershed Management Plan (2004)*

The plan provides a comprehensive set of goals, policies, and management actions which integrate all watershed resources and reflect the unique qualities of the watersheds. In addition to serving as a long-term regulatory framework for decision making by the San Francisco Public Utilities Commission, the plan is also intended to be used as an implementation guide by the commission's Land and Resource Management Section staff. The plan provides the Land and Resource Management Section manager and staff with management actions designed to implement the established goals and policies for water quality, water supply, ecological and cultural resource protection, fire and safety management, watershed activities, public awareness, and revenue enhancement.

PG&E Jefferson-Martin 230kV Transmission Line Proposed Settlement and Environmental Assessment (2004)

The project includes an assessment of construction of 24 miles of new 230 kV transmission line in San Mateo County (Jefferson-Martin 230kV Line). The project includes both overhead (3.3 miles) and underground segments (20 miles) within the Golden Gate National Recreation Area boundary and within easements managed by NPS to protect the natural and scenic values. The approximately 24-mile route selected by the California Public Utilities Commission includes replacement of the existing double circuit 60kV line with a double circuit 60kV/230kV line along the same right-of-way, with minor modifications to reduce visibility of the rebuilt line. A final route for the line was approved by the California Public Utilities Commission in August 2004, which the National Park Service appealed. Pacific Gas & Electric has proposed a settlement to the National Park Service, which is the subject of the environmental assessment. The alternatives in the general management plan are consistent with this plan.

Regional Bicycle Plan for the San Francisco Bay Area (2001)

The Metropolitan Transportation Commission's *2001 Regional Bicycle Plan* is a component of the *2001 Regional Transportation Plan for the San Francisco Bay Area*, which establishes the region's 25-year transportation investment plan. The commission sought to develop a regional bicycle plan with the following five main objectives:

- Define a network of regionally significant bicycle routes, facilities, and necessary support programs and facilities.
- Identify gaps in the network and recommend specific improvements needed to fill these gaps in the system.
- Develop cost estimates for build-out of the entire regional network.
- Develop a funding strategy to implement the regional bike network.
- Identify programs to help local jurisdictions become more bicycle-friendly.

The goal of the plan is to “ensure that bicycling is a convenient, safe, and practical means of transportation throughout the Bay Area for all Bay Area residents.” The alternatives in the general management plan are consistent with this plan.

San Francisco General Plan (2004)

The city’s general plan guides change and growth within the city to ensure that the qualities that make San Francisco unique are preserved and enhanced. The plan is the embodiment of the community’s vision for the future of San Francisco.

The general plan is designed as a guide to the attainment of the following general goals:

- Protection, preservation, and enhancement of the economic, social, cultural, and aesthetic values that establish the desirable quality and unique character of the city.
- Help make the city more healthful, safe, pleasant, and satisfying, with housing representing good standards for all residents and adequate open spaces and appropriate community facilities.
- Improvement of the city as a place for commerce and industry by making it more efficient, orderly, and satisfactory for the production, exchange, and distribution of goods and services, with adequate space for each type of economic activity and improved facilities for the loading and movement of goods.
- Coordination of the varied pattern of land use with public and semipublic service facilities required for efficient functioning of the city, and for the convenience and well-being of its residents, workers, and visitors.
- Coordination of the varied pattern of land use with circulation routes and facilities required for the efficient movement of people and goods within the city and to and from the city.
- Coordination of the growth and development of the city with the growth and development of adjoining cities and counties and of the San Francisco Bay Region.

In addition, the *SUBAREA 3: Bay Street To The Municipal Pier* identifies Objective 3 to transform the area into an attractive gateway to the residential boulevard and a transition from Fisherman’s Wharf and Golden Gate National Recreation Area. The following are the policies associated with this objective:

POLICY 3.1: Create a tree-lined and landscaped median strip within the Van Ness street space and plant rows of trees in the sidewalk space. This greenspace element, which would realign some existing parking spaces, should be designed to "announce" the area’s attractive shoreline open space resources and visually direct the visitor to them.

POLICY 3.2: Support National Park Service plans for improvements of the area within the boundaries of the Golden Gate National Recreation Area boundaries. The *Golden Gate National Recreation Area General Management Plan* calls for the following improvements:

"All of the Van Ness Avenue (asphalt paving) inside the park boundary will be removed and replaced with landscaping. The Sea Scout clubhouse and maintenance docks will also be removed. The Sea Scouts' boats will be moved to the east side of the lagoon, and their programs and meetings will be held in the aquatic center. The food concession at the foot of Van Ness will receive a good sprucing-up. The Municipal Pier will also get a substantial cleanup and minor improvements such as fish-cleaning stations and restrooms. (It may also require structural renovation). Night lighting throughout the area will be upgraded."

San Mateo County Comprehensive Bicycle Route Plan (2000)

The plan addresses issues of safety, access, quality of life, and the effective implementation of bikeways. Outlined in the plan are a detailed set of policies, goals, and objectives designed to be in concert with the county's and cities' general plans, the cities' bicycle plans, as well as other relevant regional plans. These policies address important issues related to San Mateo County's bikeways, such as planning, community involvement, use of existing resources, facility design, multimodal integration, safety and education, support facilities and programs, funding, implementation, and maintenance.

The short- to mid-term priority projects in the plan include the North-South Bikeway, the Colma-Millbrae Bikeway, the Ralston Bikeway, the North-South Bikeway (southern segment), the San Mateo County Bay Trail, the Recreational Route improvements, the North Coast Bikeway, the North-South Bikeway (Old County Road section), the Coastside Bicycle Projects, the Highway 101 / Willow Road Interchange, the North-South Bikeway (Bayshore section), the Highway 101 / Broadway Interchange, the North-South Bikeway (Delaware / California section), the Crystal Springs / 3rd / 4th Avenue Bikeway, and the SFIA Bay Trail/Commuter Bikeway. The alternatives in the general management plan are consistent with this plan.

San Mateo County Trails Plan (2001)

This document is the 2001 update of the *San Mateo County Trails Plan*. Trails planning on a countywide level dates back nearly 25 years. The 2001 update is the third iteration of the *Trails Plan*. The *Trails Plan* is intended to fulfill the following objectives:

- Provide an updated *Trails Plan* with the latest desired alignments.
- Link trails among existing and proposed trails in San Mateo County cities and parks, and to adjacent counties.
- Develop a set of policies and guidelines that can be used during detailed trail planning to ensure that adequate trails are constructed within constraints presented by the environment.
- Provide a plan for access for recreational and educational purposes to portions of the county where no access currently is available.
- Improve access to and along the coast.
- Provide recreational opportunities to area residents.
- Provide commuter routes for alternative types of transportation (e.g., bicycles).

Some of the projected trails, such as the Bay Area Ridge Trail, could pass through or connect with trails in Golden Gate National Recreation Area. The alternatives in the general management plan are consistent with this plan.

San Mateo Countywide Transportation 2010 Plan (2001)

This transportation plan serves as a plan

- for all modes (roads, Caltrain, SamTrans, BART, bicycles) and that looks at all modes as systems
- that advocates policy, not projects; it is not a capital improvement program
- whose policy is derived from understanding the relational interaction between the modes
- that strives for synergy among the parts of the transportation system—the whole is greater than the sum of the parts
- that seeks to develop the parts of the system to the optimal size, rather than the maximum
- that provides critical information to help make informed decisions
- that recognizes the decentralized, fragmented, and complex decision-making structures of transportation planning in the county
- that seeks to coordinate decision making, relying on cooperation and not enforcement

The goals of this plan are to reduce traffic congestion in San Mateo County, improve mobility, reduce congestion, increase access, improve air quality, increase economic vitality, improve the coordination of land use and transportation planning, increase reliability, and increase safety. The objectives are to increase capacity and performance (safety, reliability, convenience) of all transportation systems, increase demand for transit travel, and decrease demand for automobile travel, especially single-occupant.

The strategy is to alleviate congestion via the following:

- Roads – increase the efficiency of the existing highway system.
- Transit – increase capacity, service levels, and safety of transit systems.
- Land Use – increase supply and density of housing and employment in transit corridors.
- Transportation Systems Management – increase programs to reduce the demand for single-occupant automobile travel.
- Pricing – initiate modest pricing programs that cause a shift from automobile to transit travel.

The alternatives in the general management plan are mindful of the goals and objectives of this plan. As more specific implementation plans are developed for park sites in San Mateo, the park staff will coordinate with the county to help achieve the transportation plan's goals and objectives.

Sausalito General Plan (1995)

The following ten broad goals serve as the basis for more specific policies and implementation strategies. The overriding theme of the *Sausalito General Plan* is to protect the existing character, unique features, and quality of life in Sausalito.

Goals of the plan are as follows:

- Protect and enhance Sausalito as a residential community.
- Protect the present character of Sausalito's residential neighborhoods.
- Encourage commercial services that serve city residents.
- Recognize the importance of the downtown commercial district to the economic viability of the community and provide amenities for Sausalito's visitors.
- Preserve the open waterfront as a natural resource and promote maritime uses in the Marinship.
- Preserve the historical character of Sausalito and its architectural and cultural diversity.
- Protect the scenic qualities and the natural environment of the city.
- Protect residents from natural and manmade hazards and avoid exposure to unnecessary risks to community safety.
- Preserve and provide a variety of housing opportunities in keeping with Sausalito's tradition of diversity.
- Maintain an appropriate level of public services.

The alternatives in the general management plan are consistent with this plan

APPENDIX C: RELEVANT NPS POLICIES

This section describes the National Park Service management policies most relevant to Golden Gate National Recreation Area and Muir Woods National Monument. They guided development of this general management plan; these policies will continue to guide management of the park into the future, regardless of the alternative that is selected. They guide actions taken by the National Park Service on such topics as natural and cultural resource management, park facilities, and visitor use management. This section includes descriptions of the broad management goals consistent with all alternatives and a set of strategies that may be used by park managers to achieve those goals. This is not an exhaustive list of strategies. As new ideas, technologies, and opportunities arise, they will be considered if they further support the desired condition.

THE FOUNDATION

Beginning with Yellowstone, the idea of a national park was an American invention of historic consequences. The areas that now make up the national park system, and those that will be added in years to come, are cumulative expressions of a single national heritage. The National Park Service must manage park resources and values in such manner and by such means as will leave them unimpaired for the enjoyment of future generations

RELATIONS WITH AMERICAN INDIAN TRIBES

The park works to ensure that traditional American Indian ties to the park are recognized; NPS also strives to maintain positive, productive, government-to-government relationships with tribes culturally affiliated with the park. The rights, viewpoints, and needs of tribes are respected, and issues that arise are promptly addressed. American Indian values are considered in the management and operation of the park.

Strategies

- To ensure productive, collaborative working relationships, consult regularly and maintain government-to-government relations with federally recognized tribes that have traditional ties to resources in the park.
- Continue to identify and deepen the understanding of the significance of the park's resources and landscapes to American Indian people through collaborative research.
- Protect and preserve sites and resources that are significant to federally recognized tribes.
- Create opportunities for and invite the participation of tribes in protecting natural and cultural resources of interest within the park.
- Support the continuation of traditional American Indian activities in the park to the extent allowed by law and policy.

- Work with tribes to conduct ethnographic studies that identify culturally significant resources.
- Seek input from tribes during development of interpretive programs that relate to American Indians.
- Consult with American Indians under the Native American Graves Protection and Repatriation Act for actions that affect or have the potential to affect burial remains or items of sacred or ceremonial significance.

PARK SYSTEM PLANNING

Park planning helps define the set of resource conditions, visitor experiences, and management actions that, taken as a whole, will best achieve the mandate to preserve resources unimpaired for the enjoyment of present and future generations. NPS planning processes will flow from broad-scale general management planning through progressively more specific strategic planning, implementation planning, and annual performance planning and reporting, all of which will be grounded in foundation statements.

RELATIONSHIPS WITH PRIVATE AND PUBLIC ORGANIZATIONS, ADJACENT LANDOWNERS, AND GOVERNMENTAL AGENCIES

The park is managed holistically, as part of a greater ecological, social, economic, and cultural system. Positive relations are maintained with inholders (those owning property within the park boundary), adjacent landowners, surrounding communities, and private and public groups that affect, and are affected by the park. The park is managed proactively to ensure that NPS values are effectively communicated and understood.

Strategies

- Continue to establish and foster partnerships with public and private landowners.
- Foster a spirit of cooperation with neighbors, and encourage compatible uses of adjacent lands. Keep landowners, land managers, tribes, local governments, nongovernmental organizations, and the public informed about park management activities and issues. Consult periodically with landowners and communities that are affected by or potentially affected by park visitors and management actions.
- Work closely with local, state, and federal agencies and tribal governments whose programs affect or are affected by activities in the park.
- Continue to support and encourage volunteers who contribute to park programs.

RESEARCH

The National Park Service works with partners to learn about natural and cultural resources and associated values. Research priorities for the national recreation area are aligned with its purpose, significance, and fundamental resources and values.

Strategies

- Encourage and support basic and applied research through various partnerships and agreements to enhance understanding of resources and processes or to answer specific management questions.
- Mitigate impacts of research conducted on natural and cultural resources, as needed to preserve those resources for future generations to enjoy and study.
- Develop and implement criteria to determine whether requested research supports park purpose and significance, or other park goals.
- Develop and update lists of research issues that are important to the park.

LAND PROTECTION

The National Park Service will use all available authorities to protect lands and resources within units of the national park system, and the National Park Service will seek to acquire nonfederal lands and interests in land that have been identified for acquisition as promptly as possible. For lands not in federal ownership, both those that have been identified for acquisition and other nonfederally owned lands within a park unit's authorized boundaries, the Park Service will cooperate with federal agencies; tribal, state, and local governments; nonprofit organizations; and property owners to provide appropriate protection measures. Cooperation with these entities will also be pursued, and other available land protection tools will be employed when threats to resources originate outside boundaries.

Park staff will work with government agencies and nongovernmental organizations to support efforts to protect adjacent lands that are important to preserving the resources within the park.

Strategies

- Use various techniques to protect park values, including general agreements, acquisition of conservation and access easements, land exchanges, donations, and fee-simple acquisition.
- Carefully site any new telecommunication structures so as to not jeopardize the park's purpose, significance, and fundamental resources and values; also consider the park's management zones. Permit new rights-of-way only with specific statutory authority and approval by NPS managers, and only if there is no practicable alternative to such use of national park system lands.
- Continue to support the efforts of others to protect adjacent lands that are important to preserving park resources through appropriate planning, zoning, and other protection methods.

NATURAL RESOURCE MANAGEMENT

The National Park Service will preserve the natural resources, processes, systems, and values of units of the national park system in an unimpaired condition, to perpetuate their inherent integrity and to provide present and future generations with the opportunity to enjoy them.

The resources and processes of the park retain a significant degree of ecological integrity. Natural wind and water processes function as unimpeded as possible. Management decisions about natural resources are based on scholarly and scientific information and on the park's identified fundamental resources and values. Park resources and values are protected through collaborative efforts with neighbors and partners. Visitors and employees recognize and understand the value of the park's natural resources. Human impacts on resources are monitored, and harmful effects are minimized, mitigated, or eliminated.

Biologically diverse native communities are protected and restored when possible. Particularly sensitive communities are closely monitored and protected. Endemic species and habitats are fully protected; nonnative species are controlled, and native species are reintroduced when conditions allow. Genetic integrity of native species is protected. Threatened and endangered species are protected to the greatest extent possible and are generally stable or improving. Natural fire regimes are investigated and supported where possible.

Strategies

- Continue to inventory biotic and abiotic resources in the park and assess their status and trends.
- Continue long-term systematic monitoring of resources and processes to detect natural and human-caused trends, document changes in species or communities, evaluate the effectiveness of management plans and restoration projects, and mitigate impacts where possible.
- Implement and keep current a cooperative wildland fire management plan that includes interagency participation to maintain conditions within the natural range as much as possible.
- Work in consultation with American Indian tribes to identify, evaluate, and determine appropriate treatment for natural resources used by American Indians in park lands.
- Provide information to adjacent homeowners and private landowners on natural processes, wildlife, critical habitats, and threats to resources.
- Conserve and restore habitats for threatened and endangered species and species of special concern.
- In conjunction with other NPS offices, continue to expand the park's data management systems for analyzing, modeling, predicting, and testing trends in resource conditions.
- Continue to regularly update the park's resource stewardship strategy.

- Apply mitigation techniques to minimize impacts of construction and other activities on park resources.
- Continue to educate staff, visitors, and the public about the significance of natural resources and major threats to these resources.

ECOSYSTEM MANAGEMENT

Park management demonstrates leadership in resource stewardship and conservation of ecosystem values. The marine, forests, and aquatic systems are managed from an ecosystem perspective, considering both internal and external factors affecting visitor use, environmental quality, and resource stewardship. Management decisions about ecosystems are based on scholarly and scientific information. Resources and visitation are managed in consideration of the ecological and social conditions of the park and surrounding area. The National Park Service adapts management strategies to changing ecological and social conditions and are partners in regional land planning and management.

Strategies

- Continue to participate in and encourage ongoing partnerships with local, state, and federal agencies, and nongovernmental organizations in programs that have importance within and beyond park boundaries. Partnerships important to the long-term viability of critical natural resources include the following:
 - Monitoring water quality of local water bodies.
 - Managing wildlife across human-created boundaries (such as jurisdictions, property lines, and fences).
 - Managing nonnative invasive species.
 - Managing wildland fire.
- Central to ecosystem management is long-term monitoring of changes in the condition of cultural and natural resources and related human influences. Improvement or degradation of resources and visitor experience cannot be determined with any certainty without a monitoring program. To protect, restore, and enhance park resources and to sustain visitor use and enjoyment within and around the park, NPS staff would do the following:
 - Initiate or continue long-term monitoring of resources and visitor use, including use of the visitor experience and resource protection framework or other user capacity process, as appropriate.
 - Promote research to increase understanding of park resources, natural processes, and human interactions with the environment, with emphasis on fundamental resources and values.
 - Practice science-based decision making and adaptive management, incorporating the results of resource monitoring and research into NPS operations.
 - Identify lands/waters outside the park where ecological processes and human use affect park resources or are closely related to park resource management considerations; initiate joint research, monitoring,

management actions, agreements, or partnerships to promote resource conservation.

- Provide education and outreach programs to highlight conservation and management issues facing the park and related lands and encourage partners who are able to assist with ecosystem stewardship.
- Continue the disturbed site restoration program.
- Strive to control invasive nonnative species in coordination with adjacent landowners, other agencies, and NPS staff specialists; consider control of native species that threaten ecosystem health.

BIOLOGICAL RESOURCES MANAGEMENT

Wildlife: Natural wildlife populations and systems are understood and perpetuated. Natural fluctuations in populations are permitted to occur to the greatest extent possible. Natural influences are mimicked if necessary. The park staff would work with neighbors and partners to achieve mutually beneficial goals related to wildlife.

Strategies

- Continue cooperative management of threatened or endangered species within the park to stabilize or improve the status of these species.
- Strive to identify species that have occupied the park in the past, and evaluate the feasibility and advisability of reintroducing extirpated species.
- Continue to cooperate with the federal and state agencies to better understand populations and determine appropriate management actions for wildlife species.

Water Resources: Water quality is a key resource at the park. The need for adequate freshwater flows and high water quality are important in the preservation of the numerous rare and endangered species. The water resources have many beneficial uses including water contact and non-water contact recreation, fish migration and spawning, and municipal water supply. Groundwater is important for recharge of surface water systems, including wetlands, supporting rare and endangered species habitat and as a source for municipal and agricultural water supplies. Wetlands protect water quality, mitigate flood and drought, help control erosion, and facilitate groundwater recharge. Wetlands support complex food webs, housing a rich biodiversity of wetland-endemic species, providing habitat functions for many aquatic and terrestrial species. The intertidal and subtidal zone of the park's littoral environments are some of the most diverse and productive ecosystems in the world. Coastal habitats are important for the preservation of several rare and endangered species.

Strategies

- Continue to monitor water quality and quantity within a local and regional context, and expand monitoring as needed to more fully understand the status and trends of ground and surface water.

- Participate in local, state, and national water quality remediation and watershed planning programs.
- Update strategies for water resources management as needed to reflect changing resources and management issues.
- Continue to inventory wetlands so that important wetland communities can be identified and protected.
- Continue to identify and address threats to wetlands, such as purple loosestrife and other exotic species.
- Continue to assess human-related threats to water quality and quantity. Continue to monitor E. coli at designated recreational beaches.

Air Quality: The park is in a Class II air quality area under the Clean Air Act. This designation allows for limited amounts of new air emissions. The air quality of the park is enhanced as the NPS continues to pursue actions that provide for reduction of emissions caused by park operations and visitation.

Strategies

- Continue to monitor and record air pollution levels and analyze changes over time.
- Monitor and reduce emissions, when possible, from activities within the park's boundaries.
- Continue to participate in regional air quality planning, research, and implementation of air quality standards.

Soundscape Management: Natural soundscapes are preserved, and sounds of modern society are minimized. Visitors have opportunities in most parts of the park to hear natural sounds.

Strategies

- Strive to collect baseline data on park soundscapes to understand characteristics and trends in natural soundscapes.
- Continue to control existing and potential land-based noise sources.
- Enforce existing noise regulations.
- Require bus tour companies to comply with regulations that reduce noise levels (e.g., turning off engines when buses are parked).
- Limit use of generators.
- Work with the Federal Aviation Administration, commercial businesses, and general aviation entities to minimize noise and visual impacts of aircraft on the park. Continue to discourage pilots of conventional aircraft from flying low along the park. If demand for commercial air tours develops, develop a commercial air tour management plan to address tours and their effects on the park.

- Minimize noise generated by the NPS use of noise-producing machinery such as motorized equipment. Consider noise potential when procuring and using park equipment.

Lightscape Management: The naturally dark night sky is preserved. Artificial light sources in and outside the park do not hinder opportunities to see the moon, stars, planets, and other celestial features. Park staff and partners continue to work with local communities to encourage protection of the night sky. To the greatest extent possible, the NPS works within a regional context to protect the quality of the night sky and the experience thereof.

Strategies

- Establish baseline data for the dark night sky through NPS programs.
- Determine if light sources in the park exceed appropriate levels. Study and implement ways to reduce or minimize artificial and unnecessary light.

CULTURAL RESOURCES MANAGEMENT

The NPS will preserve and foster appreciation of the cultural resources in its custody, and will demonstrate its respect for the peoples traditionally associated with those resources, through appropriate programs of research, planning, and stewardship.

General: Cultural resources are identified, evaluated, managed, and protected within their broader context. Management decisions about cultural resources are based on scholarly research and scientific information, fundamental resources and values, and consultation with the California state historic preservation officer and with American Indian tribes, as appropriate. The historic integrity of properties listed in (or eligible for listing in) the National Register of Historic Places is protected. Visitors and employees recognize and understand the value of the park's cultural resources. Human and natural impacts on cultural resources are monitored, and adverse effects are minimized or eliminated.

Strategies

- Continue to collect information to fill gaps in the knowledge and understanding of the park's cultural resources, to assess status and trends, and to effectively protect and manage cultural resources.
- In accordance with the National Historic Preservation Act of 1966, as amended, continue to locate, identify, and evaluate cultural resources to determine if they are eligible for listing in the National Register of Historic Places (national register).
- Prepare and update national register nominations as appropriate.
- Update and keep current the park's Cultural Landscape Inventory and List of Classified Structures (the NPS inventory of evaluated historic and prehistoric structures that have historical, architectural, and/or engineering significance.)

- Work in consultation with the California state historic preservation officer, American Indian tribes as appropriate, and other interested parties to identify, evaluate, and determine appropriate treatment for archeological resources, historic structures, and cultural landscapes throughout the park.
- Conduct scholarly research and use the best available scientific information and technology for making decisions about management of the park's cultural resources.
- Build a partnership program that considers appropriate adaptive use to assist in maintaining historic buildings and cultural landscapes throughout the park.
- Continue to initiate and regularly update plans and prioritize actions needed to protect cultural resources.
- Continue to research, document, catalogue, exhibit, and store the park's museum collection according to NPS standards.
- Continue to educate staff, visitors, and the public about cultural and historic issues relating to the park.
- Treat all cultural resources as eligible for the national register pending formal determination.

Archeological Resources: Archeological resources in the park are identified and preserved. Archeological resources are the remains of past human activity and records documenting the scientific analysis of these remains. Archeological features are typically buried, but may extend aboveground. Although archeological resources are commonly associated with prehistoric peoples, they may be products of more contemporary society.

Strategies

- Conduct sufficient research to identify and evaluate park archeological resources and assess condition and potential threats.
- Continue long-term monitoring of archeological sites to measure deterioration from natural and human sources and to evaluate the effectiveness of management actions to protect resources and mitigate impacts.
- Preserve and protect archeological resources by eliminating and avoiding natural and human impacts, stabilizing sites and structures, monitoring conditions, and enforcing protective laws and regulations.
- Carry out required consultation and legal compliance, and consider concerns raised.
- Include information about archeological resources, as appropriate, in interpretive and educational programs for the public.

Cultural Landscapes: The park's cultural landscapes are preserved in good condition to retain a high degree of integrity. Cultural landscapes reflect human adaptation and use of natural resources and are often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built.

Strategies

- Prepare cultural landscape inventories and reports, and amend existing reports as needed.
- Monitor, inspect, and manage identified and evaluated cultural landscapes to enable long-term preservation of historic features, qualities, and materials.
- Implement actions identified in cultural landscape reports, and add a record of treatment to the reports.
- Create design guidelines and/or cultural landscape reports for specific developed areas in the park to preserve landscape-defining features. Include provisions in the guidelines for design review to ensure the compatibility of new planning, design, and construction.
- Have cultural landscape specialists (e.g., historical landscape architects) prepare plans and specifications for preservation, rehabilitation, and restoration, in consultation with the park's Natural Resources Division staff.

Ethnographic Resources: Ethnographic resources, the cultural and natural features of a park that are of traditional significance to traditionally associated peoples, are identified and protected to the fullest extent possible. These resources may be objects, beliefs, or places, and may have attributes that are of great importance to the group but not necessarily associated with the reason the park was established or appropriate as a topic of park interpretation.

Strategies

- Identify and document, through studies and consultations, ethnographic resources, traditionally associated people and other affected groups, and such groups' cultural affiliations to park resources.
- Recognize the sensitivity of ethnographic resources and associated data and provide confidentiality to the extent possible under the law.
- Have researchers formally collaborate with traditional cultural experts to develop a park strategy for dealing with ethnographic resources
- Monitor effects of use on ethnographic resources and effects of park plans on authorized uses and traditional users.

Historic Structures: The character of historic structures is preserved in good condition to retain a high degree of integrity. Whenever possible, adaptive use of historic structures for park needs is considered before building new infrastructure.

Strategies

- Prepare historic structure inventories and reports, and amend them as needed. Implement actions identified in historic structure reports and add a record of treatment to the reports.
- Prepare and update national register nominations as appropriate.
- Monitor, inspect, and manage identified and evaluated historic structures to enable long-term preservation of historic features, qualities, and materials.

- Use historic structures as they were historically used, or adaptively use them in ways that are compatible with park purpose and that maximize retention of historic materials, features, spaces, and spatial relationships.
- Consider historic buildings for appropriate adaptive use by other public and private entities to assist in preservation of the structures.
- Create design guidelines and/or historic structure reports for specific areas in the park to preserve architectural and character-defining features. Include provisions for design review to ensure the compatibility of new planning, design, and construction.
- Aggressively pursue basic preservation maintenance activities to maintain historic materials in good condition.
- Monitor and regulate use impacts to minimize both immediate and long-term damage to structures.
- Involve historical architects and other professionals in work that could affect historic structures.

USE OF THE PARK

National parks belong to all Americans, and the National Park Service will welcome all Americans to experience their parks. The Service will focus special attention on visitor enjoyment of the parks while recognizing that the NPS mission is to conserve unimpaired each park's natural and cultural resources and values for the enjoyment, education, and inspiration of present and future generations. The Service will also welcome international visitors, in keeping with its commitment to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout the world.

Visitors from diverse backgrounds can experience a range of opportunities consistent with the purpose, significance, and fundamental resources and values of the park. Most visitors understand and appreciate the purpose and significance of the park and value their stewardship role in preserving natural and cultural features. They actively contribute to the park's preservation through appropriate use and behavior. Park programs and services are accessible to all, and conflicts between different user groups are minimized. Visitor use levels and activities are consistent with preserving park purpose, significance, and fundamental resources and values, and with providing opportunities for recreation, education, and inspiration. Management decisions are based on scholarly and scientific information. When such information is lacking, managers make decisions based on the best available information, adapting as new information becomes available. Regional recreational opportunities continue to be coordinated among agencies for public benefit and ease of use.

Strategies

- Work towards providing programs and facilities that are effective in reaching and serving diverse communities.

- Collect data over time to monitor visitor experiences as part of an overall effort to protect desired resource conditions and visitor experiences.
- Address threats to resources and the visitor experience by means other than limiting or restricting use (e.g., through education programs). If necessary, however, implement more restrictive methods.
- Base restrictions on visitor use on a determination by the park superintendent that such measures are consistent with the park's enabling legislation and NPS policies, are necessary to prevent degradation of the purposes and values for which the park was established, will minimize visitor use conflicts, or will provide opportunities for quality visitor experiences.

INTERPRETATION AND EDUCATION

Through interpretive and educational programs, the NPS will instill in park visitors an understanding, appreciation, and enjoyment of the significance of parks and their resources. Interpretive and educational programs will encourage the development of a personal stewardship ethic, and broaden public support for preserving park resources.

Interpretive and educational services/programs at the park facilitate intellectual and emotional connections between visitors and park resources, foster understanding of park resources and resource stewardship, and build a local and national constituency. Outreach programs through schools, organizations, and partnerships build connections to the park. Curriculum and place-based education inspire student understanding and resource stewardship. Visitors receive adequate information to orient themselves to the park and possible opportunities for a safe and enjoyable visit.

Strategies

- Develop and implement a comprehensive interpretive plan, with emphasis on providing information, orientation, and interpretive services in the most effective manner possible. Use both personal services (involving authorized staff) and nonpersonal services (including state-of-the-art technologies) as appropriate.
- Stay informed of changing visitor demographics and preferences to effectively tailor programs for visitors. Develop interpretive media supportive of park purpose, significance, interpretive themes, and fundamental resources and values.
- Continue to promote improved pre-trip planning information and orientation for park visitors through the park's website and other media. Work with local communities and other entities to provide services outside park boundaries, where appropriate.
- Cooperate with partners, other governmental agencies, educational institutions, and other organizations to enrich interpretive and educational opportunities locally, regionally, and nationally.

- Create and implement an education strategy plan, which outlines goals and actions for providing curriculum and place-based education programs.
- Continue to regularly update plans and prioritize actions needed to serve visitors and provide effective interpretation.
- Continue to educate staff, visitors, and the public about park interpretation/education programs.

PARK FACILITIES

The National Park Service will provide visitor and administrative facilities that are necessary, appropriate, and consistent with the conservation of park resources and values. Facilities will be harmonious with park resources, compatible with natural processes, esthetically pleasing, functional, energy- and water-efficient, cost-effective, universally designed, and as welcoming as possible to all segments of the population. NPS facilities and operations will demonstrate environmental leadership by incorporating sustainable practices to the maximum extent practicable in planning, design, siting, construction, and maintenance.

General: Park facilities and related development are the minimum necessary to serve visitor needs and protect park resources. Visitor and administrative facilities are as compatible as possible with natural processes and surrounding landscapes, aesthetically pleasing, and functional. Historic structures and properties are adaptively used when practicable and appropriate. Staff housing is sufficient to ensure an adequate level of protection for park resources, visitors, employees, and government property, and to provide necessary services. Adequate response (equipment and people) for visitor, resource, and facility protection; search-and-rescue; fire management; and safety is available. Decisions regarding park operations, facilities management, and development at the park—from initial concept through design and construction—reflect principles of resource conservation and sustainability.

Strategies

- Build, locate, and/or modify facilities according to the *Guiding Principles of Sustainable Design* (NPS 1993) or similar guidelines. Establish architectural guidelines to ensure sustainability and compatibility with the natural and cultural environment. Properly maintain and upgrade existing facilities using sustainability principles, where possible, to serve the park mission.
- Consider the availability of existing or planned facilities in nearby communities and on adjacent lands, as well as the possibility of joint facilities with other agencies, when deciding whether to pursue new developments in the park. This will ensure that any additional facilities in the park are necessary, appropriate, and cost-effective.
- Integrate NPS asset management practices into decision making and planning. Build, modify, and/or maintain facilities according to projected funding levels and defined park priorities. Consider removal of facilities that do not meet minimum NPS criteria or are not cost-effective to maintain.

- Continue to strive to provide affordable housing within the park for emergency response staff, seasonal and entry-level employees, volunteers, and to support other park needs (housing for researchers, etc.)
- Provide commercial visitor services (for example services provided through concessioners) that are necessary and appropriate for visitor use and enjoyment through the use of concession contracts and commercial use authorizations. Ensure that concession operations are consistent with the protection of park resources and values and demonstrate sound environmental management and stewardship.

ACCESSIBILITY

New and renovated facilities are designed and constructed to be universally accessible in accordance with Section 504 of the Rehabilitation Act of 1973 as amended, Section 508 of the Rehabilitation Act, and the Architectural Barriers Act Accessibility Standards (2006). The National Park Service also has Director's Order 42: *Accessibility for Visitors with Disabilities in National Park Service Programs and Services* and Director's Order 16A: *Reasonable Accommodation for Applicants and Employees with Disabilities*. Visitors with disabilities have opportunities to experience the park open spaces, waters, historic structures, and cultural landscapes, and to enjoy representative portions of the backcountry.

Strategies

- Identify and modify existing facilities to meet accessibility standards as funding permits, or as facilities are replaced or rehabilitated. Design new facilities to meet current Architectural Barriers Act Accessibility standards.
- Provide public information about ease or difficulty of access for various facilities and trails.
- Periodically consult with public interests groups and people with disabilities or their representatives to increase awareness of the needs of people with disabilities and to determine how to make the park more accessible for everyone.
- Develop park interpretive programs per accessibility standards and the needs of people with disabilities.

**APPENDIX D:
TABLE OF SPECIAL STATUS SPECIES
(INCLUDING THREATENED AND ENDANGERED
SPECIES AND CANDIDATE SPECIES)**

| Common Name of Listed Species | Scientific Name | Retained for Impact Analysis | Designated Status ^a | | Counties with Habitat in Planning Area ^b |
|--|---|------------------------------|--------------------------------|-------|---|
| | | | Federal | State | |
| INVERTEBRATES | | | | | |
| bay checkerspot butterfly | <i>Euphydryas editha bayensis</i> | | T, X | - | SM |
| black abalone | <i>Haliotes cracherodii</i> | | E | - | M, SF, SM |
| Mission blue butterfly | <i>Icaricia icarioides missionensis</i> | ◆ | E | - | M, SM |
| San Bruno elfin butterfly | <i>Incisalia mossii bayensis</i> | ◆ | E | - | SM |
| Myrtle's silverspot butterfly | <i>Speyeria zerene myrteleas</i> | | E | - | M*, SM |
| California freshwater shrimp | <i>Syncaria pacifica</i> | | E | E | M* |
| FISH | | | | | |
| green sturgeon | <i>Acipenser medirostris</i> | | T, X | - | M, SF |
| tidewater goby | <i>Eucyclogobius newberryi</i> | ◆ | E, X | - | M, SM |
| coho salmon (Central California coast ESU) | <i>Oncorhynchus kisutch</i> | ◆ | T, X | E | M, SM |
| steelhead trout (Central California Coast ESU) | <i>Oncorhynchus mykiss</i> | ◆ | T, X | - | M, SF, SM |

APPENDIXES

| Common Name of Listed Species | Scientific Name | Retained for Impact Analysis | Designated Status ^a | | Counties with Habitat in Planning Area ^b |
|--|--|------------------------------|--------------------------------|-------|---|
| | | | Federal | State | |
| steelhead trout (Central Valley ESU) | <i>Oncorhynchus mykiss</i> | ◆ | T, X | - | M, SF |
| chinook salmon (California Coastal ESU) | <i>Oncorhynchus tshawytscha</i> | | T, X | - | M |
| chinook salmon (Central Valley spring run) | <i>Oncorhynchus tshawytscha</i> | | T, X | T | M, SF |
| chinook salmon (Sacramento River winter run) | <i>Oncorhynchus tshawytscha</i> | | E, X | E | M, SF |
| AMPHIBIANS | | | | | |
| California tiger salamander (Sonoma) | <i>Ambystoma californiense</i> | | E | T | M, SM |
| California red-legged frog | <i>Rana draytonii</i> | ◆ | T, X | - | M, SF, SM |
| REPTILES | | | | | |
| loggerhead turtle | <i>Caretta caretta</i> | | T | - | M, SF, SM |
| green turtle | <i>Chelonia mydas</i> | | T | - | M, SF, SM |
| leatherback turtle | <i>Dermochelys coriacea</i> | | E, PX | - | M, SF, SM |
| olive ridley sea turtle | <i>Lepidochelys olivacea</i> | | T | - | M, SF, SM |
| San Francisco garter snake | <i>Thamnophis sirtalis tetrataenia</i> | ◆ | E | E | SM |
| BIRDS | | | | | |
| marbled murrelet | <i>Brachyramphus marmoratus</i> | | T, X | E | M, SF, SM |
| western snowy plover | <i>Charadrius alexandrinus nivosus</i> | ◆ | T | - | M, SF, SM |

Appendix D: Table of Special Status Species

| Common Name of Listed Species | Scientific Name | Retained for Impact Analysis | Designated Status ^a | | Counties with Habitat in Planning Area ^b |
|-------------------------------|--|------------------------------|--------------------------------|-------|---|
| | | | Federal | State | |
| little willow flycatcher | <i>Empidonax trailii brewsteri</i> | | SC | E | M, SF, SM |
| peregrine falcon | <i>Falco peregrinus anatum</i> | | Delisted; monitored until 2015 | | M, SF, SM |
| bald eagle | <i>Haliaeetus leucocephalus</i> | | Delisted; monitored until 2028 | E | M, SF, SM |
| California black rail | <i>Laterallus jamaicensis coturniculus</i> | | SC | T | M, SM |
| California clapper rail | <i>Rallus longirostris obsoletus</i> | | E | E | M, SF, SM |
| bank swallow | <i>Riparia riparia</i> | ◆ | - | T | SF |
| California least tern | <i>Sternula antillarum</i> | | E | E | M, SF, SM |
| northern spotted owl | <i>Strix occidentalis caurina</i> | ◆ | T | - | M |
| MAMMALS | | | | | |
| southern sea otter | <i>Enhydra lutris nereis</i> | | T | - | SM |
| Steller sea lion | <i>Eumetopias jubatus</i> | | T, X | - | M, SF, SM |
| humpback whale | <i>Megaptera novaeangliae</i> | | E | - | M, SF, SM |
| salt marsh harvest mouse | <i>Reithrodontomys raviventris</i> | | E | E | M, SF, SM |
| PLANTS | | | | | |
| San Mateo thornmint | <i>Acanthomintha duttonii</i> | | E | E | SM |
| Franciscan manzanita | <i>Arctostaphylos franciscana</i> | | Under Review | - | SF |
| Presidio manzanita | <i>Arctostaphylos hookeri ssp.ravenii</i> | | E | E | SF |

APPENDIXES

| Common Name of Listed Species | Scientific Name | Retained for Impact Analysis | Designated Status ^a | | Counties with Habitat in Planning Area ^b |
|-------------------------------|---|------------------------------|--------------------------------|-------|---|
| | | | Federal | State | |
| Tiburon paintbrush | <i>Castilleja affinis ssp. neglecta</i> | | E | T | M |
| fountain thistle | <i>Cirsium fontinale var. fontinale</i> | | E | E | SM |
| Gowen cypress | <i>Cupressus goveniana ssp. goveniana</i> | | T | | SM |
| Presidio clarkia | <i>Clarkia franciscana</i> | | E | E | SF |
| yellow larkspur | <i>Delphinium luteum</i> | | E, X | Rare | M* |
| San Mateo wooly sunflower | <i>Eriophyllum latilobum</i> | | E | E | SM |
| Marin dwarf-flax | <i>Hesperolinon congestum</i> | | T | T | M, SF, SM |
| San Francisco lessingia | <i>Lessingia germanorum</i> | ◆ | E | E | SF, SM |
| white-rayed pentachaeta | <i>Pentachaeta bellidiflora</i> | | E | E | SM |
| San Francisco popcornflower | <i>Plagiobothrys diffuses</i> | | - | E | SF |
| Hickman's potentilla | <i>Potentilla hickmanii</i> | | E | E | SM |
| California seablite | <i>Suaeda californica</i> | | E | - | SF |
| showy Indian clover | <i>Trifolium amoenum</i> | | E | - | M |

(a) Key for Designated Status columns:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (X) Critical Habitat designated for this species [Critical Habitat - Area essential to the conservation of a species.]
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (SC) Species of Concern

(b) Key for Counties Column:

(M) Marin County

(M*) In Golden Gate National Recreation Area within Marin County, but in area managed by Point Reyes National Seashore

(SF) San Francisco County

(SM) San Mateo County

APPENDIX E: DESCRIPTIONS OF LOCAL TRANSIT SERVICE

MARIN COUNTY

West Marin Stagecoach

Administered by Marin Transit and operated under contract with MV Transportation, the Stagecoach provides the only public transportation service to West Marin County.

Two of the three Stagecoach fixed routes serve a popular Golden Gate National Recreation Area site, Stinson Beach: Route 61 (South Route), between Marin City and Bolinas via Panoramic and Shoreline highways; and Route 62 (Coastal Route), between Stinson Beach, Bolinas and Point Reyes Station via Shoreline Highway. Route 61 operates seven days a week, while Route 62 operates on Tuesdays, Thursdays and Saturdays only. Service is generally provided every few hours, although on weekends from March to December, Route 61 operates on headways of as little as 80 minutes. Connections may be made between Route 61 and Golden Gate Transit routes serving urbanized areas of Marin County, Sonoma County and San Francisco at Marin City.

West Marin Stagecoach vehicles are equipped with exterior racks accommodating up to two bicycles. Adult cash fares for both fixed-route and dial-a-ride service are \$2.

Golden Gate Transit

The Golden Gate Bridge District provides bus service in eastern Marin County, Sonoma County and San Francisco as Golden Gate Transit. Marin County park sites are served only tangentially by Golden Gate Transit, although Golden Gate Transit routes connect to the West Marin Stagecoach and Muir Woods Shuttle, expanding the reach of both.

Gerbode and Rodeo Valley trails can be accessed from the Spencer Avenue bus pad along Highway 101. The stop is served by routes, 4, 8, 18, 70 and 80; the first three operate only during commute hours in the peak direction (south in the morning, north in the afternoon), but Routes 70 and 80 operate all day, seven days a week, serve the Highway 101 corridor as far north as Santa Rosa, and extend well into San Francisco, connecting to the Civic Center / UN Plaza BART station and terminating at the Transbay Terminal, a hub for regional buses including AC Transit Transbay buses from the East Bay.

The only other park site served by Golden Gate Transit is Fort Baker. Fort Baker is only a few hundred feet, as the crow flies, from a stop along Alexander Avenue at Bunker Road. However, the stop is about 200 feet above the site, and access requires a walk alongside Alexander Avenue, then a steep hike down to the site (alternately, bus riders may use a more distant stop, along Alexander Avenue at East Road, which descends gently into the site). Moreover, while routes 2, 4, 10, 70 and 80 all serve the stop, only Route 10 makes more than a few early morning or evening stops, operating on roughly 60-minute headways seven days a week. (The *Marin Headlands / Fort Baker Plan* proposes to realign Route 10 through the site.)

Multiple Golden Gate Transit routes provide regional connections to West Marin Stagecoach and Muir Woods Shuttle service at the San Rafael Transit Center, Manzanita

Park and Ride, Marin City and Sausalito Ferry Terminal. Golden Gate Ferry service from San Francisco also serves the latter, making timed connections to Muir Woods Shuttles when that service is in operation.

Golden Gate Transit buses are equipped with exterior bike racks, and fares vary according to distance traveled.

San Francisco MUNI

The San Francisco Municipal Railway (MUNI), a division of the San Francisco Municipal Transportation Agency (SFMTA), provides limited bus service to the Marin Headlands via Route 76. Route 76 operates on hourly headways on Sundays and holidays between the San Francisco Caltrain terminus and Fort Cronkite. Within San Francisco, it operates via the Montgomery BART station, Union Square district (with its many hotels), Van Ness Avenue and Lombard Street, connecting to multiple local MUNI routes. Within the Headlands, it operates via Conzelman, McCullough, Bunker and Field roads to Battery Alexander, then via Field, Bunker and Mitchell roads to Fort Cronkite and Rodeo Cove, serving numerous sites within the Headlands. Most MUNI buses are equipped with dual exterior bike racks. Adult cash fare is \$1.50.

Among the recommendations made in 2008 by the SFMTA Transit Effectiveness Project (TEP), a major proposed revision of MUNI service, was a significant increase in Route 76 service. While the route would no longer terminate at the Caltrain station, ending instead at Montgomery BART, service would be provided every 30 minutes on both Saturdays and Sundays. TEP recommendations are currently undergoing environmental review, with no firm date set yet for implementation.

SAN FRANCISCO

MUNI service is described in general terms in the main body of this document. Following are details of routes serving Golden Gate National Recreation Area sites. Moving from east to west, and then north to south, park sites and the MUNI routes serving them are the following:

- Aquatic Park and the east side of Fort Mason are served by bus routes 10, 19, 20, 30, 47 and 49. The Powell & Hyde cable car line terminates a few hundred feet to the east, and the F-Market & Wharves historic streetcar line terminates a few blocks to the east of that.
- The west side of Fort Mason is served directly by Route 28, and Routes 22 and 30 stop a short walk away.
- The Presidio Main Post is served by routes 29 and 43. Routes 28, 30, 41 and 45 stop just outside the park's eastern entrance, the Lombard Gate.
- Crissy Field is served by Route 29.
- There is no direct MUNI bus service to Fort Point, although routes 28, 29 and 76 (on Sundays only) stop above it, at the Golden Gate Bridge. Fort Point can be accessed by hiking a few hundred feet downhill.

- Baker and China beaches are indirectly served by Route 29, which stops a few hundred feet away.
- Lands End is served by Route 18, which terminates at the Palace of the Legion of Honor.
- Fort Miley is served during the day by a branch of Route 38. Evenings, the route's main branch stops one block away.
- Sutro Heights, Sutro Bath, and the Cliff House are served by the busy routes 38 and 38L, which terminate at 48th Avenue, adjacent to Sutro Heights and a short walk from the other two sites. The Cliff House is served directly by Route 18.
- Ocean Beach encompasses much of San Francisco's coastline, and as such is served by multiple MUNI routes, including the N-Judah (near its northern end, just south of Golden Gate Park) and L-Taraval (near its southern end, north of the San Francisco Zoo) MUNI Metro light rail lines. Bus routes 5, 23, 31, 38 (southern branch), 48, 71 and 71L also terminate a short walk away from Ocean Beach. Route 18 parallels the entire beach, running a few blocks away along 45th Avenue for much of its length, and alongside the Great Highway immediately adjacent to Ocean Beach for part of it.
- Fort Funston is served, indirectly, by Route 18, which operates along Skyline Boulevard to its east. The peak-only Route 88 also terminates a short distance away.

The Powell & Mason and F-Market & Wharves lines, as well as routes L, N, 5, 10, 19, 20, 22, 23, 28, 28L, 30, 31, 38, 38L, 41, 45, 48, 49, 71 and 71L, all connect to BART stations. Routes N, 10, 30, 45, 47 and 48 connect to Caltrain stations. Routes L, N, 10, 20, 31, 41, 71 and 71L stop a short walk from the city's main Ferry Building, and routes 10 and 47 stop a short walk from ferry landings at Piers 33 and 41 at Fisherman's Wharf.

In 2008, an audit of MUNI services, the Transit Effectiveness Project, or TEP, recommended changes to MUNI routes that would alternately improve or reduce service to park sites. These recommendations, now undergoing environmental review, include the following:

- Elimination of Route 10, replacement of Route 20 with a more frequent Route 11, and increased capacity on Route 30, using larger buses
- Realignment of Route 43 through the Presidio Main Post (it now serves the Main Post's southeastern corner)
- Termination of Route 29 near Baker Beach, eliminating service to the Golden Gate Bridge (service to the bridge would continue to be provided by Route 28)
- Realignment of Route 18 so that it would no longer serve the Cliff House / Sutro Heights area
- Increased service on Routes L, N, 38L, 48 and 71L
- Replacement of Route 18 service on Skyline Boulevard with realigned Route 17 service

- A new 29L “super-limited” route operating between Van Ness and North Point, near Aquatic Park, and southern San Francisco via Lombard Street, Doyle Drive, Park Presidio Boulevard and 19th Avenue. This route was developed partly in response to endemic traffic congestion on 19th Avenue.

SAN MATEO COUNTY

SamTrans service is generally described in the main body of this document. All 100-series routes listed below connect to BART stations, 200-series routes connect to Caltrain stations, and 300-series routes connect to both. SamTrans buses are equipped with dual bike racks, and adult cash fares are \$1.75.

- Routes 14, 16, 17, 110, 112, 121, 123, 140, 294, CX and DX stop near Golden Gate National Recreation Area sites adjacent to Pacifica and Montara. Seven of those routes, most of them serving suburban areas to the north, converge at a “park and ride” lot at the Linda Mar Shopping Center near Pedro Point. Mori Point is well-served by the relatively frequent routes 110 and 112, which connect to BART stations to the north. Because of its proximity to Skyline College, approximately a half-mile away, Milagra Ridge may be the San Mateo County park site best-served by transit, as routes 121, 123 and 140, all of which connect to the BART stations, all operate relatively frequently seven days a week.
- In the SFPUC watershed, Route 342 provides access to the Sawyer Camp and San Andreas trails, and Route 294 stops near the north trailhead of Crystal Springs Trail. However, neither of these routes operates on weekends.
- The Phleger Estate is inaccessible via public transit.

APPENDIX F: DESCRIPTION OF SAN MATEO COUNTY TRAILS

Pedestrian conditions at Golden Gate National Recreation Area sites in San Mateo County are described in general terms in the main body of this document. Following are details of major trails, moving from north to south:

- Milagra Ridge features two well-maintained multiuse trails, one of which is paved and relatively level, while the other is unpaved and steep. While these trails do not connect to other NPS sites, Sweeney Ridge is about one mile to the south, and pedestrians can access it from Milagra Ridge via the Skyline College campus. The Bay Area Ridge Trail runs through both Milagra Ridge and Sweeney Ridge.
- Sweeney Ridge includes several ridgeline trails with excellent connectivity to nearby trails including Baquiano and Mori Ridge. While its trails are scenic, they are typically steep and unpaved. Golden Gate National Recreation Area and the City of Pacifica recently collaborated on improved access to Cattle Hill / Sweeney Ridge at the top of Fassler Avenue.
- Mori Point provides excellent connectivity to the adjacent beaches via a grade-separated path. Improvements to the Coastal Trail segment through Mori Point were recently completed.
- Pedro Point trails are not well developed, although a Coastal Trail connection through the eastern portion of the site is planned to connect Pacifica with the future trailhead at Devils Slide.
- Rancho Corral de Tierra access is currently on county trails north of Montara connecting to McNee Ranch State Park. In the Moss Beach area of the site, trails primarily connect to the equestrian facilities or provide trailhead access from State Route 1. The site is popular with horseback riders due to three equestrian facilities located nearby. There is evidence of illegal motorcycle and four-wheel drive truck use.
- The trails in the SFPUC watershed, along the eastern shores of San Andreas Lake and Upper and Lower Crystal Springs Reservoir, are among the most popular on the Peninsula. Six miles of the San Andreas and Sawyer Creek trails are paved, and feature a striped median, mile markers, restrooms and a lush tree canopy. The 10-mile Fifield-Cahill Ridge Trail is managed by the San Francisco Public Utilities Commission and is open only by reservation to docent-led tour groups of no more than 18 people.
- Phleger Estate's steep trails are prohibited to bicyclists and dogs and are popular with horseback riders. They are well-marked, well-maintained, and connect to about a dozen trails in the area. However, the site is remote relative to other park sites in San Mateo County.

A number of improvements to the San Mateo County trails network, including trails through Golden Gate National Recreation Area sites, are planned or have been proposed. These include the following:

- Three new multiuse trails are proposed linking San Bruno Mountain to existing trails including the Ridge Trail at Milagra Ridge.
- At Sweeney Ridge, San Mateo County plans to connect the Valley View Trail to the Ridge Trail and extend the San Andreas Trail to the Sneath Lane Trail.
- The Devil's Slide project will replace the existing Route 1 roadway along a segment of coastline plagued by landslides with a multiuse trail extending north through Pedro Point to Pacifica State Beach and south to McNee Ranch State Park, closing a gap in the California Coastal Trail. This project is under construction and is anticipated to be complete by 2011.
- Connection and extension of the San Andreas, Sawyer Creek and Crystal Springs trails is planned in order to create an uninterrupted, nonmotorized, multiuse route from the City of San Bruno to the Town of Woodside. Along segments, a parallel route for equestrians and hikers would be developed. Multiple projects would also improve connectivity from surrounding areas to the SFPUC watershed lands.

Finally, multiple new trails are proposed around Phleger Estate, including new access trails requiring bridges over West Union Creek.

Glossary and References



GLOSSARY

accessibility: Occurs when individuals with disabilities are able to reach, use, understand, or appreciate NPS programs, facilities, and services, or to enjoy the same benefits that are available to persons without disabilities.

adaptive management: A system of management practices based on clearly identified outcomes, monitoring to determine if management actions are meeting outcomes, and, if not, facilitating management changes that will best ensure that outcomes are met or are re-evaluated as conditions change. Adaptive management recognizes that knowledge about natural resource systems is sometimes uncertain and is the preferred method of management in these cases. (Source: *Departmental Manual 516 DM 4.16*)

American Indian tribe: Any band, nation, or other organized group or community of Indians, including any Alaska Native Village, which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

appropriate use: A use that is suitable, proper, or fitting for a particular park, or to a particular location within a park.

archeology: The scientific study, interpretation, and reconstruction of past human cultures from an anthropological perspective based on the investigation of the surviving physical evidence of human activity and the reconstruction of related past environments. Historic archeology uses historic documents as additional sources of information.

archeological resource: Any material remains or physical evidence of past human life or activities, which are of archeological interest, including the record of the effects of human activities on the environment. They are capable of revealing scientific or humanistic information through archeological research.

asset: A physical structure or grouping of structures, land features, or other tangible property that has a specific service or function.

asset management: A systematic process of maintaining, upgrading, and operating assets cost-effectively by combining engineering principles with sound business practices and economic theory.

backcountry: Primitive, undeveloped portions of parks.

best management practices (BMPs): Practices that apply the most current means and technologies available to not only comply with mandatory environmental regulations, but also maintain a superior level of environmental performance. See also, “sustainable practices/principles.”

civic engagement: As a philosophy, a discipline, and a practice, it can be viewed as a continuous, dynamic conversation with the public on many levels that reinforces the commitment of the National Park Service and the public to the preservation of park resources and strengthens understanding of the full meaning and contemporary relevance of these resources. Civic engagement is the philosophy of welcoming people into the parks and building relationships around a shared stewardship mission, whereas public

involvement (also called public participation) is the specific, active involvement of the public in NPS planning and other decision-making processes.

conserve: To protect from loss or harm; preserve. Historically, the terms conserve, protect, and preserve have come collectively to embody the fundamental purpose of the National Park Service—preserving, protecting and conserving the national park system.

consultation (cultural resources): A discussion, conference, or forum in which advice or information is sought or given, or information or ideas are exchanged. Consultation generally takes place on an informal basis; formal consultation requirements for compliance with section 106 of the NHPA are published in 36 CFR Part 800. Consultation with recognized tribes is done on a government-to-government basis.

cultural landscape: A geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values. There are four general kinds of cultural landscape, not mutually exclusive: historic site, historic designed landscape, historic vernacular landscape, ethnographic landscape.

cultural resource: An aspect of a cultural system that is valued by or significantly representative of a culture or that contains significant information about a culture. A cultural resource may be a tangible entity or a cultural practice. Tangible cultural resources are categorized as districts, sites, buildings, structures, and objects for the National Register of Historic Places and as archeological resources, cultural landscapes, structures, museum objects, and ethnographic resources for NPS management purposes.

cumulative actions: Actions that, when viewed with other actions in the past, the present, or the reasonably foreseeable future regardless of who has undertaken or will undertake them, have an additive impact on the resource the proposal would affect.

decision maker: The managerial-level employee who has been delegated authority to make decisions or to otherwise take an action that would affect park resources or values. Most often it refers to the park superintendent or regional director, but may at times include, for example, a resource manager, facility manager, or chief ranger to whom authority has been redelegated.

deferred maintenance: Maintenance that was not performed when it should have been, and therefore, is delayed. Continued deferment of maintenance results in deficiencies. Deferred maintenance is the cost to repair an asset's deficiencies.

desired condition: A park's natural and cultural resource conditions that the National Park Service aspires to achieve and maintain over time, and the conditions necessary for visitors to understand, enjoy, and appreciate those resources.

developed area: An area managed to provide and maintain facilities (e.g., roads, campgrounds, housing) serving visitors and park management functions. Includes areas where park development or intensive use may have substantially altered the natural environment or the setting for culturally significant resources.

economic multiplier effect: An effect in economics in which an increase in spending produces an increase in income and consumption greater than the initial amount spent. For example, if a park builds a new visitor center, it will employ construction workers and their suppliers as well as those who work in the visitor center. Indirectly, the new

visitor center will stimulate employment in restaurants, dry cleaners and service industries in the factory's vicinity.

ecosystem: A system formed by the interaction of a community of organisms with their physical and biological environment, considered as a unit.

ecosystem management: A collaborative approach to natural and cultural resource management that integrates scientific knowledge of ecological relationships with resource stewardship practices for the goal of sustainable ecological, cultural, and socioeconomic systems.

enabling legislation: The law(s) that establish a park as a unit within the national park system.

environmental assessment (EA): A brief National Environmental Policy Act (NEPA) document that is prepared, with public involvement, (a) to help determine whether the impact of a proposed action or its alternatives could be significant; (b) to aid the Park Service in compliance with the National Environmental Policy Act by evaluating a proposal that will have no significant impacts, but may have measurable adverse impacts; or (c) as an evaluation of a proposal that is either not described on the list of categorically excluded actions, or is on the list, but exceptional circumstances apply.

environmental impact statement (EIS): A detailed National Environmental Policy Act analysis document that is prepared, with extensive public involvement, when a proposed action or alternatives have the potential for significant impact on the human environment.

environmentally preferred alternative (or environmentally preferable alternative): Of the action alternatives analyzed, the one that would best promote the policies in section 101 of the National Environmental Policy Act. This is usually selected by the planning team members. The Council on Environmental Quality encourages agencies to identify an environmentally preferable alternative in the draft Environmental Impact Statement (EIS) or Environmental Assessment (EA), but only requires that it be named in the Record of Decision (ROD).

ethnographic resource: A site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it.

existing infrastructure: The systems, services, and facilities currently in a park unit, including buildings, roads, trails, power equipment, water supply, etc.

final plan: A final plan, or final general management plan, is a document that usually includes a discussion of the purpose and need for the plan, a description of NPS mandates and policies that affect the park, a description of the preferred alternative (the actual plan), a description of appropriate mitigation measures, and relevant appendixes (e.g., references, preparers, index). A final general management plan is prepared after the Record of Decision (ROD) or Finding of No Significant Impact (FONSI) is approved and a notice is published in the *Federal Register*. It describes only the selected alternative without all the accompanying compliance parts included in the environmental impact statement or environmental assessment.

Finding of No Significant Impact (FONSI): A determination based on an environmental assessment and other factors in the public planning record for a proposal that, if implemented, would have no significant impact on the human environment.

facility costs: one-time costs related to a facility, such as the cost associated with building or trail.

fiscal year: from October 1 of one calendar year to September 30 of the following calendar year.

foundation statement (Foundation): A statement that begins a park's planning process and sets the stage for all future planning and decision making by identifying the park's mission, purpose, significance, special mandates and the broad, parkwide mission goals. This are incorporated into a park's general management plan, but a foundation statement may also be produced as a stand-alone document for a park.

FTE (Full time equivalent): A computed number of employees, representing the number of full-time employees that could have been employed if the reported number of hours worked by part time employees had been worked by full-time employees. For example, two half-time employees equal one FTE.

fundamental resources and values: Those features, systems, processes, experiences, stories, scenes, sounds, smells, or other attributes determined to warrant primary consideration during planning and management because they are critical to achieving the park's purpose and maintaining its significance. A fundamental value, unlike a tangible resource, refers to a process, force, story, or experience, such as such as an island experience, the ancestral homeland, wilderness values, or oral histories.

gateway community: A community that exists in close proximity to a unit of the national park system whose residents and elected officials are often affected by the decisions made in the course of managing the park, and whose decisions may affect the resources of the park. Because of this, there are shared interests and concerns regarding decisions. Gateway communities usually offer food, lodging, and other services to park visitors. They also provide opportunities for employee housing, and a convenient location to purchase goods and services essential to park administration.

general management plan (GMP): A plan that clearly defines direction for resource preservation and visitor use in a park, and serves as the basic foundation for decision making. General management plans are developed with broad public involvement.

geologic resources: Features produced from the physical history of the earth, or processes such as exfoliation, erosion and sedimentation, glaciation, karst or shoreline processes, seismic, and volcanic activities.

golden gate: A strait in western California located between the Marin Headland as and Fort Point, which connects the Pacific Ocean and San Francisco Bay. Discovered in 1579 by Sir Francis Drake, it was known as the Golden Gate long before the name gained popularity during the gold rush of 1849. The Golden Gate Bridge, which spans the strait, was completed in 1937.

HABS/HAER/HALS: HABS is the Historic American Buildings Survey, the federal government's oldest preservation program; companion programs are HAER (Historic American Engineering Record), and HALS (Historic American Landscapes Survey).

Documentation produced through the programs constitutes the nation's largest archive of historic architectural, engineering, and landscape documentation.

historic property: A district, site, structure, or landscape significant in American history, architecture, engineering, archeology, or culture; an umbrella term for all entries eligible for or included in the National Register of Historic Places.

human environment: Defined by the Council on Environmental Quality (CEQ) as the natural and physical environment, and the relationship of people with that environment. Although the socioeconomic environment receives less emphasis than the physical or natural environment in the CEQ regulations, the National Park Service considers it to be an integral part of the human environment.

impact: The likely effect of an action or proposed action upon specific natural, cultural or socioeconomic resources. Impacts may be direct, indirect, individual, cumulative, beneficial, or adverse.

impact topics: Specific natural, cultural, or socioeconomic resources that would be affected by the proposed action or alternatives (including no action). The magnitude, duration, and timing of the effect to each of these resources are evaluated in the impact section of an environmental assessment or an environmental impact statement.

impairment: An impact that, in the professional judgment of a responsible NPS manager, would harm the integrity of park resources or values and violate the 1916 NPS Organic Act's mandate that park resources and values remain unimpaired.

implementation plan: A plan that focuses on how to implement an activity or project needed to achieve a long-term goal. An implementation plan may direct a specific project or an ongoing activity.

indicators of user capacity: Specific, measurable physical, ecological, or social variables that can be measured to track changes in conditions caused by public use, so that progress toward attaining the desired conditions can be assessed .

issue: Some point of debate that needs to be decided. For general management planning purposes, issues can be divided into "major questions to be answered by the general management plan" (also referred to as the decision points of the general management plan) and the "National Environmental Policy Act (NEPA) issues" (usually **environmental problems** related to one or more of the planning alternatives).

management concept: A brief, statement of the kind of place the park should be (a "vision" statement).

management zone: A geographical area for which management directions have been developed to determine what can and cannot occur in terms of resource management, visitor use, access, facilities or development, and park operations. Each zone has a unique combination of resource and social conditions and a consistent management direction. Different actions are taken by the National Park Service in different zones.

management zoning: The application of management zones to a park unit. The application of different type of zones and/or size of zones will likely vary in different alternatives.

mitigation: A modification of a proposal to lessen the intensity of its impact on a particular resource. Actions can be taken to avoid, reduce, or compensate for the effects of environmental damage.

mobile combustion: A source of greenhouse gases generated by combustion of fossil fuels in highway (cars, trucks, buses), off-road (construction, agricultural), water-borne, rail and air vehicles.

manager: The managerial-level employee who has authority to make decisions or to otherwise take an action that would affect park resources or values. Most often, it refers to the park superintendent or regional director, but may at times include, for example, a resource manager, facility manager, or chief ranger to whom authority has been redelegated.

museum object: A material thing possessing functional, aesthetic, cultural, symbolic, and/or scientific value, usually movable by nature or design. Museum objects include prehistoric and historic objects, artifacts, works of art, archival material, and natural history specimens that are part of a museum collection. Structural components may be designated museum objects when removed from their associated structures.

National Park Service Organic Act: The 1916 law (and subsequent amendments) that created the National Park Service and assigned it responsibility for management of the national parks.

national park system: The sum total of the land and water now or hereafter administered by the Secretary of the Interior through the National Park Service for park, monument, historic, parkway, recreational or other purposes.

Native American: Pertaining to American Indian tribes or groups, Eskimos and Aleuts, and Native Hawaiians, Samoans, Chamorros, and Carolinians of the Pacific Islands. Groups recognized by the federal and state governments and named groups with long-term social and political identities who are defined by themselves and others as Indian are included.

NEPA process: The objective analysis of a proposed action to determine the degree of its impact on the natural, physical, and human environment; alternatives and mitigation that reduce that impact; and the full and candid presentation of the analysis to, and involvement of, the interested and affected public—as required of federal agencies by the National Environmental Policy Act of 1969.

non-facility costs: one-time costs not related to a facility, such as the cost of restoration of a landscape.

one-time costs: This term refers to the costs to perform a one-time action, such as construct, rehabilitate, or demolish a facility; and can include other project costs. One-time costs can also include non-facility costs, such as restoring a landscape.

ONPS (Operations of the National Park Service) Funds: funding that is provided for the day-to-day operations of parks including Golden Gate National Recreation Area and Muir Woods National Monument.

park partner: any state or local government (or subdivision thereof), public or private agency, organization, institution, corporation, individual, or other entity which is engaged

in helping to ensure the protection, enhancement and enjoyment of the park's natural, cultural and recreation heritage.

Planning, Environment, and Public Comment (PEPC) System: An online database designed to facilitate the project management process in conservation planning and environmental impact analysis. It assists NPS employees in making informed decisions with regard to a number of compliance issues throughout the planning, design, and construction process.

policy level issues: The potential for some resources or values to be detrimentally affected by discretionary management decisions intended to achieve conditions consistent with the park's purpose.

potential boundary modifications: The description of areas or resources that meet criteria for boundary adjustments, along with the rationale for an adjustment.

preferred alternative: The alternative an NPS decision maker has identified as preferred at the draft EIS stage. It is identified to show the public which alternative is likely to be selected to help focus its comments.

preserve: To protect from loss or harm; conserve. Historically, the terms preserve, protect and conserve have come collectively to embody the fundamental purpose of the National Park Service—preserving, protecting and conserving the national park system.

preservation (cultural resources): The act or process of applying measures to sustain the existing form, integrity, and material of a historic structure, landscape or object. Work may include preliminary measures to protect and stabilize the property, but generally focuses upon the ongoing preservation maintenance and repair of historic materials and features rather than extensive replacement and new work.

primary interpretive themes: The most important ideas or concepts to be communicated to the public about a park.

professional judgment: A decision or opinion that is shaped by study and analysis and full consideration of all the relevant facts, and that takes into account

- the decision maker's education, training, and experience
- advice or insights offered by subject matter experts and others who have relevant knowledge and experience
- good science and scholarship; and, whenever appropriate,
- the results of civic engagement and public involvement activities relating to the decision.

public involvement (also called public participation): The active involvement of the public in NPS planning and decision-making processes. Public involvement occurs on a continuum that ranges from providing information and building awareness, to partnering in decision making.

projected implementation costs: A projection of the probable range of recurring annual costs, initial one-time costs, and life-cycle costs of plan implementation.

purpose: The specific reason(s) for establishing a particular park.

Record of Decision (ROD): The document that is prepared to substantiate a decision based on an environmental impact statement (EIS). It includes a statement of the decision made, a detailed discussion of decision rationale, and the reasons for not adopting all mitigation measures analyzed, if applicable.

scoping : Internal National Park Service decision making on issues, alternatives, mitigative measures, the analysis boundary, appropriate level of documentation, lead and cooperating agency roles, available references and guidance, defining purpose and need, and so forth. External scoping is the early involvement of the stakeholders, interested individuals and organizations, local societies, environmental groups, park visitors, etc.

significance: Statements of why, within a national, regional, and systemwide context, the park's resources and values are important enough to warrant national park designation.

soundscape (natural): The aggregate of all the natural, nonhuman-caused sounds that occur in parks, together with the physical capacity for transmitting natural sounds.

special mandates: Legal mandates specific to the park that expand upon or contradict a park's legislated purpose.

stakeholders: Individuals and organizations that are actively involved in the project, or whose interests may be positively or negatively affected as a result of the project execution /completion. They may also exert influence over the project and its results. For GMP planning purposes, the term stakeholder includes NPS offices/staff as well as public and private sector partners and the public, which may have varying levels of involvement.

standards: The minimum acceptable condition for an indicator of a desired condition.

superintendent: The senior onsite NPS official in a park. Used interchangeably with "park superintendent," "park manager," or "unit manager."

sustainable design: Design that applies the principles of ecology, economics, and ethics to the business of creating necessary and appropriate places for people to visit, live in, and work. Development that has a sustainable design sits lightly upon the land, demonstrates resource efficiency, and promotes ecological restoration and integrity, thus improving the environment, the economy, and society.

sustainable practices/principles(also sustainability): Those choices, decisions, actions and ethics that will best achieve ecological/ biological integrity; protect qualities and functions of air, water, soil, and other aspects of the natural environment; and preserve human cultures. Sustainable practices allow for use and enjoyment by the current generation, while ensuring that future generations will have the same opportunities.

visitor: Anyone who physically visits a park for recreational, educational or scientific purposes, or who otherwise uses a park's interpretive and educational services, regardless of where such use occurs (e.g., via Internet access, library, etc.).

user capacity (also called carrying capacity): The types and levels of visitor and other public use that can be accommodated while sustaining the desired resource conditions and visitor experiences that complement the purpose of the park. The National Park Service has adopted this term in preference of the term *visitor capacity*, which does not include all public use.

visitor experience: The perceptions, feelings, and reactions a person has while visiting a park. Examples of visitor experiences include a sense of being immersed in a natural landscape; a feeling of being crowded; a feeling of being in an area where the sights and sounds of people and vehicles are predominant; having a sense of challenge and adventure; or a perception of solitude and privacy.

warming hut: Local term for a visitor facility that was pioneered at Crissy Field. Used in this general management plan to indicate a modest structure providing comfortable shelter and a range of services which may include park orientation, limited food and beverage, limited retail, and restrooms.

zone: See “management zone.”

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