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Chapter I: Introduction and Purpose & Need

Introduction

The National Park Service (NPS) is considering improvements to The Marine Mammal Center (The Center) located in the Marin Headlands on land owned and managed under NPS by the Golden Gate National Recreation Area (GGNRA). The Center is a rehabilitation hospital for marine mammals that treats hundreds of injured, ill or orphaned marine mammals that are stranded in coastal waters every year. The Center is proposing to upgrade and expand their facilities to better serve existing programs that include animal treatment, education, and research. Funding that will allow The Center to embark on these important facilities upgrades has recently been secured thus promising to help The Center accomplish its mission and consolidate its functions. Proposed improvements to The Center include:

- an upgraded water filtration system;
- upgraded pens and pools;
- consolidation of administrative and education functions in several new buildings;
- improved research and medical facilities; and
- improved access to operations and consolidated parking.

The Center operates under a Cooperative Agreement with the NPS that delegates responsibilities of operation and management of the site to The Center. The GGNRA General Management Plan was amended in 1981 to incorporate The Center as a core institution of the Headlands Center for the Environment. The Center rescues, rehabilitates, and releases marine mammals, some of which are threatened and endangered. Scientists at The Center not only research diseases that afflict marine mammals but also develop new treatments for these diseases. The Center reaches over 60,000 people each year with on- and off-site programs and conducts public education campaigns to reduce human interference in marine mammal habitat. Pursuant to the Marine Mammal Protection Act of 1972, The Center is licensed by the National Oceanographic and Atmospheric Administration (NOAA) to be the rescue organization for marine mammals for 600 miles of California coastline.

This environmental assessment (EA) analyzes three alternatives and a no action alternative and evaluates the impacts of each on the environment. This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and regulations of the Council on Environmental Quality (40 CFR 1508.9), and the National Park Service's Director's Order (DO) – 12 (*Conservation Planning, Environmental Impact Analysis, and Decision-making*), and The National Historic Preservation Act of 1966 (as amended).

Project Need and Project Purpose/Objectives

To adequately articulate the purpose, objectives and need for the proposed project, it is important to first understand the existing functions and operations of The Center. Relevant background is provided below, followed by a description of the project's purpose and need.

Background

The Marine Mammal Center began its operation 28 years ago on the former Nike Missile site (SF-87-L) in the Marin Headlands area of the GGNRA (Figure I-1). The facility has expanded over time and currently occupies building space at nearby Fort Cronkhite, in addition to the former Nike Missile site (Figure I-2). The GGNRA manages approximately 72 miles of one of the four richest habitats for marine mammals in the world. One of the primary goals of The Center's work is to learn about and protect the marine mammal resources in the park's coastal areas. The partnership between The Center and GGNRA is unique in the national park system with respect to ocean resources. This partnership represents one of the longest park partnerships within the GGNRA and is in keeping with the park's overall mandate.

The mission of The Center is carried out under three distinct but related functional areas:

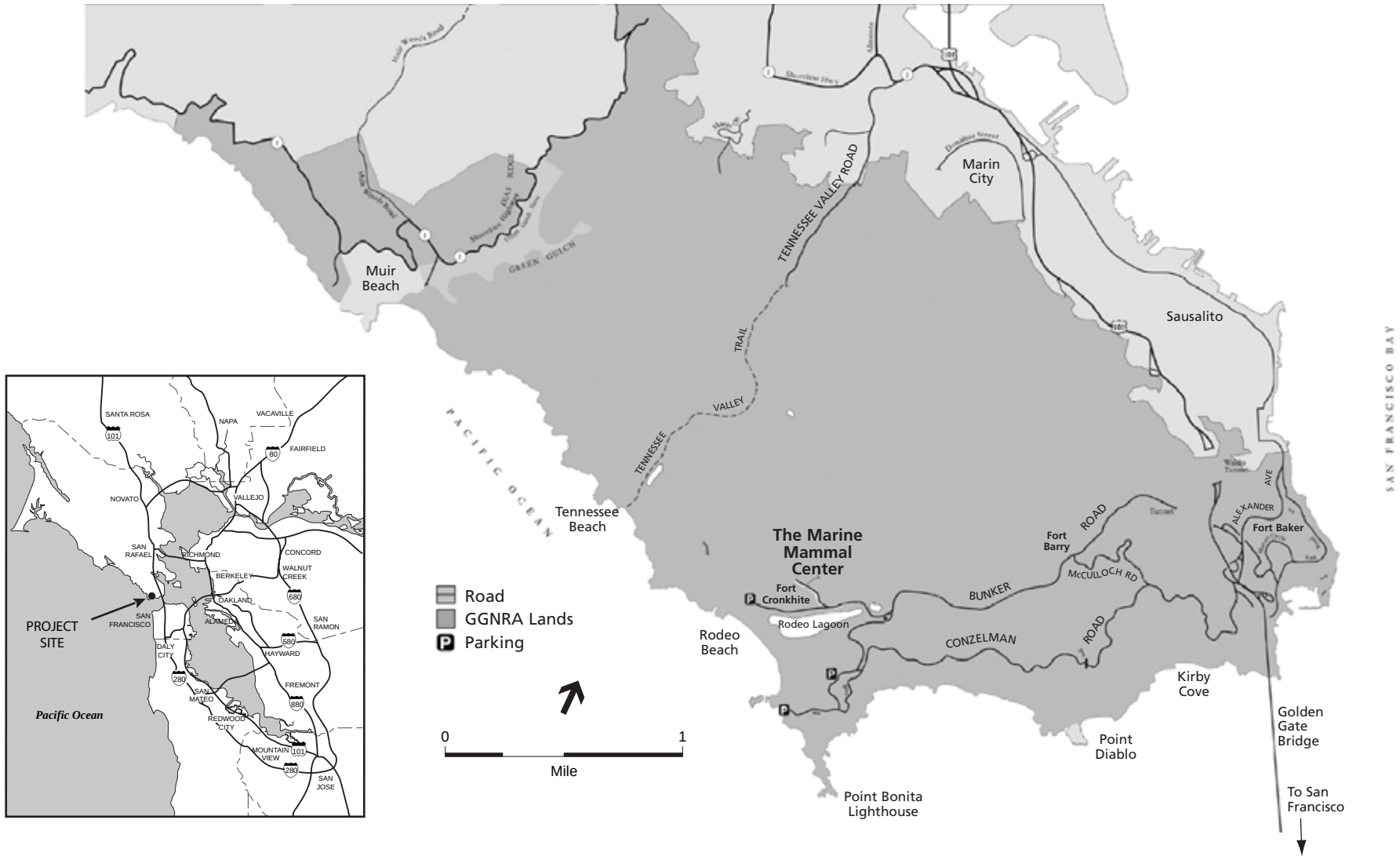
- rescue, rehabilitation, and release
- research
- education

The Center is the largest rescue facility of its kind in the world and treats an average of 500 animals each year including seals, sea lions, otters, dolphins, porpoises and sea turtles. Basic rescue, rehabilitation, and release operations are carried out by approximately 800 volunteers. Two crews a day tend to the animals, with a total of 14 crews caring for harbor seals, and an additional 14 crews for the other species. In addition to the hospital site in the Marin Headlands, The Center maintains field offices north of San Francisco in Anchor Bay and on the southern central coast of California in Monterey and San Luis Obispo. Field office staff and volunteers are trained to rescue, do preliminary assessments and transport animals to the hospital site if necessary. Once at the hospital site, animals are further assessed and rehabilitated. Approximately 60 percent of animals are successfully returned to the wild. Animals stay on site from six to twelve weeks depending on the medical problem, species and age. Post-mortem (necropsy) exams are performed on animals that do not survive and data is included in The Center's ongoing research.

The Center's scientists conduct research on marine mammal disease immunology and publish research findings in leading scientific journals. Post-mortem tissue and serum samples have been banked for ten years. This enables ongoing research at The Center and also provides samples to researchers around the world. The Center's medical and scientific staffs routinely work with colleagues in England, Canada, Mexico, Brazil, Australia, Scotland, the Netherlands, France and Germany.

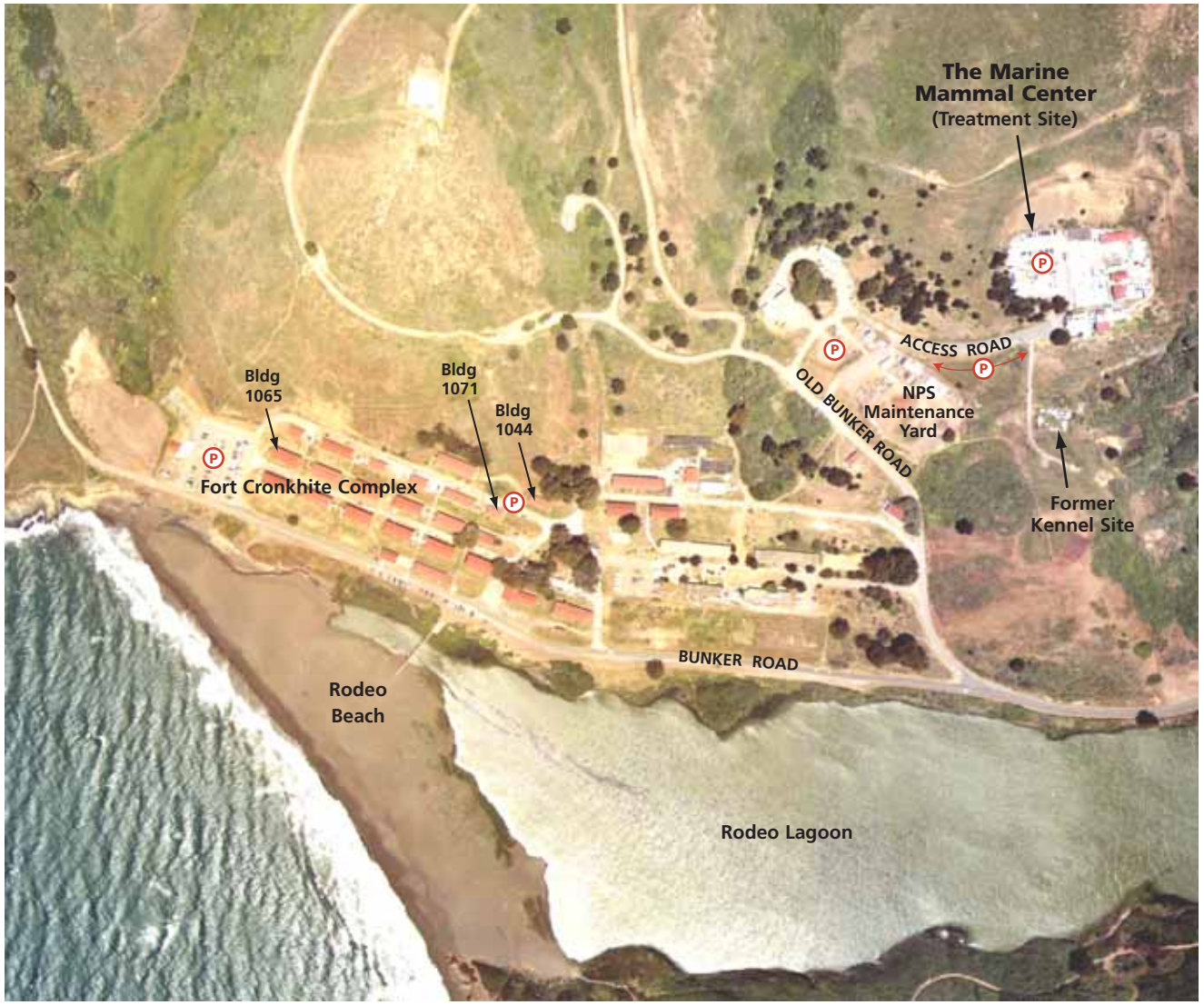
The Center provides educational programs for students of many age groups that are directed toward the development of an awareness and concern for marine mammals and their environment. The organization reaches approximately 17,000 students on-site each year and provides programs that travel to school sites, reaching an additional 15,000 students. Another approximate 30,000 visitors come to the site each year on a drop-in basis. The Center also

Figure I-1
Project Location



SOURCE: National Park Service, GGNRA, and Environmental Science Associates

Figure I-2
Area of Potential Effect



SOURCE: National Park Service and Environmental Science Associates

develops and offers resources for teachers. The one indoor classroom doubles as staff work-space; thus, most student presentations are given outdoors near the hospital building. The outdoor spaces are weather dependant and limit the quality and variety of educational programs that can be offered at The Center. Student groups observe The Center's pinniped (seal and sea lion) patients from a distance and are taught about the natural history and conservation of pinnipeds and sea otters. Students can also study and handle tanned pelts and bones. Beach walk programs are also conducted on Rodeo Beach and focus on the sandy beach and lagoon ecosystems of the Marin Headlands.

The main themes of The Center's Education Department programs and teacher resources are: marine mammal natural history, conservation (including human interaction), the work of The Center as a marine mammal hospital, and marine science careers. These programs offer a comprehensive marine mammal education. The Center is licensed by NOAA and the US Department of Agriculture. These licenses, in keeping with The Center's mission, do not allow The Center to operate as a display facility in the sense of an aquarium or zoo.

The Center's functions currently occupy approximately 26,000 square feet (sq. ft.) of space at the former Nike Missile site (referred to as the treatment site) and in three buildings (#1065, #1071, and #1044), at nearby Fort Cronkhite (see Figure I-1). The treatment site includes 7 buildings totaling 18,500 sq. ft. of enclosed space. Hospital functions and animal housing are located at the treatment site. In addition, The Center uses the former kennel site south of the treatment site for miscellaneous storage. At Fort Cronkhite, Building #1065 houses 4,800 square feet of administrative offices; Building #1071 contains 1,200 square feet of education space; and Building #1044 is 1,600 square feet used for medical laboratory.

Project Need

The existing facilities no longer meet the operational needs of The Center, particularly those at the treatment site. The ability of The Center to achieve its mission has been diluted by inefficiencies created by the widely dispersed location of services and sub-standard buildings and supporting infrastructure. The Center has undergone piecemeal changes over time as needs and funding became available. As a result, there are inefficiencies and outdated facilities that now need to be modernized in order for The Center to fulfill its mission and continue its noteworthy programs.

At the treatment site, most buildings (5 out of 7) are modified freight containers or trailers that no longer meet the facility's operational needs. The water transport and filtration systems have not significantly been upgraded over time. The filtration tanks and pipes are spread above ground along the hillside on the southern edge of the facility, which are visually unappealing and also increase the exposure of facilities to sunlight. The ozone in the marine mammal life-support system reacts to sunlight and causes constant breakage of the poly vinyl chloride pipes and thus, leads to water loss through leakage. Old pumps malfunction and are unreliable, which is life threatening for the animals. The lack of shading over pools and the water treatment tanks, causes algal blooms, which overstress the treatment system. Consequently, dirty water must be frequently dumped into the sewer and replenished with clean City water.

Old pens and pools need to be replaced. Many pens and pools were built almost 20 years ago and are deteriorated, undersized and now promote disease transmission from pen to pen. Also, the existing design of the pens and pools does not incorporate adequate safety precautions for

volunteers working with the animals. Twenty-one of thirty existing pools are unfit for continued use and need to be demolished and replaced.

An NPS report produced in 2000 found that two to four times a year during heavy rainfalls storm conditions the sanitary sewer lift-stations overflow. The rainfall from The Center's pen enclosures appears to be a contributing factor to the lift-station failure.

Existing space used for educational programs at the treatment site are primarily outside and are weather dependant, which can deter from their effectiveness and the visitor experience. Some educational functions are conducted in a historic building at Fort Cronkhite, but their separation from the treatment site makes these facilities less than ideal.

Currently circulation and parking are inefficient and in some situations unsafe, especially at the treatment site. Visitors primarily park on the access road which is steep and does not allow for easy turn-around. Foot traffic is also delegated along this road which creates unsafe conditions by forcing pedestrians into the road's right of way. In addition, staff and visitors must travel between buildings at Fort Cronkhite and the treatment center (approximately a ½ mile distance) on a regular basis. Staff make multiple trips a day which contributes to the daily inefficiencies of operating The Center's.

Access by emergency vehicles to the treatment site and all of its built facilities is also difficult and limited. Proposed changes would improve access for emergency and delivery vehicles, clarify visitor parking and circulation, decrease overall parking demand, and allow for adequate designated parking adjacent to safe access paths to the treatment site itself.

Project Purpose/Objectives

In order to administer better care to marine mammals, educate the public, and improve research techniques, The Center is proposing to consolidate its facilities to one site. This would entail retrofit of some of the existing facilities, demolition of some non-historic structures, and construction of new space at the treatment site. It would also improve current access, circulation, and visitor parking problems at the site, and address issues of access by emergency vehicles to the treatment site. The primary objectives of the proposed project are to:

- Improve the current facility for access, job efficiency, and safety for staff and visiting public;
- Improve and diversify treatment of sick or injured marine mammals by increasing the number of pools and creating more areas for quarantine;
- Improve sanitation and reduce cross-contamination in animal care areas by upgrading pools and plumbing systems;
- Provide indoor school programs that are grade-specific, activity based, reflect current research, and correlate with the California Academic Standards;
- Enhance overall visitor education in support of GGNRA's and The Center's programmatic goals;
- Improve interpretive information and programs regarding the work, natural history, and necessity of the preservation of marine mammals, as well as The Center's ongoing partnership with GGNRA;
- Visually integrate the design of new elements into the historic setting of the Marin Headlands, respecting both its landscape and architecture;

- Consolidate services for improved interdepartmental interactions;
- Improve research laboratories and work spaces to enhance The Center's success. Specifically, co-locate the laboratory and necropsy functions, resulting in faster diagnoses and maximum tissue and serum collection;
- Modernize the decaying physical plant to improve animal care, increase electrical efficiency and operability, and decrease water usage;
- Minimize environmental impacts to the area, including traffic and circulation ;
- Improve ability to control wet weather discharge to NPS wastewater system, thus reducing conditions of overflow; and
- Improve visual quality of the site, including the rehabilitation of the former kennel site.

In an effort to minimize impacts to the surrounding area, the proposal includes the modernization of existing facilities largely within the footprint of the developed site. Some demolition and new construction is proposed.

Relevant Plans and Policies

This environmental assessment is written with the guidance of a set of regulations and policies. The project must comply with requirements of NEPA as well as other legislation that governs land use, natural resource protection, and other policy issues within GGNRA. Many regulations and Executive Orders are typically addressed in NEPA documents. The following is a summary of several relevant guidance documents and regulations and a description of their relationship to the Marine Mammal Center's project. Other relevant regulatory guidance is discussed in Chapter III within the discussions of individual resource topic areas.

1980 General Management Plan for the Golden Gate National Recreation Area (GMP)

The GMP, which is the guiding plan for the park, and its corresponding EA were reviewed in the development of this environmental analysis. The GMP EA is incorporated by reference into this EA and can be viewed at Park Headquarters, Building 201 Fort Mason, San Francisco. Relevant management objectives include:

- Locating development in areas previously disturbed by human activity whenever possible;
- Maintaining and restoring the character of natural environment lands by maintaining the diversity of native park plant and animal life, identifying and protecting threatened and endangered plant and animal species, marine mammals, and other sensitive natural resources, controlling exotic plants, and checking erosion whenever feasible;
- Reusing existing buildings for visitor and management needs in order to help preserve historic structures and reduce building costs;
- Planning facilities that will offer a wide variety of uses; and
- Protecting marine mammals, threatened and endangered species, and other sensitive natural resources found within the seashore.

These were used to develop alternatives and assess impacts discussed in Chapters II and IV of this EA.

Executive Order 11988 and 11990 (Floodplain Management and Wetland Protection)

These executive orders direct NPS to avoid, to the extent possible, long- and short-term adverse impacts associated with modifying or occupying floodplains and wetlands. They also require NPS to avoid direct or indirect support of floodplain or wetland development whenever there is a practical alternative. The Center is not located within a designated floodplain; however, there are wetlands within the project area, and an analysis of the project's potential impact on wetlands is provided in Chapter IV.

Executive Order 12898 (Environmental Justice in Minority and Low-Income Populations)

This executive order directs federal agencies to assess whether their actions have disproportionately high and adverse human health or environmental effects on minority and low-income populations. There is no housing within the project area.

Secretarial Order 3175 and ECM 95.2

These memoranda require agencies to explicitly address environmental impacts of a proposed project on Indian Trust Resources. There are no formally designated Indian Trust Resources at The Center site. An analysis of the proposed project's effect on cultural resources is found in Chapter IV.

The 1972 Coastal Zone Management Act (CZMA)

The CZMA requires federal agency participation in the development of coastal states' coastal zone management programs. The CZMA also requires federal agencies to prepare a consistency determination for every federal agency activity within or outside the coastal zone that affects land or water use or natural resources of the coastal zone. A consistency determination indicates that the federal activities are consistent with the enforceable parts of the state programs. The NPS has communicated informally with the Coastal Commission staff during the preparation of this document. The NPS will be submitting a letter, along with this Environmental Assessment, regarding consistency with the CZMA for review, to fulfill the agency's requirements under the CZMA. A consistency determination will be prepared following completion of the environmental review process.

Previous Planning

This site and facilities improvement project has been under consideration for over a decade. In 1990 a Master Plan was developed for The Center that envisioned a similar but smaller project (NPS, 1990). This Master Plan was updated in 1994, but adequate funding has not been available until recently. Over the years, minor, interim and temporary changes have been made to implement portions of the approved Master Plan; however, these have been small changes such as relocation of the medical staff trailer and minor upgrades to the filtration system. With implementation of The Marine Mammal Center Site and Facilities Improvement Project, the objectives of The Center's Master Plan and the purpose of and need for the 1990 project would be comprehensively addressed and this new project would replace the 1990 Master Plan.

Public Scoping

The NEPA process was initiated in April 2003 when A Notice of a Public Scoping was mailed. The NPS conducted a public scoping meeting on May 20, 2003. The Marine Mammal Center was one of many items on the agenda for this meeting so attendance numbers specific to this project are not known. However, three people spoke and public comments included concerns regarding a potential increase in single-occupancy traffic to the site, adequate traffic flow for buses, improvements to the education program facilities, and the need for focused growth for The Center (so that future improvements do not cause sprawl at the site). In addition two letters were received expressing support for the project and suggesting three very specific improvements to Center facilities. Received comments have been taken into account in the development of the alternatives and the analysis contained in this EA.

In addition to the scoping effort described above, B.J. Griffin, the Executive Director of the Marine Mammal Center, met with several community groups in 2003 to solicit input from surrounding stakeholders. In July of 2003 she met with the Parks and Open Space Committee of the Marin Conservation League. In October of 2003, Ms. Griffin addressed the Sausalito Women's Club on the work of The Marine Mammal Center. Also in late October 2003, Ms. Griffin provided a briefing and tour for Dana Whitsell, City Manager of the town of Sausalito. All of these meetings were met with positive response, expressing support for the project.

Issues and Impact Topics

Issues and concerns affecting this proposed project were identified through input from individuals, organizations, and state and federal agencies as well as from past NPS planning efforts. The current project was evaluated under GGNRA's Project Review process and included internal scoping with staff. The prominent issues raised are potential impacts from construction and site disturbance/expansion including impacts to water resources; surrounding biological resources and wetlands; geology, soils and seismicity; hazardous materials; air quality; noise; cultural (historic) resources; potential for increased traffic; visual resources; dark skies/natural lightscapes; recreation and public use; park operations and facilities; and cumulative effects.

Chapter II: Alternatives

Introduction

Four alternatives for the proposed Marine Mammal Center Site and Facilities Improvements Project are evaluated in this EA. A regional location map and project area map showing the location of the study area are presented in Figures I-1 and I-2 in the previous chapter. Under Alternative 1 (No Action), the project area would remain unchanged, except for normal maintenance and repair. The other three alternatives propose varying configurations for accommodating The Center's program through some demolition of existing structures, some new building and infrastructure construction and new parking. Alternative 2, the Consolidated Program Alternative, locates most proposed uses, including parking, in one location at the treatment site. Alternative 3, the Consolidated Program, Remote Parking Alternative, locates most proposed uses at the current treatment site but places most of the required parking at an area below the treatment site. Alternative 4, the Split Program, Limited New Construction Alternative, splits Center functions and parking between its current Fort Cronkhite location and accommodates the balance of proposed uses and parking through some new construction at the treatment site. All three action alternatives implement actions designed to improve and upgrade facilities at The Center. All three action alternatives would consolidate all or some of the administrative and animal care facilities in the same location, and would provide for construction of a new perimeter "ring road" to improve access for delivery of large animals and equipment, and service and emergency vehicles.

Description of Alternatives

Background on Alternatives Development

The Center developed and refined the three action alternatives evaluated in this EA through an internal planning process and in response to scoping comments (see Chapter I). Each alternative was designed to accommodate the project objectives described in Chapter I and still present a range of options that address environmental opportunities and constraints of the site and project.

This Chapter provides background information on the development and refinement of the alternatives, as well as project conditions that have been identified by The Center. The EA identifies and analyzes a range of alternatives that are consistent with the National Environmental Policy Act (NEPA) and Council on Environmental Quality (CEQ) regulations. Actions developed as part of this process also must be consistent with current editions of applicable codes during the design and construction of the project.

Common Components of Action Alternatives

Buildings

- The demolition of approximately 6,000 square feet of non-historic structures at the treatment site would occur under each action alternative.
- All action alternatives retain the use of Building #1065 at Fort Cronkhite, although its use varies under the alternatives.

- No changes are anticipated for the Existing Harbor Seal Hospital in any of the action alternatives.
- All three action alternatives would maintain visitor separation from hospital functions.

Utilities/Infrastructure

- All three action alternatives would provide key upgrades to the treatment site's filtration system, much of which would be relocated and housed underground in the old Nike silo on the east end of the treatment site.
- Pens and pools in the patient boarding area would be upgraded in all three action alternatives. These upgrades would include replacing approximately 15,400 square feet of existing structures with approximately 19,500 square feet of pens and pools made of sturdier materials. The project also would provide shade structures to many pools; build pools at, or near to, grade to enable easier transfer of animals; enable animals to access pools with less stress; and enable easier access to animals. All action alternatives include upgrading the existing cetacean pool on the eastern edge of the treatment site.
- Under all action alternatives the water holding capacity at the treatment site would be increased from 47,000 gallons to 207,000 gallons. This increased capacity would be accommodated within the new pens and pools that would be larger and deeper than existing ones.
- Under all action alternatives wastewater would be combined with drainage from the pens and pools in the following manner: area drains installed within the existing pens and pool areas would be designed primarily for the wash-down operations in the pen enclosure. This operation necessitates washing down raw sewage and therefore these area drains would be connected directly to the sanitary sewer. The area within the existing pens (about 10,000 square feet) also would receive rainfall which would be directed towards the sanitary sewer.
- To address the sanitary sewer lift-station overflow situation, the project design will improve the current situation and ensure that the overall combined outflow from The Center's facilities would not exceed current levels nor exceed the capacity of NPS facilities. All action alternatives would include the operational capability to interrupt rainfall flowing to the pen enclosure area drains either by using the 40,000 gallon cetacean pool as an equalization basin or some comparable basin to regulate the timing and flow of rainfall. Cetacean pools are not occupied during the season when storm events would occur. Details of this system will be fully developed, reviewed, and refined by the MMC in coordination with the NPS during the design development and construction drawing phases as well as the construction permitting process.
- All action alternatives are designed for the same square-footage of area exposed to rainfall. This is accomplished by separating the interior pen area from the adjacent walkways and by covering (roofing over) a portion of the pen area. The walkways outside of the pen enclosures and the new roofed areas would drain directly to the storm system (not the sanitary system).
- Under all action alternatives, the stormwater system would be designed to provide the maximum opportunity for surface run-off to infiltrate the soil. Use of vegetated swales and planting areas would be used to reduce run-off and remove contaminants. Parking lot drainage would be designed so that run-off is directed away from sensitive areas and fed into the stormwater system, not the sewer system.
- All action alternatives propose to continue the use of propane gas (or LPG) to supply a new gas-fired hot water boiler for domestic hot water and heat-exchange for 'closed', re-circulated water in a radiant floor heating system. The propane tank would be sized for once-per-month delivery. The size and placement of this tank would be reviewed with NPS during the design development review process.

- Under all action alternatives, all existing Life Support System (LSS) equipment would be removed, native vegetation would be planted in this area, and new equipment would be installed in and above the silos. LSS equipment includes pumps, filters, fractionaters, piping, valves, control panels, pressure gauges, contactor tank, and deaerators.

Circulation and Parking

- All action alternatives include an 18-foot wide perimeter road (ring road), which is the same for all action alternatives on the eastern edge of the treatment site, but varies on the far-western edge of the treatment site in how parking would be accommodated. This perimeter road is required for deliveries of animals and supplies and to provide fire and emergency vehicle access. The road would be located around the perimeter of the treatment site to avoid locating a road in the middle of pens and pools, which would be harmful to the mammals on site.
- Although parking configurations vary under the action alternatives, as discussed below (see Table II-3 at the end of this Chapter), under all action alternatives it is assumed that up to 16 parking spaces would be available for use by The Center in shared locations outside The Center's assigned area. These spaces are needed for average daily operation of The Center and are currently within existing shared Fort Cronkhite parking lots and/or the NPS maintenance area.
- Under all alternatives, The Center would continue to park up to two buses in the nearby NPS maintenance yard. New sidewalk access to The Center from these bus spaces is being considered by NPS as part of the road reconstruction included in work to date on the Marin Headlands/ Ft. Baker Transportation Draft EIS (not yet completed).
- Several times a year (no more than 6 times a year) The Center holds events that require additional parking beyond average daily operation for one-time events. In advance of these special events, The Center would be required to coordinate parking needs with GGNRA's Special Parks Uses Group.

Other Actions

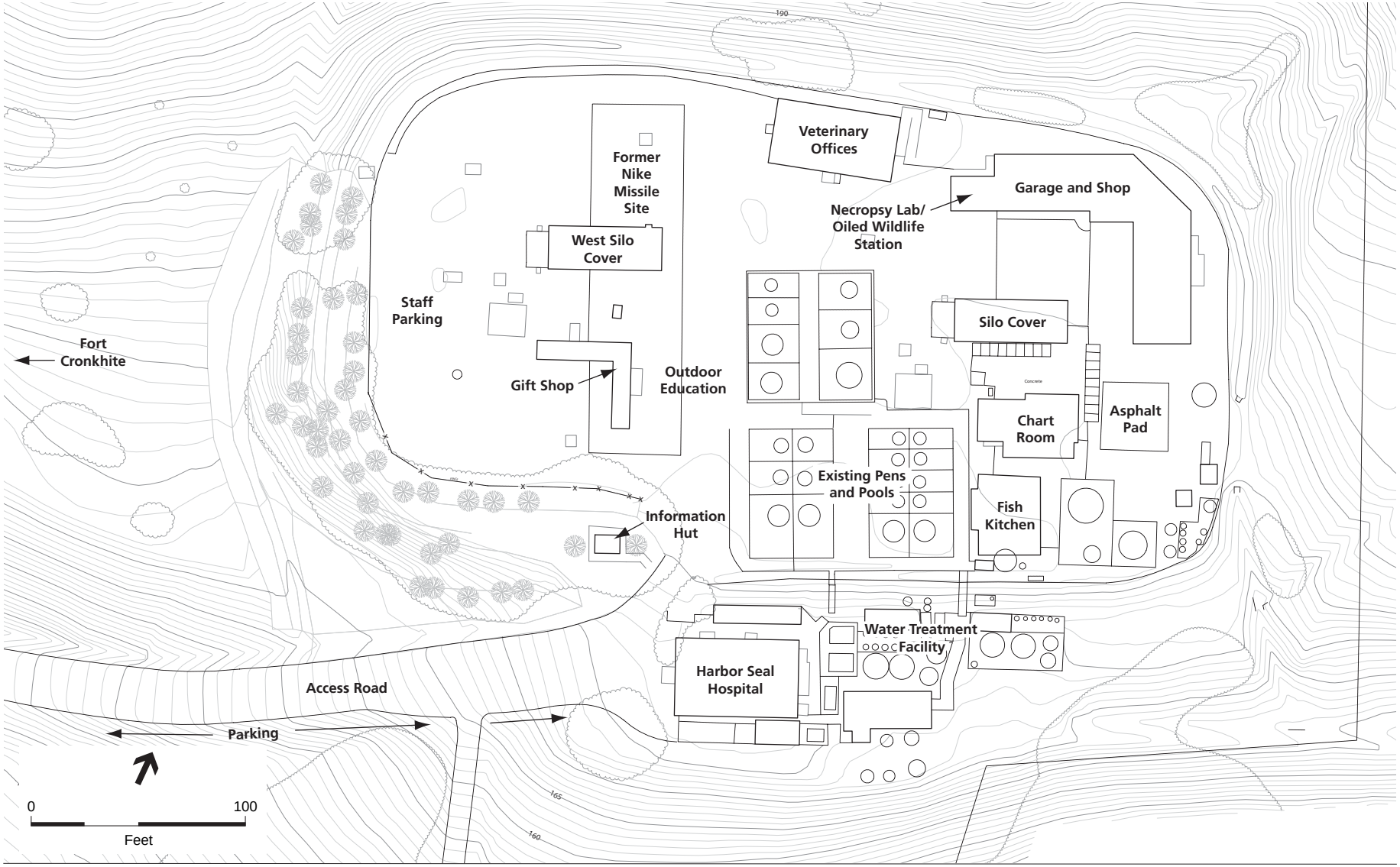
- Under all action alternatives, project construction would occur within two six-month periods to avoid the season (approximately March – September) of maximum animal occupation.
- Under all action alternatives, preservation of natural dark would be incorporated into the site design to the greatest extent possible. Site lighting would be focused downward and shielded structurally to allow for natural night skies.
- Under all action alternatives, The Center's designers would apply sustainability measures throughout the project.

Alternative 1: No Action

Alternative 1 is the "No Action" Alternative and describes the action of continuing the present management operation with no major improvements to the facilities beyond any life safety code concerns or reasonable management actions (see Figure II-1).

Alternative 1 provides a baseline from which to compare other action alternatives, evaluate the magnitude of proposed changes, and measure the environmental effects of those changes. The no action concept follows the guidance of CEQ, which describes the No Action Alternative as representing no change from the existing management direction or level of management intensity.

Figure II-1
Alternative One: No Action



SOURCE: Scott Dennis Architect, Noll & Tam Architects, and Environmental Science Associates

There would be no net change in occupied square footage (26,000 sq. ft.). Under this Alternative, the existing facilities in the project area would be maintained without significant alteration. The Center's facilities would continue to be housed in modified freight containers and trailers. The water transport and filtration system would not be significantly upgraded. Old pumps that currently malfunction would undergo minimal upgrades. Under this alternative there would be no significant improvements to the visitor experience and there would be no consolidation of The Center's program. Administrative and some research functions would continue to be physically separated from the treatment site. There would be no changes to the kennel area south of the treatment site, which is currently used for storage.

Components of Alternative 1, and thus the existing conditions, are described below:

- **Fenced Pen Area (Pens and Pools):** This 15,400-square foot area, used for rehabilitating rescued marine mammals, is located in the central portion of the treatment site, surrounded by chain-link fences and gates. The Center has installed 30 pens and fiberglass pools on concrete slabs. An above-grade filtration system exists just outside the original inner perimeter fence.
- **Water Treatment Facility:** New pumps and water retention tanks were added to the filtration systems in 1992. Significant upgrades were constructed in 1998. The water system structure was built in 1985. This facility covers approximately 2,800 square feet of land located on the south side of the treatment site.
- **Veterinary Offices:** This 1,750-square foot structure is a double-wide trailer located on the north side of the treatment site in 1994.
- **Necropsy Lab and Oiled Wildlife Station:** This 1,750-square foot building (250 feet of which is for necropsy functions) was assembled from several structures on the northeast side of the treatment site and was enlarged in 1994.
- **Chart Room:** This 650-square foot building was constructed from two shipping containers and is located on the southeastern portion of the treatment site.

Chart room structure

- **Fish Kitchen:** This 900-square foot building, made from a modified shipping container, is located at the southeastern portion of the treatment site and was moved to the treatment site sometime after 1975. It was enlarged by joining a second container with a free-standing roof structure over the enlarged building in 1994.

- **Outdoor Education Classroom:** This approximately 1,000-square foot area was established in 1981 and is located adjacent to the gift shop and includes storage containers and bleachers used for educational programs.
- **Gift Shop:** The Gift Shop is contained in a 600-square foot temporary building just inside The Center's entrance on the west side of the treatment site, with adjacent storage.
- **Harbor Seal Hospital:** The existing 1,900-square foot Ready Building was modified in 1999 to accommodate hospital functions for Harbor Seals. At the same time, cast-inplace concrete pools and urgent-care recovery pens were added to support animals recovering from surgeries in the Hospital. Ornamental shrubs have been planted in front of the Hospital.
- **Miscellaneous Storage:** The treatment site also contains approximately 11,000 square feet of shop and storage space in old sheds and other makeshift buildings.
- **Former Kennel Site:** Just south of The Center's facilities is the site of a former dog kennel. This approximately 13,000-square foot space is currently used for (temporary) storage of crates and pens and other miscellaneous equipment not regularly in use.
- **Fort Cronkhite:** The Center currently uses a total of 7,590 square feet in three buildings (#1065, #1071, and #1044), at nearby Fort Cronkhite (see Figure I-1). Building #1065 houses 4,840 square feet of administrative offices; Building #1071 contains 1,180 square feet of education space; and Building #1044 includes 1,570 square feet used for medical laboratory.

Parking

The Center would continue to have a total of 91 parking spaces for daily operation split between the treatment site (55 spaces, including 2 handicapped spaces) and outside The Center's assigned lands (Fort Cronkhite and elsewhere - 36 spaces) (see Figure II-2). Primary accommodation for visitor parking would continue to be the 13 parallel parking spaces located along the access drive to The Center (included in the 55 spaces discussed above). Buses would continue to park and turn around in the NPS Maintenance Yard.

Utilities

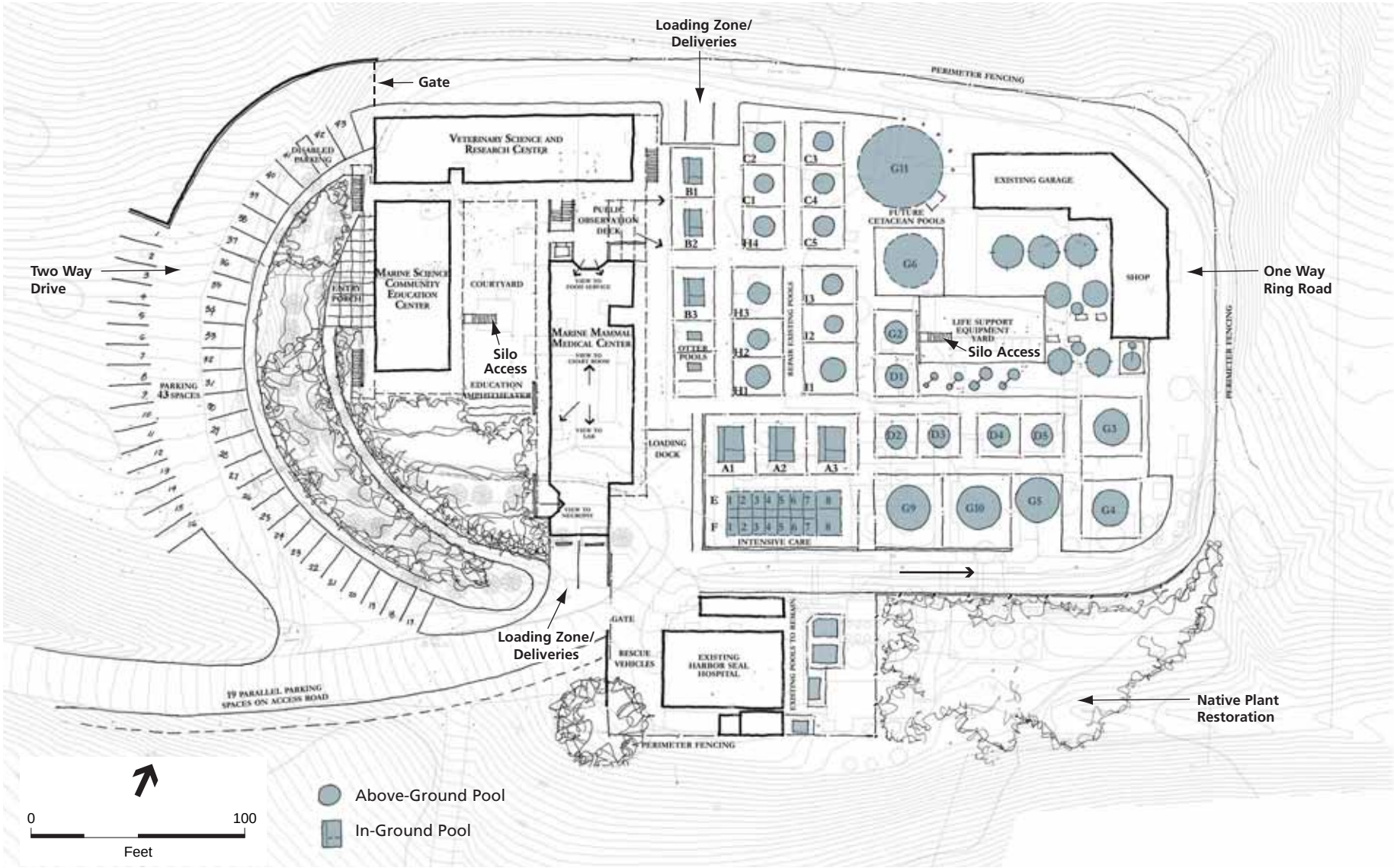
Utilities under Alternative 1 would not change or be upgraded beyond normal upkeep.

The existing PG&E electrical service feeds to the treatment site would not be changed, updated or undergrounded. Under the No Action Alternative, natural gas needs would continue to be provided by propane tanks. Stormwater and wastewater systems also would not be substantially changed; thus the potential contribution from The Center's pen enclosures during extreme storm conditions to the lift stations' overflow would remain, until addressed separately as funding allows.

The domestic water system and the overall Center's water holding capacity would remain at its current capacity of 47,000 gallons. Water intake, filtration, and discharge methodologies would not be modified with modern technologies.

Under this Alternative pens and pools would continue to be used in their aging condition. It is assumed that recurring problems with the water filtration system that have to do with leakage, breakage, and sanitation would continue under this alternative. Regular maintenance would continue but would not include any major improvements or upgrades to Center facilities.

Figure II-2
Alternative Two: Consolidated Program Alternative



SOURCE: Scott Dennis Architect, Noll & Tam Architects, and Environmental Science Associates

Visitor Experience

Alternative 1 would not change the current visitor experience, which primarily consists of a small hut at the entrance (that is often not occupied), the gift shop, and three interpretive panels with limited information. Currently, there is very little sense of arrival and no orientation to the visitor that they are entering a hospital environment and why there may not be any animals on the front row for them to see.

Alternative 2: Consolidated Program

Alternative 2 includes the demolition and removal of the following non-historic buildings (totaling approximately 5,600 square feet) at the treatment site:

- Chart Room
- Fish Kitchen
- Veterinary Offices
- Gift Shop
- Necropsy Lab/Oiled Wildlife Station
- Information Hut
- Water Treatment Facilities

Under this alternative, The Center would occupy a total of approximately 35,200 square feet of building space (see Table II-4 at the end of this Chapter). Approximately 4,800 square feet would be retained in Building #1065 at Fort Cronkhite (see Figure I-2) for use by visiting researchers and approximately 12,900 square feet would be retained at the treatment site. At the treatment site, approximately 7,430 square feet of the retained space would be underground in the existing missile silos; 3,570 square feet would be in the existing garage and shop (which house some labs and storage); and the remainder of currently occupied space to be retained would be the Harbor Seal Hospital (1,900 square feet).

Alternative 2 includes the construction of three new buildings totaling approximately 17,500 square feet as described below (see Figure II-2). New buildings would be constructed on the western portion of the treatment site. The buildings would be organized around a central open courtyard.

This alternative includes construction of a new perimeter ring road with new parking on the west side (double-loaded drive with 43 spaces) as well as expanded parallel parking along the access road (19 spaces). The former kennel site, south of The Center, would no longer be used for offsite storage and this area would be included in project restoration plans.

Proposed New Facilities

- **Marine Science Community Education Center:** Alternative 2 would provide a new two-story, 5,760-square foot Marine Science Community Education Center. The Education Center would be the primary visitor facility and would include an information desk, a marine science discovery room, a retail store, an education classroom, a meeting room, and The Center's offices for communications, membership, and development. Construction of this building would replace the functions of the Gift Shop and Gift Shop storage (600 and 320 square feet, respectively, which would be demolished) and education and administrative functions (6,000 square feet currently at Fort Cronkhite).

- **Veterinary Science and Research Center:** Alternative 2 would develop a Veterinary Science and Research Center building which primarily would serve staff working with the mammals. Some space would be accessible for the visiting public. This two-story, 7,800-square foot facility would include veterinary science offices, a staff/volunteer common area (including tables and seating areas), visitor restrooms, administration and education offices, and a mechanical room. Public restrooms would be located on the first floor, with staff and volunteer restrooms located adjacent to work spaces in other locations. Construction of this building would replace the functions of the Veterinary Offices (1,750 square feet), and various storage buildings (1,120 square feet), which would be demolished.
- **Marine Mammal Medical Center:** Alternative 2 would develop a new Marine Mammal Medical Center building. The one-story, 3,920-square foot Medical Center would include a patient food preparation area, pharmacy, chart room, research laboratory, necropsy research area, and public space. Construction of this building would replace the functions of the Necropsy Lab (250 square feet), the Fish Kitchen (900 square feet), and Chart Room (650 square feet), which would be demolished.

  In the necropsy research area, post-mortem tissue and serum have been banked for ten years. This bank is a critical resource for research at The Center and it also provides samples to researchers around the world. The new necropsy room proposed under Alternative 2 would allow faster diagnoses and more efficient operation due to increased storage capacities and proximity to the adjacent research laboratory.

  A public area within this building would be designed to promote the educational mission of The Center by incorporating observation windows in the building to allow visitors to view staff/volunteer functions and activities. Educational exhibits would be placed near the observation windows to help interpret The Center's activities.
- **Courtyard and Amphitheater:** Alternative 2 would incorporate a new centralized courtyard and amphitheater in the site design to provide a common gathering area for visitors and volunteers. The amphitheater would provide seating for up to 60 visitors. The Center staff would offer educational and interpretive talks at the outdoor amphitheater.
- **Public Observation Deck:** A public gathering space would be located between the Veterinary Science and Research Center and the Marine Mammal Medical Center, which would include an observation deck (approximately 800 square feet), elevated approximately one story above ground level. This deck could also be used as an outdoor classroom space and would provide views of the marine mammal patient boarding area and the display windows of the Marine Mammal Medical Center.
- **Research Facilities:** Approximately 4,800 square feet of space would be retained in Building #1065 at Fort Cronkhite for use by visiting research personnel.

Circulation and Parking

Vehicle Access

Operations and parking would be consolidated at the treatment site under this alternative and would minimize current internal traffic that operates between Fort Cronkhite and the treatment site. Alternative 2 includes construction of a one-way, 18-foot-wide ring road and new parking on the west side of The Center.

These elements would extend The Center's developed area by approximately 26,000 square feet outside the current footprint on a newly graded area. The ring road would provide emergency vehicle access to the facilities and would be used for The Center's day-to-day operational needs such as daily deliveries by large trucks, garbage pickup, fish deliveries, supplies, and animal

admissions. The east side of the new ring road would extend beyond the currently developed footprint and would be closed to public access. The ring road would be designed to separate the vehicles from the animal patients as well as the volunteers, staff, and visitors on foot.

Parking

A new parking lot would be provided on the west side of the treatment site, along the ring road. Alternative 2 would provide a total of 78 total parking spaces for daily operations, as opposed to 91 spaces under existing conditions. 43 spaces would be located in a new lot west of the Marine Science Community Education Center (including two handicapped spaces south of the Marine Mammal Medical Center). The existing 13 parking spaces along the access road would be expanded to 19 spaces, and another 16 spaces would be available outside The Center's assigned lands (potentially in the NPS Maintenance Yard).

Utilities

Electrical

Alternative 2 would maintain the two independent, above-grade, electrical feeds but would underground the feeds from the existing poles to new main switchgear equipment located within the new buildings at the northwest corner and within the above-grade silo enclosure on the east side of the treatment site.

New electrical feeds on the east side of the treatment site would distribute from existing overhead lines underground to a new pad-mounted transformer servicing feeds to the new 1,000 Amp 480/277V 3-phase main switchgear. This equipment would supply power to the new pumps and equipment associated with the LSS systems and animal care functions. The availability of this power supply has been confirmed with PG&E (MMC, 2004.

New electrical feeds on the west side of the treatment site would distribute from existing overhead lines underground to a new pad-mounted transformer servicing feeds to the new 800 Amp 208/120V 3-phase main switchgear. This equipment would supply power to the equipment and lighting within the buildings. The availability of this power supply has been confirmed with PG&E (MMC, 2004).

Water

The domestic water system under Alternative 2 would maintain the existing water service connection points. The details of how the domestic systems would use water supplied to the site are described in the water use summary report (Appendix E). Improved controls within the proposed LSS design would enable The Center to schedule peak water usage at non-peak times of day.

Under Alternative 2 all new buildings would include fire sprinklers. The design intent would be to extend the water-service feeding the existing on-site hydrant into the new buildings for fire sprinklers. A recent test of a nearby hydrant indicated that pressure and flow were more than adequate although the closest hydrant to the treatment site currently needs repair. The required minimum fire flow for this facility would be 900 gallons per minute for a duration of 60-90 minutes (Wells, personal communication). Fire flow is not included in the above water use quantities, as there is no way of predicting the extent of water use in an emergency.

Visitor Experience

Alternative 2 would provide an enhanced visitor experience. There would be a clear sense of arrival from the access drive to the designated parking area and a path from the main parking area to the entrance on the west side of the Marine Science Community Education Center. Visitors would enter a discovery room, which orients them to The Center and its work as well as natural history on marine mammals. From there, visitors would enter the courtyard where animals could be viewed, and husbandry and veterinary functions could be viewed through inverted bays into the food preparation/pharmacy, chart room, laboratory, and necropsy (post mortem). Exhibits would further explain treatment protocols, disease research, human interaction, and rescue and release techniques. The public would be able to observe animals from two observation areas at ground level by walking between these buildings and from a second-level observation deck.

School groups would experience interactive labs and learn from The Center's teachers in an indoor classroom. The observation deck and amphitheater facilities would provide for education programs adjacent to the animals.

Alternative 3: Consolidated Program, Remote Parking

Under Alternative 3, construction of new buildings and facilities and changes to utilities would be the same as described under Alternative 2 (see Figure II-3).

Circulation and Parking

Vehicle Access

Operations and parking would be consolidated at or adjacent to the treatment site under this alternative and would minimize current internal traffic that operates between Fort Cronkhite and the treatment site. The new ring road would be used only by emergency vehicles and daily deliveries by large trucks, garbage pickup, fish deliveries, supplies, and animal admissions. The east side of the new ring road would extend beyond the currently developed footprint and would be closed to the public.

Parking

A new parking lot would be constructed on the former kennel site to accommodate most of the parking demand under this alternative. Alternative 3 would provide a total of 78 total parking spaces for daily operations as opposed to 91 spaces in the existing conditions. Two handicapped spaces would be located south of the Marine Mammal Medical Center, 60 spaces would be located in a new parking area, located on the former kennel site, and 16 spaces would be available outside The Center's assigned lands (potentially in the NPS Maintenance Yard). The new parking area would be designed to fit into the existing landscape and would be partially screened by the existing topography and contours. A new access road would lead to this parking lot and an approximately 200-foot-long path would connect the remote parking area to The Center.

Visitor Experience

As with Alternative 2, Alternative 3 would provide an enhanced visitor experience. There would be a clear sense of arrival from the access drive with a new drive to the parking lot and a path leading from the parking area to the main entrance on the west side of the Marine Science Community Education Center. Once the visitor has arrived through the main entrance, the visitor experience would be the same as described above under Alternative 2.

Alternative 4: Split Program, Limited New Construction

Under this Alternative, The Center would encompass a total of approximately 30,200 square feet of building space split between Fort Cronkhite (7,590 square feet) and the treatment site (22,610 square feet) (see Figure II-4).

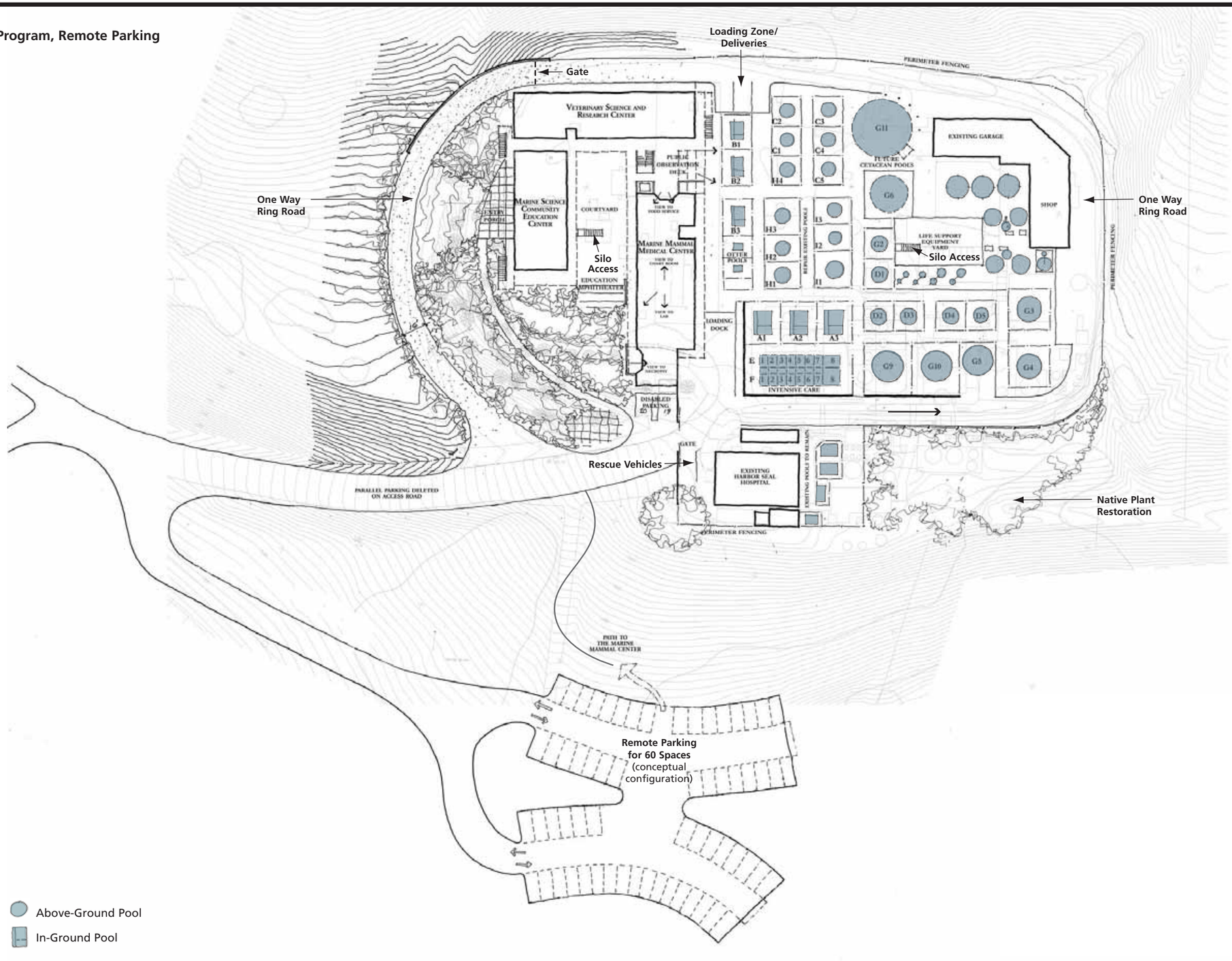
At the treatment site, approximately 12,900 square feet of existing space would be renovated. Approximately 7,430 square feet of the renovated space would be underground in the existing missile silos; 3,570 square feet would be in the existing garage and shop (which houses some labs and storage); and the remainder would be in the Harbor Seal Hospital (1,900 square feet). Like Alternatives 2 and 3, Alternative 4 includes the demolition of approximately 5,600 square feet of buildings. However, this alternative includes the construction of three new buildings totaling approximately 9,710 square feet as described below (as opposed to 17,500 square feet for Alternatives 2 and 3).

This alternative includes a new perimeter ring road for use by The Center and closed to the public. But, unlike Alternatives 2 and 3, the primary facility and road improvements would be made largely within the existing footprint of the center. The exception to this would be the construction of a remote parking lot for visitor and staff use on the former kennel site south of The Center.

Proposed New Facilities

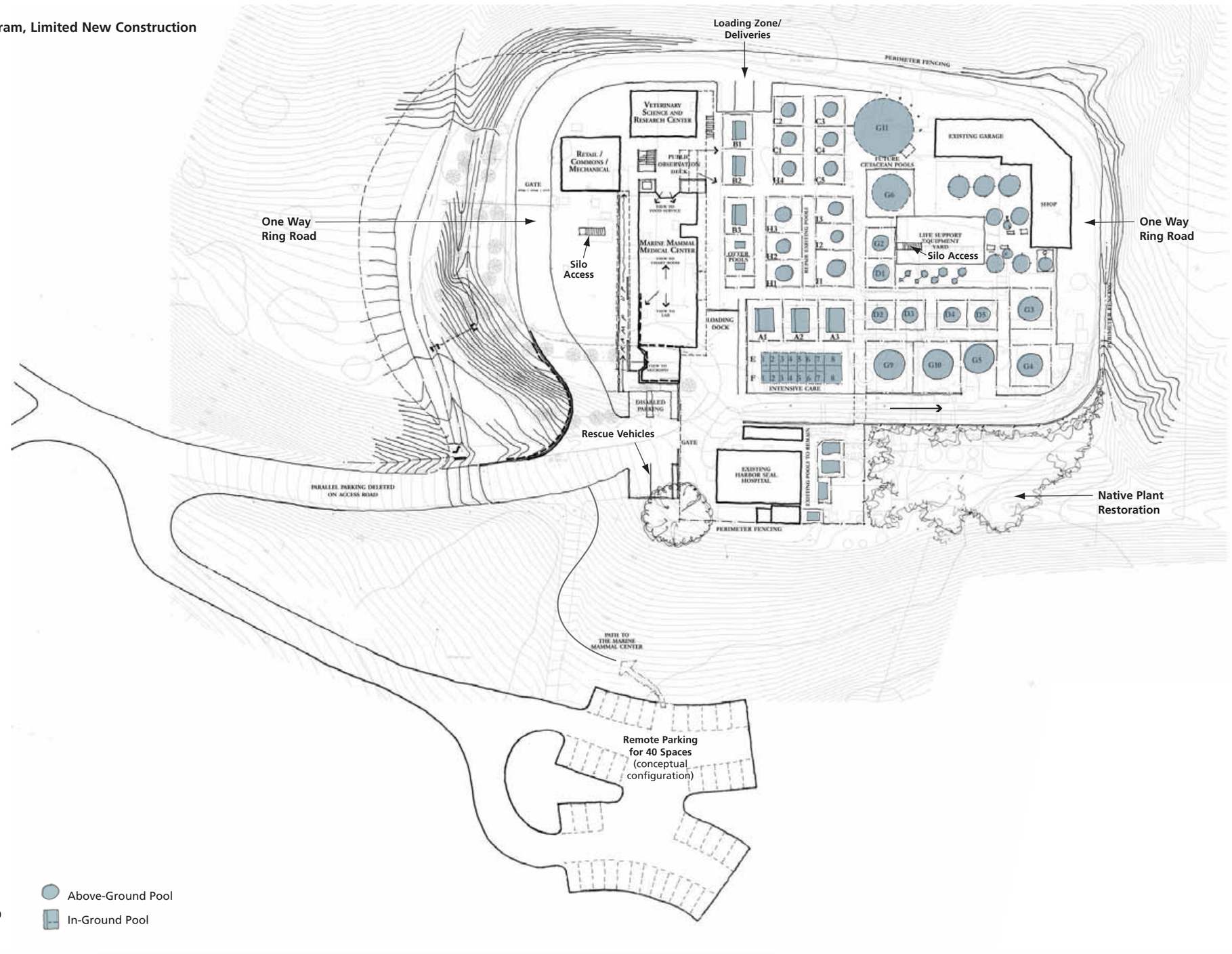
- **Marine Science Community Education Center:** There would be no Marine Science Community Education Center at the treatment site under Alternative 4. Education functions would be retained at Fort Cronkhite in Buildings #1044 and #1071 as described above.
- **Veterinary Science and Research Center:** Alternative 4 would include construction of a new Veterinary Science and Research Center at the treatment site. This two-story, 2,790-square foot facility would include veterinary science offices as well as facilities and life support offices. Construction of this building would replace the functions of the Veterinary Offices (1,750 square feet) and various storage buildings (1,120 square feet), which would be demolished.
- **Retail and Commons:** Alternative 4 would include a two-story, 3,000-square foot building that would house the gift shop, staff/volunteer commons (including tables and seating areas), public restrooms, and the mechanical room. Construction of this building would replace the functions of the Gift Shop and Gift Shop storage (600 and 320 square feet, respectively, which would be demolished).
- **Marine Mammal Medical Center:** Alternative 4 would construct a two-building, 3,920-square foot Marine Mammal Medical Center. It would include an animal food preparation area, pharmacy, chart room, research laboratory, and necropsy area. Construction of this building would replace the functions of the Necropsy Lab (250 square feet), the Fish Kitchen (900 square feet), and Chart Room (650 square feet), which would be demolished.

Figure II-3
Alternative Three: Consolidated Program, Remote Parking



SOURCE: Scott Dennis Architect, Noll & Tam Architects, and Environmental Science Associates

Figure II-4
Alternative Four: Split Program, Limited New Construction



SOURCE: Scott Dennis Architect, Noll & Tam Architects, and Environmental Science Associates

The Medical Center would be designed to promote the educational mission of The Center by incorporating observation windows in the buildings allowing visitors to view staff/volunteer functions and activities at The Center. Educational exhibits would be placed near the observation windows to help interpret The Center's activities.

- **Fort Cronkhite:** At Fort Cronkhite The Center would continue to use 4,840 square feet of space in Building #1065 for administration and 1,180 square feet of space in Building #1071 for education. The 1,570 square feet of space in Building #1044 would be converted from lab space to education and research (see Figure I-1).

Circulation and Parking

Vehicle Access

Some of The Center's operations and parking would be consolidated at the treatment site under this alternative to help reduce current internal traffic that operates between Fort Cronkhite and the treatment site. Like other action alternatives, Alternative 4 includes construction of a narrow ring road for emergency vehicle access and daily deliveries. Under this alternative, however, the road would be located within the existing developed footprint of The Center.

Parking

Under this alternative, parking would be split between the treatment site, in a new parking lot, and Fort Cronkhite. Alternative 4 would provide a total of 78 parking spaces, as opposed to 91 existing spaces. Two handicapped parking spaces would be included west of the Veterinary Science and Research Center, 40 spaces would be located at a new parking lot located south of The Center at the former kennel site, and 16 spaces would be available outside The Center's assigned lands (potentially in the NPS Maintenance Yard). The new remote lot would be partially screened, visually, by the topography in the area. An approximately 200-foot path would connect the remote parking area to The Center. Parking (20 spaces) for Fort Cronkhite buildings would continue to be accommodated in the Fort Cronkhite area.

Utilities

Utilities under Alternative 4 would be configured as described under Alternatives 2 and 3 with the exception that proposed wastewater flow and electrical demand could be slightly reduced under Alternative 4(Marine Mammal Center, 2003).

Visitor Experience

In Alternative 4, the sense of arrival would be less defined than in Alternatives 2 and 3. Since there is no discovery/orientation room, visitors would walk up the path from the main parking area and enter the courtyard, relying on outside exhibits for orientation. The inverted bays, looking into the food preparation/pharmacy, chart room, laboratory, and necropsy (post mortem) would be available for a more passive, self-guided learning experience. Visitors would be able to observe animals at ground level by walking between these buildings to an observation area.

The education building would remain about ½ mile away from the treatment site (at Fort Cronkhite). Program space would be very limited under this alternative. There would be no interactive labs. Education programs at the treatment site would take place on outdoor bleachers, as in Alternative 1.

Preferred Alternative

The Preferred Alternative for the Marine Mammal Center Site and Facilities Improvements would be Alternative 2. This choice is based on a determination that Alternative 2 would best meet the Project Need and Purpose while still meeting the requirements of NEPA and the National Park Service's NEPA guidelines. The consolidation of almost all of The Center's functions on or adjacent to the treatment site, including the location of new parking on the west side of the access drive and adjacent to the built area, would bring maximum efficiency to The Center's operations and avoid the impacts that would occur with the development of a remote parking lot.

Environmentally Preferred Alternative

The CEQ Regulations implementing NEPA and the National Park Service NEPA guidelines require that "the alternative or alternatives which were considered to be environmentally preferable" be identified (Council on Environmental Quality Regulations, Section 1505.2). Environmentally preferable is defined as "the alternative that will promote the national environmental policy as expressed in NEPA Section 101. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative that best protects, preserves, and enhances historic, cultural, and natural resources."

The environmentally preferable alternative for the Marine Mammal Center Site and Facilities Improvements is based on these national environmental policy goals. The National Park Service has determined that the environmentally preferable alternative for this project is Alternative 4. The smaller site and building footprint proposed for Alternative 4, when compared with Alternatives 2 and 3 would involve the least disruption to the biological and physical environment. Due to the reduced square footage of new construction, largely within the existing developed footprint, Alternative 4 would best protect, preserve, and enhance historic, cultural, and natural resources.

On the other hand, the Environmentally Preferred Alternative would bring no reduction in operational traffic and the associated safety improvements. In addition, operational functions under Alternative 4 would not fulfill project objectives for educational and site efficiencies as fully as the other action alternatives. The differences between the environmental impacts of Alternative 4 and the Preferred Alternative are not substantial given these considerations.

Alternatives Considered But Rejected

Several variations to these alternatives were considered during the planning process but were dismissed from further consideration for various reasons.

One alternative considered studied the inclusion of alternate new paved roads within The Center's built footprint, to ease delivery of large animals and equipment and to facilitate emergency access. In particular, this alternative considered construction of a road directly through the middle of the treatment site, in close proximity to the pens and pools. This alternative would have avoided impacts to wetlands but would have required substantially more grading and site work to accomplish. This particular alternative also would have been highly disruptive to the recovering mammals as a result of having a road and vehicles run adjacent to the

pens and pools. This alternative had greater environmental impacts to achieve similar results when compared to the alternatives studied.

Another alternative was considered that would have located small, dispersed parking areas throughout the facility, including on the southeastern side where the water treatment facilities are now located. This alternative was rejected because it was visually incompatible and disruptive. The alternatives evaluated in this EA had similar results with less environmental impacts.

Other alternatives were considered that either eliminated the ring road or included only a partial ring road on the south and east sides. Alternatives that considered no construction of a ring road were dismissed from further consideration since this would eliminate the possibility of providing adequate emergency (fire truck) access to the treatment site's facilities and therefore not meet the project's objectives. One alternative considered the construction of a partial ring road but would require construction of a hammer head turn around at the southeast corner of the facility. Physical resource impacts would have included major cut and fill and construction of a large, prominent retaining wall. This alternative would have greater environmental impacts to achieve the project objectives when compared to the alternatives studied.

An early alternative was considered that included an ocean outfall to bring salt water to the site. This component was rejected due to feasibility related to cost and the extensive time it would take to complete this effort including environmental permitting requirements.

Re-locating The Center to a new site either within or outside of GGNRA was also considered. No feasible sites were identified that would meet the project objectives and could be supported by The Center's network of staff and volunteer resources. Relocation outside the park also would mean the loss of a valuable park partner which was not desirable.

Comparison of Alternatives

This section compares the key features of the alternatives and summarizes the potential environmental consequences. Table II-1 identifies the key components of the alternatives proposed for the Marine Mammal Center Site and Facilities Improvements Project and assesses whether the alternatives fulfill the purpose of and need for the project. Table II-2 summarizes and compares the potential environmental consequences associated with each alternative. Potential environmental consequences are analyzed in more detail in Chapter 4, Environmental Consequences. Table II-3 presents square footage of proposed buildings under each alternative. Table II-4 summarizes the daily operational parking needs under each alternative.

Table II-1
Alternatives Comparison Table

Alternative Component	Alternative 1: (No Action)	Alternative 2	Alternative 3	Alternative 4
Marine Mammal Center Facilities	▪ Administrative, educational and research functions would continue to be located at Fort Cronkhite and separated from the treatment site	▪ All Marine Mammal Center functions would be consolidated at the treatment site in upgraded and expanded facilities	▪ Same as Alternative 2	▪ Administrative, educational and research functions would continue to be located at Fort Cronkhite and separated from the treatment site ▪ Replace some treatment site functions currently located in modified freight containers with new permanent buildings
Buildings	▪ 26,000 square feet of total built space ▪ 18,500 square feet of building space at the treatment site – Veterinary Offices – Necropsy Lab and Oiled Wildlife Station – Chart room – Fish Kitchen – Gift Shop – Outdoor Education Area ▪ 7,590 square feet of building space at Fort Cronkhite retained in three buildings – Administrative functions – Education rooms	▪ 35,200 square feet of total built space ▪ 30,400 square feet of building space at the treatment site – construct 17,500 square feet – renovate 12,900 square feet ▪ Demolish 5,600 square feet of non-historic structures on the treatment site ▪ New Facilities (construction of 17,500 sq. ft. as above) – New two-story, 5,760-square foot Marine Science Community Education Center – New two-story, 7,800-square foot Veterinary Science and Research Center – New one-story, 3,920-square foot Marine Mammal Medical Center ▪ 4,800 square feet of building space at Fort Cronkhite retained in one building ▪ No changes to the Harbor Seal Hospital. ▪ Demolish LSS equipment and install new equipment in and above silos	▪ Same as Alternative 2	▪ 30,200 square feet of total built space ▪ 22,610 square feet of building space at treatment site – construct 9,710 square feet – renovate 12,900 square feet ▪ Demolish 5,600 square feet of non-historic structures on the treatment site ▪ New Facilities (construction of 9,710 sq. ft. as above) – New two-story, 2,790-square foot Veterinary Science and Research Center – New one-story, 3,920-square foot Marine Mammal Medical Center – New 3,000-square foot Retail/Commons Center ▪ 7,590 square feet of building space at Fort Cronkhite retained in three buildings ▪ No changes to the Harbor Seal Hospital ▪ Demolish LSS equipment and install new equipment in and above silos

Table II-1 (Continued)
Alternatives Comparison Table

Alternative Component	Alternative 1: (No Action)	Alternative 2	Alternative 3	Alternative 4
Pens and Pools	▪ Pens and pools would continue to be used in their current configuration	▪ Upgrade pens and pools ▪ Replace existing structures with sturdier materials ▪ Provide shade structures to many pools ▪ Build pools at or near grade to enable easier transfer of animals and easier access to animals ▪ Upgrade and relocate cetacean pool	▪ Same as Alternative 2	▪ Same as Alternative 2
Amenities/Visitor Experience	▪ No additional visitor interpretation or education amenities would be provided ▪ Most classroom discussion would continue to be held outside with little opportunity to view the animals at the treatment site ▪ Limited visitor orientation and sense of arrival provided ▪ Outdoor seating for several dozen visitors	▪ Centralized courtyard and amphitheater providing seating for up to 60 visitors ▪ Public observation deck overlooking pens and pools ▪ Observation windows to necropsy, laboratory, chart room and marine mammal food preparation areas ▪ Sense of arrival and visitor orientation provided ▪ Visitor education and interpretive spaces provided	▪ Same as Alternative 2	▪ Public observation deck overlooking pens and pools ▪ Observation windows of necropsy, laboratory, chart room and marine mammal food preparation area ▪ Limited visitor orientation and sense of arrival provided ▪ Outdoor seating for several dozen visitors
Access and Parking	▪ 91 parking spaces split between the treatment site and Fort Cronkhite – 42 at treatment site – 13 on access road – 12 outside Center's assigned lands – 24 at Fort Cronkhite ▪ Special event overflow parking accommodated in other locations in the Headlands in coordination with NPS ▪ Buses park in NPS maintenance yard	▪ 78 parking spaces including 2 disabled access parking spaces – 43 at treatment site – 19 on access road – 16 outside Center's assigned lands – 0 at Fort Cronkhite ▪ New perimeter ring road to service emergency vehicles and deliveries ▪ Special event overflow parking – same as in Alternative 1 ▪ Buses park in NPS maintenance yard	▪ 78 parking spaces for staff and visitors, including 2 disabled access parking spaces – 62 at treatment site (former kennel and disabled access) – 0 on access road – 16 outside Center's assigned lands – 0 at Fort Cronkhite ▪ New perimeter ring road to service emergency vehicles and deliveries ▪ Special event overflow parking – same as in Alternative 1 ▪ Buses park in NPS maintenance yard	▪ 78 parking spaces for staff and visitors, including 2 disabled access parking spaces – 40 at treatment site (former kennel and disabled access) – 0 on access road – 16 outside Center's assigned lands – 0 at Fort Cronkhite ▪ New perimeter ring road to service emergency vehicles and deliveries ▪ Special event overflow parking – same as in Alternative 1 ▪ Buses park in NPS maintenance yard

Table II-1 (Continued)
Alternatives Comparison Table

Alternative Component	Alternative 1: (No Action)	Alternative 2	Alternative 3	Alternative 4
Utilities	■ 47,000-gallon water holding capacity in existing pens and pools ■ Use 4,520,000 - 5,950,000 gallons of water per year ■ Water intake, filtration, and discharge facilities would not be upgraded and would continue to operate inefficiently ■ Improvements to stormwater management and actions taken to avoid sewer lift station overflows only when funding allows	■ Pens and pools increased to 207,000-gallon water holding capacity ■ Use 3,702,000 – 5,747,000 gallons of water per year ■ Upgrade filtration system, relocated and housed underground in the old Nike silo ■ Improvements to stormwater management and actions taken to avoid sewer lift station overflows ■ No increase in requirements for gas or electric	■ Same as Alternative 2	■ Same as Alternative 2
Site Lighting	■ Site lighting would continue to impede upon views of night skies with some shielding of existing lights	■ Focus site lighting downward and shield structurally to allow for natural night skies ■ Site lighting would be designed to minimize adverse effect on marine mammal patients ■ Incorporate natural dark into site design to the extent possible	■ Same as Alternative 2	■ Same as Alternative 2

Table II-2
Summary of Environmental Consequences

Alternative 1 No Action	**Alternative 2** Consolidated Program	**Alternative 3** Consolidated Program, Remote Parking	**Alternative 4** Split Program, Limited New Construction
WATER RESOURCES			
Local, long-term, moderate, adverse effect on water resources associated with The Center's out-dated and inefficient system. *Water use:* 4.5 – 6 million gallons per year	Local, Long-term, Moderate, Beneficial Impact from increased efficiency in water use. *Water use:* 3.7 – 5.7 million gallons per year	Local, Long-term, Moderate, Beneficial Impact from increased efficiency in water use. *Water use:* 3.7 – 5.7 million gallons per year	Local, Long-term, Moderate, Beneficial Impact from increased efficiency in water use. *Water use:* 3.7 – 5.7 million gallons per year
No Increased stormwater Impacts.	Local, Long and Short-term, Minor, Adverse Impact from stormwater impacts – 29,000 square feet of additional impermeable surfaces.	Local, Long and Short-term, Minor, Adverse Impact from stormwater impacts – 46,200 square feet of additional impermeable surfaces.	Local, Long and Short-term, Minor, Adverse Impact from stormwater impacts. 13,470 square feet of additional impermeable surfaces.
No changes in wastewater/sanitary system	Local, Long-term, Moderate, Beneficial Impact from increased capacity to mitigate for lift-station overflows during storm conditions.	Local, Long-term, Moderate, Beneficial Impact from increased capacity to mitigate for lift-station overflows during storm conditions.	Local, Long-term, Moderate, Beneficial Impact from increased capacity to mitigate for lift-station overflows during storm conditions.
BIOLOGICAL RESOURCES			
	Placement of the ring road would result in the permanent fill of **.08 acres** of wetlands.	Placement of the ring road would result in the permanent fill of **.08** acres of wetlands.	Placement of the ring road would result in the permanent fill of **.08** feet of wetlands.
	Approximately **15** Monterey pine and cypress trees (potential to impact breeding and nesting birds) removed and **17,000 square feet (or .40 acres)** of non-native annual grassland removed for site expansion and parking.	Approximately **5** Monterey pine and cypress trees (potential to impact breeding and nesting birds) removed and **23,000 square feet (or .52 acres)** of non-native annual grassland removed for site expansion and parking..	Approximately **8** Monterey pine and cypress trees (potential to impact breeding and nesting birds) removed and **13,000 square feet (or .3 acres)** of non-native annual grassland removed for site expansion and parking.
	Approximately **8,200 square feet** of native plants would be restored on the southeast edge of the site.	Approximately **8,200 square feet** of native plants would be restored on the southeast edge of the site.	Approximately **8,200 square feet** of native plants would be restored on the southeast edge of the site.
		Construction of the remote parking has the potential to affect special status plants if they exist within the project boundary.	Construction of the remote parking has the potential to affect special status plants if they exist within the project boundary.

Table II-2 (Continued)
Summary of Environmental Consequences

Alternative 1 No Action	**Alternative 2** Consolidated Program	**Alternative 3** Consolidated Program, Remote Parking	**Alternative 4** Split Program, Limited New Construction
GEOLOGY, SOILS AND SEISMICITY			
No geologic, soil, or seismic safety impacts associated with project implementation would result.	Excavation of approximately **4,800** cubic yards of material and the placement of approximately **2,400** cubic yards of fill in the area of the proposed ring road and western edge additional parking.	Excavation of approximately **3,400** cubic yards of material, primarily in the area west of the existing Center and the remote parking area (kennel site), and the placement of approximately **2,200** cubic yards of fill in these areas and along the ring road.	Excavation of approximately **1,600** cubic yards of material, southwest corner of the existing Center site and the remote parking area, and placement of approximately **2,000** cubic yards of fill primarily around the ring road.
HAZARDOUS MATERIALS			
Alternative 1 would have no effect with respect to asbestos and lead-based paint.	Renovation could expose construction workers to hazardous levels of lead-based paint and asbestos.	Renovation could expose construction workers to hazardous levels of lead-based paint and asbestos.	Renovation could expose construction workers to hazardous levels of lead-based paint and asbestos.
	Inadvertent release of large quantities of these materials into the environment could adversely impact soil, surface waters, or groundwater quality.	Inadvertent release of large quantities of these materials into the environment could adversely impact soil, surface waters, or groundwater quality.	Inadvertent release of large quantities of these materials into the environment could adversely impact soil, surface waters, or groundwater quality.
AIR QUALITY			
Alternative 1 would have no effect with respect to air quality.	Construction of the project would generate fugitive dust (including PM10) and other criteria air pollutants from exhaust emissions.	Construction of the project would generate fugitive dust (including PM10) and other criteria air pollutants from exhaust emissions.	Construction of the project would generate fugitive dust (including PM10) and other criteria air pollutants from exhaust emissions.
NOISE			
Alternative 1 would have no effect with respect to noise emissions.	Construction noise levels would increase during 2 six-month periods of construction.	Construction noise levels would increase during 2 six-month periods of construction.	Construction noise levels would increase during 2 six-month periods of construction.
CULTURAL RESOURCES			
Cultural resources would be protected as they are currently.	Potential for the discovery of unidentified or unexpected subsurface archaeological resources during ground disturbance.	Potential for the discovery of unidentified or unexpected subsurface archaeological resources during ground disturbance.	Potential for the discovery of unidentified or unexpected subsurface archaeological resources during ground disturbance.
	Impacts to the views and vistas that now contribute to the cultural landscape would be considered moderate adverse impacts.	Impacts to the views and vistas that now contribute to the cultural landscape would be considered moderate adverse impacts.	Impacts to the views and vistas that now contribute to the cultural landscape would be considered moderate adverse impacts.
	New construction if designed to be compatible with the historic and cultural landscape would improve the degraded and inconsistent structures that now exist on the site.	New construction if designed to be compatible with the historic and cultural landscape would improve the degraded and inconsistent structures that now exist on the site.	New construction if designed to be compatible with the historic and cultural landscape would improve the degraded and inconsistent structures that now exist on the site.

Table II-2 (Continued)
Summary of Environmental Consequences

Alternative 1 No Action	**Alternative 2** Consolidated Program	**Alternative 3** Consolidated Program, Remote Parking	**Alternative 4** Split Program, Limited New Construction
TRANSPORTATION			
Problematic parking and circulation scenarios would continue to exist.	▪ 78 parking spaces including 2 disabled access parking spaces – 43 at treatment site – 19 on access road – 16 outside Center's assigned lands – 0 at Fort Cronkhite ▪ New perimeter ring road to service emergency vehicles and deliveries. ▪ Special event overflow parking – same as in Alternative 1 ▪ Buses park in NPS maintenance yard	▪ 78 parking spaces for staff and visitors, including 2 disabled access parking spaces – 62 at treatment site (former kennel and disabled access) – 0 on access road – 16 outside Center's assigned lands – 0 at Fort Cronkhite ▪ New perimeter ring road to service emergency vehicles and deliveries. ▪ Special event overflow parking – same as in Alternative 1 ▪ Buses park in NPS maintenance yard	▪ 78 parking spaces for staff and visitors, including 2 disabled access parking spaces – 40 at treatment site (former kennel and disabled access) – 0 on access road – 16 outside Center's assigned lands – 0 at Fort Cronkhite ▪ New perimeter ring road to service emergency vehicles and deliveries ▪ Special event overflow parking – same as in Alternative 1 ▪ Buses park in NPS maintenance yard
No additional vehicle trips generated by this alternative and no changes to site access, on-site circulation or parking. Negligible increase in visitors.	Up to ten additional visitors would be expected on peak days. Given current traffic volumes, this additional traffic (up to 15 vehicle trips) would represent an increase of less than 0.10 percent over current conditions.	Up to ten additional visitors would be expected on peak days. Given current traffic volumes, this additional traffic (up to 15 vehicle trips) would represent an increase of less than 0.10 percent over current conditions.	Less than ten additional visitors would be expected on peak days. Given current traffic volumes, this additional traffic (up to 8 vehicle trips) would represent an increase of less than 0.8 percent over current conditions.
Buses would continue to park in the NPS maintenance yard with difficult access to the site.	Buses would continue to park in the NPS maintenance yard with difficult access to the site.	Buses would continue to park in the NPS maintenance yard with difficult access to the site.	Buses would continue to park in the NPS maintenance yard with difficult access to the site.
VISUAL RESOURCES			
The Center's facilities would continue to be incompatible with other historic facilities in the area.	Construction activity would be visible by recreational users and park staff in the project area.	Construction activity would be visible by recreational users and park staff in the project area	Construction activity would be visible by recreational users and park staff in the project area
18,500 square feet of building space in predominantly single story structures at treatment site	Would include approximately 17,500 square feet of building space in predominantly two-story structures at treatment site.	Would include approximately 17,500 square feet of building space in predominantly two-story structures at treatment site.	Would include approximately 9,700 square feet of building space in one- and two-story structures at the treatment site.
RECREATION AND PUBLIC USE			
Sub-optimal viewing opportunities for the visiting public would continue.	Temporary adverse effect visitor experience at The Marine Mammal Center during construction.	Temporary adverse effect visitor experience at The Marine Mammal Center during construction..	Temporary adverse affect visitor experience at The Marine Mammal Center during construction..
Educational programs would continue to operate with insufficient facilities.	Beneficial effect on recreation and public use due to improved educational and observation facilities and increased public parking spaces.	Beneficial effect on recreation and public use due to improved educational and observation facilities and increased public parking spaces.	Beneficial effect on recreation and public use in the project area due to improved observation facilities.

Table II-3
Square Footage Alternatives Comparison Table

Site Component	Alternative 1: (No Action)	Alternative 2	Alternative 3	Alternative 4
TREATMENT SITE				
New Marine Mammal Medical Center	Will not be constructed	3,920 Square Feet	3,920 Square Feet	3,920 Square Feet
New Veterinary Science and Research Center	Will not be constructed	7,800 Square Feet	7,800 Square Feet	2,790 Square Feet
New Marine Science Community Education Center	Will not be constructed	5,760 Square Feet	5,760 Square Feet	3,000 Square Feet
Reuse at Treatment Site	18,500 Square Feet	12,9000 Square Feet	12,900 Square Feet	12,900 Square Feet
TOTAL TREATMENT SITE	18,500 Square Feet	30,380 Square Feet	30,380 Square Feet	22,610 Square Feet
TOTAL AT FORT CRONKHITE	7,590 Square Feet	4,800 Square Feet	4,800 Square Feet	7,590 Square Feet
TOTAL	26,090 Square Feet	35,180 Square Feet	35,180 Square Feet	30,200 Square Feet

Table II-4
Daily Operational Parking Space Needs

Site Component	Alternative 1: (No Action)	Alternative 2	Alternative 3	Alternative 4
Treatment Site	42	43	2	2
New Lot at Former Kennel Site	0	0	60	40
Access Road	13	19	0	0
Outside of Assigned Area (NPS Maintenance Yard or Fort Cronkhite)	12	16	16	16
Fort Cronkhite	24	0	0	20
TOTAL	91	78	78	78

Chapter III: Affected Environment

Introduction

This section presents topics included in the analysis of the Marine Mammal Center Site and Improvements Project Environmental Assessment and a rationale for their inclusion. Topics were selected based on federal law, regulations, and executive orders; National Park Service (NPS) management policies; and concerns expressed by the public, park staff, or other agencies during scoping and comment periods. This section also provides a discussion of topics that were dismissed from further analysis.

A short rationale for each impact topic considered in this chapter is given below. A description of the existing conditions for each selected topic is provided later in this chapter. The affected environment described in this chapter encompasses the geographical area affected by the alternatives. The local context for the proposed project is the Marine Mammal Center (The Center) and the regional context for the proposed project is the Golden Gate National Recreation Area (GGNRA) and Marin Headlands including Rodeo Beach. The potential impacts of each alternative within each topic area are presented in Chapter IV, Environmental Analysis.

Topics Considered in this Assessment

Natural Resources

The federal and state Endangered Species Acts (and associated legislation), Clean Water Act, Clean Air Act, and National Environmental Policy Act require that the effects of any federal undertaking examine natural resources. In addition, National Park Service management policies and natural resource management guidelines call for the consideration of natural resources in planning proposals. The Marine Mammal Center (The Center)is located within GGNRA – an area of abundant natural resources. It is therefore necessary to characterize both these natural resources and the environmental consequences to these resources that could result from implementation of the Marine Mammal Center Site and Improvements Project alternatives.

Analysis was performed for the following natural resource topics: water resources; biological resources; geology, soils and seismicity; hazardous materials; air quality; and noise.

Cultural Resources

The National Historic Preservation Act, the Archeological Resources Protection Act, Native American Graves Protection and Repatriation Act, and the National Environmental Policy Act require that the effects of any federal undertaking on cultural resources be examined. In addition, National Park Service management policies and cultural resource management guidelines call for the consideration of cultural resources in planning proposals. Historic resources exist within the project area and could be affected by the alternatives.

Social Resources

The analysis of social resources examines the effects of the Marine Mammal Center Site and Improvements Project on the social environment within the park. Analysis of transportation examines the effects of the alternatives on transportation in this area of the park. Conserving the park's scenery is a crucial component of the National Park Service 1916 Organic Act. Stewardship of GGNRA requires consideration of two integrated purposes: to preserve the park's unique natural and cultural resources and scenic beauty, and to make these resources available to visitors for study, enjoyment, and recreation. Park visitors utilize The Center and also use trails and roads in the surrounding area, as such alternatives' effects on visitor experience must be addressed.

Analysis was performed for the following social resource topics: transportation, visual resources, and recreation and public use.

Natural Resources

Water Resources

Water Use and Treatment

Water is obviously an integral part of operations at The Center. The total water available to all facilities in the Marin Headlands is provided by Marin Municipal Water District and is fed through a single municipal supply pipe line. The majority of water used by The Center's programs is directly related to animal care; more specifically, the majority of water is utilized in the Life Support Systems (LSS) that clean and re-circulate water contained in the animal pools. Domestic water utilization makes up the balance of total water use. The Center compiled a study of historic water use as part of planning for the project (Appendix E). As defined for this report, domestic water use primarily includes washing the animal pens although cooking, laundry, and restroom facilities are also included in these calculations. The current LSS systems have evolved into inefficient and often unreliable systems that deliver marginal water quality under certain environmental conditions.

Water use for the existing facilities is estimated based on water meter readings from December 1997 through June 2002. For the purpose of this evaluation, annual water uses for existing conditions are presented in two categories. The first category is based on average animal loading conditions and would represent a 'typical year', while the second category is based on higher animal loading conditions that occur during El Nino events (occurring at approximately 7-8 year intervals) . According to The Center's records, the most recent El Nino event occurred during 1998. The current total volume of water that can be contained in the existing pools totals about 47,000 gallons assuming all pools are filled. The total volume capacity of the pools is not, however, the basis of annual water use as pools are repeatedly emptied and filled. Based on the utilities record (Appendix E), the following volumes are historical averages for annual water use at The Center:

Typical Condition: 4,520,000 gallons per year

El Nino Condition: 5,950,000 gallons per year

Under typical conditions this averages out to approximately 12,400 gallons per day however a daily rate is not realistic as Center facilities are much more active in the spring and summer. A peak day (which would occur March to September) may average as much as 31,640 gallons per day. These averages include water use for the LSS systems, wash down of the animal pens and other general plumbing demands at the facility. The existing water use for each of these demands is summarized below and in Appendix E.

Water use for the existing life support systems (LSS) is assumed to include demands for backwashing the filters, flushing of the pools for water quality purposes, dumping and filling of pools for animal husbandry purposes, and intermittent maintenance work associated with the life support systems. Currently, the existing pools are dumped and filled approximately once per week during peak loading conditions to help maintain acceptable water quality. Backwashing the water filters is a fundamental operation necessary to purge the filters of accumulated particles so that the filters can continue to cleanse the re-circulated water. Backwashing the filters uses a lot of water and modern LSS systems are often designed to 'recover' water during the backwash cycle. 'Backwash recovery' capability for the existing LSS is limited at The Center.

TMMC above-grade piping

In their current configuration, the LSS systems Filters, Basins, Piping etc. at The Center are all above-grade and are exposed to sunlight resulting in UV degradation of equipment (a-long-term maintenance issue) and, more importantly, heat-gain is introduced into the water circulating through the systems. An unfortunate dynamic exists whereas the heat-gain introduced to the water systems typically coincides during the months of highest animal populations. Bacteria flourish in warmer water therefore this operational coincidence results in the out-dated LSS systems under-performing and delivering the poorest water quality just when the systems and staff are the most stressed. The poorer water quality during this time is not only an added health risk to the animals but results in conditions that are not safe for the staff working with the animals in the pools.

Domestic water use includes the animal care program for feeding the animals and washing down their pen enclosures; domestic water use for people includes personal hygiene, comfort and meal preparation. The single largest source of domestic water use is in washing down the existing pen enclosures. On-site testing confirmed that the hose connections used in washing down the pens deliver 15 gallons per minute (GPM) of water. Each of the 28 existing pens is 'washed down' for

10 minutes, 3 times per day (when occupied). Pens are typically occupied by animals 4 months (30 days x 4 = 112 days) of the year. Thus the domestic systems and wash-down functions which feed into the wastewater system are responsible for about 1.5 million gallons per year.

Storm Water and Wastewater Inputs

Wastewater from the Center is discharged through the Marin Headlands Sanitary Sewer system. The storm-water watershed above the site is first intercepted by an artificial open drainage swale that is located above the project site and beyond the project scope. Between this upstream swale and the project site is a secondary open-air drainage swale that intercepts storm water and diverts the storm water around the project site.

On-site: the existing storm water runoff surface-drains to open-air drainage swales at the perimeter that continue downstream as open-air swales paralleling the access road to the West and draining to the natural landscape to the South-East. Catch-basins added on-site drain to the same (downstream) open air drainage swales.

Area drains installed within the existing pens and pool areas are intended primarily for the wash-down operations in the pen enclosure. This operation necessitates washing down raw sewage therefore these area drains are connected directly to the wastewater system or sanitary sewer. The area drains within the existing pens (about 10,000 square feet) also receive rainfall. An NPS report produced in 2000 found that two to four times a year during extreme storm conditions the sanitary sewer lift-stations overflows. The rainfall from the Center's pen enclosures appears to be a contributing factor to the lift-station overflow.

Biological Resources

The project study area for this biological resources section encompasses all project components proposed under each alternative, including the Center and ancillary features such as parking and roadways and adjacent habitats or resources that could be directly or indirectly affected by the construction and operation of the proposed project.

Vegetation and Wildlife

Vegetation and wildlife occurring within the project area include vegetation communities that support wildlife that naturally occur within the greater Golden Gate National Recreation Area. Due to the past land use practices of the project area, including the military operations formerly at the site now occupied by the Marine Mammal Center, much of the native vegetation has been substantially altered. Remnants of native communities that do occur on the project site connect to larger vegetation communities and corridors that extend beyond the project boundaries. The site now contains two vegetation communities: Coastal scrub and annual grassland.

Coastal Scrub Community. The coastal scrub community occurs in patches within the project site and in a larger corridor along the southern boundary of the project site. This community is characterized by dense shrubs, grasses and wildflowers. Species in this community that were observed within the project boundaries include bush lupine (*Lupinus arboreus*), coyote brush (*Baccharis pilularis*), buckbrush (*Ceanothus* ssp.), and California coffeberry (*Rhamnus californica*). Several Monterey pines (*Pinus radiata*) and cypress trees (*Cupressus* sp.) were planted as a windbreak along the northwestern section of the project site and would be included

in this community. Some of these trees would be removed under the Project. Along the southern side of the project area this community becomes more dominant and part of a larger corridor of coastal scrub that extends beyond the boundaries of the project site.

Annual Grassland and Ruderal Community. Due to the extensive alteration of the project site, non-native annual grasses and ruderal (weedy) species now dominate most of the project area along the western and northern boundaries. Species within this community include wild oat (*Avena fatua*), rattlesnake grass (*Briza major*), rip-gut brome (*Bromus hordaceous*), and sweet fennel (*Foeniculum vulgare*). This community dominates much of the project area within the current footprint of the Center. Along the southern portions of the project boundary this community occurs as a mosaic within the coastal scrub community.

Native Plant Communities. Historically, coastal scrub, chaparral and coastal prairie habitats occurred throughout the GGNRA and within the Marine Mammal Center project area. Due to the historical land use of the project area and its former use as a missile site and military operation, while some natives remain, much of the native communities have been eliminated or substantially altered. These activities create a more hospitable environment for the establishment of invasive species. Increased populations of invasives have created inhospitable conditions for native plant populations.

Wildlife

The vegetation communities within the project area and within the regional context of the GGNRA, provide nesting, foraging, and corridor habitat for diversity of wildlife species. Species existing within the project area are those adapted to grassland and scrub habitat and include mammals, reptiles, amphibians and birds. Large mammals such as black-tailed deer (*Odocoileus hemionus columbianus*), mountain lion (*Felis concolor*), coyote (*Canis latrans*), grey fox (*Urocyon cinereargenteus*), bobcat (*Lynx rufus*)and raccoon (*Procyon lotor*) migrate through the project site. Small mammals and rodents such as western harvest mouse (*Reithrodontomys megalotis*), Botta's pocket gopher (*Thomomys bottae*), and deer mouse (*Peromyscus maniculatis*)use the grassland communities for foraging and nesting materials. Nesting birds and raptors use the grassland and mature non-native trees for nesting and foraging materials. The coastal location of the project site likely serves as refugia for a variety of common land birds, migrating birds and raptors such as white tailed kite (*Elanus leucurus*), great horned owl (*Bubo virginianus*), and red tailed hawk (*Buteo jamaicensis*).

Special-Status Species

Special status plants and animals species include those species that are listed as endangered, threatened or as species of special concern by state and federal agencies. A reconnaissance-level survey was conducted by an ESA biologist on October 21, 2003. The purpose of the visit was to identify habitat that could support special-status plant and animal species. Prior to the site visit the California Natural

Diversity Database (CNDDB) was queried and the Fish and Wildlife Service provided a list of Special status species for Marin County and five surrounding USGS 7.5 minute quadrangles including Point Bonita, San Francisco North, San Rafael Mountain, San Quentin, and Bolinas.

Plants

A total of 15 federally listed endangered or threatened and 11 other special-status plants are reported with potential to occur within the vicinity of the project area (See Appendix B). Of these 26, only four have at least moderate potential to occur within the project area boundaries. Many of the listed species occur on serpentine and/or sand soils or in unique habitats not present on the project site. Due to past land use practices, including the military operations at the project site, the habitat for these special-status plants has been substantially altered and likely no longer exists at the project site. However, since no rare plant surveys have been conducted at the site, the presence or absence of special-status plants within the vicinity of the project site cannot be verified.

Wildlife

A total of 25 special-status animals are reported with potential to occur within the vicinity of the project site. Of these, only the nesting white tailed kite (*Elanus leucurus*) and saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*) are expected to occur in the close vicinity of the project site. White tailed kites nest in dense coastal scrub vegetation that occurs along the southern perimeter of the project area. Saltmarsh common yellowthroat is a federal species of special concern and CNDDB reports occurrences in Rodeo Lagoon, less than one mile from the project site (CDFG 2003). This occurrence is outside of the project boundary, however this species could also occur in drainages adjacent to the project site. Red-legged frog occurring in near-by water bodies may use lands near the project as possible upland habitat. Brown pelican and Tidewater goby are found in Rodeo Lagoon.

In addition to special-status species, non-listed species that occur within the project area and that may be impacted by construction activities include the monarch butterfly and nesting birds and raptors. Monarch butterflies hold no federal protection status, overwintering sites for this species are considered unique to California and are protected by CDFG. This species is known to overwinter in the Tennessee Valley, Fort Mason and Fort Baker. Monarch butterflies roost in eucalyptus or cypress trees near a constant water source. CNDDB reports a known wintering site for monarch butterflies in a eucalyptus grove at Fort Barry, adjacent to the youth hostel (See Appendix B). The closest known roosting site is outside the project.

Many nesting and breeding birds are protected by the federal Migratory Bird Treaty Act. Nesting birds and raptors may occur in the Monterey pine and large cypress trees and in grasslands located on the project site as well as use the dense stands of coyote brush south and east of the project site for nesting and foraging. Raptors observed during reconnaissance-level surveys include red tailed hawk, red-shouldered hawk (*Buteo lineatus*), American kestrel (*Falco sparverius*), and white-tailed kite. Passerine species (song birds) observed during the site visit include California thrasher (*Toxostoma curvirostre*), western meadowlark (*Sturnella neglecta*), and northern flicker (*Colaptes auratus*). Great-horned owls are known to be nesting in the Fort Cronkhite area (GGNRA,2004).

Wetlands

The National Park Service (NPS) conducted a wetland inventory for the entire Rodeo Valley in 2002; however, the area around The Center was not mapped either for reasons of access or because it fell below the minimum mapping area requirements. NPS staff have done a preliminary wetland assessment and it is estimated there are .08 acres of wetlands occurring within the project area that may fall under the jurisdiction of the U.S. Corps of Engineers (Castellini 2003) (see Figure III-1). Many of these features are narrow drainages along the northern side of the existing Marine Mammal Center facilities and are the result of past land use practices. These features are the result of natural drainages and installed concrete or asphalt drainages that have accumulated sediment and debris resulting in establishment of wetland vegetation. These features are seasonal and of low habitat quality. Vegetation within these features include rush (*Juncus* sp.), umbrella sedge (*Cyperus eragrostis*), curly dock (*Rumex crispus*), and Italian ryegrass (*Lolium multiflorum*). A larger drainage swale is located along the north eastern side of the treatment site facilities at the bottom of the hillside and adjacent to the concrete drainage ditch. This swale includes curly dock, umbrella sedge, rush, and mature willows (*Salix* sp.). This wetland swale is seasonal and higher habitat quality, providing habitat for such species as pacific tree frog (*Hyla regilla*) and western toad (*Bufo boreas*).

Southeast of the treatment site adjacent to the former kennel site is a much larger contiguous wetland area that contains Palustrine Emergent vegetation at the top of the drainage and Palustrine Scrub-Shrub further down the drainage.

Regulatory Background

Special Status Species

As defined in this document, species are accorded “special-status” because of their recognized rarity or vulnerability to various causes of habitat loss or population decline. Some are formally listed or receive specific protection defined in federal or state endangered species legislation. Other species have no formal listing status as threatened or endangered, but have designations as “rare” or “sensitive” on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged experts, such as the California Native Plant Society (CNPS).

Migratory Bird Treaty Act

The Federal Migratory Bird Treaty Act (16 U.S.C., Sec. 703, Supp. I, 1989) prohibits the killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, and many others. The Migratory Bird Executive Order of January 11, 2001 directs executive departments and agencies to take certain actions to implement this Act, and defines the responsibilities of each federal agency taking actions that have, or are likely to have, a measurable affect on migratory bird populations. All project actions within the GGNRA must comply with this act; therefore, they cannot result in unauthorized take of migratory birds.

Wetlands and Waters of the United States

Wetlands and other water resources, e.g., rivers, streams and natural ponds, are a subset of “waters of the United States” and receive protection under Section 404 of the Clean Water Act (CWA). The Army Corps of Engineers (the Corps) has primary federal responsibility for administering regulations that concern waters and wetlands. Waters of the U.S. and their lateral

Figure III-1
Potential USACE Jurisdictional Wetlands in the Vicinity of the Marine Mammal Center

SOURCE: National Park Service

limits are defined in 33 CFR Part 328.3(a) and include streams that are tributaries to navigable waters and their adjacent wetlands. The lateral limits of jurisdiction for a non-tidal stream are measured at the line of Ordinary High Water Mark (OWHM) (33 CFR Part 328.3(e)) or the limit of adjacent wetlands (33 CFR Part 328.3(b)). Any permanent extension of the limits of an existing water of the United States, whether natural or human-made, results in similar extension of Corps jurisdiction (33 CFR Part 328.5).

Waters of the U.S. fall into two categories: wetlands and other waters. Other waters include waterbodies and watercourses such as rivers, streams, lakes, springs, ponds, coastal waters, and estuaries. Wetlands include marshes, meadows, seep areas, floodplains, basins, and other areas experiencing extended seasonal soil saturation. Seasonally, or intermittently-inundated features such as seasonal pools, streams and tidal marshes are categorized as wetlands if they have hydric soils and support wetland plant communities. Seasonally-inundated waterbodies or watercourses that do not exhibit wetland characteristics are classified as other waters of the United States.

Under Section 10 of the Rivers and Harbors Act of 1899, the construction of structures in, over, or under, as well as excavation of material from or deposition of materials into 'navigable waters' is regulated by the Corps. The term 'navigable waters' of the United States means those waters of the U.S. that are subject to the ebb and flow of tide shoreward to the Mean High Water Mark (MHW) and/or are presently used, or may be susceptible to use, to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the water body and is not extinguished by later actions or events which impede or destroy navigable capacity (33 CFR 329. 4).

Section 10 jurisdiction is determined for tidal waters as the Mean High Tide Line (MHW) and in non-tidal areas, the OHWM is used. Navigable waters typically have the same boundaries as, or lie within the boundaries of, waters of the United States.

Geology, Soils, and Seismicity

Geologic and Seismic Setting

Regional and Site Geology

The Center is located on a site that has been highly disturbed. Paleontological resources are not expected to be found in the project area. Marine sedimentary and volcanic rocks of the Franciscan Complex underlie the Marin Headlands in the vicinity of the Marine Mammal Center.[1] The main area of the Center property is located on a relatively level cut-and-fill pad that was originally constructed for a Nike Missile battery site. The pad is located at the base of an over-cut slope (approximately 2:1 [horizontal to vertical]). The site is underlain by sandstone and shale of the Franciscan Complex (Rice and Smith 1976); outcrops of shale bedrock occur on the west portion of the slope and sandstone outcrops occur on the east portion (Cleary Consultants, Inc. 2003). Bedrock underlying the slopes and valleys around the project site also includes Franciscan chert (ancient sea floor) and greenstone (altered volcanic rocks), and young colluvium. Surficial erosion gullies occur in the shallow soils on portions of this cut slope.

[1] The Franciscan Complex is the assemblage of rocks that form the basement rock of the Coast Ranges east of the San Andreas fault. These rocks were named at San Francisco (Elder, 2001).

Exploratory soil borings drilled as part of a geotechnical investigation for this project encountered soils ranging from dense gravelly clayey sand fill over stiff to hard sandy clay on the western portion of the site, in the vicinity of the proposed new buildings. Another boring, taken near the northern boundary in the area of the largest proposed embedded tank (tank G11), encountered clayey sand over very dense weathered sandstone bedrock of the Franciscan Complex. A boring taken in the southeast corner of the main Center site pad encountered layer of medium dense clayey sand fill over approximately seven feet of soft sandy clay fill, which overlay stiff sandy clay, also possibly fill, to the boring depth of 15 feet (Cleary Consultants, Inc., 2003). The approximate location of the exploratory borings is shown in Figure III-2.

Soils located in the Center vicinity, as classified by the Natural Resource Conservation Service (NRCS), include the *Xerothents, fill* at the Center site, and *Tamalpais-Barnabe Variant very gravelly loams* to the north, east, and south, and *Cronkhite-Barnabe complex* soils west to the west. *Xerothents, fill* consists of material that has been mechanically moved and mixed, and may contain varying amounts of rock, concrete, asphalt, and other material. *Tamalpais* and *Barnabe* series soils are made up of upland soils derived from weathered chert and sandstone and *Cronkhite* soils are made up of soils derived from sandstone and shale (USDA NRCS, 1985).

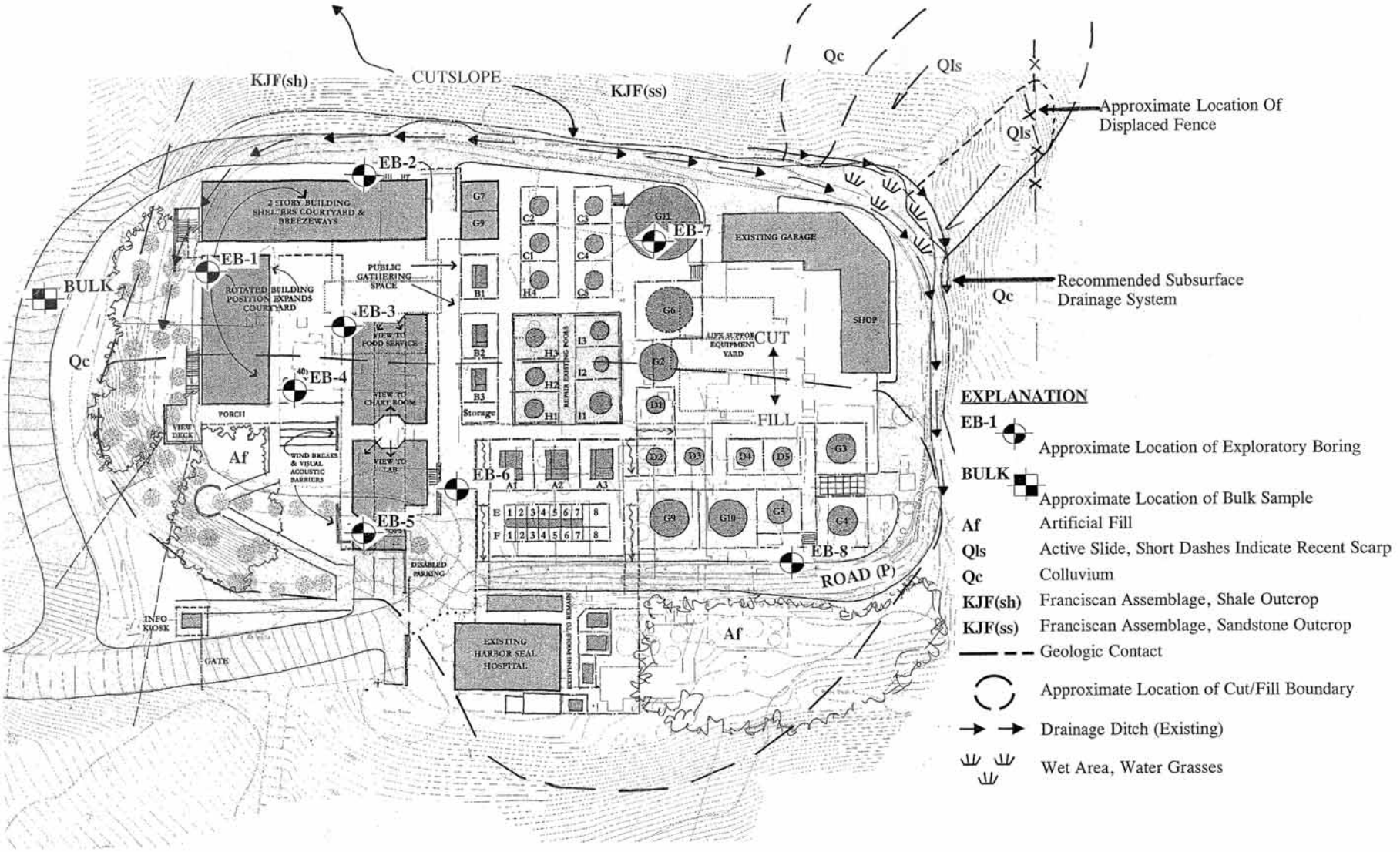
Perched groundwater was encountered at one of the eight borings, taken near the northern boundary on the west side of the (at the location of one of the new buildings). During boring, the groundwater was encountered at a depth of approximately 2.5 feet, and 3.5 hours after drilling at a depth of 13.5 feet.

Geologic Hazards

The geologic map of southern Marin County (Rice and Smith, 2003) indicates that numerous landslides have occurred in the site vicinity. The site is in an area that "contains few if any large, mapped landslides but locally contains scattered small landslides and questionable, identified larger landslides" according to a map showing the distribution of slides and earth flows in Marin County (Wentworth, et al., 1997). Several debris-flow source areas are located on the slopes northwest, north, and northeast of the site according to a map of principal debris-flow source areas in the County (Ellen, et al., 1997). An active slide area, approximately 100 feet wide and 150 feet long, is located near the northeastern corner of the Center site (see figure III-2). According to the geotechnical investigation conducted for this project, the slide apparently occurred shortly after the original grading of the site during the 1950s (Cleary Associates, Inc., 2003). The toe of the slide is near the area of the proposed perimeter roadway. Based on the shallow depth of the slide scarp and the moderate slope of the slide area (3:1, horizontal to vertical), significant further slope movement in this area is not anticipated, although wet conditions at the base of the slide could contribute to creep or minor movement of the slide (Cleary Consultants, Inc., 2003). Soil erosion, including rill or gully erosion[2] of the shallow soils on the existing cut slope or erosion of fill materials at the site, could undermine road or building foundations or destabilize engineered slopes.

[2] Rill erosion or "rilling" refers to the development of numerous minute, closely spaced channels resulting from the uneven removal of surface soil by running water that is concentrated in streamlets of sufficient volume and velocity to generate cutting power. Rilling is the intermediate process between sheet erosion and gully erosion.

Figure III-2
Location of Geologic Features and Exploratory Soil Borings



SOURCE: Cleary Consultants, Inc. and Noll & Tam Architects

NOTE: Conceptual road design not representative of specific alternatives

Seismic Hazards

The San Francisco Bay Area is considered seismically active, and earthquakes are an unavoidable geologic hazard at the Marin Headlands. The San Francisco Bay Area region contains both active and potentially active faults.[3] The closest active faults to the Center are the San Andreas fault, located approximately four miles west, the Hayward fault, located approximately 19 miles east; other active regional faults include the Rodgers Creek fault, located about 24 miles northeast, and the San Gregorio-Hosgri-Seal Cove Fault Zone, located about 22 miles southwest (Jennings 1994) (see Figure III-3). Recent studies by the United States Geological Survey (USGS) indicate there is a 62 percent likelihood of a Richter magnitude 6.7 or higher earthquake occurring in the Bay Area in the next 30 years (USGS, 2003). This area of the Marin Headlands would experience strong to very strong ground shaking from an earthquake on the closer faults, and moderate to strong ground shaking from an earthquake on the more distant faults (ABAG, 2003).

Seismic ground shaking may trigger landslides or debris flows and may cause secondary ground failures, including liquefaction, lateral spreading, and ground lurching. As noted in the Geologic Hazards discussion above, several debris-flow sources have been identified in the slopes north of the site. Liquefaction is the sudden loss of strength in loose, saturated materials (predominantly sands) during strong ground shaking, which results in the temporary fluid-like behavior of those materials (much like quicksand). Liquefaction typically occurs in areas where groundwater is shallow, and soils consist of poorly consolidated, well-sorted, clay-free sands and silts. The geotechnical investigation found that the Center site primarily is underlain by medium-dense to dense clayey sand, very stiff to hard sandy clay, and relatively shallow Franciscan bedrock. Based on these conditions, the investigation concluded that the likelihood of soil liquefaction during strong ground shaking at the site is low (Cleary Consultants, Inc., 2003).

The geotechnical investigation conducted at the site concluded that the hazard resulting from surface fault rupture at the site is low (Cleary Consultants, Inc., 2003).

Regulatory Background

Seismic Hazards Mapping Act

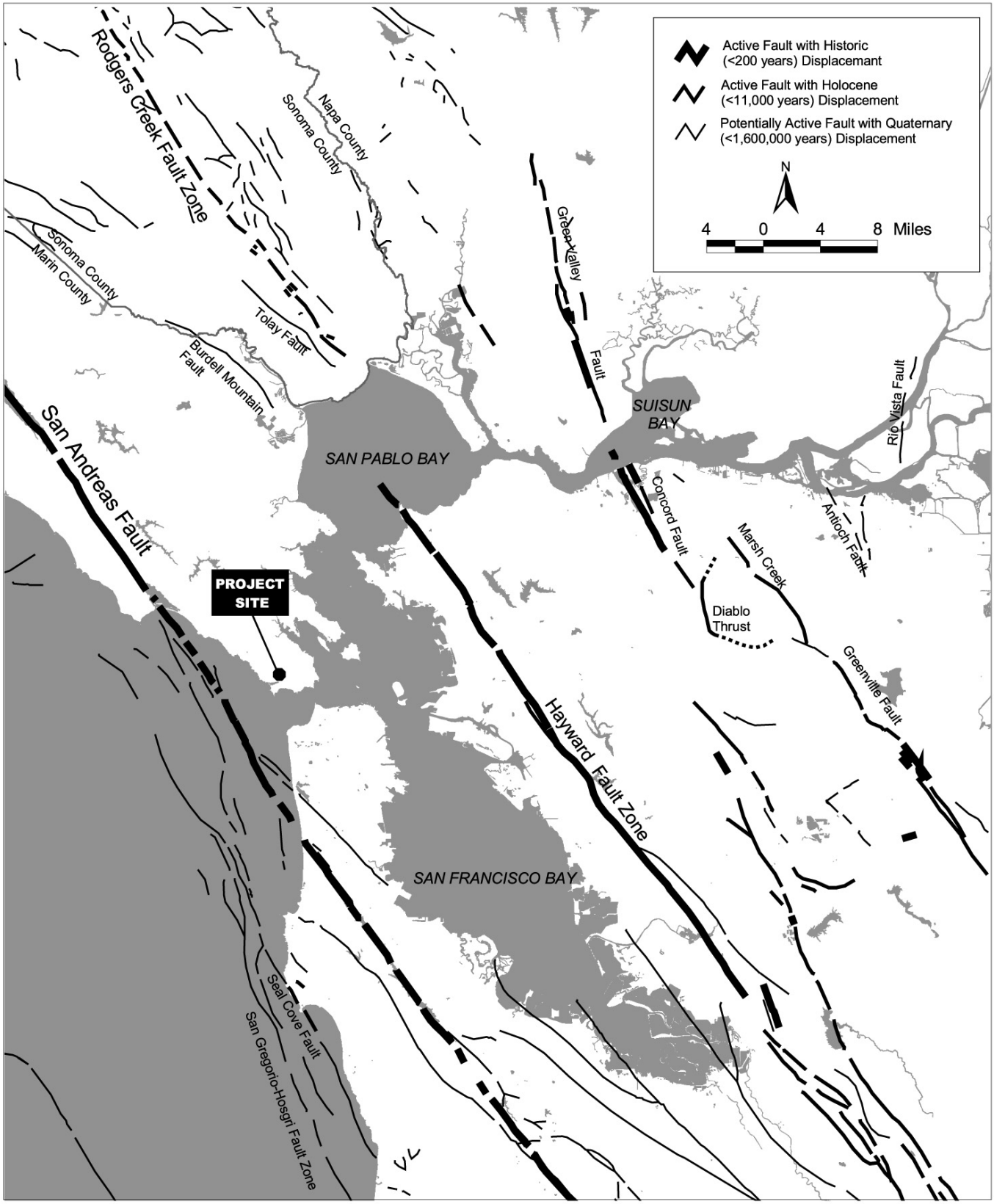
The Seismic Hazards Mapping Act was developed to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and from other hazards caused by earthquakes. This act requires the State Geologist to delineate various seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones. The California Geologic Survey has not yet completed a preliminary Seismic Hazards Map for the western portion of the Marin Headlands, which includes the project location.

California Building Code

The California Building Code (California Code of Regulations Title 24, Part 2) is part of the California Building Standards Code (CBSC, 1995). The California Building Code incorporates by

[3] An active fault is defined by the State of California as a fault that has experienced surface displacement within Holocene time (approximately the last 10,000 years). A potentially active fault is defined as a fault that has shown evidence of surface displacement during the Quaternary period (last 1.6 million years), unless direct geologic evidence demonstrates inactivity for all of the Holocene or longer. This definition does not, of course, mean that faults lacking evidence of surface displacement are necessarily inactive. "Sufficiently active" is also used to describe a fault if there is some evidence that Holocene displacement occurred on one or more of its segments or branches (Hart 1997).

Figure III-3
Active and Potentially Active Bay Area Earthquake Faults



SOURCE: California Department of Conservation, Division of Mines and Geology (After Jennings; 1994)

reference, with necessary California amendments, the Uniform Building Code (UBC), which is published by the International Conference of Building Officials and is a widely adopted model building code in the United States. About one-third of the text within the California Building Code has been tailored for California earthquake conditions (ICBO, 1997).

Hazardous Materials

United States Army Corps of Engineers recently conducted environmental site investigations at several formerly used defense sites on GGNRA lands. No significant hazardous materials were found on The Center site. Under a separate transaction, elevator hydraulic fluid from the former Nike missile facility on The Center site was recently removed by the Army Corps of Engineers (DiStefano, Tony – personal communication).

Due to the considerable age of many of the structures within the Marin headlands, lead-based paint and asbestos are commonly identified in historic buildings. In general, structures constructed before December 31, 1978 are at-risk for lead-based paint, and asbestos was commonly used as a building material until 1978. An evaluation to determine the potential presence of lead-based paint has been conducted on structures planned for removal at The Center (McKewan, Tom – personal communication). Lead based paint was found on several above ground structures, such as pipes and the tops of the silos. No lead has leaked into the soil. Asbestos was found on the transit panels in the silo control rooms.

Regulatory Setting

Under Title 22 of the California Code of Regulations, Division 4.5, Chapter 11, Article 3, hazardous materials are grouped into the following four categories, based on their properties: toxic (causes human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), and reactive (causes explosions or generates toxic gases). Hazardous materials have been and are commonly used in commercial, agricultural, and industrial applications, as well as in residential areas to a limited extent.

The criteria that render a material hazardous also make a waste hazardous (California Health and Safety Code, Section 25151). If improperly handled, hazardous materials and wastes can result in public health hazards if released to the soil or groundwater or through airborne releases in vapors, fumes, or dust.

Air Quality

Ambient Air Quality Standards

The federal Clean Air Act Amendments of 1970 established national ambient air quality standards, and individual states retained the option to adopt more stringent standards and to include other pollutants. California had already established its own air quality standards when federal standards were established, and because of the unique meteorological conditions and associated air quality problems in the state, there is considerable diversity between state and federal standards currently in affect in California.

The ambient air quality standards incorporate a margin of safety and are designed to protect those segments of the public most susceptible to respiratory distress, known as sensitive receptors, such as asthmatics, the very young, the elderly, people weak from other illness or

disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels somewhat above the ambient air quality standards before adverse health effects are observed.

Air Quality Monitoring Data

Federal, state, and local agencies operate a network of monitoring stations throughout California to provide data on ambient concentrations of air pollutants. Recent monitoring data from monitoring stations in San Francisco indicate occasional exceedances of state standard for PM10. All other criteria air quality standards have not been exceeded in San Francisco over the past five years.

Air Quality Plans

The federal Clean Air Act requires nonattainment and maintenance areas to prepare air quality plans that include strategies for attaining and maintaining the national standards. The state California Clean Air Act also requires plans for nonattainment areas. Thus, just as areas in California have two sets of designations, many – including the Bay Area – also have two sets of air quality plans: one to meet federal requirements relative to the national standards and another to meet state requirements relative to the state standards.

State Implementation Plan

Regional air quality plans developed under the federal Clean Air Act are included in an overall program referred to as State Implementation Plans (SIPs). Plans have been prepared for the Bay Area to address nonattainment and maintenance issues related to the national (one-hour) ozone standard and the national carbon monoxide standard.

A Bay Area ozone SIP, the *Ozone Attainment Plan* (Association of Bay Area governments 1999), has recently been approved by U.S. EPA. This 2001 Ozone Attainment Plan replaces the previous Bay Area ozone SIP (i.e., the *Ozone Maintenance Plan*) in conjunction with the approved portions of the 1999 Plan. The *Carbon Monoxide Maintenance Plan* (Association of Bay Area Governments 1994) was developed to ensure continued attainment of the national carbon monoxide standard in the Bay Area.

Clean Air Plan

The Bay Area Air Quality Management District (2000) developed the *Bay Area 2000 Clean Air Plan* to meet planning requirements under the state California Clean Air Act. This plan was developed to address the nonattainment designation of the Bay Area with respect to the state ozone standard.

Conformity With Adopted Air Quality Plans

U.S. EPA also has developed criteria and procedures for determining the conformity of federal actions to the applicable SIPs. The General Conformity Rule is used to assess conformity with an applicable SIP. The General Conformity Rule states that an action may be classified as exempt if emissions will not increase, or an increase in emissions is clearly de minimis. Because of the relatively small scale of the proposed project and because there would be no operational emissions of criteria air pollutants, the Marine Mammal Center Site and Improvements Project would have emissions below the “de minimus” threshold, and therefore would be presumed to be in conformance with the General Conformity Rule.

Other Regulatory Requirements

California Air Resources Board (CARB), the State's air quality management agency, is responsible for establishing and reviewing the state ambient air quality standards, compiling the California SIP and securing approval of that plan from U.S. EPA. CARB also oversees the activities of air quality management districts, which are organized at the county or regional level. As a general matter, U.S. EPA and CARB regulate emissions from mobile sources, and the air districts regulate emissions from stationary sources associated with industrial and commercial facilities.

In the Bay Area, the Bay Area Air Quality Management District (BAAQMD) is the regional agency empowered to regulate air pollutant emissions from stationary sources. The BAAQMD also monitors odors through its Regulation 7, which requires the District to take certain enforcement actions after receiving 10 or more complainants over a 90 day period. Once review under Regulation 7 is initiated, the BAAQMD would collect air samples and determine the dilution threshold necessary to render the odor to an undetectable level. If the measured dilution rate exceeds a 4:1 ratio at the property line or the standard for the given height of the emission source, then the operator must reduce odor emissions to below the threshold.

Sensitive Receptors

Some land uses are considered more sensitive than others to odors and air pollution. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions source, or duration of exposure to air pollutants. Schools, hospitals and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people and the infirm are more susceptible to respiratory infections and other air quality-related health problems than the general public. Recreational and residential areas are also sensitive to poor air quality.

Noise

Sound levels are the audible intensities of air pressure vibrations, and are most often measured with the logarithmic decibel (dB) scale. To consider the human response to the pitch and loudness of a given sound in the context of environmental noise, the A-weighted frequency dependent scale (dBA) is usually employed. The equivalent energy indicator, Leq, is an average of noise over a stated time period, usually one-hour. The day-night average, Ldn, is a 24-hour average, which accounts for the greater sensitivity of most people to nighttime noise. Generally, a 3 dB difference at any time is noticeable to most people and a difference of 10 dB is perceived as a doubling of loudness.

Noise-Sensitive Uses

Certain types of land uses are considered to be more sensitive to ambient noise levels than others, due to the amount of noise exposure (in terms of both exposure time and intensity) and the types of activities typically involved with these land uses. Schools, libraries, churches, hospitals, convalescent and nursing homes, auditoriums, parks, and outdoor recreation areas are generally more sensitive to noise than are commercial and industrial land uses. Residences may also be considered noise-sensitive uses because residents may be disturbed by noise. Land uses within the vicinity of the project study area are primarily recreational although some buildings southwest of the site house office and conference uses.

In a park setting, a natural soundscape is an area characterized by certain ambient acoustical and sound level qualities, absent the intrusion of sounds caused by humans or human technology. The natural soundscape is a component of any park setting that is intended to be managed or appreciated as natural, such as wilderness areas. The natural soundscape is viewed as a resource, as having value for its presence, and as a value to be appreciated by visitors. Many park visitors have an expectation of seeing, hearing and experiencing phenomena associated with a specific natural environment. The sounds made by wind, birds, geysers, elk, wolves, waterfalls, and many other natural phenomena are associated by visitors with unique features and resources of parks.

The marine mammals on the site are not as sensitive to noise impacts as some animals might be in that their natural environment (the surf and ocean)is naturally noisy however, sudden loud noises or threatening noises, etc would be stressful to the animals (Haulena, 2004).

Regulatory Requirements

Although there is not a Soundscape Management Plan for GGNRA noise management will use Director's Order #47: Soundscape Preservation and Noise Management. The key directive from this Order is that where natural soundscape conditions are currently not impacted by inappropriate noise sources, the objective must be to maintain those conditions. Where the soundscape is found to be degraded, the objective is to facilitate and promote progress toward the restoration of the natural soundscape.

Existing Noise Sources

The ambient noise environment in the project area is primarily influenced by motor vehicles traveling on Bunker Road. Occasional aircraft overflights also contribute to the ambient noise environment.

Background noise in the park is generally much lower than that expected or tolerated in developed areas in which federal noise guidelines are generally applied.

Park operations generate noise intermittently from personnel, vehicles, generators, hand tools such as hammers and power saws, heavy equipment such as backhoes and tractors, and smaller power equipment such as chain saws and weedeaters. Noise from park operations above ambient levels is confined to daylight hours.

Cultural Resources

Historic Context

The project area is within the Forts Barry, Baker and Cronkhite Historic District which was listed on the National Register of Historic Places in 1973. The Area of Potential Effect (APE) will have two components: 1) The immediate APE will be Forts Barry and Cronkhite from summit to summit of surrounding hills for intrusion into the feeling, setting, association, etc. of the National Register property. 2) The larger APE component will be a cumulative look at effects on the total National Register property. The effects of adding new construction within the district will be assessed for cultural resources, including historic buildings and cultural landscapes (see Figure I-2). There are no known or anticipated archeological resources.

The project site was originally part of the military structures of Fort Cronkhite established in 1941 as a military mobilization post. The project site itself is the former Launch Area of the Air Missile Defense Site SF-87-L constructed in 1955 approximately ½ mile from the primary Fort Cronkhite campus (SF-87-L was operational until 1974). Site SF-87-L was one of two NIKE missile launch sites located within the Forts Baker, Barry and Chronkhite (FBBC) Historic District listed as contributing elements of the FBBC National Register property. The other site, the neighboring site SF-88-L, located approximately ¾ miles from the site across Rodeo Lagoon, was restored in 1996. The neighboring site SF-88-L, located approximately ¾ miles from the site across Rodeo Lagoon, was restored in 1996 and is listed on the National Register of Historic Places.

1950's era photo Site SF-87-L from Presidio Archives

In anticipation of the deactivation of the FBBC, the Army transferred the FBBC to the NPS in the legislation which created Golden Gate National Recreation Area (GGNRA) in 1972. The Center began operations at Site SF-87-L in 1975.

In July 2003,the Launch Area of the Air Missile Defense Site SF-87-L was determined to no longer be a contributing feature to the FBBC (National Register) Historic District. This determination was based on a recent assessment that concluded that successive modifications made by overtime had rendered the integrity of the site questionable. It was determined that the property no longer conveys any association with its historic mission of coastal missile defense. The determination stated that modifications had diminished the property's integrity of design, materials, setting, workmanship and feeling as well as its association with its historic period of significance (see Appendix F). However, public comment on the National Register determination strongly recommended that, even though the site no longer contributes to the historic district, its military history should be interpreted to the public under any alternative for reuse.

Existing Uses and Features

(*Descriptions re-printed in part from the Amendment to the National Register Nomination for the FBBC Historic District*)

The Center currently occupies 3 historic buildings within The Fort Cronkhite complex. Building #1065 is occupied by the administrative staff. Building #1071 is occupied by the education

department and Building #1044 includes research Laboratory functions. These three buildings are approximately ½ mile from the Center's treatment site used for animal care.

Administration building at Fort Cronkhite

The animal-care functions are located at the former Site SF-87-L. The site includes two underground abandoned missile silos, approximately 3200 square feet and both currently used for miscellaneous storage. The general condition of the existing silos is poor with sub-standard exiting and access and, therefore, suitable for only storage of un-sensitive materials The former NIKE missile team 'ready room' was renovated in 1998 into a critical care and surgery facility for injured marine mammals. The balance of the existing structures on the project site are non-historic cargo containers and other portable structures which have been adapted for essential animal care operations including: food preparation; chart room; medical offices; storage and

facilities maintenance offices; and gift shop. Under some alternatives, parking facilities would be located at the former kennel site south of the treatment site. This fenced area housed dogs when the Nike site was active and is currently used for storage.

A *cultural landscape* is 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 that exhibit other cultural or aesthetic values" (Page, Gilbert and Dolan 1998). The landscape characteristics that contribute to the integrity of a cultural landscape include spatial organization and cluster arrangement, land use, cultural traditions, circulation, topography and drainage, vegetation, buildings and structures, views and vistas, small-scale features, and archaeological sites.

Cultural Landscape refers to the organization and interrelationships of the natural and designed features of a site by use reflecting cultural values and traditions, and changes to those features over time. Much of the park land within GGNRA retains strong historical integrity, but there are areas that have been diminished by the introduction disparate elements that do not contribute to the overall character and identity of the site. The utilitarian buildings of the treatment site fall into this category.

Regulatory Requirements

In order to ensure the preservation of historic resources throughout the Park, the NPS has developed protocols for the conservation and adaptive re-use of the structures and the grounds. Specifically, the NPS, the California Historic Preservation Office, and the Advisory Council on Historic Preservation entered into a Section 106 Programmatic Agreement in 1992 that details the procedures that must be followed for modifications proposed on GGNRA property. This agreement provides for internal GGNRA review of some types of projects but requires specific consultation with SHPO for all proposals involving the construction of new buildings and structures.

This consultation and review would be directed by the Secretary's Standards for Treatment of Cultural Landscapes and National Parks Service Cultural Resource Management Guidelines (NPS – 28) which states, "Contemporary additions or development adjacent to historic structures should be designed to complement the structures visual and physical characteristics."

The definitive paragraph cited below states the NPS policy on new construction within an historic district:

> A new structure or addition will be compatible if it maintains the overall pattern of development in the area and is visually unobtrusive in terms of scale texture, and continuity of architectural style or tradition. Scale is defined in terms of similar or harmonious proportions, especially height and width. Texture refers to the surface quality of materials, especially the reflection of light. Continuity encompasses such characteristics as use of color, internal organization of space, massing, roof forms, architectural details, site relationships, palette of materials, and placement of windows and doors. Unless a new structure is a reconstruction, it should not duplicate or mimic a historic structure.

Social Resources

Transportation

Existing Conditions

The Center provides medical treatment and rehabilitation to marine mammals that are rescued on the California coast and provides educational programs both on and off-site. This section summarizes existing site access and on-site circulation and parking for the Center.

Site Access

Animal care facilities are located on Old Bunker Road, while administrative functions are carried out nearby at Ft. Cronkhite in Building 1065. Buildings 1071 and 1044 are used for education and a research facility (See figure 1-2). Primary vehicle access to both locations is provided by Bunker Road, which connects with U.S. Highway 101 and Alexander Avenue in Sausalito (see figure I-1). In addition, Conzelman Road provides a secondary connection from Bunker Road to the Golden Gate Bridge via a short connection on McCullough Road.

Bunker Road is a relatively flat but winding two-lane rural road that carries approximately 2,500 vehicles per day during the peak summer season, and up to 4,000 vehicles on peak Sundays. Bunker Road has several traffic calming speed bumps through Capehart Housing, a small residential area located to the east of The Center, indicating that speed, not traffic volume, may be the primary traffic concern.

Parallel to Bunker Road, Conzelman Road is a scenic two-lane roadway (reduced to one lane in some segments) that is characterized by significant grades and a number of turns with tight turning radii, offering spectacular views of the Golden Gate and San Francisco. The westernmost segment of Conzelman Road becomes a one-way westbound road west of Battery 129 (also known as Hawk Hill) about .5 mile west of the intersection with McCullough Road. Conzelman Road ends at Field Road, which in turn ends at Bunker Road in the western part of this park area. McCullough Road provides a connection between Bunker Road and Conzelman Road in the eastern part of this park area. All of these roads, with the exception of Bunker Road, are similar to Conzelman Road with significant grades and sharp turning radii. The Golden Gate National Recreation Area is one of the most heavily visited urban area parklands in the United States. The Marin Headlands are a particularly popular area of the GGNRA.

Counts measuring levels of vehicle usage for days of the week and time of day were performed on Bunker Road and Conzelman Road in 2000. The results are presented on tables III-1 and III-2 (Fehr & Peers, 2003). The highest traffic volumes were noted on weekends with clear and warm weather, in contrast the lowest traffic volumes were noted on weekdays and times of poor weather. Conzelman Road is more heavily utilized serving the majority of the recreational users, with approximately 5,400 daily vehicles during the peak summer season and 8,000 vehicles on peak Sundays. These counts measure trips to the Marin Headlands or vicinity so do not give a complete picture of number of visitors to the Center treatment site itself. A three-year study conducted by the Center shows the average number of visitors to the site to be 72.3 with a peak of 110 visitors. Visitors typically arrive between 10 and 5 and often travel more than one to a vehicle (Hannah, Kathleen – personal communication).

The primary constraint to traffic flow on Bunker-Barry is the single-lane Baker – Barry Tunnel under U.S. Highway 101, east of The Center and north of the Golden Gate Bridge. The BAKER-Barry Tunnel is controlled by traffic signals at either end, resulting in diminished capacity and vehicle queuing, with a possible waiting time of five minutes posted. The tunnel height limitation is thirteen feet six inches. Observations made in the summer of 2000 indicated maximum vehicle queues ranging from 19 to 38 vehicles eastbound and 11 to 16 westbound over several weekends in July and August, although typical weekday queues are generally just several vehicles long based upon observations conducted in December 2003.

On-Site Circulation and Parking

An access road from Old Bunker Road provides access for staff and visitors to the animal care facilities at The Center. The Center has access to a total of 91 parking spaces, including 42 parking spaces (at the treatment site 2 of which are disabled parking), 13 parking spaces along the access road and 12 are outside the Center's assigned lands. The Center uses 24 spaces at Fort Cronkhite.

As described above, visitor parking spaces consist of parallel parking spaces located on the entry driveway. Staff using the buildings at Fort Cronkhite park in lots near these buildings (approximately 24 spaces). During special events, the Center would also accommodate up to

Table III-1

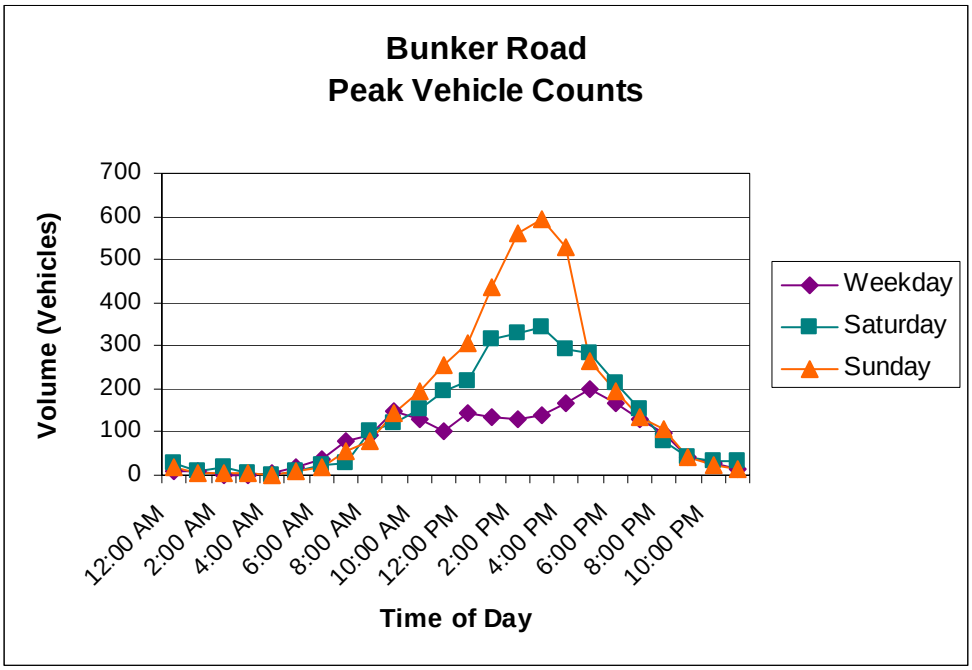
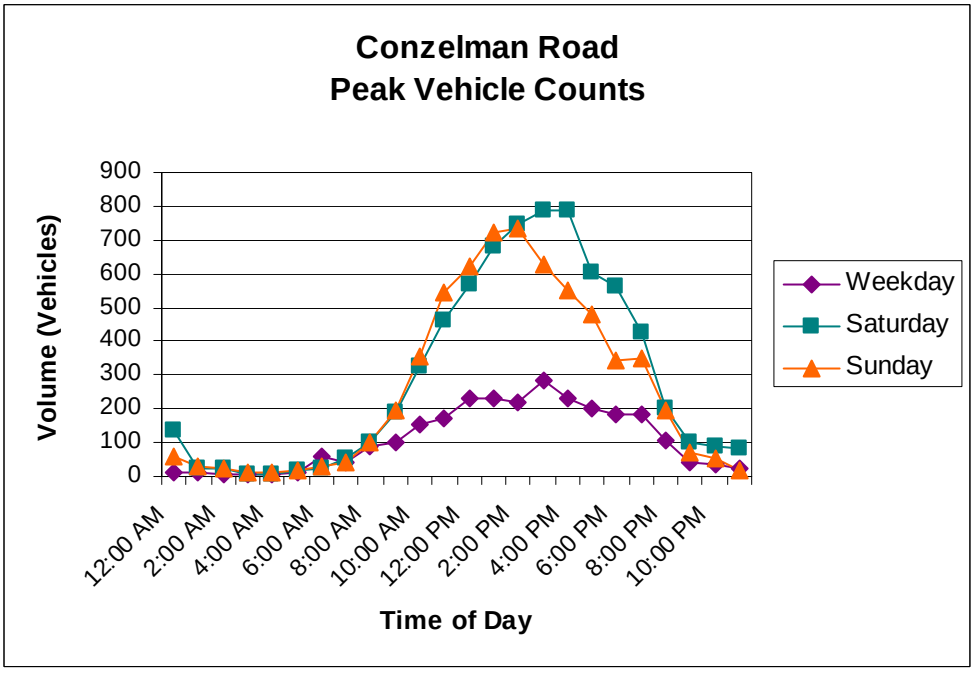


Table III-2



25 additional visitor cars at the National Park Service maintenance yard located adjacent to The Center. These estimates of available parking were derived from a study that looked at parking demand for the Center from 1996 to 2003 (MMC, 2003). Demand was consistent during these years. Currently, there is no designated bus parking. The Center currently parks up to two buses in the National Park Service maintenance yard.

A site visit was conducted in December 2003 to observe on-site circulation and parking characteristics. Key observations include:

- The visitor parking layout necessitates an awkward three-point turn directly in front of the main gate/visitor information area in order for vehicles to exit, hampering through access and creating hazardous conditions for any pedestrians in the area
- Old Bunker Road and the access road to The Center are in need of repaving in spots due to age and water damage

Visual Resources

The Marin Headlands within Golden Gate National Recreation Area is a primary visual resource of the San Francisco Bay Area. Together with the Presidio to the south of the Golden Gate Bridge, the hilly, grassland and forested open-space landscape of the Marin Headlands is a regional landmark, visually prominent within the built environment of urban San Francisco and Marin County communities. The visual shape of the Marin Headlands is largely defined by water, including the Pacific Ocean to the west and San Francisco Bay to the south and east. The Marin Headlands are readily visible from the Golden Gate Bridge, the Pacific Ocean and San Francisco Bay, several Marin County bayside communities including Sausalito and Marin City, Mount Tamalpais State Park to the north of the Marin Headlands, the Presidio and northern waterfront of San Francisco, office towers in the San Francisco financial district, and hill summits in San Francisco such as Twin Peaks.

The Marine Mammal Center is located in the southwestern area of the Marin Headlands, near the Marin Headlands Visitor Center and Rodeo Beach. The Center is located on a south-westerly facing hillside slope within a natural coastal plain below Wolf Ridge. The adjacent topography shields the site from views from many vantage points that are below the level of the site. Views to the site from vistas that are at the same level or above the site are shadowed by area topography (Dennis, 2003). Wolf Ridge rises gradually from Rodeo Lagoon, with scrub and occasional groups of trees accentuating the rolling topography of the project area. The area is visually dominated by vegetated natural open space areas and dynamic water features, including the Pacific Ocean and Rodeo Lagoon. The dynamic qualities imparted by the movement of ocean and lagoon water and, depending on weather, of coastal fog and mist contribute to the exceptional scenic resource value of the area. Built features are also visually prominent in the project area as relicts of the former military presence in the area, including Fort Cronkhite, the bunker on a ridge west of the site, and The Center itself (a former Nike missile site). The corporation yard is located just below The Center contributing to the built appearance of this area of the Marin Headlands.

The former military facilities define the dominant architectural style in the area. Historic Fort Cronkhite buildings are characterized by one- and two-story rectilinear structures that are primarily wood-frame with some examples of concrete block structures. The buildings at Fort Cronkhite were built during three distinct time frames resulting in a mixture of architecture styles unified by planning and scale. Buildings are primarily bearing-wall construction with wood-

framed roofs (Scott Dennis Architect 2003). Fort Cronkhite buildings are unified in color predominantly featuring white siding and red pitched roofs.

The Marine Mammal Center site is visually characterized by built features. The majority of the site is paved, and is encircled by perimeter chain link fencing. The one-story administrative buildings, hospital, laboratories and staff facilities, garage and shop, animal pens and pools, and water treatment facility are a visual hodgepodge of utilitarian architectural styles and makeshift structures. The architectural style of The Marine Mammal Center facilities lacks visual coherence and detracts from the natural setting of the Marin Headlands and the uniform historic architectural style of nearby Fort Cronkhite. Current nighttime lightening is not shaded or moderated thus making the treatment site very visible at night.

The Marine Mammal Center site is visually characterized by built structures.

The Marine Mammal Center is visible from the network of Marin Headland roads and trails located near The Center. Nearby roads include Conzelman Road and Bunker road. Nearby trails include the Miwok Trail, Rodeo Lagoon Trail, Coastal Trail, and Wolf Ridge Trail. The trail network affords both fixed and dynamic, sequenced views of The Marine Mammal Center. Vegetation and topography visually screen trail users from prominent views of The Marine Mammal Center, although intermittent short-range and medium-range views of the low-lying, one-story built structures of the facility are visible from the Miwok, Rodeo Lagoon, Coastal, and Wolf Ridge Trails.

The Marin Headlands are readily visible from the Golden Gate Bridge.

The Center's built features are prominent, although topography and vegetation partially screen buildings. The corporation yard is similarly visually prominent from the old bunker site. The Bunker Road site provides medium- to long-range views of The Marine Mammal Center. The Center's one-story buildings are largely nestled within the topographic landform, and partially screened by Monterey pines, cypress trees, and coastal scrub.

Utilities

Electrical

The existing electrical service feeds to the site are from PG&E via above-grade overhead distribution entering the site by two separate service feeds. The first independently metered feed supplies the main switchgear located in the existing sub-grade silo on the West edge of the site. The second independently metered feed supplies above-grade switchgear located on the East of the site.

Gas and Fire Response

There is no piped natural gas service to the project site. Existing gas appliances are serviced by on-site propane gas delivered to an above-grade vessel. The current on-site buildings are not fire-sprinklered. An existing on-site fire-fighting hydrant is located on the access road at the site entry.

Recreation and Public Use

The Marine Mammal Center is located in the Marin Headlands, which is part of the Golden Gate National Recreation Area. GGNRA is the largest urban national park in the world comprising 76,500 acres of land and water that includes 28 miles of wild coastline, other distinct natural landscape types and vegetative communities, and diverse developed uses, many of which have substantial historic and aesthetic value. GGNRA includes the Marin Headlands, Muir Woods National Monument, Alcatraz Island, and the Presidio of San Francisco.

GGNRA and the Marin Headlands are part of a network of local, state, and federal parks in the San Francisco Bay Area, including City of San Francisco parks (e.g., Golden Gate Park and Lincoln Park), state parks (e.g., Mt. Tamalpais, Angel Island, and China Camp), and national parks (e.g., Point Reyes National Seashore). Individually and collectively, these parks provide recreational opportunities having extraordinary variety and value for residents of the San Francisco Bay Area, and visitors from around the state, the country, and the world. Nearly 14 million individuals visit GGNRA annually.

The Marine Mammal Center is the largest marine mammal facility in the world to combine animal rehabilitation with an on-site research lab, and the only facility to treat an average 500 animals a year. Individuals from all over the world visit The Marine Mammal Center, and more than 60,000 people are reached by its education programs each year. The Center is open to visitors nearly every day of the year from 10:00 a.m. to 4:00 p.m.

Education and public outreach are important components of The Marine Mammal Center mission and is called for in GGNRA's Cooperative Agreement. The Center is committed to increasing appreciation of marine mammals, fostering informed decision-making affecting them, and inspiring action to protect the marine environment. Each year The Center provides marine science education programs and events for school children and members of the general public, helping to foster a sense of responsibility and connection to the marine environment. Education

programs are conducted at a building located at Fort Cronkhite, approximately ½-mile from the treatment site, and at the treatment site using limited program space and educational programs occurring on outdoor bleachers and off-site at Rodeo Beach. The Marine Mammal Center offers several educational programs, including such topics as Pinniped Patients, Guided Beach Walk, In Our Marine Science Classroom, and Research Discovery Day. In addition, the Marine Mammal Center hosts a program on sea lions at Pier 39 in San Francisco and provides on-site marine mammal educational programs for schools via the Whale Bus program.

The Marine Mammal Center is currently undersized and improperly designed to adequately provide educational programs to fulfill The Center's mission. Currently, The Center provides three interpretive panels with limited information for the visitor. The facility lacks a physical sense of arrival for visitors, and provides limited orientation information for the visitor navigate the site. The Center lacks indoor or sheltered classroom space at the treatment site, marine mammal pens are not configured in a manner that allows visitors to view the animals without disturbing and potentially habituating the animals, and parking arrangements are not safe or convenient.

Several Marin Headlands attractions are located near The Marine Mammal Center, including the Marin Headlands Visitor Center, Rodeo Beach, Fort Cronkhite, and the Nike missile site. Numerous trails are located in the vicinity of The Marine Mammal Center, including the Miwok Trail, Coastal Trail, Wolf Ridge Trail, Rodeo Lagoon Trail, and Bobcat Trail. This area of the Marin Headlands offers a wide range of active pursuits, as well as opportunities for solitude, retreat, and discovery. Recreational activities in the area include walking, hiking, jogging, biking, sightseeing, photography, nature study, surfing, fishing, sunbathing, picnicking, and historic study.

Impact Topics Dismissed from Further Analysis

Environmental Justice

No aspect of the action alternatives of The Marine Mammal Site and Improvements Project would result in disproportionately high and adverse human health or environmental effects on minority or low-income populations. Any temporary restriction on travel or access to any area of the park that might result from the this Project would be equally applied to all visitors, regardless of race or socioeconomic standing.

Paleontological Resources

The Center is located on a site that has been highly disturbed. Paleontological resources are not expected to be found in the project area.

Park Operations and Facilities

The Center has been operating under a cooperative lease agreement with GGNRA for many years. An update to this agreement is being prepared in tandem with the NEPA process to reflect the proposed facility changes. The project is not going to change any of the fundamental tenants of that agreement. To the extent that Park operations could be impacted these impacts are being discussed under other resource topics.

Prime and Unique Agricultural Lands

There are no known agricultural lands in the project area; therefore, the action alternative would not affect prime and unique agricultural lands.

Land Use

Land uses within GGNRA are classified as "Parklands," regardless of the individual types of land uses within the park. Implementation of the project would not effect existing land uses within the park. This potential project is an improvement to an existing use and an existing facility, not a change in overall land use.

Public Health and Safety

Public health and safety is not presented as a separate topic in this analysis, since project alternatives and other sections (transportation, visitor experience) evaluate park-related public health and safety issues.

Museum Collection

Implementation of elements of the action alternatives would not have a direct or indirect effect on park museum collections.

Wilderness Experience

There is no designated Wilderness within the project area.

Chapter IV: Environmental Consequences

Introduction

The National Environmental Policy Act requires that environmental documents disclose the environmental impacts of a proposed federal action, reasonable alternatives to that action, and any adverse environmental effects that cannot be avoided should the proposed action be implemented. This chapter of *The Marine Mammal Center Site and Facilities Improvements Project Environmental Assessment* analyzes the environmental impacts of the four project alternatives. This analysis provides the basis for comparing the beneficial and adverse effects of the alternatives.

Following this introduction, the chapter presents the methodologies used in the environmental impact analysis. The impact analyses sections are organized by resource topic. Each resource topic section analyzes Alternative 1 (the No Action Alternative) compared to existing conditions, including impacts on natural resources, cultural resources, and social resources, and presents impact conclusions. The subsequent sections within each resource topic analyze the action alternatives (i.e., Alternative 2, Alternative 3, and Alternative 4) compared to Alternative 1. Environmental impacts are summarized in table II-2: Summary of Environmental Consequences, located at the end of Chapter II, Alternatives.

Methodology

Context, Duration, Intensity, and Type of Impact

The analysis of environmental impacts considers the context, duration, intensity, and type of impact, as defined below.

Context

The context of the impact considers whether the impact would be local or regional. For the purposes of this analysis, local impacts would generally be those that occur within the immediate vicinity of The Marine Mammal Center and the Marin Headlands. Regional impacts would be those that occur in the surrounding park and community.

Duration

The duration of the impact considers whether the impact would occur in the short term or the long term. Short-term impacts are temporary, transitional, or construction-related impacts associated with project activities. Long-term impacts are typically those effects that would last several years or more or would be permanent.

Intensity

The intensity of the impact considers whether the effect would be negligible, minor, moderate, or major. Negligible impacts would not be detectable and would have no discernible effect. Minor impacts would be slightly detectable, but would not be expected to have an overall effect.

Moderate impacts would be clearly detectable and could have an appreciable effect. Major impacts would have a substantial, highly noticeable effect.

Type of Impact

Impacts were evaluated in terms of whether they would be beneficial or adverse. Beneficial impacts would improve resource conditions. Adverse impacts would deplete or negatively alter resources.

Cumulative Impacts

A cumulative impact is described in regulations developed by the Council on Environmental Quality, Regulation 1508.7, as follows:

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

The cumulative projects addressed in this analysis include past and present actions as well as any planning or development activity currently being implemented or planned for implementation in the reasonably foreseeable future. Cumulative actions are evaluated in conjunction with the impacts of an alternative to determine if they have any additive effects on a particular resource. Because most of the cumulative projects are in the early planning stages, the evaluation of cumulative impacts was based on a general description of the projects. Projects identified by the National Park Service (NPS) that would cumulatively contribute to the environmental impacts of The Marine Mammal Center Project are identified at the end of this chapter.

Impairment

Pursuant to the 1916 Organic Act, the National Park Service has a management responsibility "to conserve the scenery and the natural and historic objects and the wildlife 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." As a result, the National Park Service cannot take an action that would "impair" the resources of the Golden Gate National Recreation Area (GGNRA). National Park Service *Management Policies 2001* provide guidance on addressing impairment.

Impairment is an impact that, in the professional judgment of the responsible National Park Service manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. Impairment of park resources and values was evaluated on the basis of duration and intensity of impacts.

Director's Order #12 requires that impairment be addressed in all environmental assessments and draft and final environmental impact statements, as well as in the decision documents (Finding of No Significant Impact, Record of Decision). In this environmental assessment, impairment is addressed in the conclusion section of each impact topic under each alternative.

Analysis of Environmental Consequences

Water Resources

Alternative 1

Analysis

Operation-related Effects on Water Resources. Under Alternative 1, The Marine Mammal Center would continue to operate with an out-dated and inefficient water treatment and delivery system. The LSS systems filters, basins, piping etc. at The Center would continue to operate above-grade, exposed to sunlight resulting in UV degradation of equipment (a-long-term maintenance issue) and, more importantly, heat-gain would continue to be introduced into the water circulating through the systems. Bacteria would continue to flourish in warmer water resulting in the out-dated LSS systems under-performing and delivering the poorest water quality just when the systems and staff are the most stressed. The poorer water quality during this time would continue to act as an added health risk to the animals and result in conditions that are not safe for the staff working with the animals in the pools.

The total volume of water that could be contained in the existing pools would continue to total about 47,000 gallons assuming all pools are filled. Water would continue to be lost to leakage and evaporation. Average annual water would continue to be used at the following rates:

Typical Condition: 4,520,000 gallons per year

El Nino Condition: 5,950,000 gallons per year

An NPS report produced in 2000 found that two to four times a year during extreme storm conditions the sanitary sewer lift-stations overflows and the overflow can discharge into Rodeo Lagoon. The rainfall from the Center's pen enclosures appears to be a contributing factor to the lift-station overflow. Under Alternative 1 this condition would continue until addressed in a separate utility upgrade project.

Impact Significance. Local, Long-term, Moderate, Adverse Impact.

Summary of Alternative 1 Impacts. Alternative 1 would have a local, long-term, moderate, adverse effect on water resources associated with The Center's out-dated and inefficient system resulting in a moderately high water demand and continued periodic high discharge of stormwater into the sanitary sewer system, causing lift station failure.

Impairment

Alternative 1 would result in a local, long-term, moderate, adverse impact to water resources in the project area. The adverse effect of this alternative on water resources would be localized to the project area and would not be expected to have an overall effect on the water resources of the area. The local adverse impacts to water resources would not be of sufficient magnitude or nature to impair water supply or quality elsewhere in GGNRA or affect the integrity of resources that are necessary to fulfill specific purposes identified in the park's establishing legislation, key to opportunities for enjoyment of the park, or identified as a goal in the park's *General Management Plan* or other relevant planning documents. Therefore, Alternative 1 would not impair resources or park values for future generations.

Alternative 2

Analysis

Operation-related Effects on Water Resources. Implementation of Alternative 2 would have a long-term, moderate beneficial impact on water resources in the project area. Installing new water treatment systems would allow for the larger pools envisioned under this alternative to be filled to capacity using less water on an annual basis than currently used. This results in a capacity of 207,000 gallons assuming all pools are concurrently filled. This represents an increase of 160,000 gallons over the 47,000 gallons current capacity which correlates to improved treatment for animals and safety for staff and volunteers. As discussed in Chapter III, the total volume capacity of the pools is not in itself the basis of annual water use. Under this alternative annual water use would actually decrease because of designed efficiencies of the new system. The redesigned system would loose considerably less water through leakage and evaporation. In addition pens and pools currently must be emptied and refilled once a week to maintain water quality, however the new filtration system would allow for pens and pools to be emptied and refilled every two and a half weeks resulting in substantial water savings. This resulting decrease in annual water use also includes the proportionally small increase in domestic water use due to facilities included in the new buildings under this alternative.

It is assumed that this new dump and fill rate would be used for all new animal holding pools, with the exception of the cetacean pools. Because the animal loads in the cetacean pools are expected to be very low compared to the animal loads in other pools, the design assumes that the new cetacean pools would be flushed at a rate of approximately ten percent per month over the course of the year.

As described in further detail in Appendix E, total water use is expected to range from 29 to 55 percent of the total existing water use during typical conditions and from 41 and 76 percent of the total existing water use during El Nino conditions. This wide range is based on a range of operational assumptions and can vary depending on how long each pen is backwashed and how efficiently filters are operating. The differences between typical and El Nino conditions are primarily due to the number of animals seen in these types of years.

Typical Condition: 2,544,800 – 3,702,000 gallons per year

El Nino Condition: 3,664,500 – 5,747,000 gallons per year

The system's ability to accommodate peak water demands and peak treatment demands are increased under this alternative. Water storage and metering basins designed into the LSS systems allow water to be filled or dumped to the source system at any time of the day or night. Because peak demand for the LSS systems would be more controllable with the modernized design, peak demand should not be an unfavorable factor for the LSS systems. Mitigation Measures included in Appendix A describe coordination with Marin Municipal Water District regarding initial fill and peak demand periods.

Alternative 2 adds 29,000 square feet of additional impermeable surfaces to the project area primarily from the increased parking capacity. This increase in impervious area could result in a moderate adverse impact to water quality from increased contaminants that are carried over paved areas into Rodeo Lagoon. Mitigation Measures included in Appendix A would control and treat these contaminants and reduce this impact to minor, adverse. Mitigation measures would

also seek to remove existing hardened surface elsewhere within the Park equal to or greater than the amount of impermeable surfaces added as part of this project.

Alternative 2 would include the operational capability to interrupt rainfall flowing to the pen enclosure area drains either by using the 40,000 gallon cetacean pool as an equalization basin or another comparably-sized basin to regulate flow of rainfall under extreme conditions. This additional capacity would eliminate contributions to the sanitary system coming from the Center under those conditions found two to four times a year during extreme storm conditions when the sanitary sewer lift-stations overflows. Mitigation Measures are included in Appendix A to direct parking lot drainage away from the sewer system and to ensure coordination and monitoring of these new facilities during storm events.

Impact Significance. Local, Long-term, Minor, Adverse Impact.

Construction-related Effects on Water Resources Overall, construction activities could cause erosion of exposed soil and subsequent sedimentation of surface water flows are controlled by mitigation measures that would be required prior to and during construction. These measures would reduce temporary construction-related erosion during periods of rain, while soil would be exposed, and prior to the site restoration and cleanup phase of the project. Mitigation Measures included in Appendix A to reduce erosion include limiting exposed import stockpiles during construction, implementing erosion control measures and implementation of a Stormwater Pollution Prevention Plan. Soil degradation would be minimal due to Stormwater Pollution Prevention Plan requirements and the short-term nature of the construction activities.

Impact Significance After Mitigation Included in the Project. Local, Short-term, Negligible to Minor, Adverse Impact.

Impairment

Alternative 2 would result in a local, short and long-term, minor, adverse impact to water resources at The Marine Mammal Center project area. The Marine Mammal Center Project would not be expected to have an overall effect on the water resources of the area, due to the overall reduction in water use and control of storm water discharge at the site. These local impacts to water resources would not be of sufficient magnitude or nature to impair the integrity or availability of water resources that are necessary to fulfill specific purposes identified in the park's establishing legislation, key to opportunities for enjoyment of the park, or identified as a goal in the park's *General Management Plan* or other relevant planning documents. Therefore, Alternative 2 would not impair resources or park values for future generations.

Alternative 3

Analysis

Operation– and Construction- related Effects on Water Resources. Similar to Alternative 2, Alternative 3 would have a long-term, moderate beneficial impact on water resources in the project area. Installing new water treatment systems would allow for the larger pools envisioned under this alternative to be filled to capacity using less water on an annual basis. In addition, peak demand should not be an unfavorable factor for the LSS systems. Mitigation Measures included in Appendix A would reduce impacts relating to peak use and increased storm water.

Alternative 3 adds 46,200 square feet of additional impermeable surfaces to the project area primarily from the increased parking capacity. This increase in impervious area could result in a moderate adverse impact to water quality from increased contaminants that are carried over paved areas into Rodeo Lagoon. Mitigation Measures included in Appendix A would control and treat these contaminants and reduce this impact to minor, adverse. Measures would also seek to remove existing hardened surface elsewhere within the Park equal to or greater than the amount of impermeable surfaces added as part of this project.

Impact Significance after Mitigation Included in the Project. Local, Long-term, Minor, Adverse Impact.

Impairment

Similar to Alternative 2, Alternative 3 would result in a local, long-term, minor, adverse impact to water resources at The Marine Mammal Center project area. Alternative 3 would not be expected to have an overall effect on the water resources of the area or to impair the availability or quality of water resources that are necessary to fulfill specific purposes identified in the park's establishing legislation, key to opportunities for enjoyment of the park, or identified as a goal in the park's *General Management Plan* or other relevant planning documents. Therefore, Alternative 3 would not impair resources or park values for future generations.

Alternative 4

Analysis

Operation and Construction-related Effects on Water Resources. Similar to Alternative 2, Alternative 4 would have a long-term, moderate beneficial impact on water resources in the project area. Installing new water treatment systems would allow for the larger pools envisioned under this alternative to be filled to capacity using less water on an annual basis. In addition, peak demand should not be an unfavorable factor for the LSS systems. Mitigation Measures included in Appendix A would reduce impacts relating to peak use and increased storm water.

Alternative 4 adds 13,470 square feet of additional impermeable surfaces to the project area primarily from the increased parking capacity. This increase in impervious area could result in a moderate adverse impact to water quality from increased contaminants that are carried over paved areas into Rodeo Lagoon. Mitigation Measures included in Appendix A would control and treat these contaminants and reduce this impact to minor, adverse. Measures would also seek to remove existing hardened surface elsewhere within the Park equal to or greater than the amount of impermeable surfaces added as part of this project.

Like Alternative 2, this Alternative would include the operational capability to interrupt rainfall flowing to the pen enclosure area drains either by using the 40,000 gallon cetacean pool as an equalization basin or some comparable basin to regulate flow of rainfall under extreme conditions and prevent lift-station failure. Mitigation Measures are included in Appendix A to ensure coordination and monitoring of these new facilities during storm events.

Impact Significance after Mitigation Included in the Project. Local, Long-term, Minor, Adverse Impact.

Impairment

Similar to Alternative 2, Alternative 4 would result in a local, long-term, minor, adverse impact to water resources at The Marine Mammal Center project area. Alternative 4 would not be expected to have an overall effect on the water resources of the area or to impair the availability or quality of water resources that are necessary to fulfill specific purposes identified in the park's establishing legislation, key to opportunities for enjoyment of the park, or identified as a goal in the park's *General Management Plan* or other relevant planning documents. Therefore, Alternative 3 would not impair resources or park values for future generations.

Biological Resources

Alternative 1

Analysis

Operation-related Effects on Biological Resources. Under Alternative 1, none of the facilities of the proposed project would be implemented. The Center would continue to function under its current intensity. No effects to surrounding vegetation, wildlife, or wetlands would occur.

Impact Significance. No Impact.

Summary of Alternative 1 Impacts. Alternative 1 would have no impact on biological resources.

Impairment

Alternative 1 would result in no impact to biological resources in the project area. Therefore, Alternative 1 would not impair resources or park values for future generations.

Alternative 2

Analysis

Construction-related Effects on Biological Resources. Construction of the proposed facilities would temporarily disturb vegetation in the project area. The past land use practices of the project area, including military operations, have substantially altered the native vegetation and it is likely that no special-status species exist. None of the locally or regionally occurring special-status plants would be directly or indirectly affected under proposed Alternative 2. The re-configured parking area on the west side of the site would require the removal of approximately 15 Monterey pine and cypress trees. In addition, approximately 17,000 square feet (or .40 acres) of non-native annual grassland would be removed for the construction of the ring road parking lot. These effects would be mitigated by invasive plant removal and/or restoration. Approximately 8,200 square feet of native plants would be restored on the southeast edge of the site where the water filtration system is currently located. This restoration would be propagated at the NPS nursery in accordance with NPS Guidelines and the compatibility guidance developed for this project.

None of the locally or regionally-occurring special status wildlife species would be directly impacted by the proposed Alternative 2. Indirect impacts to special-status and common wildlife species may occur during construction. Indirect impacts include disturbance and harassment from construction activities and general increased human presence. The ring road would be constructed in a grassland area that currently provides a corridor for wildlife species and construction activities may prevent wildlife from using this corridor during the construction

period. Installation of the ring road does not constitute a permanent barrier for wildlife. These impacts are considered minor and no mitigation would be required.

Construction activities have the potential to directly and indirectly affect nesting and breeding birds and raptors protected under the Migratory Bird Treaty Act. Nesting habitat for several non-listed bird species occurs within the project area, including the Monterey pine and cypress trees. Removal of these trees for placement of the ring road has the potential to impact breeding and nesting birds. Contaminated run-off into Rodeo Lagoon and Lake could impact water quality and thus animals living in these water bodies. Appendix A, Mitigation Measures, identifies biological resources protection measures such as pre-construction surveys, establishing buffers around trees with active nests and timing of removals. Other mitigation included in other parts of this EA (particularly under water resources) would also protect these species.

Although these mitigation measures would reduce the adverse biological effect of construction activity, it would not reduce the intensity of the adverse impact.

Placement of the ring road would result in the permanent fill of .08 acres/square feet of waters of the U.S. including wetlands. The small natural and constructed drainages would be filled as well as the larger swale drainage along the northern side of the property. Section 404 of the Clean Water Act requires obtaining a permit prior to placing fill into a water of the U.S. Appendix A, Mitigation Measures, identifies biological resources protection measures such as obtaining an Section 404 permit from the U.S. Army Corps of Engineers. NPS and the Corps would require mitigation to replace the functions and values lost from the permanent fill of jurisdictional areas. Although this mitigation measure and the requirements that would come with such a permit would reduce the adverse biological effect of construction activity, it would not reduce the intensity of the adverse impact.

Impact Significance after Mitigation Included in the Project. Local, Short-term, Moderate, Adverse Impact.

Summary of Alternative 2 Impacts. Alternative 2 would have local, short-term, moderate, adverse effect on biological resources due to impacts associated with construction activity, such as construction equipment and ground disturbance. The adverse biological resource impacts would be somewhat offset by planned restoration and the mitigation included in this analysis.

Impairment

Alternative 2 would result in local, short-term, moderate, adverse impacts to biological resources at The Marine Mammal Center project area. The adverse effect of this alternative on biological resources would be localized but clearly detectable. The Marine Mammal Center Project would not be expected to have an overall effect on the biological resources of the area, due to the temporary duration of construction activity and the existing developed features in the area (i.e., The Marine Mammal Center, corporation yard, Fort Cronkhite, and the Marin Headlands Visitor Center). The local adverse impacts to biological resources would not be of sufficient magnitude or nature to impair the integrity of biological resources that are necessary to fulfill specific purposes identified in the park's establishing legislation, key to opportunities for enjoyment of the park, or identified as a goal in the park's *General Management Plan* or other relevant planning documents. Therefore, Alternative 2 would not impair resources or park values for future generations.

Alternative 3

Analysis

Operation-related Effects on Biological Resources. Alternative 3 could have a local, long-term, adverse impact on the wetland area that is located to the east of the former kennel site where the remote parking would be located. Sediment and other run-off from the new remote lot could impair this resource. Implementation of mitigation measures identified in Appendix A, Mitigation Measures, such as designing this lot to slope away from the wetland areas and installing easily cleanable catch-basins, debris screens, and grease separators or similar water quality protection devices would reduce these impacts.

Impact Significance. Local. Long-term, Minor, Adverse Impact.

Construction-related Effects on Biological Resources. Similar to Alternative 2, Alternative 3 would have a local, short-term, adverse impact on biological resources in the project area during the construction period. As with Alternative 2, the construction of the ring road and access to the remote parking would require some tree removal. Under Alternative 3, removal would include approximately 5 Monterey pine and cypress trees on the western edge of the site and approximately 23,000 square feet (or .52 acres) of annual grassland on the western edge of the site and at the old kennel site where a paved parking lot would be planned (see below). Approximately 8,200 square feet of native plants would be restored on the southeast edge of the site where the water filtration system is currently. This restoration would be propagated at the NPS nursery in accordance with NPS Guidelines and the compatibility guidance developed for this project.

None of the locally or regionally-occurring special status wildlife species would be directly impacted by the proposed Alternative 3. As with Alternative 2, indirect impacts to special-status and common wildlife species may occur during construction. These impacts are considered minor and no mitigation would be required to address them. Direct and indirect effects to nesting and breeding birds would be considered moderate with the implementation of Mitigation Measures described above.

As under Alternative 2, construction of the ring road around the perimeter of the Center would result in the permanent fill of .08 potentially jurisdictional features. As with Alternative 2, impacts to wetlands would be considered minor with the implementation of Mitigation Measures discussed above.

The remote parking area as proposed under Alternative 3 would provide a remote parking facility at the southern end of the project site (kennel site). Construction in this area has the potential to indirectly affect nesting and breeding birds as discussed above in the dense scrub vegetation located in this area. Impacts to birds and raptors resulting from the construction of the remote parking area would be minor with the implementation of Mitigation Measures discussed above.

The construction of the remote parking area and access drive may require the removal of scrub vegetation including coyote brush, coffeeberry and annual grassland species. The existing vegetation within the proposed parking area is dense and is part of a larger corridor of coastal scrub vegetation outside the project area. No rare plant surveys have been conducted in the project area and therefore the presence or absence of special-status plants cannot be verified. Construction of the remote parking has the potential to effect special status plants if they exist

within the project boundary. Contaminated run-off into Rodeo Lagoon and Lake could impact water quality and thus animals living in this water bodies. Appendix A, Mitigation Measures, identifies biological resources protection measures such as conducting appropriately-timed rare plant surveys prior to construction and if rare plants are found, applying appropriate avoidance measures. Other mitigation included in other parts of this EA (particularly under water resources) would also protect these species. Although these mitigation measures would reduce the adverse biological effect of construction activity, it would not reduce the intensity of the adverse impact.

Impact Significance after Mitigation Included in the Project. Local, Short-term, Moderate, Adverse Impact.

Summary of Alternative 3 Impacts. Alternative 3 would have local, short-term, moderate, adverse effect on biological resources due to biological impacts associated with construction activity, such as construction equipment and ground disturbance including development of a new paved area for the remote parking lot. The adverse biological resource impacts have been somewhat offset by planned restoration and the mitigation included in this analysis.

Impairment

Similar to Alternative 2, Alternative 3 would result in a local, short-term, moderate, adverse impact to biological resources at The Marine Mammal Center project area. The adverse effect of this alternative on biological resources would be localized but clearly detectable. Alternative 3 would not be expected to have an overall effect on the biological resources of the area, due to the temporary duration of construction activity and the existing developed features in the area. The local adverse impacts to biological resources would not be of sufficient magnitude or nature to impair the integrity of biological resources that are necessary to fulfill specific purposes identified in the park's establishing legislation, key to opportunities for enjoyment of the park, or identified as a goal in the park's *General Management Plan* or other relevant planning documents. Therefore, Alternative 3 would not impair resources or park values for future generations.

Alternative 4

Analysis

Operation-related Effects on Biological Resources. Similar to Alternative 3, this Alternative could have a local, long-term, adverse impact on the wetland area that is located to the east of the former kennel site where the remote parking would be located. Sediment and other run-off from the new remote lot could impair this resource. Implementation of mitigation measures identified in Appendix A, Mitigation Measures, such as designing this lot to slope away from the wetland areas and installing easily cleanable catch-basins, debris screens, and grease separators or similar water quality protection devices would reduce these impacts.

Impact Significance. Local. Long-term, Minor, Adverse Impact.

Construction-related Effects on Biological Resources. Similar to Alternative 2, Alternative 4 would have a short-term, adverse impact on biological resources in the project area during the construction period. Alternative 4, however, would have considerably less construction activity because administration and educational uses would be retained at Fort Cronkhite.

Under this Alternative, the construction of the ring road would require the removal of approximately 8 Monterey pine and cypress trees on the western edge of the property and

13,000 square feet (or .3 acres) of annual grassland at the old kennel site where a paved parking lot would be planned. The remote parking area as proposed under Alternative 4 includes fewer parking spaces than Alternative 3 and effects on vegetation would be slightly less as a result. However, construction of the smaller remote parking still has the potential to effect special status plants if they exist within the project boundary. These effects can be reduced to moderate levels with the implementation of Mitigation Measures discussed above. Approximately 8,200 square feet of native plants would be restored on the southeast edge of the site where the water filtration system is currently. This restoration would be propagated at the NPS nursery in accordance with NPS Guidelines and the compatibility guidance developed for this project.

Under Alternative 4, project effects to common wildlife, nesting raptors and special-status bird species would be the same as in Alternatives 2 and 3. The smaller construction footprint for the remote parking area as proposed under Alternative 4 would require removal of less scrub vegetation and therefore effects on nesting raptors and special-status birds would be less than with Alternative 3. Direct and indirect effects on nesting birds and raptors would be considered moderate with the implementation of Mitigation Measures discussed above.

As with Alternatives 2 and 3, the construction of the ring road would result in the permanent fill of .08 acres of potentially jurisdictional features. Effects of the construction of the ring road would be considered moderate with the implementation of Mitigation Measures discussed above.

Impact Significance after Mitigation Included in the Project. Local, Short-term, Moderate, Adverse Impact.

Summary of Alternative 4 Impacts. Alternative 4 would have local, short-term, moderate, adverse effect on biological resources due to biological impacts associated with construction activity, such as construction equipment and ground disturbance. The adverse biological resource impacts have been somewhat offset by planned restoration and the mitigation included in this analysis.

Impairment

Similar to Alternative 2, Alternative 4 would result in a local, short-term, moderate, adverse impact to biological resources at The Marine Mammal Center project area. The adverse effect of this alternative on biological resources would be localized but clearly detectable. Alternative 4 would not be expected to have an overall effect on the biological resources of the area, due to the temporary duration of construction activity and the existing developed features in the area. The local adverse impacts to biological resources would not be of sufficient magnitude or nature to impair the integrity of biological resources that are necessary to fulfill specific purposes identified in the park's establishing legislation, key to opportunities for enjoyment of the park, or identified as a goal in the park's *General Management Plan* or other relevant planning documents. Therefore, Alternative 4 would not impair resources or park values for future generations.

Geology, Soils and Seismicity

Alternative 1

Analysis

Alternative 1, none of the facilities of the proposed project would be implemented. The Center would continue to function under its current intensity and no new facilities or roadways would be

constructed. Therefore, no geologic, soil, or seismic safety impacts associated with project implementation would result.

Impact Significance. No Impact.

Impairment

Alternative 1 would result in no impact to geology, soils, and seismicity resources in the project area. Thus the Alternative would not affect the geologic elements that are necessary to fulfill specific purposes identified in the park's establishing legislation, key to opportunities for enjoyment of the park, or identified as a goal in the park's *General Management Plan* or other relevant planning documents. Therefore, Alternative 1 would not impair resources or park values for future generations.

Alternative 2

Analysis

Construction-related Effects on Geology, Soils and Seismicity. Construction of the proposed facilities for this alternative would involve excavation of approximately 4,800 cubic yards of material and the placement of approximately 2,400 cubic yards of fill in the area of the proposed ring road and western edge additional parking. Use of inappropriate fill material, such as a soil that does not have adequate bearing strength, or fill that is improperly engineered and compacted could be subject to settlement. Settlement in turn could damage roadways, underground utilities, or site structures. In addition, fill materials placed at the site in the past may not have been engineered during placement and could be subject to settlement or have inadequate strength to support the proposed structures, including new tanks, buildings and the roadways. Similarly, underlying native materials may not have adequate strength to support the proposed structures. Differential settlement could occur in areas that are underlain by different soil and rock types or a combination of native materials and artificial fill. A site-specific geotechnical investigation conducted in February 2003 identified feasible engineering methods to reduce the potential for damage due to collapse or settlement of weak foundations soils or fill. These recommendations are included in Appendix A as Mitigation Measures. Although these mitigation measures would reduce the potential damage of proposed project changes, the impact would remain adverse.

Precipitation contacting unpaved areas can cause soil erosion. Rilling and gullying can remove portions of an engineered slope. Erosion during construction phases of the project, especially during trenching, stripping and recompaction of artificial fill, initial site grading, and prior to resurfacing, could undermine building and tank foundations or cause trenches to collapse. Long-term erosion hazards could result from poorly designed drainage facilities that allow the concentration of storm water flows in areas that are not designed or equipped to accommodate such flows. Erosion would be prevented during construction because the site would be winterized (i.e., prepared for winter storms) and standard construction practices to prevent erosion would be implemented. Long term erosion would be avoided because drainage facilities would be properly designed and engineered to accommodate projected flows, according to standard engineering practice. As these conditions are met by project design, no mitigation measures are necessary.

This alternative would involve the excavation of approximately 4,800 cubic yards of material, primarily to the west of the existing Center. Cutting for the perimeter roadway into the base of the

existing cut slope north of the site and into the slope west of the existing site could reduce slope stability to an unacceptable factor of safety. In addition, water collecting or infiltrating at the base of the existing slide near the northeastern corner of the site could contribute to the continued creep or minor movement of the slide. Slope failure or localized landslides resulting from destabilized slopes could result in injury to people and animals at the Center and damage to Center facilities. The report on the geotechnical investigation conducted at the site recommends against removing significant amounts of material at the base of this cut slope, as such removal could reduce the stability of the slopes. The geotechnical report also provides recommendations contingent upon the report authors' review of earthwork and foundation plans and their observations of the earthwork and foundation installation phases of construction. These recommendations are included in Appendix A as Mitigation Measures. Although these mitigation measures would reduce the potential damage of proposed project changes, the impact would remain adverse.

Earthquakes are an unavoidable geologic hazard at the Marin Headlands. The intensity of a seismic event would depend on the causative fault and the distance to the epicenter, the moment magnitude, and the duration of ground shaking. For instance, a large earthquake (magnitude 7 or greater) on the North Golden Gate segment of the San Andreas fault could generate higher-intensity ground shaking at the Center than would a similarly large earthquake on a more distant fault such as the Hayward fault or the Rodgers Creek fault. If new buildings and tanks were not designed and constructed in accordance with current standards of earthquake-resistant construction, ground shaking during an earthquake could cause substantial damage to these facilities. In addition, ground shaking could cause unattached objects within buildings to fall or undergo movement which could cause injury to people or damage to facilities or equipment. Recommendations from the Cleary report are included in Appendix A as Mitigation Measures. These mitigation measures would reduce the potential damage of proposed project changes to minor though the impact would remain adverse.

Impact Significance after Mitigation Included in the Project. Local, Short and long-term, Minor - Moderate, Adverse Impact.

Summary of Alternative 2 Impacts. Alternative 2 would have local, short and long-term, minor - moderate, adverse effect on geology, soils and seismicity due to impacts associated with construction activity and adequate design of facilities. The adverse impacts to geology, soils and seismicity have been somewhat offset by the mitigation included in this analysis.

Impairment

Alternative 2 would result in a local, short and long-term, minor - moderate, adverse impacts to geology, soils and seismicity in The Marine Mammal Center project area. The adverse effects of this alternative would be localized but clearly detectable. The Marine Mammal Center Project would not be expected to have an overall effect on geology, soils and seismicity in the area, due to the temporary duration of construction activity and the mitigation measures included in the project. These local adverse impacts would not be of sufficient magnitude or nature to impair the integrity of biological resources that are necessary to fulfill specific purposes identified in the park's establishing legislation, key to opportunities for enjoyment of the park, or identified as a goal in the park's *General Management Plan* or other relevant planning documents. Therefore, Alternative 2 would not impair resources or park values for future generations.

Alternative 3

Analysis

Construction-related Effects on Geology. Earthwork undertaken for this alternative would involve excavation of approximately 3,400 cubic yards of material, primarily in the area west of the existing Center and the remote parking area (kennel site), and the placement of approximately 2,200 cubic yards of fill in these areas and along the ring road. Impacts under Alternative 3 would be generally the same as described for Alternative 2. Both alternatives share similar potential impacts related to seismic ground shaking, settlement, and soil erosion at the main Center site. All mitigation measures identified for Alternative 2 would apply to the main site and perimeter roadway construction undertaken as part of this alternative. The notable difference between the two alternatives is the construction of a remote parking area south of the main site. The remote parking area would utilize portions of an existing roadway and graded area. Implementation of this alternative would involve additional grading and cut and fill activities along the proposed roadway and parking area.

The kennel area is underlain by geologic materials similar to those underlying the main site (i.e., Franciscan sandstone and shale). As with the main site, fill materials placed under the existing roadway and storage area may not have been engineered during placement. This area may thus be subject to settlement or have inadequate strength to support the proposed use. This area would also be subject to the same potential for soil erosion and to the effects of ground shaking discussed with respect to the main site facilities, above. Because the use of this area would be limited to a parking access road and parking, potential impacts to structures would be limited. As discussed under Alternative 2, construction-related erosion impacts would be avoided because the construction site would be winterized and standard construction practices to prevent erosion would be implemented. To prevent the occurrence of long-term erosion, drainage facilities would be designed and engineered to direct surface runoff to drainage structures capable of accommodating projected flows away from wetland areas east of the site (see Appendix E – Water Resources). These would be constructed according to standard engineering practice. Mitigation measures are included in Appendix A that require the authors of the geotechnical investigation report for the project (Cleary Consultants, Inc., 2003) be retained to review the final design plans for this alternative and to observe earthwork and foundation installation of all aspects of Alternative 3.

These mitigation measures would reduce the potential damage of proposed project changes under this Alternative to minor though the impact would remain adverse.

Impact Significance after Mitigation Included in the Project. Local, Short and long-term, Minor Adverse Impact.

Summary of Alternative 3 Impacts. Alternative 3 would have local, short and long-term, minor adverse effect on geology, soils and seismicity due to impacts associated with construction activity and adequate design of facilities. The adverse impacts to geology, soils and seismicity have been somewhat offset by the mitigation included in this analysis.

Impairment

Alternative 3 would result in local, short and long-term, minor adverse impacts to geology, soils and seismicity in The Marine Mammal Center project area. The adverse effects of this alternative would be localized and only slightly detectable. The Marine Mammal Center Project would not

be expected to have an overall effect on geology, soils and seismicity in the area, due to the temporary duration of construction activity and the mitigation measures included in the project. These local adverse impacts would not be of sufficient magnitude or nature to impair the integrity of biological resources that are necessary to fulfill specific purposes identified in the park's establishing legislation, key to opportunities for enjoyment of the park, or identified as a goal in the park's *General Management Plan* or other relevant planning documents. Therefore, Alternative 3 would not impair resources or park values for future generations.

Alternative 4

Analysis

Earthwork undertaken for this alternative would involve excavation of approximately 1,600 cubic yards of material, primarily in the southwest corner of the existing Center site and the remote parking area, and placement of approximately 2,000 cubic yards of fill. Under Alternative 4, a perimeter roadway would be constructed but would be contained within the existing site footprint and fewer new buildings would be constructed. The impacts related to settlement, landsliding, soil erosion, and seismic hazards identified under Alternative 2 also would apply to this alternative, although the extent of the impacts would be incrementally smaller under this alternative. Impacts related to construction of the remote parking area identified under Alternative 3 also would apply to this alternative; the extent of these impacts also would be incrementally smaller, due to the smaller parking area proposed under this alternative.

Impact Significance after Mitigation Included in the Project. Local, Short and long-term, Minor - Moderate, Adverse Impact.

Summary of Alternative 4 Impacts. Alternative 4 would have local, short and long-term, minor - moderate, adverse effect on geology, soils and seismicity due to impacts associated with construction activity and adequate design of facilities. The adverse impacts to geology, soils and seismicity have been somewhat offset by the mitigation included in this analysis.

Impairment

Alternative 4 would result in a local, short and long-term, minor - moderate, adverse impacts to geology, soils and seismicity in The Marine Mammal Center project area. The adverse effects of this alternative would be localized but clearly detectable. The Marine Mammal Center Project would not be expected to have an overall effect on geology, soils and seismicity in the area, due to the temporary duration of construction activity and the mitigation measures included in the project. These local adverse impacts would not be of sufficient magnitude or nature to impair the integrity of biological resources that are necessary to fulfill specific purposes identified in the park's establishing legislation, key to opportunities for enjoyment of the park, or identified as a goal in the park's *General Management Plan* or other relevant planning documents. Therefore, Alternative 4 would not impair resources or park values for future generations.

Hazardous Materials

Alternative 1

Analysis

Under Alternative 1, none of the facilities of the proposed project would be implemented. Lead-based paint and asbestos is present in several structures constructed prior to 1950 (McKewan,

2003). Because no activity is proposed that would disturb the lead-based paint and asbestos, Alternative 1 would have no effect with respect to these materials. They would continue to be managed in place.

Impact Significance. No effect.

Summary of Alternative 1 Impacts. Alternative 1 would bring about no new impacts from hazardous materials.

Impairment

Alternative 1 would result in no new impacts to existing conditions. Therefore, Alternative 1 would not impair resources or park values for future generations due to impacts from hazardous materials.

Alternative 2

Analysis

Construction-related Effects from exposure to Hazardous Materials. Lead-based paint and asbestos are present in structures constructed prior to 1950. Under Alternative 2, proposed building demolition could disturb these materials and expose construction workers to hazardous levels of lead-based paint and asbestos. This would result in a moderate, adverse impact. Mitigation measures included in Appendix A address worker safety hazards that may arise during renovation , including respiratory protection, protective clothing, housekeeping, hygiene facilities, medical surveillance, and training among other best management practices. These mitigations would reduce this impact to minor but still adverse.

Construction activities would involve the use of certain hazardous materials such as fuels, oils, paint, solvents and glues. Inadvertent release of large quantities of these materials into the environment could adversely impact soil, surface waters, or groundwater quality. However, the on-site storage and/or use of large quantities of materials capable of impacting soil and groundwater are not typically necessary for a project of this type. Implementation of Mitigation Measures included in Appendix A for handling of hazardous materials during construction would reduce these impacts to minor adverse.

Summary of Alternative 2 Impacts. Alternative 2 could cause local, short-term, minor, adverse impacts from hazardous materials.

Impairment

With the inclusion of described mitigations, Alternative 2 would not impair resources or park values for future generations due to impacts from hazardous materials.

Alternative 3

Analysis

Construction-related Effects from exposure to Hazardous Materials. Lead-based paint and asbestos are present in structures constructed prior to 1950. As under Alternative 2 described above, proposed building demolition could disturb these materials and expose construction workers to hazardous levels of lead-based paint and asbestos. This would result in a moderate, adverse impact. Mitigation measures included in Appendix A address worker safety hazards that

may arise during renovation, including respiratory protection, protective clothing, housekeeping, hygiene facilities, medical surveillance, and training among other best management practices. These mitigations would reduce this impact to minor but still adverse.

Construction activities would involve the use of certain hazardous materials such as fuels, oils, paint, solvents and glues. Inadvertent release of large quantities of these materials into the environment could adversely impact soil, surface waters, or groundwater quality. However, the on-site storage and/or use of large quantities of materials capable of impacting soil and groundwater are not typically necessary for a project of this type. Implementation of Mitigation Measures included in Appendix A for handling of hazardous materials during construction would reduce these impacts to minor adverse.

Summary of Alternative 3 Impacts. Alternative 3 could cause local, short-term, minor, adverse impacts from hazardous materials.

Impairment

With the inclusion of described mitigations, Alternative 3 would not impair resources or park values for future generations due to impacts from hazardous materials.

Alternative 4

Analysis

Construction-related Effects from exposure to Hazardous Materials. Lead-based paint and asbestos are present in structures constructed prior to 1950. As under Alternatives 2 and 3 described above, proposed building demolition could disturb these materials and expose construction workers to hazardous levels of lead-based paint and asbestos. This would result in a moderate, adverse impact. Mitigation measures included in Appendix A address worker safety hazards that may arise during renovation, including respiratory protection, protective clothing, housekeeping, hygiene facilities, medical surveillance, and training among other best management practices. These mitigations would reduce this impact to minor but still adverse.

Construction activities would involve the use of certain hazardous materials such as fuels, oils, paint, solvents and glues. Inadvertent release of large quantities of these materials into the environment could adversely impact soil, surface waters, or groundwater quality. However, the on-site storage and/or use of large quantities of materials capable of impacting soil and groundwater are not typically necessary for a project of this type. Implementation of Mitigation Measures included in Appendix A for handling of hazardous materials during construction would reduce these impacts to minor adverse.

Summary of Alternative 4 Impacts. Alternative 4 could cause local, short-term, minor, adverse impacts from hazardous materials.

Impairment

With the inclusion of described mitigations, Alternative 4 would not impair resources or park values for future generations due to impacts from hazardous materials.

Air Quality

Alternative 1

Analysis

Under Alternative 1, none of the facilities of the proposed project would be implemented. Potential impacts from construction related emissions would not occur thus, Alternative 1 would have no effect with respect to air quality.

Impact Significance. No effect.

Summary of Alternative 1 Impacts. Alternative 1 would not negatively impact air quality.

Impairment

Alternative 1 would result in no new impacts to existing conditions. Therefore, Alternative 1 would not impair resources or park values for future generations.

Alternative 2

Analysis

Construction-related Effects to Air Quality. Construction of the project would generate fugitive dust (including PM_{10}) and other criteria air pollutants from exhaust emissions. A large portion of the total construction dust emissions would result from trenching and excavation activities. Dust emissions would vary from day to day, depending on the phase of construction, the silt content of the soil, and the weather. Daily emissions would depend greatly upon whether construction of the various project components (e.g., excavation of underground storage tank and associated pipelines) would occur simultaneously.

In regards to PM_{10} emissions, the Bay Area Air Quality Management District indicates that if control measures are implemented, PM_{10} emissions from construction activities would be considered a minor impact. Dust control measures identified in Appendix A would ensure that this adverse impact remains minor.

Summary of Alternative 2 Impacts. Alternative 2 could cause local, short-term, minor, adverse impacts to air quality.

Impairment

With the inclusion of described mitigations, Alternative 2 would not impair resources or park values for future generations.

Alternative 3

Analysis

Construction-related Effects to Air Quality. Construction of the project would generate fugitive dust (including PM_{10}) and other criteria air pollutants from exhaust emissions. A large portion of the total construction dust emissions would result from trenching and excavation activities. Dust emissions would vary from day to day, depending on the phase of construction, the silt content of the soil, and the weather. Daily emissions would depend greatly upon whether construction of the various project components (e.g., excavation of underground storage tank and associated pipelines) would occur simultaneously.

In regards to PM_{10} emissions, the Bay Area Air Quality Management District indicates that if control measures are implemented, PM_{10} emissions from construction activities would be considered a minor impact. Dust control measures identified in Appendix A would ensure that this adverse impact remains minor.

Summary of Alternative 3 Impacts. Alternative 3 could cause local, short-term, minor, adverse impacts to air quality.

Impairment

With the inclusion of described mitigations, Alternative 3 would not impair resources or park values for future generations.

Alternative 4

Analysis

Construction-related Effects to Air Quality. Construction of the project would generate fugitive dust (including PM_{10}) and other criteria air pollutants from exhaust emissions. A large portion of the total construction dust emissions would result from trenching and excavation activities. Dust emissions would vary from day to day, depending on the phase of construction, the silt content of the soil, and the weather. Daily emissions would depend greatly upon whether construction of the various project components (e.g., excavation of underground storage tank and associated pipelines) would occur simultaneously.

In regards to PM_{10} emissions, the Bay Area Air Quality Management District indicates that if control measures are implemented, PM_{10} emissions from construction activities would be considered a minor impact. Dust control measures identified in Appendix A would ensure that this adverse impact remains minor.

Summary of Alternative 4 Impacts. Alternative 4 could cause local, short-term, minor, adverse impacts to air quality.

Impairment

With the inclusion of described mitigations, Alternative 4 would not impair resources or park values for future generations.

Noise

Alternative 1

Analysis

Under Alternative 1, none of the facilities of the proposed project would be implemented. Potential noise impacts from construction would not occur thus, Alternative 1 would have no effect with respect to noise emissions.

Impact Significance. No effect.

Summary of Alternative 1 Impacts. Alternative 1 would have no increased impacts from noise.

Impairment

Alternative 1 would result in no new impacts to existing conditions. Therefore, Alternative 1 would not impair resources or park values for future generations in terms of increased noise.

Alternative 2

Analysis

Operation-related Impacts from Noise. Operational noise levels at the treatment site would fluctuate depending on the particular type of equipment being used on site and the number of animals in residence. Barking marine mammals are part of the existing site and the noise produced by these animals is not expected to increase or change. The new buildings at the treatment site could have a potential beneficial impact in shielding this existing noise source from receptors at Fort Cronkhite (to the west). These buildings are not expected to amplify the existing barking noises to the east.

Impact Significance. Minor effect.

Summary of Alternative 2 Impacts. Alternative 2 would have minor, beneficial increased impacts from noise.

Impairment

Alternative 2 would result in minor impacts to existing conditions. Therefore, Alternative 2 would not impair resources or park values for future generations in terms of increased noise.

Construction-related Impacts from Noise. Construction noise levels at the treatment site would fluctuate depending on the particular type, number, and duration of use of various types of construction equipment. The effect of construction noise would depend upon the type of construction activity, the distance between construction activities and the nearest noise sensitive uses, and the existing noise levels at those uses.

Typical noise levels generated by different types of standard construction equipment are described below (FTA, 1995):

- Equipment Noise Level at 50 feet (dBA, Leq)
- backhoes 80
- shovel 82
- dozers 85
- scrapers 89
- truck 88
- paver 89
- pumps 76
- generators 81
- compressors 81
- Jack hammers 88
- pile drivers 101

Excavation activities would most probably involve the use of an excavator shovel, which as shown above would generate approximately 82 dBA at 50 feet. The receptors nearest this noise source

would be volunteers and staff at the treatment site, visitors to the Center's education program and the animals on site at the time of construction. These temporary noise levels would not be in keeping with NPS goals to restore and maintain the natural soundscape of the park setting. Mitigation Measures described in Appendix A include limiting construction to the off-season for animal care and weekdays and potentially limiting education programs during periods of concentrated construction. These mitigations would reduce the severity of this impact to minor adverse.

Summary of Alternative 2 Impacts. Alternative 2 would cause local, short-term, minor, adverse impacts from increased noise.

Impairment

With the inclusion of described mitigations, Alternative 2 would not impair resources or park values for future generations due to increased noise.

Alternative 3

Analysis

Operation-related Impacts from Noise. As with Alternative 2, operational noise levels at the treatment site would fluctuate depending on the particular type of equipment being used on site and the number of animals in residence. Barking marine mammals are part of the existing site and the noise produced by these animals is not expected to increase or change. The new buildings at the treatment site could have a potential beneficial impact in shielding this existing noise source from receptors at Fort Cronkhite (to the west). These buildings are not expected to amplify the existing barking noises to the east.

Impact Significance. Minor effect.

Summary of Alternative 3 Impacts. Alternative 3 would have minor, beneficial increased impacts from noise.

Impairment

Alternative 3 would result in minor impacts to existing conditions. Therefore, Alternative 3 would not impair resources or park values for future generations in terms of increased noise.

Construction-related Impacts from Noise. Construction noise levels at the treatment site would fluctuate depending on the particular type, number, and duration of use of various types of construction equipment. The effect of construction noise would depend upon the type of construction activity, the distance between construction activities and the nearest noise sensitive uses, and the existing noise levels at those uses.

Typical noise levels generated by different types of standard construction equipment are described above under the discussion of Alternative 2. Excavation activities would most probably involve the use of an excavator shovel, which as shown above would generate approximately 82 dBA at 50 feet. The receptors nearest this noise source would be volunteers and staff at the treatment site, visitors to The Center's education program and the animals on site at the time of construction. These temporary noise levels would not be in keeping with NPS goals to restore and maintain the natural soundscape of the park setting. Mitigation Measures described in Appendix A include limiting construction to the off-season for animal care and weekdays and

potentially limiting education programs during periods of concentrated construction. These mitigations would reduce the severity of this impact to minor adverse.

Summary of Alternative 3 Impacts. Alternative 3 would cause local, short-term, minor, adverse impacts from increased noise.

Impairment

With the inclusion of described mitigations, Alternative 3 would not impair resources or park values for future generations due to increased noise.

Alternative 4

Analysis

Operation-related Impacts from Noise. As with Alternative 2, operational noise levels at the treatment site would fluctuate depending on the particular type of equipment being used on site and the number of animals in residence. Barking marine mammals are part of the existing site and the noise produced by these animals is not expected to increase or change. The new buildings at the treatment site could have a potential beneficial impact in shielding this existing noise source from receptors at Fort Cronkhite (to the west). These buildings are not expected to amplify the existing barking noises to the east.

Impact Significance. Minor effect.

Summary of Alternative 4 Impacts. Alternative 4 would have minor, beneficial increased impacts from noise.

Impairment

Alternative 4 would result in minor impacts to existing conditions. Therefore, Alternative 4 would not impair resources or park values for future generations in terms of increased noise.

Construction-related Impacts from Noise. Construction noise levels at the treatment site would fluctuate depending on the particular type, number, and duration of use of various types of construction equipment. The effect of construction noise would depend upon the type of construction activity, the distance between construction activities and the nearest noise sensitive uses, and the existing noise levels at those uses.

Typical noise levels generated by different types of standard construction equipment are described above under the discussion of Alternative 2. Excavation activities would most probably involve the use of an excavator shovel, which as shown above would generate approximately 82 dBA at 50 feet. The receptors nearest this noise source would be volunteers and staff at the treatment site, visitors to The Center's education program and the animals on site at the time of construction. These temporary noise levels would not be in keeping with NPS goals to restore and maintain the natural soundscape of the park setting. Mitigation Measures described in Appendix A include limiting construction to the off-season for animal care and weekdays and potentially limiting education programs during periods of concentrated construction. These mitigations would reduce the severity of this impact to minor adverse.

Summary of Alternative 4 Impacts. Alternative 4 would cause local, short-term, minor, adverse impacts from increased noise.

Impairment

With the inclusion of described mitigations, Alternative 4 would not impair resources or park values for future generations due to increased noise.

Cultural Resources

Alternative 1

Analysis

Under Alternative 1, no changes to the existing facilities would be implemented. Maintenance of the cultural resources (namely the historic buildings at Fort Cronkhite) would continue to be governed by the 1992 Section 106 Programmatic Agreement among the NPS, the California Historic Preservation Office, and the Advisory Council on Historic Preservation. As a result, potential improvements or other projects would continue to be subject to consultation and review, and consequently, cultural resources would be protected as they are currently.

Impact Significance. No Impact.

Summary of Alternative 1 Impacts. Alternative 1 would bring about no new impacts on cultural and historic resources.

Impairment

Alternative 1 would result in no new impacts to existing conditions. Therefore, Alternative 1 would not impair resources or park values for future generations.

Alternative 2

Analysis

Construction-related Effects on Archaeology. Under Alternative 2, portions of area now in grasslands would be excavated to construct new parking areas. Foundations would also be built for proposed new buildings. Because of the potential for the discovery of unidentified or unexpected subsurface archaeological resources during ground disturbance, this would be considered a moderate, adverse impact. However, mitigation measures outlined in Appendix A, Mitigation Measures, such as construction monitoring and avoidance would reduce this adverse impact to minor to moderate.

Impact Significance After Mitigation Included in the Project. Local, Long-term, Minor to Moderate, Adverse Impact.

Operation-related Effects on Historic and Cultural Landscape Resources. Alternative 2 would alter the project site through the addition of three new buildings and several remodeled facilities. No historic buildings would be demolished under this Alternative. Two historic buildings now in use by the Center at Fort Cronkhite would be vacated and managed by NPS. While the impact of vacant historic buildings would be considered in the Section 106 Consultation, it is anticipated that the impact would not be adverse. The fact that the Park has an active Section 110 program and fully intends to find uses for these buildings would ensure their continued preservation. Impacts to the views and vistas that now contribute to the cultural landscape would be considered moderate adverse impacts. The cumulative effects of adding 3 new buildings to the historic district would be assessed in the Section 106 Consultation for any possible immediate or

cumulative effects to the FBBC National Register property. Since these new structures are on a previously developed area and are screened from general view by the topography of the site, the effects would not be adverse. New construction would be compatibly designed and sited in keeping with the character-defining elements of the Forts Barry, Baker and Cronkhite Historical District. Compatibility Guidelines, now under development, would encourage the design of new buildings to be compatible in scale, massing, color, material and character with the Historic district. This would have a beneficial impact as this could improve the degraded and inconsistent structures that now exist on the site. Implementation of mitigation measures described in Appendix A regarding adoption of Compatibility Guidelines being currently negotiated for this project would reduce impacts from this Alternative but they would remain adverse.

Impact Significance After Mitigation Included in the Project. Local, long-term, moderate, adverse impact. These impacts would not have significant adverse effects on the National Register District.

Summary of Alternative 2 Impacts. Alternative 2 would have both adverse and beneficial impacts on historic and cultural resources. On balance these impacts would remain moderate and adverse.

Impairment

Alternative 2 would result in local, long-term, moderate adverse impacts however would not impair resources or park values for future generations.

Alternative 3

Analysis

Construction-related Effects on Archaeology. Under Alternative 3, portions of the old kennel site, now in grasslands would be developed to construct new parking areas. Foundations would also be built for proposed new buildings. Because of the potential for the discovery of unidentified or unexpected subsurface archaeological resources during ground disturbance, this would be considered a moderate, adverse impact. However, mitigation measures outlined in Appendix A, Mitigation Measures, such as construction monitoring and avoidance would reduce this adverse impact to minor to moderate.

Impact Significance After Mitigation Included in the Project. Local, Long-term, Minor to Moderate, Adverse Impact.

Operation-related Effects on Historic and Cultural Landscape Resources. Alternative 3 would alter the project site through the addition of two new buildings and several remodeled facilities. No historic buildings are being demolished under this Alternative. Two historic buildings now in use by the Center at Fort Cronkhite would be vacated but these buildings would become the responsibility of NPS and would thus continue to be protected. Impacts to the views and vistas that now contribute to the cultural landscape would be considered moderate adverse impacts. New construction would be compatibly designed and sited in keeping with the character-defining elements of the Forts Barry, Baker and Cronhkite Historical District. Compatibility Guidelines, now under development, would encourage the design of new buildings to be compatible in scale, massing, color, material and character with the Historic district. This would have a beneficial impact as these changes would improve the degraded and inconsistent structures that now exist on the site. Implementation of mitigation measures described in Appendix A regarding adoption

of Compatibility Guidelines being currently negotiated for this project would reduce impacts from this Alternative but they would remain adverse.

Impact Significance After Mitigation Included in the Project. Local, long-term, moderate, adverse impact. These impacts would not have significant adverse effects on the National Register District.

Summary of Alternative 3 Impacts. Alternative 3 would have both adverse and beneficial impacts on historic and cultural resources. On balance these impacts would remain moderate and adverse.

Impairment

Alternative 3 would result in local, long-term, moderate adverse impacts however would not impair resources or park values for future generations.

Alternative 4

Analysis

Construction-related Effects on Archaeology. Under Alternative 4, a reduced area (as compared to Alternative 3)of the old kennel site, now in grasslands would be excavated to construct new parking areas. Foundations would also be built for proposed new buildings but within a smaller footprint that other alternatives. Because of the potential for the discovery of unidentified or unexpected subsurface archaeological resources during ground disturbance, this would be considered a moderate, adverse impact. However, mitigation measures outlined in Appendix A, Mitigation Measures, such as construction monitoring and avoidance would reduce this adverse impact to minor to moderate.

Impact Significance After Mitigation Included in the Project. Local, Long-term, Minor to Moderate, Adverse Impact.

Operation-related Effects on Cultural Landscape Resources. Alternative 4 would alter the project site through the addition of two new buildings and several remodeled facilities. No historic buildings are being demolished under this Alternative, however impacts to the views and vistas that now contribute to the cultural landscape would be considered moderate adverse impacts. New construction would be compatibly designed and sited in keeping with the character-defining elements of the Forts Barry, Baker and Cronkhite Historical District. Compatibility Guidelines, now under development, would encourage the design of new buildings to be compatible in scale, massing, color, material and character with the Historic district. These changes would have a beneficial impact as this could improve the degraded and inconsistent structures that now exist on the site. Implementation of mitigation measures described in Appendix A regarding adoption of Compatibility Guidelines being currently negotiated for this project would reduce impacts from this Alternative to minor, adverse.

Impact Significance After Mitigation Included in the Project. Local, long-term, minor, adverse impact. These impacts would not have significant adverse effects on the National Register District.

Summary of Alternative 4 Impacts. Alternative 4 would have both adverse and beneficial impacts on historic and cultural resources. On balance these impacts would be minor and adverse.

Impairment

Alternative 4 would result in local, long-term, minor adverse impacts and thus would not impair resources or park values for future generations.

Transportation

Alternative 1

Analysis

Under Alternative 1, none of the facilities of the proposed project would be implemented. The Center would continue to function under its current intensity. Thus there are no additional vehicle trips generated by this alternative and no changes to site access, on-site circulation or parking. On the other hand, under Alternative 1, inefficient and unsafe parking and circulation scenarios would continue to exist. At present, the 13 visitor spaces on the access road do not allow for efficient or safe passage by either cars or pedestrians on this access route.

Impact Significance. Local, Long-term, Moderate, Adverse Impact.

Summary of Alternative 1 Impacts. Alternative 1 would have a local, long-term, moderate, adverse effect on parking and circulation as ongoing impacts of inefficient and unsafe parking and circulation scenarios that would continue to exist.

Impairment

Alternative 1 would result in a local, long-term, moderate, adverse impact to parking and circulation in the project area. However, the local adverse impacts would not affect the integrity of transportation systems or circulation elements identified in relevant planning documents. Therefore, Alternative 1 would not impair resources or park values for future generations.

Alternative 2

Analysis

Operation-related Effects on Transportation. Alternative 2 includes construction of an 18-foot, one-way perimeter road (ring road) around the treatment site and a new parking lot on the west side of the site, accessed off of the main access road by a two-way portion of the ring road. The eastern portion of the ring road would be gated and closed to the general public and would be proposed to service daily deliveries by large trucks for garbage pickup, fish deliveries, supplies, and animal admissions. The eastern portion of the ring road is designed to separate the vehicles from the animal patients, as well as the volunteers, staff, and visitors on foot. This alternative would provide a total of 78 parking spaces, including 41 standard parking spaces and 2 handicapped parking spaces in the new lot west of the Marine Science Community Education Center, and 19 parallel parking spaces along the access road. The Center would use at least 16 additional spaces outside their assigned lands for daily operation. Buses would park in or near the NPS Maintenance Yard.

This analysis focuses on the likely increase in vehicle trips that could result from the project alternatives. The action alternatives are generally intended to upgrade existing operations and would not necessarily generate increases in vehicle trips despite the net increase in built square footage. It is difficult to find comparable projects that have expanded square footage and improved facilities but not grown an existing program. The Lindsay Wildlife facility undertook a

similar upgrade and has not experienced a significant increase in visitors. However, a new facility could attract more people, as could word-of-mouth. Using best professional judgment it is estimated that under Alternative 2 an increase of up to ten visitors might be expected on peak days. This is approximately 10 percent of visitorship on peak days. Given current traffic volumes, this additional traffic (less than 15 vehicle trips as not all visitors would come in single cars) would represent an increase of less than 0.10 percent over current conditions on Bunker Road and would thus be considered negligible, adverse.

Under this alternative, trips that currently terminate at the administrative facilities at Ft. Cronkhite would be reassigned to terminate at the Center, but would not generate new trips to the area on Bunker Road east of the Center. There would be a reduction in the vehicle trips required between Fort Cronkhite and the treatment site.

The occasional special event at the Center could result in impacts to vehicle queues at the Barry Tunnel and at the intersection of Bunker Road and Alexander Road if conducted on Saturday or Sunday afternoons. Currently, the Center conducts up to six such events per year (which would be the same as future conditions); so no impact would be generated relative to existing conditions.

Reuse of buildings that the Center would vacate at Ft. Cronkhite would be anticipated under this Alternative. No particular future use has been identified for the buildings at this time. These buildings consist of approximately 2,760 square feet of space. The type of new use in these buildings could impact future conditions. As an example, an office or similar facility may be expected to generate approximately 104 daily vehicle trips, based on standard industry tip generation data maintained by the Institute of Transportation Engineers for single-tenant office buildings. This would represent an increase of approximately four percent on Bunker Road. Sufficient capacity exists on Bunker Road to accommodate those additional trips, particularly on weekdays, thus this impact would be considered negligible as well.

On-site circulation and parking would be improved under Alternative 2. However, improvements to the access road could be required as traffic is redirected along this route.

Impact Significance. Local, Long-term, Negligible - Minor Adverse Impact.

Construction-related Effects on Transportation. Construction traffic generated by trucks and other vehicles traveling to and from the site during construction of the improvements envisioned by this Alternative could potentially impact local roadways.

Bunker Road is the most level and direct route to the project site. The topography, curves and heavier usage experienced on Conzelman Road constrains truck traffic to and from the Center. Despite vehicle queuing at the Barry Tunnel, Bunker Road is the more appropriate route for construction vehicles. Given the capacity of the road utilized during peak weekend periods it is clear there is sufficient remaining capacity on weekdays to handle the additional construction requirements.

Appendix A contains general recommendations regarding construction traffic routing and phasing which would minimize potential construction impacts to minor adverse levels.

Impact Significance after Mitigation Included in the Project. Local, Short and Long -term, Negligible - Minor, Adverse Impact.

Summary of Alternative 2 Impacts. Alternative 2 would have local, short and long-term, negligible - minor, adverse effect on transportation due to impacts associated with construction activity and increased visitor use. The adverse impacts to transportation would be offset by the mitigation included in the Project (See Appendix A).

Impairment

Alternative 2 would result in a local, short and long-term, negligible - minor, adverse effect on transportation in The Marine Mammal Center project area. The adverse effects of this alternative would be localized and only slightly detectable. The Marine Mammal Center Project would not be expected to have an overall effect on transportation in the area, due to the temporary duration of construction activity and the mitigation measures included in the project. These local impacts would not be of sufficient magnitude or nature to impair the integrity of transportation and circulation in the Park. Therefore, Alternative 2 would not impair resources or park values for future generations.

Alternative 3

Analysis

Operation-related Effects on Transportation. Similar to Alternative 2, Alternative 3 includes construction of an 18-foot wide, one-way ring road to service emergency vehicles and daily deliveries by large trucks. This one-way road would be closed to the public and would encircle the entire facility. This alternative would provide a total of 78 parking spaces, including 2 handicapped parking spaces at the treatment site and 60 standard parking spaces and in the new lot on the former kennel site. The Center would use at least 16 additional spaces outside their assigned lands for daily operation. Buses would park in or near the NPS Maintenance Yard.

A new access road would be constructed to connect this remote parking area to the old access road and a 200-foot path would connect the remote parking area to the Center. A sense of arrival would be established with a walkway up the hill and around to the main entrance. Handicapped parking would be located adjacent to the facilities, in conformance with UFAS and ADA standards. Though located away from the Center's facilities, the remote lot would result in reduced vehicle activity in the vicinity of Center patients, and would be partially visually screened by the topography in the area.

As described above in Alternative 2, the action alternatives are intended to upgrade existing operations and would not necessarily generate a noticeable increase in vehicle trips despite the net increase in built square footage. It is estimated that under Alternative 3 an increase of up to ten visitors might be expected on peak days. This is approximately 10% of visitorship on peak days. Given current traffic volumes, this additional traffic (less than 15 vehicle trips as not all visitors would come in single cars) would represent an increase of less than 0.10 percent over current conditions on Bunker Road and would thus be considered negligible, adverse.

As with Alternative 2, trips that currently terminate at the administrative facilities at buildings in Ft. Cronkhite would be reassigned to terminate at the Center, but would not generate new trips to the area on Bunker Road east of the Center.

Reuse of buildings at Ft. Cronkhite for another tenant would be anticipated under this Alternative, as the Center would vacate these buildings. No particular use has been identified for these buildings, which consist of approximately 2,760 square feet of space. Reuse of the buildings,

depending on the NPS selected uses, could impact future conditions. As an example, an office or similar facility may be expected to generate approximately 104 daily vehicle trips, based on standard industry tip generation data maintained by the Institute of Transportation Engineers for single-tenant office buildings. This would represent an increase of approximately four percent on Bunker Road. Sufficient capacity exists on Bunker Road to accommodate those additional trips, particularly on weekdays, thus this impact would be considered negligible as well.

Based upon this review, Alternative 3 would provide improved circulation and access over existing conditions for vehicles and pedestrians on-site. Thus this would be considered a moderate beneficial impact.

Impact Significance. Local, Long-term, Negligible – Moderate Beneficial Impact.

Construction-related Effects on Transportation. As described above under Alternative 2, Construction traffic generated by trucks and other vehicles traveling to and from the site during construction of the improvements envisioned by this Alternative could potentially impact local roadways. Appendix A contains general recommendations, as described above which would minimize potential construction impacts to minor adverse levels.

Impact Significance after Mitigation Included in the Project. Local, Short and Long -term, Negligible - Minor, Adverse Impact.

Summary of Alternative 3 Impacts. Alternative 3 would have local, short and long-term, negligible - minor, adverse and beneficial effects on transportation and circulation due to impacts associated with construction activity and adequate design of facilities. The adverse impacts to transportation have been offset by the mitigation included in the project (See Appendix A).

Impairment

Alternative 3 would result in local, short and long-term, negligible - minor, adverse and beneficial effects on transportation and circulation in The Marine Mammal Center project area. The adverse effects of this alternative would be localized and only slightly detectable. The Marine Mammal Center Project would not be expected to have an overall effect on transportation in the area, due to the temporary duration of construction activity and the mitigation measures included in the project. These local impacts would not be of sufficient magnitude or nature to impair the integrity of transportation and circulation in the Park. Therefore, Alternative 3 would not impair resources or park values for future generations.

Alternative 4

Analysis

Like other action alternatives, Alternative 4 includes construction of a one-way ring road to service emergency vehicles and daily deliveries to the facilities. Under this alternative the footprint of the new ring road stays primarily within the existing footprint of the current Center treatment site. This alternative would provide a total of 78 parking spaces, including 2 handicapped parking spaces at the treatment site and 40 standard parking spaces in the new lot at the former kennel site. The Center would use at least 16 additional spaces outside their assigned lands for daily operation. 20 spaces would continue to be used at Fort Cronkhite. Buses would park in or near the NPS Maintenance Yard.

The remote parking lot would reduce the vehicle activity in the vicinity of Center patients, and would be partially screened by the topography in the area. A new access road would be constructed to connect this remote parking area to the old access road and a 200-foot long path would connect the remote parking area to the Center. Parking for use of the Ft. Cronkhite occupied buildings would continue to be accommodated in the large lot near the Ft. Cronkhite building complex and along the upper access road in that area (unchanged from current conditions).

As with Alternatives 2 and 3, Alternative 4 is generally intended to upgrade existing operations and would not necessarily generate significant increases in vehicle trips despite the net increase in built square footage. Because of the reduced square footage of the build out area under this alternative, an increase of less than ten visitors might be expected on peak days. This is approximately 8 percent of visitorship on peak days. Given current traffic volumes, this additional traffic (less than 10 vehicle trips as not all visitors would come in single cars) would represent an increase of less than 0.8 percent over current conditions on Bunker Road and would thus be considered negligible, adverse.

Impact Significance after Mitigation Included in the Project. Local, Short and Long -term, Negligible - Minor, Adverse Impact.

Summary of Alternative 2 Impacts. Alternative 4 would have local, short and long-term, negligible - minor, adverse and beneficial effects on transportation and circulation due to impacts associated with construction activity and adequate design of facilities. The adverse impacts to transportation have been offset by the mitigation included in this analysis.

Impairment

Alternative 4 would result in local, short and long-term, negligible - minor, adverse and beneficial effects on transportation and circulation in The Marine Mammal Center project area. The adverse effects of this alternative would be localized and only slightly detectable. The Marine Mammal Center Project would not be expected to have an overall effect on transportation in the area, due to the temporary duration of construction activity and the mitigation measures included in the project. These local impacts would not be of sufficient magnitude or nature to impair the integrity of transportation and circulation in the Park. Therefore, Alternative 4 would not impair resources or park values for future generations.

Visual Resources

Visual simulations were developed for The Marine Mammal Center project area. Two vantage points of The Marine Mammal Center were selected. The first vantage point is from an old bunker located on a ridge above The Center west of the project site (see figure C-1 in Appendix C, Visual Simulations). The second vantage point of The Marine Mammal Center is from Bunker Road near the Marin Headlands Visitor Center (see figure C-5 in Appendix C, Visual Simulations). The first vantage point provides medium-range views of the project site.

Alternative 1

Analysis

Operation-related Effects on Visual Resources. Under Alternative 1, The Marine Mammal Center would continue to be visually characterized as a mix of one-story utilitarian architectural styles

and makeshift structures comprising approximately 18,000 square feet of building space on the treatment site. The exposed infrastructure, primarily the LSS and water filtration system are a visual intrusion on the landscape at the site. The architectural style of The Center's facilities would continue to be somewhat incoherent and not well integrated with the setting. Site lighting would continue to intrude upon night sky views in the project area.

The built features of The Marine Mammal Center would continue to be visible from vantage points in the project area, including medium range views of the facility from the historic bunker west of the site (see figure C-1 in Appendix C, Visual Simulations) and medium- to long-range views from Bunker Road near the Marin Headlands Visitor Center (see figure C-5 in Appendix C, Visual Simulations). The features of the site moderately intrude upon the setting of the Marin Headlands.

Impact Significance. Local, Long-term, Moderate, Adverse Impact.

Summary of Alternative 1 Impacts. Alternative 1 would have a local, long-term, moderate, adverse effect on visual resources associated with The Center's cluttered site and mixed architectural style with other historic facilities in the area and the intrusion of built features on the natural landscape of the Marin Headlands.

Impairment

Alternative 1 would result in a local, long-term, moderate, adverse impact to visual resources in the project area. The adverse effect of this alternative on visual resources would be localized to the project area and would not be expected to have an overall effect on the visual resources of the area. The local adverse impacts to visual resources would not be of sufficient magnitude or nature to impair the integrity of scenic resources that are necessary to fulfill specific purposes identified in the park's establishing legislation, key to opportunities for enjoyment of the park, or identified as a goal in the park's *General Management Plan* or other relevant planning documents. Therefore, Alternative 1 would not impair resources or park values for future generations.

Alternative 2

Analysis

Construction-related Effects on Visual Resources. Construction of The Marine Mammal Center Project would have a short-term, adverse impact on visual resources in the project area during the construction period. Construction activity, including construction fencing, staging areas, heavy-duty equipment, ground disturbance, and increased truck traffic on local roadways, would be visible by recreational users and park staff in the project area,. Construction activity would intermittently block visitors from viewing marine mammals on-site during the construction period. Appendix A, Mitigation Measures, identifies visual resources protection measures such as fencing the construction staging area to provide visual screening and consolidating construction equipment and materials at the staging areas. Although these mitigation measures would somewhat reduce the adverse visual effect of construction activity, it would not reduce the intensity of the adverse impact.

Impact Significance after Mitigation Included in the Project. Local, Short-term, Moderate, Adverse Impact.

Operation-related Effects on Visual Resources. Implementation of Alternative 2 would result in increased developed facilities at The Marine Mammal Center site. Alternative 2 would include approximately 35,200 square feet of building space in predominantly 2-story structures at the treatment site, including 7,700 square feet of underground space. The increase in developed building space and the conversion of buildings on the site from one-story (13 feet high) to predominantly two-story (26 feet high) buildings would increase the visibility of built structures in the natural landscape of the Marin Headlands. From the historic bunker west of the site (see figure C-2 in Appendix C, Visual Simulations) the new 2-story built features would be noticeably more visible in the natural landscape than the existing built features. Paved areas and parked cars would be limited to the existing treatment site. From the NPS Marin Headlands visitor center area (see figure C-6 in Appendix C, Visual Simulations) the new built features would be more visible in the natural landscape than the existing built features. New buildings could be seen after dark if office lights are in use. The intrusion of new built features on the natural Marin Headlands landscape would have a local, long-term, moderate, adverse impact on visual resources.

A number of design elements would mitigate the visual impact of the Center, including a cohesive architectural design of Center facilities that would incorporate elements of the historic architectural style of Fort Cronkhite buildings and site landscaping and an entry porch designed to enhance visitors' sense of arrival. The design elements of Alternative 2 would have a local, long-term, minor, beneficial impact on visual resources. Also beneficial would be the removal of the highly visible clutter at the former kennel site and the site's restoration to natural vegetation.

Impact Significance. Local, Long-term, Minor, Adverse Impact**.**

Summary of Alternative 2 Impacts. Alternative 2 would have local, long-term, moderate, adverse effect on visual resources due to visual intrusions associated with construction activity, such as construction equipment and ground disturbance, and the introduction of new built features in the natural landscape of the Marin Headlands. The adverse visual resource impacts would be somewhat offset by the design elements at The Marine Mammal Center and mitigation measures included in Appendix A (Historic Compatability Guidlelines).

Impairment

Alternative 2 would result in a local, long-term, moderate, adverse impact to visual resources at The Marine Mammal Center project area. The adverse effect of this alternative on visual resources would be localized but clearly detectable. The Marine Mammal Center Project would not be expected to have an overall effect on the visual resources of the area, due to the temporary duration of construction activity. The local adverse impacts to visual resources would not be of sufficient magnitude or nature to impair the integrity of visual resources that are necessary to fulfill specific purposes identified in the park's establishing legislation, key to opportunities for enjoyment of the park, or identified as a goal in the park's *General Management Plan* or other relevant planning documents. Therefore, Alternative 2 would not impair resources or park values for future generations.

Alternative 3

Analysis

Construction-related Effects on Visual Resources. Similar to Alternative 2, Alternative 3 would have a short-term, adverse impact on visual resources in the project area during the construction

period. Construction activity would be visible in the project area, including construction fencing, staging areas, heavy-duty equipment, ground disturbance, and increased truck traffic on local roadways. Construction activity would intermittently block visitors from viewing marine mammals on-site during the construction period. Alternative 3 includes construction of a remote parking lot south of the Center; therefore, under Alternative 3 there would be 2 construction sites in the project area and additional activity associated with constructing the proposed remote parking lot. Appendix A, Mitigation Measures, identifies visual resources protection measures such as fencing the construction staging area to provide visual screening and consolidating construction equipment and materials at the staging areas. Although these mitigation measures would somewhat reduce the adverse visual effect of construction activity, it would not reduce the intensity of the adverse impact.

Impact Significance after Mitigation Included in the Project. Local, Short-term, Moderate, Adverse Impact.

Operation-related Effects on Visual Resources. Similar to Alternative 2, implementation of Alternative 3 would result in increased developed facilities at The Center. Alternative 3 would include approximately 35,200 square feet (including 7,700 of below grade storage) in predominantly 2-story structures at the treatment site. The increase in developed building space and the conversion of buildings on the site from one-story (13 feet-high) to predominantly two-story (26 feet-high) buildings would increase the appearance of built structures in the natural landscape of the Marin Headlands. In addition, the establishment of the remote parking area would pave an existing unpaved area. From the old reservoir tank on Old Bunker Road west of the site (see figure C-3 in Appendix C, Visual Simulations) the new 2-story built features, the paved area of the remote parking area and parked cars would be more visible in the natural landscape than the existing built features. From the visitor center area (see figure C-6 in Appendix C, Visual Simulations) the new built features would be more visible in the natural landscape than the existing built features. New buildings could be seen after dark if office lights are in use. The intrusion of new built features on the natural Marin Headlands landscape would have a local, long-term, moderate, adverse impact on visual resources.

Design elements and mitigation measures included in Appendix A (Historic Compatibility Guidelines) would improve views of The Center, including cohesive architectural design of Center facilities and site landscaping. The design elements of Alternative 3 would have a local, long-term, minor, beneficial impact on visual resources.

Impact Significance. Local, Long-term, Minor, Adverse Impact.

Summary of Alternative 3 Impacts. Alternative 3 would have local, long-term, moderate, adverse effect on visual resources due to visual intrusions associated with construction activity, such as construction equipment and ground disturbance, and the introduction of new built features in the former kennel area of the Marin Headlands, including development of a new paved area for the remote parking lot. The adverse visual resource impacts would be somewhat offset by the design elements at The Marine Mammal Center.

Impairment

Similar to Alternative 2, Alternative 3 would result in a local, long-term, moderate, adverse impact to visual resources at The Marine Mammal Center project area. The adverse effect of this

alternative on visual resources would be localized but clearly detectable. Alternative 3 would not be expected to have an overall effect on the visual resources of the area, due to the temporary duration of construction activity and the existing developed features in the area. The local adverse impacts to visual resources would not be of sufficient magnitude or nature to impair the integrity of visual resources that are necessary to fulfill specific purposes identified in the park's establishing legislation, key to opportunities for enjoyment of the park, or identified as a goal in the park's *General Management Plan* or other relevant planning documents. Therefore, Alternative 3 would not impair resources or park values for future generations.

Alternative 4

Analysis

Construction-related Effects on Visual Resources. Similar to Alternative 2, Alternative 4 would have a short-term, adverse impact on visual resources in the project area during the construction period. Alternative 4, however, would have considerably less construction activity because of a reduced amount of new buildings (administration and educational uses would be retained at Fort Cronkhite). Construction activity at the treatment site would be visible in the project area, including construction fencing, staging areas, heavy-duty equipment, ground disturbance, and increased truck traffic on local roadways. Construction activity would intermittently block visitors from viewing marine mammals on-site during the construction period. Alternative 4 includes construction of a remote parking lot at the former kennel site; therefore, there would be two construction activity zones in the project area and additional activity associated with constructing the proposed remote parking lot. Appendix A, Mitigation Measures, identifies visual resources protection measures such as fencing the construction staging area to provide visual screening and consolidating construction equipment and materials at the staging areas. Although these mitigation measures would somewhat reduce the adverse visual effect of construction activity, it would not reduce the intensity of the adverse impact.

Impact Significance after Mitigation Included in the Project. Local, Short-term, Moderate, Adverse Impact.

Operation-related Effects on Visual Resources. Similar to Alternative 2, implementation of Alternative 4 would result in increased developed facilities at The Center. Alternative 4 would include approximately 30,200 square feet of above-ground building space (22,670 at the treatment site and 7,590 at Fort Cronkhite) in 1- and 2-story structures at the treatment site. The increase in developed building space and the conversion of some building space on the site from one-story (13 feet) to two-story buildings (26 feet) would increase the appearance of built structures in the natural landscape of the Marin Headlands. In addition, the establishment of the remote parking area would pave an existing unpaved area. From the old reservoir tanks on Old Bunker Road west of the site (see figure C-4 in Appendix C, Visual Simulations) the new 1- and 2-story built features and paved area of the remote parking area would be more visible in the natural landscape than the existing built features. From the visitor center area (see figure C-6 in Appendix C, Visual Simulations) the new built features would be more visible in the natural landscape than the existing built features. The intrusion of new built features on the natural Marin Headlands landscape would have a local, long-term, minor, adverse impact on visual resources.

Similar to Alternative 2, Alternative 4 would improve internal viewing opportunities at the treatment site. Alternative 4 would include a public observation deck of the marine mammal pens

and pools and observation windows in facilities providing opportunities for views of Center work areas. The new viewing opportunities of Alternative 4 would have a local, long-term, minor, beneficial impact on visual resources.

Impact Significance. Local, Long-term, Negligible, Adverse Impact.

Summary of Alternative 4 Impacts. Alternative 4 would have local, long-term, moderate, adverse effect on visual resources due to visual intrusions associated with construction activity, such as construction equipment and ground disturbance, and the introduction of new built features in the natural landscape of the Marin Headlands including development of a new paved area for the remote parking lot. The adverse visual resource impacts would be somewhat offset by the beneficial introduction of new viewing opportunities at The Marine Mammal Center.

Impairment

Similar to Alternative 2, Alternative 4 would result in a local, long-term, moderate, adverse impact to visual resources at The Marine Mammal Center project area. The adverse effect of this alternative on visual resources would be localized but clearly detectable. Alternative 4 would not be expected to have an overall effect on the visual resources of the area, due to the temporary duration of construction activity and the existing developed features in the area. The local adverse impacts to visual resources would not be of sufficient magnitude or nature to impair the integrity of visual resources that are necessary to fulfill specific purposes identified in the park's establishing legislation, key to opportunities for enjoyment of the park, or identified as a goal in the park's *General Management Plan* or other relevant planning documents. Therefore, Alternative 4 would not impair resources or park values for future generations.

Recreation and Public Use

Alternative 1

Analysis

Operation-related Effects on Recreation and Public Use. Visitors to The Marine Mammal Center would continue to be limited by the configuration of The Center. The Marine Mammal Center would continue to not have a physical sense of arrival. The layout of the existing pens and pools and vantage points from which marine mammals can be observed would continue to not provide optimal viewing opportunities to the visiting public. Education programs would continue to be conducted at a building located at Fort Cronkhite, approximately ½-mile from the treatment site, with limited program space and educational programs occurring on outdoor bleachers. Educational programs would continue to be impacted due to insufficient facilities, including the absence of indoor classroom space. Interpretation materials would continue to include only three interpretive panels with limited information. Visitor safety would continue to be adversely affected by the unsafe parking configuration at The Center.

Impact Significance. Local, Long-term, Minor, Adverse Impact.

Summary of Alternative 1 Impacts. Alternative 1 would have a local, long-term, minor, adverse impact on recreation and public use due to sub-optimal viewing opportunities to the visiting public, insufficient facilities to conduct educational programming, and unsafe parking configurations at The Center.

Impairment

Alternative 1 would result in a local, long-term, minor, adverse impact to recreation and public use at The Center. The adverse effect of this alternative on recreation and public use would be localized with no discernible overall effect on the visitor experience in the Marin Headlands. Therefore, Alternative 1 would not impair resources or park values for future generations.

Alternative 2

Analysis

Construction-related Effects on Recreation and Public Use. Construction activities would have a temporary adverse affect visitor experience at The Marine Mammal Center. Visitors would have limited access to The Center because areas under construction would be fenced off from visitor access. Visitors would be exposed to construction noise and dust, which would adversely affect visitor experience and educational programming efforts. Operation of construction equipment could adversely affect visitor safety. Implementation of mitigation measures identified in Appendix A, Mitigation Measures, such as fencing construction areas to protect public health and safety would somewhat offset the adverse construction-related impacts on recreation and public use.

Impact Significance after Mitigation Included in the Project. Local, Short-term, Minor, Adverse Impact.

Operation-related Effects on Recreation and Public Use. Implementation of Alternative 2 would improve visitor experience at The Marine Mammal Center. Alternative 2 would involve a reconfiguration of The Marine Mammal Center campus with the inclusion of many features designed to further The Center's mission related to public education and outreach. Alternative 2 would provide improved landscaping and an entry porch designed to promote visitors' sense of arrival. Educational facilities and opportunities for science-based educational programming would be improved through the development of a Marine Science Community Education Center and education amphitheater. Interactive laboratory and indoor classroom programs would be available for school groups. Visitors to The Center would enter a discovery room, which would orient visitors to The Marine Mammal Center and the natural history of marine mammals. The visitor experience would be improved through the development of a public observation deck over the pens and pools and facilities designed with observation windows with views of the laboratory, necropsy, chart room, and marine mammal food preparation area. Exhibits would interpret treatment protocols, disease research, human interaction, and rescue and release functions. Approximately 43 public parking spaces would be conveniently provided at the western end of the site and along the access road, which would improve visitor access to The Marine Mammal Center. Alternative 2 facility improvements would have a local, long-term, moderate, beneficial effect on recreation and public use in the project area due to improved educational and observation facilities and increased public parking spaces.

Impact Significance. Local, Long-term, Moderate, Beneficial Impact.

Summary of Alternative 2 Impacts. Alternative 2 would have local, long-term, minor, beneficial impact on recreation and public use in the project area. The beneficial educational and observation facility improvements to The Center would offset the adverse construction-related impacts.

Impairment

Alternative 2 would result in a local, long-term, minor, beneficial impact on visitor experience compared to Alternative 1. Since Alternative 2 would have an overall beneficial effect, this alternative would not impair resources or park values for future generations.

Alternative 3

Analysis

Construction-related Effects on Recreation and Public Use. Construction-related impacts would be similar to those described under Alternative 2; however, the intensity of the adverse impact to recreation and public use would be more severe due to the larger construction area affected by this alternative. Under Alternative 3, The Marine Mammal Center site and the proposed remote parking area would both experience construction activity and adversely affect visitor experience and educational programming efforts. Implementation of mitigation measures identified in Appendix A, Mitigation Measures, such as fencing construction areas to protect public health and safety would somewhat offset the adverse construction-related impacts on recreation and public use.

Impact Significance after Mitigation Included in the Project. Local, Short-term, Moderate, Adverse Impact.

Operation-related Effects on Recreation and Public Use. Implementation of Alternative 3 would improve visitor experience at The Marine Mammal Center similar to the beneficial impacts described under Alternative 2. Alternative 3 would feature improved educational facilities, public observation areas, and public parking spaces similar to those described under Alternative 2. Alternative 3 would include approximately 62 public parking spaces predominantly located in a remote parking area at the former kennel site. Unlike the unpaved and undelineated remote parking area under Alternative 1, the remote parking area under this alternative would be paved, striped, and signed for ease of use with parking space and interior circulation delineations. Overall, Alternative 3 facility improvements would have a local, long-term, moderate, beneficial effect on recreation and public use in the project area due to improved educational and observation facilities and increased public parking spaces.

Impact Significance. Local, Long-term, Moderate, Beneficial Impact.

Summary of Alternative 3 Impacts. Alternative 3 would have local, long-term, negligible, beneficial impact on recreation and public use in the project area. The beneficial education, observation, and parking facility improvements to The Center would offset the adverse construction-related impacts.

Impairment

Alternative 3 would result in a local, long-term, negligible, beneficial impact on visitor experience compared to Alternative 1. Since Alternative 3 would have an overall beneficial effect, this alternative would not impair resources or park values for future generations.

Alternative 4

Analysis

Construction-related Effects on Recreation and Public Use. Construction-related impacts would be similar to those described under Alternative 2, although Alternative 4 features substantially less construction activity due to fewer new facilities proposed. In addition, Alternative 4 would feature construction activity in both the central facility area and the new remote parking area. Implementation of mitigation measures identified in Appendix A, Mitigation Measures, such as fencing construction areas to protect public health and safety would somewhat offset the adverse construction-related impacts on recreation and public use.

Impact Significance after Mitigation Included in the Project. Local, Short-term, Minor, Adverse Impact.

Operation-related Effects on Recreation and Public Use. Implementation of Alternative 4 would somewhat improve visitor experience at The Marine Mammal Center. The Visitor experience would be improved through the development of a public observation area on the ground-level between The Center's buildings, and facilities designed with observation windows with views of the laboratory, necropsy, chart room, and marine mammal food preparation area. Similar to Alternative 1, the education building would remain at Fort Cronkhite with limited program space and educational programs at the treatment site occurring on outdoor bleachers. Approximately 40 public parking spaces would be provided predominantly at the proposed remote parking area. Fewer parking spaces would be provided at the treatment site under Alternative 4 than under Alternative 1, which would adversely affect visitor access. Overall, Alternative 4 facility improvements would have a local, long-term, moderate, beneficial effect on recreation and public use in the project area due to improved ground-level observation facilities. The facility improvements would offset adverse effects associated with the reduced number of public parking spaces.

Impact Significance. Local, Long-term, Moderate, Beneficial Impact.

Summary of Alternative 4 Impacts. Alternative 4 would have local, long-term, moderate, adverse impact on recreation and public use in the project area. The adverse construction-related impacts would offset the beneficial facility improvements to The Center.

Impairment

Alternative 4 would result in a local, long-term, moderate, adverse impact on visitor experience compared to Alternative 1. The adverse effect of this alternative on recreation and public use would be localized with no discernible overall effect on the visitor experience in the Marin Headlands. Therefore, Alternative 4 would not impair resources or park values for future generations.

Cumulative Impacts

A cumulative impact is described in regulations developed by the Council on Environmental Quality, Regulation 1508.7, as follows:

> A "cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person

undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

One other major project, the Fort Baker/Marin Headlands Transportation Management Plan, is currently being planned in the Marin Headlands at this time. Under this project, NPS is initiating a planning effort to analyze and recommend long-term transportation management actions related to vehicle, pedestrian, bicycle and transit service within the Marin Headlands and Fort Baker areas. The study will seek to minimize the intrusion of automobiles and encourage alternative modes of transportation to these national park sites. The Draft EIS for this plan is anticipated after the completion of review of this EA.

The Marine Mammal Center has been involved in planning with this ongoing project to ensure that all elements of the Project are considered in the larger planning effort. Of particular interest will be impacts from any proposed changes under that plan that could affect cultural resources, traffic and/or changes to sediment and runoff within the project area. As part of these discussions, the NPS and the Center agreed that 25 spaces of needed overflow parking would be included and planned for within the description of future parking for the Marin Headlands.

The Fort Baker Redevelopment Plan (NPS, June 2000) identified actions that could affect regional traffic; however, mitigations included in that EIS will ensure that these impacts will not cumulatively affect the Marine Mammal project area. The Fort Baker EIS also analyzed the effects of new construction on the FBBC National Register District. The cumulative effects of adding three new buildings to the historic district, under the Marine Mammal Center undertaking, would be assessed in the Section 106 consultation process. Since these new structures are on a previously developed area and are screened from general view, the effects would not be adverse.

As plans are developed to reuse Fort Cronkhite buildings impacts to traffic would also need to be examined to ensure that a cumulative impact does not occur. Analysis developed for the Fort Baker/Marin Headlands Transportation Management Plan would inform this analysis. Beyond these elements, no cumulative effects have been identified within this project or within other activities in the project area.

Chapter V: Consultation, Coordination and References

Agency Consultation

Advisory Council on Historic Preservation and California State Historic Preservation Officer

The 1966 National Historic Preservation Act, as amended in 1992, requires federal agencies to consult with the Advisory Council on Historic Preservation and State Historic Preservation Officer regarding undertakings that may affect historic properties. The National Park Service consulted with the Advisory Council on Historic Preservation and State Historic Preservation Officer in the development of this Environmental Assessment to discuss specific aspects of these proposed undertakings as well as compliance with Section 106 of the National Historic Preservation Act. Section 106 requires federal agencies to consider the effects of their actions on properties that may be eligible for listing or are listed in the National Register of Historic Places.

California Coastal Commission

The National Park Service is consulting with the California Coastal Commission because the Marine Mammal Center Site and Facilities Improvement Project is located within the Coastal Zone. The Federal Consistency Unit of the California Coastal Commission implements the federal Coastal Zone Management Act of 1972 as it applies to federal activities. The National Park Service is requesting a negative determination for the preferred alternative which would illustrate that the Project is consistent with the area's coastal management program.

U.S. Army Corps of Engineers

The National Park Service will consult with U.S. Army Corps of Engineers to ensure compliance with Section 404 of the Clean Water Act. The National Park Service will obtain a Nationwide Permit for project activities within waters of the U.S. if necessary following completion of the National Environmental Policy Act process.

U.S. Fish and Wildlife Service

The Endangered Species Act of 1973, as amended (16 United States Code 1531 et seq.), requires all federal agencies to consult with the U.S. Fish and Wildlife Service and/or NOAA Fisheries to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of listed species or critical habitat. The National Park Service requested a list of federally listed endangered and threatened species that may be present within the Project Area from the U.S. Fish and Wildlife Service in October of 2003. The list received from the U.S. Fish and Wildlife Service in November 2003 was used as a basis for the special-status species analysis in this environmental assessment (see Appendix B, Special-status Species). This environmental assessment has determined that the proposed action will not adversely affect species that are federally listed as threatened or endangered. The National Park Service will notify the U.S. Fish and Wildlife Service and NOAA Fisheries of this finding, request the agencies review these findings, and return a letter concurring with this determination.

Future Information

Copies of the Marine Mammal Center Site and Facilities Improvement Project Environmental Assessment will be distributed to the general public, congressional delegations, state and local elected officials, federal agencies, organizations and local businesses, public libraries, and the news media. There will be a 30-day public comment period on the Marine Mammal Center Site and Facilities Improvement Project Environmental Assessment.

Written comments regarding this document should be directed to:

Mail: Superintendent, Golden Gate National Recreation Area
Fort Mason, Building 201
San Francisco, CA 94123-0022
ATTN.: Marine Mammal Center Site and Facilities Improvement Project

Fax: 415/561-4854
Email: public_affairs@nps.gov

To request a printed copy of this environmental assessment, refer to the information directly above.

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Appendix A: Mitigation Measures

Appendix A: Mitigation Measures

The National Park Service places a strong emphasis on avoidance, minimization, and mitigation of potential impacts. To help ensure that construction and/or operation of the proposed action protects natural and cultural resources and the quality of the visitor experience, protective measures would be developed and implemented. The National Park Service would implement an appropriate level of monitoring throughout the construction process to help ensure that protective measures are being properly implemented and are achieving their intended results. No mitigation measures are proposed for Alternative 1.

These Mitigation Measures would apply to all of the action alternatives identified in the Marine Mammal Center Site and Improvements Project Environmental Assessment.

General

Construction Staging Plan

A Construction Staging Plan shall be submitted for NPS review and approval prior to commencement of any excavation, demolition, removal, construction, or alteration of any site or structure. The Construction Staging Plan shall include information on schedule of work by dates and location where work would be performed, safety procedures, traffic management, noise mitigation, equipment to be used and procedures to be followed in the execution of work, solid and hazardous waste management, staging areas, clean-up, progress reports, complaint review process, and other areas of concern.

Annual Report

Under the Cooperative Agreement between the NPS and The Center, The Center will submit an Annual Report that will include things such as a description of services and programs, number of annual visitors, number of special event attendants, an annual maintenance plan, and sustainability program update.

Water Resource Measures

Coordinate with the National Park Service regarding construction and maintenance of the new water system, sewer system and stormwater system. Particularly coordinate timing and rate regarding initial filling of facilities and demand and releases during peak use periods.

Water Conservation. Water saving devices, including low-flush toilets and low maintenance/drought tolerant landscaping shall be used.

Stormwater Management

Develop and implement a comprehensive stormwater pollution prevention plan for construction activities that complies with federal and state regulations and addresses all aspects of stormwater pollution prevention. The stormwater pollution prevention plan will be submitted to the park for review/approval prior to construction activities.

The storm water pollution prevention plan will include such measures as, but is not limited to, the following:

- Measures to control erosion, sedimentation, and compaction. Use of silt fences, sedimentation basins, etc. in construction areas to reduce erosion, surface scouring, and discharge to water bodies.
- To the extent possible, schedule the use of mechanical equipment during periods of low precipitation to reduce the risk of accidental hydrocarbon leaks or spills. When mechanical equipment is necessary outside of low precipitation periods, use National Park Service–approved methods to protect soil and water from contaminants.
- Dispose of volatile wastes and oils in approved containers for removal from construction sites to avoid contamination of soils, drainages, and watercourses.
- Inspect equipment for hydraulic and oil leaks prior to use on construction sites, and implement inspection schedules to prevent contamination of soil and water.
- Keep absorbent pads, booms, and other materials on site during projects that use heavy equipment to contain oil, hydraulic fluid, solvents, and hazardous material spills.
- Other Structural BMPs – Structural BMPs shall minimize discharge to the storm sewer system and control run-off quality to the maximum extent practical.
- With guidance from the NPS The Center will monitor the effects of runoff to Rodeo Lake and Rodeo Lagoon from the new parking areas.

Stormwater pollution prevention measures will be developed and implemented that include the following:

- Utilize structural best management practices (BMP's)(oil filters, biofilters, control of run-on and run-off, etc.) and operational best management practices (including spill prevention and control) throughout the project design. Install in parking lots and drainage facilities easily cleanable catch-basins, debris screens, and grease separators or similar water quality protection devices.
- All buildings and parking areas shall be designed to provide the maximum opportunity for surface run-off to be directed away from sensitive habitat and infiltrate the soil. Use of vegetated swales and planting areas shall be utilized to reduce run-off and remove contaminants. Parking lot drainage will be designed so that run-off is fed into the storm water system, not the sewer system.
- During heavy rainfall events the operational capability to interrupt rainfall flowing to the pen enclosure area drains will be utilized either by using the 40,000 gallon cetacean pool as an equalization basin or another dedicated comparable size basin to regulate flow of rainfall under extreme conditions. The Center will coordinate with NPS staff and monitor these new facilities during storm events.

Impervious Surfaces:

The Center will work with NPS to arrange for mitigation for new pavement or hardened surfaces added within the project area. This could include removal of pavement, soil decompaction, or similar measures.

Ensure that newly constructed impervious surfaces prevent increased water runoff volume and velocity, reduced water quality, and reduced water infiltration to the greatest extent feasible.

Biological Resource Protection Measures

Native Plant Habitat

For areas identified for native plant restoration, site-specific Vegetation Restoration Action Plans will be prepared for review and approved by NPS prior to implementation. These plans will also include prescriptions for weed control and ongoing maintenance until the sites are fully established. Native plant materials will be obtained from the local watershed and propagated at the NPS native plant nursery for use in these restoration projects. Appropriate mitigations for the loss of areas (such as those paved over for construction of a new parking lot), will include the removal of exotic species as well as restoration of native plant habitat acreage within the project area.

Protection for Nesting Birds

General construction activities and the removal of trees could impact nesting birds. To the extent practicable, construction activities shall be performed from September through February to avoid the general nesting period for birds. If construction cannot be performed during this period, pre-construction surveys shall be performed by a qualified biologist between January through the period that breeding season construction begins to locate any active nests prior to the start of construction and prior to the removal of any tree. If active nests are observed, a 500-foot buffer shall be established around trees with raptor nests and a 250-foot buffer around trees with other nests. Smaller buffers may be used if deemed appropriate by the NPS. Construction activities shall avoid buffered trees and no tree can be removed until young have fledged or the nest has is otherwise abandoned. Tree removals will be scheduled outside of the breeding season.

Protection for Wetlands

Construction of the ring road will result in the permanent fill of approximately 0.08 acres of jurisdictional wetland. Obtaining a Section 404 permit from the U.S. Army Corps of Engineers may be necessary prior to construction. The type of permit required is dependent upon the project and the amount of fill. The Corp may require mitigation to offset permanent impacts to waters of the U.S. as a result of the construction of the ring road. NPS may require mitigation as well which will be near the project vicinity, will be in-kind if practicable, and will be at a minimum 1:1 ratio.

Protection for Special Status Species

CNDDB and FWS species lists for the project vicinity list a total of 6 special status plants with at least a potential to occur within the project area, specifically within the coastal scrub community and in and around Rodeo Lagoon and Lake. To ensure no special-status plant species exist within the project boundaries, appropriately-timed rare plant and mission blue butterfly host plant surveys will be conducted by a qualified biologist. If rare plants are found, appropriate avoidance measures, including altering the design of the remote parking area will be incorporated into final project design. Design and construction of new facilities shall avoid disturbing sensitive habitat where rare and endangered plants or mission blue butterfly habitat exist. Measures shall be taken to direct human access away from such habitat. Other mitigation included in other parts of this EA (particularly under water resources) will also protect these species.

Geology, Solis and Seismicity Protection Measures

Protection from Settlement Impacts

The recommendations of the report on the site-specific geotechnical investigation conducted for this project (Cleary Consultants, Inc., 2003) will be implemented as part of the project. Report recommendations include site preparation requirements, fill placement and compaction parameters, requirements for subsurface and surface drainage. The report also addresses settlement impacts that could occur due to over-excavation of existing fill material and loose soil and recommends its replacement with approved, engineered, on-site soils or imported non-expansive fill. The report also includes specific recommended limitations for foundations and retaining walls.

Excavation Activities

When possible, excavated materials will be reused on site or within the Park. Any remainder that cannot be reused will be disposed on site. If onsite disposal is not possible appropriate disposal options will be used.

Adjacent uphill slopes will be monitored for failure when work is being performed along the toe of the slope on the north side of the site.

Landslide and Slope Stability

The recommendations of the geotechnical report for this project (Cleary Consultants, Inc., 2003) will be implemented as part of the project. NPS approved engineers will review the foundation and grading plans and be retained to provide soil engineering observation and testing services during the grading and foundation installation phases of the project. NPS approved engineers will approve final plans and conduct observations of the earthwork and foundation construction, as determined appropriate by this engineer. Report recommendations that address slope stability and landslide impacts, include (but are not limited to) limiting the steepness of new permanent cut and fill slopes to no more than 2:1 (horizontal to vertical); placing benches on fill slopes that are steeper than 6:1 (horizontal to vertical); diverting surface runoff away from the top of slopes and toward a suitable drainage collection system; placing a subsurface drainage system between the new perimeter road and the slide area in the northwestern corner of the site; and design parameters for retaining walls.

Protection from Seismic Hazards

The recommendations of the geotechnical report for this project (Cleary Consultants, Inc., 2003) will be implemented as part of the project. These recommendations include the design and construction of buildings and tanks in accordance with current standards for earthquake-resistance, and inclusion of measures to minimize the movement of objects within buildings and minimize the effects of such movement. The geotechnical report also provides seismic design parameters of the 1997 Uniform Building Code that can be used in lateral force analyses at the site.

Additional Study

NPS approved engineers shall review the final design plans for the project and observe earthwork and foundation installation during construction. Mitigation Measures stated above shall apply and be implemented to the design and construction of all project components.

Transportation

Prepare a construction routing plan for review and approval by NPS prior to initiating any site preparation and construction activities.

Mitigations for minimizing the potential impact of construction vehicles are to:

- Develop a project construction schedule to limit construction vehicle activity to weekdays, if possible. Weekend activity, if necessary, shall be conducted before 11 a.m.
- During periods of heavy truck activity exiting The Center, install a temporarily stop sign to create an all-stop intersection for the duration of construction or submit an alternate control plan for NPS approval in order to allow trucks to pass safely.

Transportation Demand Management. The MMC shall comply with the provisions of any future NPS TDM program for the Marin Headlands area. Provisions will be made so that carpools and vanpools receive preferential parking.

Event Coordination. Up to six times a year The Center holds events that require additional parking on a short-term basis. In advance of these special events, in order to avoid peak traffic conditions, The Center will be required to coordinate with GGNRA's Special Parks Uses Group.

Cultural Resources Protection Measures

Mitigation measures for cultural landscape resources include measures to avoid impacts, designing new development to be compatible with surrounding historic resources, and screening new development from surrounding historic resources.

Additional measures to largely offset potential impacts to cultural resources are listed below.

- Archeological monitoring - If previously unknown cultural resources are encountered during construction, temporarily suspend work in the immediate area to document discovered resources according to National Park Service standards.
- Guidelines for compatible new construction – Historic Compatibility Guidelines for New Facilities at the Marine Mammal Center will be prepared as part of this project and will be subject to review and approval by NPS. All new designs shall be reviewed for compatibility with the cultural landscape of the Historic District per the Standards for the Treatment of Historic Properties. Design of all new construction, including site work, shall be compatible in terms of architectural elements, scale, massing, materials, and orientation. Review and approval will be carried out by NPS staff as stipulated in the GGNRA Programmatic Agreement in order to reduce the effects of the proposed action on the National Register District.
- Undertake all treatments within cultural landscapes in keeping with the *Secretary of The Interior's Standards for the Treatment of Historic Properties*.

Visual Resources

Design of new buildings shall be consistent with the Historic Compatibility Guidelines. Existing visual screening will be retained as deemed appropriate by NPS. This screening currently consists of invasive Monterey pines which thus must be managed as described below. Where screening is removed for purposes of construction activities, if requested by NPS it will be replanted with less invasive trees that still provide appropriate screening. Maintenance of the screening will require active removal of seedlings and saplings that spread from these invasive trees. Over the long-term, if the trees are replaced, they will be replaced with less invasive species that still provide appropriate screening.

Hazardous Materials Measures

Hazardous Materials/Waste Management Plan

The MMC shall submit for NPS review and approval plans and procedures for the management of hazardous materials and spill response consistent with current GGNRA standard operating procedures for hazardous waste management and the GGNRA Spill Response Plan. The following would be included in this plan:

- Store and use all hazardous materials in compliance with federal regulations. All applicable Materials Safety Data Sheets would be kept on site for inspection.
- Comply with all applicable regulations and policies during the removal and remediation of asbestos, lead paint, and polychlorinated biphenyls.
- Providing on-site air monitoring during all abatement activities and perimeter monitoring to ensure no contamination of work or adjacent areas.
- Post-demolition testing of soil to assure that soil at the site is not contaminated by lead based paint.
- Properly dispose of discarded containers of fuels and other chemicals.
- During routine maintenance of construction equipment, properly contain and remove grease and oils.
- Avoid overtopping construction equipment fuel gas tanks.

Air Quality/Dust Abatement Measures

Dust abatement measures would be developed and implemented that include the following:
Cover and/or seal truck beds and stockpiles to minimize blowing dust or loss of debris

- Limit truck and related construction equipment speeds in active construction areas to a maximum of 15 miles per hour and strictly adhering to park regulations and posted speed limits in other areas while inside park boundaries
- Maintain adequate dust suppression equipment and use clean water to control excess airborne particulates at staging areas, active construction zones, and unpaved roads leading to/from active construction areas

Noise Abatement Measures

Noise abatement measures would be developed and implemented that include the following:

- Perform all on-site noisy work above 76 A-weighted decibels (dBA) (such as the operation of heavy equipment) between September to March to minimize disruption to rescued marine mammals and related education programs. Within these months limit noisy work to week-days to avoid impacts to recreational users in the area.
- During periods of concentrated construction potentially halt or limit on-site education programs to avoid noise exposure.
- Ensure that all construction equipment has functional exhaust/muffler systems.
- Submit a construction work plan/schedule that minimizes construction-related noise in noise-sensitive areas to The Center as well as the park for review/approval prior to commencement of construction activities.
- Use hydraulically or electrically powered construction equipment, when feasible.
- Locate stationary noise sources as far from sensitive receptors as possible.
- Limit the idling of motors except as necessary (e.g., concrete mixing trucks).

Visitor Use

Visitor protection measures would be developed and implemented by contractors that include the following:

- Develop and implement a visitor protection plan for park review/approval that:
  - Provides procedures for managing staging areas to restrict public access and maintain site safety
  - Ensures that visitors are safely and efficiently routed around construction areas at The Center
  - Outlines measures to largely offset the potential for public exposure to noxious materials or contaminants that may be present during construction in the project area (i.e., by providing established and maintained walkways across the site, covering walking paths with clean soil and asphalt, and providing barrier fencing along trails)
- Provide protective fencing enclosures around construction areas to protect public health and safety
- Visitor Use and Accessibility – all new public facilities shall be made accessible to people of all ages, backgrounds, and abilities. The goals of barrier-free accessibility shall be met and an emphasis shall be placed on affording visitors with disabilities the same experiences and opportunities as other visitors. Access improvements shall conform to the requirements of the Uniform Federal Accessibility Standards and the Americans with Disabilities Act.
- Interpretive Program – The Center shall include an expanded interpretive program from the current one in place to convey messages to visitors about park-related themes as well as The Center's mission. New exhibits and programs shall be developed in consultation with NPS interpretive staff.

Utility Measures

The following mitigation measures would be implemented to largely offset potential impacts to park utilities:

- Schedule peak water usage at non-peak times of day. In addition washdowns & water system cycling shall not occur during a peak storm events.
- Verify utility locations by contacting the Underground Services Alert prior to the start of construction.
- Observe all local, state, and federal standards in designing utility systems.
- Promptly reconnect utility services that are interrupted because of construction activities and provide advance notification to all residents, concessioners, and others if utility service would be disrupted.
- Utilities shall, to the extent possible, be located underground or screened from principle viewing areas. Placement of above-ground appurtenances shall be screened from view to the fullest extent possible.

Night Sky Measures

Measures would be implemented to minimize effects of night lighting on the ability to view the night sky in the project area that include the following:

- Avoid construction activities after sunset
- Direct and shield night lighting associated with construction equipment to minimize light scatter effects
- Design interior and exterior lighting to prevent escaped light
- Use downward-facing and unobtrusive luminaries at facilities and building entrances and exits; confine light spread within project boundaries.

Appendix B: Special Status Species

APPENDIX B
POTENTIAL OCCURRENCE OF SPECIAL STATUS SPECIES IN VICINITY OF THE MARINE MAMMAL CENTER PROJECT AREA

Common Name *Scientific Name*	Listing Status USFWS/CDFG/CNPS	Habitat Requirements	Potential Species Occurrence In Project Study Area	Period of Identification
FEDERAL AND STATE LISTED SPECIES				
ANIMALS				
Invertebrates				
California freshwater shrimp *Syncarus pacifica*	FE/CE	Endemic to Marin, Napa, and Sonoma Counties. Habitat consists of low gradient streams with dense riparian cover. Feeds on detritus	**Absent**. Species not known to occur in the vicinity of project site. No occurrences listed in CNDDB.	
Myrtle's silverspot butterfly Speyeria zerene myrtleae	FE/--	Myrtle's silverspot is found in coastal dune or prairie habitat.. Four populations are known to inhabit coastal terrace prairie, coastal bluff scrub, and associated non-native grassland habitats in western Marin and southwestern Sonoma counties, including the Point Reyes National Seashore. Adult butterflies are typically found in areas that are sheltered from the wind, below 820 feet elevation, and within 3 miles of the coast. Larval food plants include *Grindelia rubicaulis, Abronia latifolia,* and *Erigeron glaucus*	**Low Potential**. Marginal habitat exists in the vicinity of the project site. Only four known locations known from northern Marin County. Two known locations from Pt. Reyes National Seashore (CNDDB 2003).	
Mission blue butterfly *Icaricia icarioides missionensis*	FE/--	Grasslands and coastal scrub with larval food plants (*Lupinus albifrons*, *L. variicolor* and *L. formosus*)	**Low Potential**. Site disturbed, invasives and non-native grasslands. Project location is at the northern limit of distribution. Species known on coastal ridges and slopes within GGNRA, particularly Fort Baker, and Marin Headlands along Wolfback Ridge and Rifle Range above Presidio Stables (GGNRA, CNDDB 2003).	

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Common Name *Scientific Name*	Listing Status USFWS/CDFG/CNPS	Habitat Requirements	Potential Species Occurrence In Project Study Area	Period of Identification
San Bruno elfin butterfly *Incisalia mossii bayensis*	FE/--	Coastal scrub and bunchgrass grassland habitats, with larval foodplant, *Sedum spathulifolium*; adults nectar on *Lomatium utriculatum*, *Achillea millefolium, Arabis blepharophylla, Erysimum franciscanum, Ranunculus californicus*, and *Fragaria californica*	**Absent**. All known populations are from San Mateo County (Arnold 1983).	
Fish				
Delta smelt *Hypomesus transpacificus*	FT/CT	Confined to the upper Sacramento-San Joaquin River estuary in shallow waters near the entrapment zone	**Low Potential**. Migrating individuals may occasionally move through Bay waters in the vicinity of the Rodeo Lagoon.	
Coho salmon, Central California Coast ESU[1] & Critical Habitat *Oncorhynchus kisutch*	FT/CE[2]	Central and northern California coastal rivers and streams	**Low Potential.** The MMC is outside of the designated ESU range. Last known population known from Redwood Creek, in Frank Valley, Muir Woods National Monument and GGNRA.	
Steelhead, Central California Coast ESU *Oncorhynchus mykiss*	FT/--	Drainages of San Francisco and San Pablo bays, central Calif. Coastal rivers	**Low Potential.** Migrating individuals may occasionally move through bay waters in the vicinity of the Marine Mammal Center.	
Central Valley chinook salmon-spring-run & Proposed Critical Habitat *Oncorhynchus tshawytscha*	FT/CT	Central and northern California coastal rivers and streams	**Low Potential**. The Marine Mammal Center is outside of the designated ESU range, but migrating individuals may occasionally move through Bay waters in the vicinity of the Presidio.	
Chinook Salmon, Winter-run & Critical habitat *Oncorhynchus tshawytscha*	FE/CE	Bay waters	**Low Potential.**. The Marine Mammal Center outside of designated ESU range, but migrating individuals may occasionally move through bay waters in the vicinity of the MMC.	

[1] Evolutionary Significant Unit.

[2] The state-endangered status is only for coho salmon occurring south of San Francisco Bay.

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Common Name *Scientific Name*	Listing Status USFWS/CDFG/CNPS	Habitat Requirements	Potential Species Occurrence In Project Study Area	Period of Identification
Central Valley Chinook Salmon, fall/late fall run *Oncorhynchus tshawytscha*	FC/CSC	Spawns in the Sacramento and San Joaquin Rivers and their tributaries	**Low Potential.** The MMC is outside of designated ESU range, but migrating individuals may occasionally move through Bay waters in the vicinity of the MMC	
Tidewater goby *Eucyclogobius newberryi*	FE/CSC	Brackish water habitats along California coast. Found in shallow lagoons and lower stream reaches. Require still water with high oxygen levels.	**Observed**. Found downstream of project site. In receiving waters of storm water run-off. Also known from Rodeo Lagoon. (GGNRA, 2003.)	
Amphibians				
California tiger salamander *Ambystoma californiense*	FC/CSC	Wintering sites occur in grasslands occupied by burrowing mammals; breed in ponds and vernal pools	**Low Potential**. Species has not been identified from the project area. No known occurrences GGNRA (CNDDB).	
California red-legged frog *Rana aurora draytonii*	FT/CSC	Breed in stock ponds, pools, and slow-moving streams	**Observed**. Occurs in Rodeo Lake at lower end of swale adjacent to eastern edge of project area (GGNRA, 2003).	
Birds				
Marbled murrelet & Critical habitat *Brachyramphus marmoratus*	FT/CE	Nests in dense, old growth forests along coast. Forages close to shoreline in non-breeding season.	**Low Potential**. No suitable nesting habitat exists within project area.	
Western snowy plover (nesting colony) & critical habitat. *Charadrius alexandrinus nivosus*	FT/CSC	Sandy beaches on marine and estuarine shores - requires sandy, gravely, or friable soils for nesting	**Absent**. No suitable habitat exists within project area. Known occurrences at Pt Reyes National Seashore and Ocean Beach in San Francisco. Rare occurance at Rodeo Beach (GGNRA, 2003 CNDDB 2003).	
Willow flycatcher *Empidonax traillii*	FSC/CE	Nests and forages in dense riparian cover	**Low Potential**. No suitable habitat in the direct vicinity of the project site. Does occur in willow riparian habitat at Rodeo Lagoon during migration .	

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Common Name *Scientific Name*	Listing Status USFWS/CDFG/CNPS	Habitat Requirements	Potential Species Occurrence In Project Study Area	Period of Identification
Short-tailed albatross ***Phoebastria albatrus***	FE/--	Nesting colonies in Japan and Midway Island. Adults return to natal colonies and lay a single egg each year. Spend non-breeding season at sea.	Low Potential. Rare summer migrant to coastal S.F. Bay.	
Bald eagle *Haliaeetus leucocephalus* (nesting and wintering)	FE[3]/CE	Nests and forages on inland lakes, reservoirs, and rivers	**Low Potential**. Rare fall migrant potentially in GGNRA.	
California black rail *Laterallus jamaicensis coturniculus*	FSC/CT	Nests and forages in tidal emergent wetland with pickleweed	**Low potential**. Habitat present at Rodeo Lagoon. Closest known breeding population found in Bolinas Lagoon (Goals Project 2000). No known occurrences according to CNDDB.	
Brown pelican *Pelecanus occidentalis californicus*	FE/CE	Forages in open water – roosting in flatlands such as berms and islands	**Observed**. Forages and migrates through Rodeo Beach. Large roosting populations at Bird Rock and Rodeo Lagoon. (GGNRA, 2003).	
California least tern *Sterna antillarum browni* (nesting colony)	FE/CE	Nests along the coast from San Francisco Bay south to northern Baja California - colonial breeder on bare or sparsely vegetated flat substrates including sand beaches, alkali flats, land fills, or paved areas	**Low Potential**. Rare nonbreeding fall transient. (Goals Project 2000).	
California clapper rail *Rallus longirostris obsoletus*	FE/CE	Nests and forages in emergent wetland with pickleweed, cordgrass, and bulrush	**Absent**. No suitable habitat present.	
Saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	FSC/CSC	Resident of the San Francisco bay region in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging, tall grasses or tule patches and willows for nesting	**Moderate Potential**. Known occurrence in willows along creek and Rodeo Lagoon. May occur in swale adjacent to former kennel site.	

[3] Proposed for delisting July 6, 1999.

APPENDIX B
POTENTIAL OCCURRENCE OF SPECIAL STATUS SPECIES IN VICINITY OF THE MARINE MAMMAL CENTER PROJECT AREA

Common Name *Scientific Name*	Listing Status USFWS/CDFG/CNPS	Habitat Requirements	Potential Species Occurrence In Project Study Area	Period of Identification
Mammals				
Salt marsh harvest mouse *Reithrodontomys raviventris raviventris*	FE/CE	Saline emergent marsh with dense pickleweed	**Low Potential** .No suitable habitat present. One possible record at Rodeo Lagoon.	
Steller (northern) sea lion *Eumetopias jubatus*	FT/--	Pacific Coast south to Santa Rosa Island, CA.	**Low Potential**. Migrating individuals may occasionally move through Pacific Ocean outside of the MMC and GGNRA.	
PLANTS				
Baker's larkspur *Delphinium bakeri*	FE/CE/1B	Coastal scrub and valley and foothill grassland	**Low Potential**. Suitable habitat exists within project area. Only known occurrences are along Salmon Creek north of Bodega Bay.	March through May
Marin dwarf-flax *Hesperolinon congestum*	--/CT/1B	Serpentine bluffs and grasslands, serpentine scrub	**Low Potential**. Fewer than 20 cites known. Closest known location is Presidio	May through June
Santa Cruz tarplant *Holocarpa macradenia*	FT/CE/1B	Valley and foothill grassland. Coastal prairie and coastal scrub	**Low Potential**. Suitable habitat exists within project site. No known occurrences within project area.	June through October
Sonoma alopecurus *Alopecurus aequalis* var. *sonomensis*	FE/--/1B	Riparian scrub, freshwater marshes and swamps	**Low Potential**. No suitable habitat exists within the project area. No known occurrences listed by CNDDB.	May through July
Sonoma spineflower *Chorizanthe valida*	FE/CE/1B	Coastal prairie with sandy soils	**Low Potential**. No suitable habitat exists within site.	June through August
Tiburon jewelflower *Streptanthus nigers*	FE/CE/1B	Valley and foothill grassland on serpentine soils	**Low Potential**. No suitable habitat within project area.	May through June
Tiburon mariposa lily *Calochortus tiburonensis*	FT/CT/1B	Valley and foothill grasslands, often on serpentine soils	**Low Potential**. Ssuitable habitat present within project area. Only known from one occurrence at Ring Mountain Preserve on Tiburon Peninsula.	March through June

APPENDIX B
POTENTIAL OCCURRENCE OF SPECIAL STATUS SPECIES IN VICINITY OF THE MARINE MAMMAL CENTER PROJECT AREA

Common Name *Scientific Name*	Listing Status USFWS/CDFG/CNPS	Habitat Requirements	Potential Species Occurrence In Project Study Area	Period of Identification
Tiburon paintbrush *Castilleja affinis* ssp.*neglecta*	FE/CT/1B	Valley and foothill grassland, often on serpentine soils.	**Low Potential**. No suitable habitat present within project area.	April through June
Beach layia *Layia carnosa*	FE/CE/1B	Coastal dunes and coastal scrub	**Low Potential**. No suitable habitat present within project area.	March through July
Clover lupine *Lupinus tidestromii*	FE/CE/1B	Coastal dunes	**Low Potential**. No suitable habitat present within project area.	April through June
Robust spineflower *Chorizanthe robusta* var. *robusta*	FE/--/1B	Cismontane woodland, coastal dunes, gravelly and sandy coastal scrub	**Low Potential**. No suitable habitat within project area.	April through September
Showy Indian clover *Trifolium amoenum*	FE/--/1B	Coastal bluff scrub. Valley and foothill grasslands	**Low Potential**. Suitable habitat exists within project area. Not known from project vicinity.	April through June
Soft bird's beak *Cordylanthus mollis* ssp. *mollis*	FE/CR/1B	Coastal salt marshes and swamps	**Low Potential**. No suitable habitat within project area.	July through November
White-rayed pentachaeta *Pentachaeta bellidflora*	FE/CE/1B	Valley and foothill grassland. Often found in serpentine soils	**Low Potential**. Suitable habitat exists within project area. Closest known occurrence in Marin City (CNDDB 2003).	March through May
Yellow larkspur *Delphinium luteum*	FE/CR/1B	Chaparral, coastal prairie, and rocky coastal scrub. Blooming period March-May	**Moderate Potential**. Suitable habitat exists within project areas. Not known from vicinity of project site. Rare plant surveys need to confirm presence or absences.	March through May

APPENDIX B
POTENTIAL OCCURRENCE OF SPECIAL STATUS SPECIES IN VICINITY OF THE MARINE MAMMAL CENTER PROJECT AREA

Common Name *Scientific Name*	Listing Status USFWS/CDFG/CNPS	Habitat Requirements	Potential Species Occurrence In Project Study Area	Period of Identification
FEDERAL OR STATE SPECIES OF SPECIAL CONCERN				
ANIMALS				
Invertebrates				
Opler's longhorn moth *Adella oplerella*	FSC/--	Serpentine bunchgrass grassland	**Low Potential**. No known occurrences reported by CNDDB.	
Globose dune beetle *Coelus globulus*	FSC/--	Northern foredune, coastal dune scrub with herbaceous plants in sandy soils	**Low Potential**. No known occurrences reported by CNDDB	
Ricksecker's water scavenger beetle *Hydrochara rickseckeri*	FSC/--	Found in freshwater ponds, shallow water of streams marshes and lakes	**Low Potential**. No suitable habitat in project area.	
Bumblebee scarab *Lichnanthe ursine*	FSC/--	Open coastal sand dunes	**Low Potential**. No suitable habitat exists on project site.	
Amphibians				
Foothill yellow-legged frog *Rana boylii*	FSC/CSC	Fast-moving streams and rivers in chaparral, forests, and woodlands	**Low Potential**. No suitable habitat in the vicinity of the project site.	
Reptiles				
Western pond turtle *Clemmys marmorata*	FSC/CSC	Lakes, ponds, reservoirs, and slow-moving streams and rivers, primarily in foothills and lowlands	**Low potential.** No known occurrences in the vicinity of the project site. Closest known occurrence is Redwood Creeks, Muir Beach (CNDDB 2003).	
California horned lizard *Phrynosoma coronatum frontale*	FSC/CSC	Sandy open areas in riparian woodland, grassland, coastal scrub, mixed chaparral, and oak woodland	**Low potential.** No known occurrences in the vicinity of the project site. No occurrences reported by CNDDB.	

APPENDIX B
POTENTIAL OCCURRENCE OF SPECIAL STATUS SPECIES IN VICINITY OF THE MARINE MAMMAL CENTER PROJECT AREA

Common Name *Scientific Name*	Listing Status USFWS/CDFG/CNPS	Habitat Requirements	Potential Species Occurrence In Project Study Area	Period of Identification
Birds				
Tricolored blackbird *Agelaius tricolor*	FSC/CSC	Nests in freshwater marshes with dense stands of cattails or bulrushes, occasionally in willows, thistles, mustard, blackberry brambles, and dense shrubs and grains	**Absent**. No suitable habitat present. No known occurrences reported by CNDDB.	
Bank swallow *Riparia riparia*	--/CT	Nests along river or creek banks. Forages for insects over water.	**Absent**. No suitable habitat exists in the vicinity of project site.	
Bells' sage sparrow Amphispiza belli belli	FSC/			
Ferruginous hawk *Buteo regalis*	FSC/CSC	Forages in grassland, agricultural lands, and pastures (wintering only)	**Low Potential**. Uncommon seasonal migrant.	
Red-tailed hawk *Buteo jamaicensis*	--/--	Open stands of deciduous and coniferous forests; frequents croplands and pastures	**Observed**. Nesting habitat in larger Monterey pine on northwestern side of project site	
Red-shouldered hawk *Buteo lineatus*	--/--	Dense riparian woodland, hardwood-conifer habitats adjacent to swamps, marshes, and wet meadows	**Observed.** Potential nesting habitat in mature Monterey pine and cypress on northwestern side of project site.	
Northern Harrier *Circus cyaneus*	--/CSC	Nests on the ground in a slightly elevated area or in thick vegetation.	**Moderate Potential**. Nests in Rodeo/Gebode Valley area.	
Vaux's swift *Chaetura vauxi*	--/CSC	Nests in hollow, burned-out tree trunks in large conifers	**Low Potential**. Uncommon seasonal migrant	
Black swift *Cypseloides niger*	FSC/CSC	Nests in mountains often adjacent to waterfall and coastal cliffs. Water required at nest. Single egg laid yearly.	**Low Potential**. Rare seasonal migrant.	
California gull *Larus californicus* (nesting colony)	--/CSC	Colonial nester on islets in large interior lakes either fresh or strongly alkaline	**Moderate Potential**. Common nonbreeding visitor in fall, winter and spring; occurs along the shorelines of Mountain Lake (Jones and Stokes 1997).	
Long-billed curlew *Numenius americanus*	--/CSC	Breeds in upland shortgrass prairies and wet meadows in northeastern California in gravelly soils	**Moderate Potential**. Uncommon winter visitor to Rodeo Beach.	

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POTENTIAL OCCURRENCE OF SPECIAL STATUS SPECIES IN VICINITY OF THE MARINE MAMMAL CENTER PROJECT AREA

Common Name *Scientific Name*	Listing Status USFWS/CDFG/CNPS	Habitat Requirements	Potential Species Occurrence In Project Study Area	Period of Identification
Elegant Tern S*terna elegans*	--/CSC	Coastal, frequenting estuaries and beaches in summer and fall	**Moderate Potential**. roosts on Rodeo Beach with their fledglings for portions of the year as well as feeding in the lagoon.	
Double-crested cormorant *Phalacrocorax auritus* (rookery site)	--/CSC	Forages in a variety of habitats and nests in riparian forests or on protected islands.	**Observed**. Several individuals observed at Rodeo Lagoon.	
Mammals				
Pallid bat *Antrozous pallidus*	--/CSC	Day roosts are mainly in caves, crevices and mines; also found in buildings and under bark. Forages in open lowland areas	**Low Potential**. No suitable habitat within project site.	
Greater western mastiff bat *Eumops perotis californicus*	FSC/CSC	Needs rock crevices, grassland, coastal scrub; may use urban areas	**Moderate Potential.** Older buildings within Fort Barry may provide habitat for this species. No occurrences reported by CNDDB..	
Small-footed myotis *Myotis ciliolabrum*	FSC/--	Roosts in caves, buildings, mines and crevices, sometimes bridges and bark	**Moderate Potential.** Older buildings within Fort Barry may provide habitat for this species. No occurrences reported by CNDDB.	
Long-eared myotis *Myotis evotis*	FSC/--	Roosts in buildings, crevices, under bark, snags, and in forests. Caves are the primary night roost	**Moderate Potential.** Older buildings within Fort Barry may provide habitat for this species. No occurrences reported by CNDDB..	
Fringed myotis *Myotis thysan sodes*	FSC/--	Roosts in caves, old buildings and under bark	**Moderate Potential.** Older buildings within Fort Barry may provide habitat for this species. No occurrences reported by CNDDB.	
Long-legged myotis *Myotis volans*	FSC/--	Roosts in rock crevices, buildings, tree bark, snags, mines and caves. Trees are perhaps the most important daytime roosts for this species.	**Low Potential**. No suitable habitat within project site.	

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Common Name *Scientific Name*	Listing Status USFWS/CDFG/CNPS	Habitat Requirements	Potential Species Occurrence In Project Study Area	Period of Identification
Yuma myotis *Myotis yumanensis*	FSC/CSC	Roosts in caves, old buildings and under bark. Forms maternity colony in the spring.	**Moderate Potential.** Older buildings within Fort Barry may provide habitat for this species. Roosting population recorded at Battery Wallace in Marin Headlands. (GGNRA, 2003)	
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	FSC/CSC	Forests with moderate canopy cover and brushy understory	**Absent**. No suitable habitat exists within project site.	
Townsend's big-eared bat *Plecotus townsendii*	FSC/CSC	Roosts in caves, mines, buildings or other human-made structures for roosting. Forages in open lowland areas	**Moderate Potential.** Has been recorded within older buildings within Fort Barry (GGNRA, 2003).	
Salt marsh vagrant shrew *Sorex vagrans halicoetes*	FSC/CSC	Inhabits tidal salt marshes dense with pickleweed around south San Francisco Bay	**Absent.** No suitable habitat within project site.	
PLANTS				
Pink sand verbena *Abronia umbellata* ssp. *umbellata*	--/--/1B	Coastal dunes	**Low Potential**. No suitable habitat within project area.	June through October
Coast rock-cress *Arabis blepharophylla*	--/--/4	Coastal bluff scrub, coastal prairie, coastal scrub	**Moderate potential**. Suitable habitat exists within project site. Rare plant surveys need to confirm presence or absences.	February through May
Franciscan thistle *Cirsium andrewsii*	--/CSC/1B	Coastal dunes	**Low Potential**. No suitable habitat exists on project site	March through July
Round-headed Chinese houses *Collinsia corymbosa*	--/CSC	Coastal dunes	**Low Potential**. No suitable habitat exists on project site	April through June
Tiburon buckwheat *Eriogonum luteolum* var. *caninum*	--/CSC/3	Chaparral, coastal prairie, and valley and foothill grassland	**Moderate potential**. Suitable habitat exists within project site. Rare plant surveys need to confirm presence or absences.	June through September
San Francisco wallflower *Erysimum franciscanum*	FSC/--/4	Northern foredune, northern coastal scrub, northern coastal bluff scrub, central dune scrub	**Moderate Potential**. Occurs on coastal bluffs. Rare plant surveys need to confirm presence or absences.	March through June

APPENDIX B
POTENTIAL OCCURRENCE OF SPECIAL STATUS SPECIES IN VICINITY OF THE MARINE MAMMAL CENTER PROJECT AREA

Common Name ***Scientific Name***	**Listing Status** **USFWS/CDFG/CNPS**	**Habitat Requirements**	**Potential Species Occurrence** **In Project Study Area**	**Period of Identification**
San Francisco gilia *Gilia capitata spp. Chamissonis*	--/CSC/1B	Coastal dune and scrub	**Moderate Potential**. Suitable habitat exists on project site. Rare plant surveys need to confirm presence or absences.	April through June
San Francisco gumplant *Grindelia hirsutula* var. *maritima*	FSC/--/1B	Coastal bluff scrub, coastal scrub, valley and foothill grassland; slopes with sandy or serpentinite soils	**Low Potential**. Occurs on coastal bluffs	August through September
Kellogg's horkelia *Horkelia cuneata* ssp. *sericea*	FSC/--/1B	In openings of closed-coned coniferous forest, coastal scrub, maritime chaparral; sandy or gravelly soils	**Low Potential**. Collected near Bakers beach in 1890, not found in San Francisco area since that time (CDFG 2001).	April through September
Marin checkerbloom *Sidalcea hickmanii* ssp. *viridis*	FSC/--/1B	Chaparral (serpentinite)	**Low Potential**. No suitable habitat exists within project site.	May through June
Large-flowered linanthus *Linanthus grandiflorus*	--/CSC/4	Chaparral, coastal dune and scrub, coastal prairie and lower montane coniferous forest with sandy soils	**Moderate Potential.** Suitable habitat exists on project site Rare plant surveys need to confirm presence or absences.	April through August
Curly-leaved monardella *Mondarella undulata*	--/CSC/4	Coastal bluff and scrub, valley and foothill grassland with sandy soils	**Moderate Potential.** Suitable habitat exists on project site. Rare plant surveys need to confirm presence or absences.	May through September

APPENDIX B
POTENTIAL OCCURRENCE OF SPECIAL STATUS SPECIES IN VICINITY OF THE MARINE MAMMAL CENTER PROJECT AREA

Common Name *Scientific Name*	Listing Status USFWS/CDFG/CNPS	Habitat Requirements	Potential Species Occurrence In Project Study Area	Period of Identification
SPECIES ON OTHER LISTS				
ANIMALS				
Monarch butterfly *Danaus plexippus* (winter sites)	--/*	Eucalyptus groves (winter sites)	**Moderate Potential**. Population known to winter in eucalyptus grove at Fort Barry, adjacent to the youth hostel (CNDDB 2003).	

Status codes:

Federal Categories (U.S. Fish and Wildlife Service)

FE = Listed as Endangered by the Federal Government
FT = Listed as Threatened by the Federal Government
FSC = Federal Species of Concern
FC3c = Too widespread and/or not threatened
FD = Delisted. Status monitored for five years.

State Categories (California Department of Fish and Game)

CE = Listed as Endangered by the State of California
CT = Listed as Threatened by the State of California
CR = Listed as Rare by the State of California
CSC = California Species of Special Concern
* = California Natural Diversity Data Base Special Animals List

California Native Plant Society (CNPS)

List 1A = Plants presumed extinct in California
List 1B = Plants rare, threatened, or endangered in California and elsewhere
List 2 = Plants rare, threatened, or endangered in California but more common
List 3 = Plants about which more information is needed
List 4 = Plants of limited distribution

-- No listing status

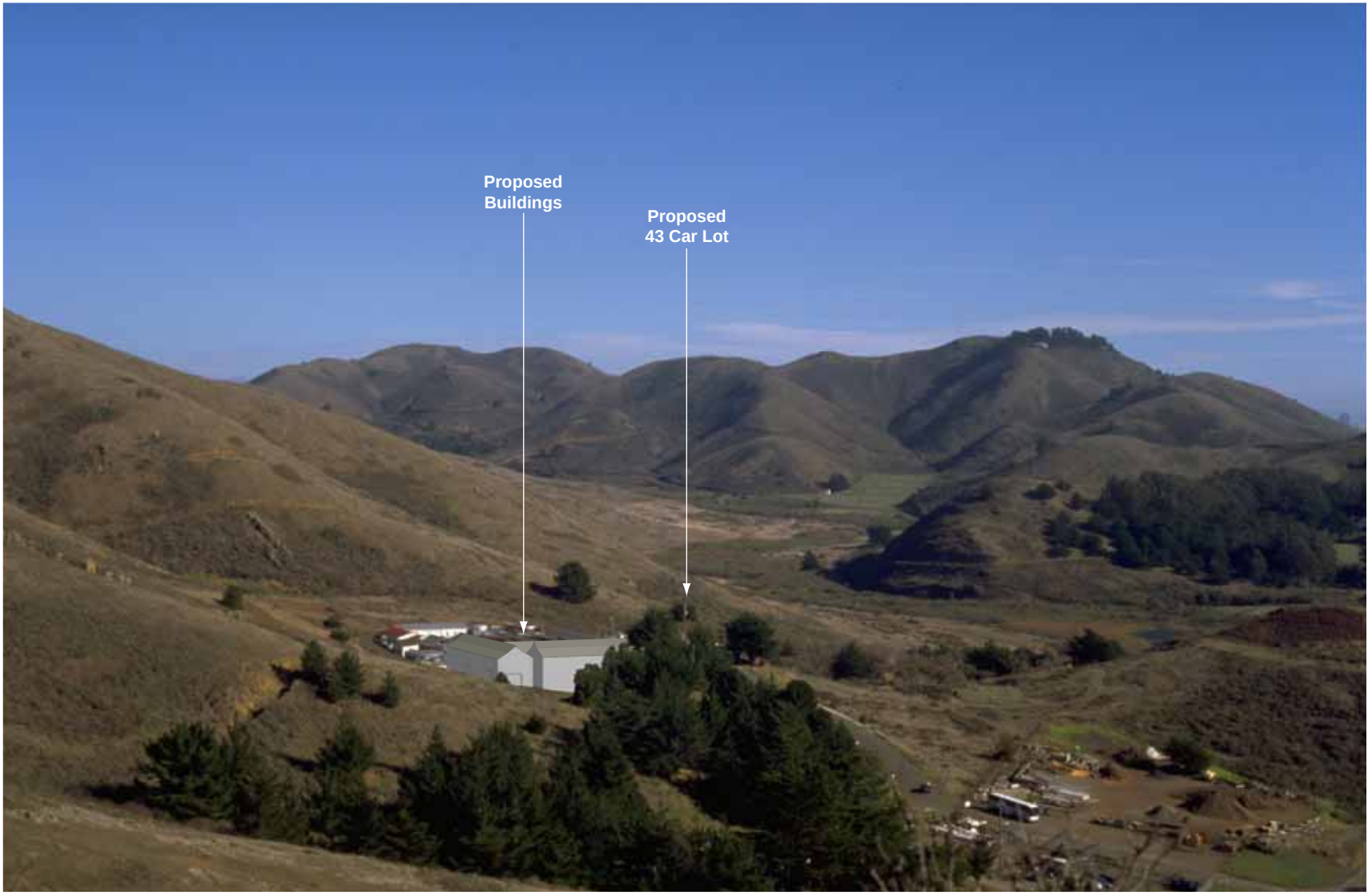
SOURCES: CDFG 2001; CNPS 1999; NPS 1999c, 2000; Jones and Stokes Associates 1996, 1997; Munz 1970; USFWS 2000; Goals Project 2000.

Appendix C: Visual Simulations

Figure C-1
Existing Old Bunker Road View

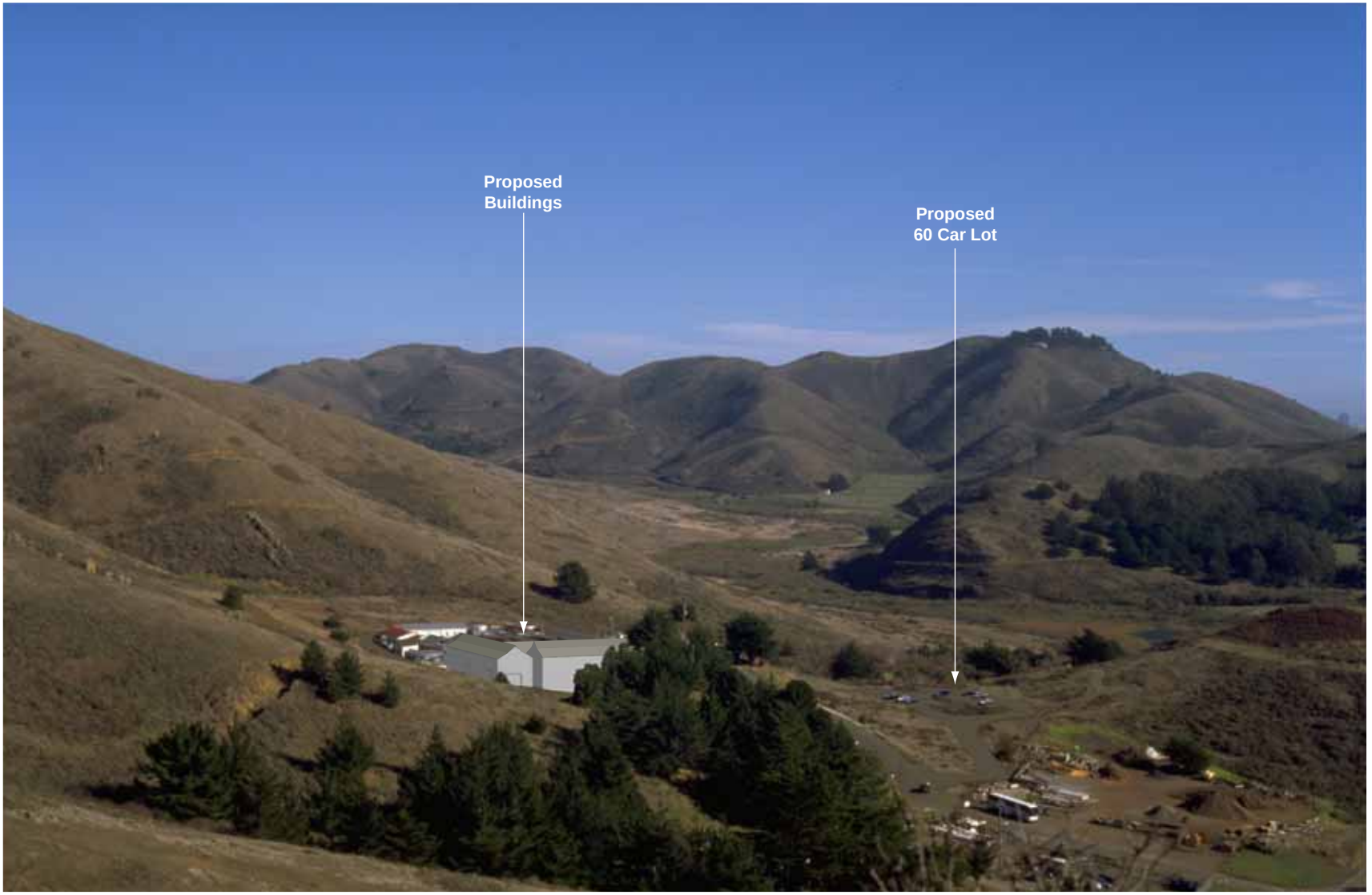
SOURCE: Environmental Science Associates

Figure C-2
Alternative 2: Old Bunker Road View Simulation



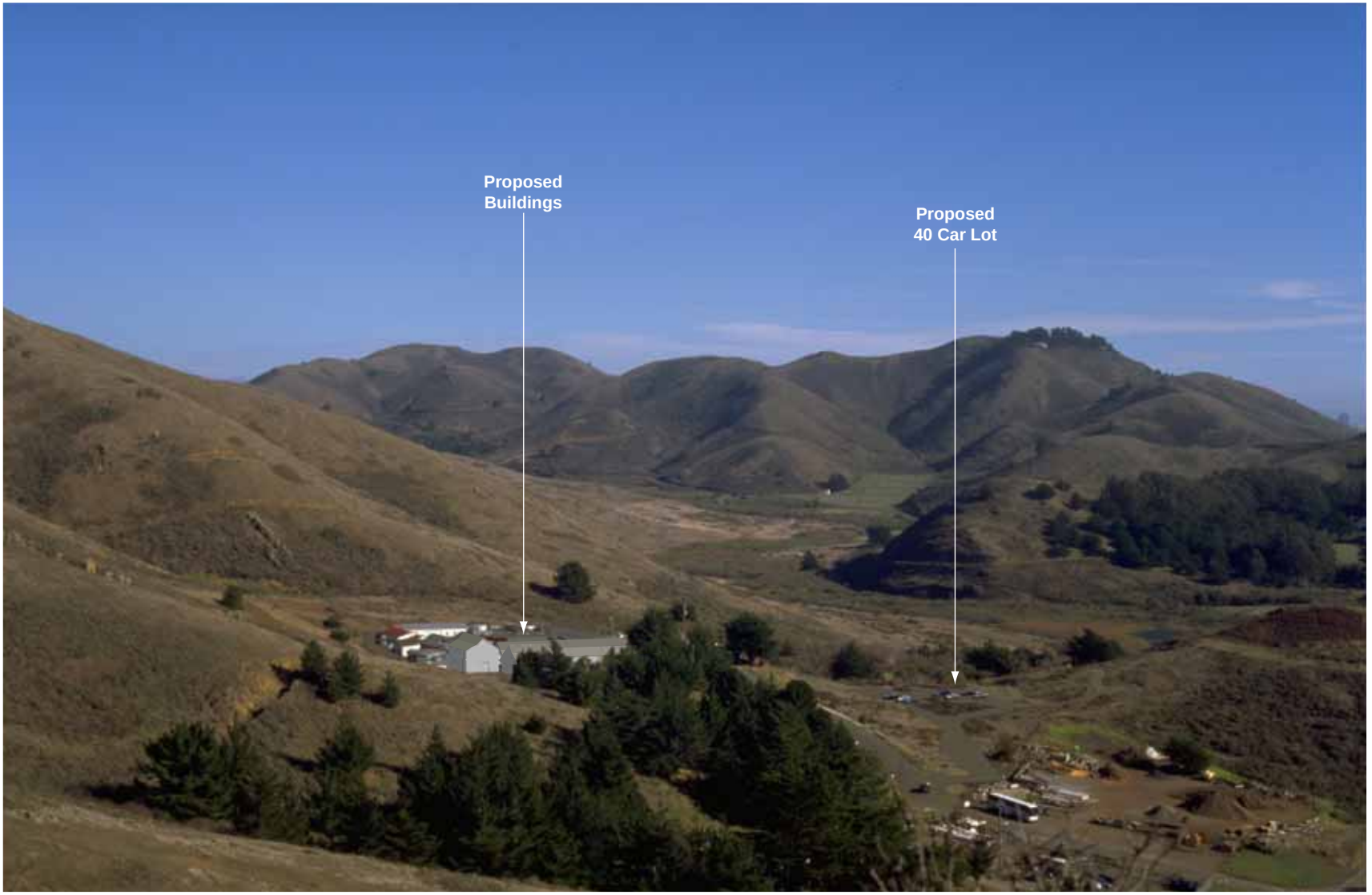
SOURCE: Environmental Science Associates

Figure C-3
Alternative 3: Bunker View Simulation



SOURCE: Environmental Science Associates

Figure C-4
Alternative 4: Old Bunker Road View Simulation



SOURCE: Environmental Science Associates

Figure C-5
Existing Visitor Center View

SOURCE: Environmental Science Associates

Figure C-6
Alternatives 2, 3, and 4 Visitor Center View Simulations

SOURCE: Environmental Science Associates

Appendix D: Received Scoping Comments

National Park Service
U.S. Department of the Interior

Golden Gate
National Recreation Area

GGNRA
Fort Mason, Bldg. 201
San Francisco, CA 94123

415 561-4488 phone

Public Scoping Notice

Marine Mammal Center Modernization Project

The Marine Mammal Center (Center) has begun preparation of an Environmental Assessment (EA), pursuant to the National Environmental Policy Act (NEPA), for the modernization of its facilities in the Marin Headlands, a site within the Golden Gate National Recreation Area (GGNRA). Public comments on the scope of the EA are welcome until May 31, 2003. This project will be presented at the GGNRA's public meeting on May 20, 2003. The Park public meeting will be held at Building 201 Fort Mason in San Francisco and will begin at 7:00 p.m. Please note that several other projects will be presented at the Park's public meeting so the exact time of the presentation for this project is not set. For information on the agenda, please call Michael Feinstein at (415) 561-4733.

Interested individuals, organizations and agencies should send written comments to:

Golden Gate National Recreation Area
Attn: Glenn Bixler
Building 201 Fort Mason
San Francisco, CA 94123
Phone: 415-561-4488

BACKGROUND

The Marine Mammal Center is located in the Marin Headlands on lands managed by GGNRA. The Center rescues, rehabilitates, and releases marine mammals, some of which are threatened and endangered. The causes of marine mammal diseases are researched at the Center and new treatment protocols are developed. The Center also conducts school education programs and public education campaigns to reduce human interference in marine mammal habitat and develop an appreciation for the animals and their preservation.

PROPOSED PROJECT

The existing facilities no longer meet the operational needs of the Center. The Center is proposing to retrofit the existing facilities in order to administer better care to marine mammals and education to the public. The proposal includes the modernization of existing facilities and would be built largely within the footprint of the current facilities thus minimizing impacts to the surrounding areas. Some new construction is proposed.

Goals

- Improve treatment of marine mammals through more efficient and effective hospital facilities;
- Improve Center functionality as it relates to the marine mammals brought to the facility; and
- Improve the location of current facility features for access by staff and visiting public.

Environmental Review

The EA will be prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and regulations of the Council on Environmental Quality (40 CFR 1508.9), the 2001 National Park Service (NPS) Management Policies, and the NPS Director's Order No. 12: Conservation Planning, Environmental Impact Analysis, and Decision-Making. This assessment will evaluate the potential effects of the project on the environment, including effects on natural resources, cultural resources, visitor use and experience, and socioeconomic effects. Mitigation measures will be identified to avoid or reduce any adverse environmental effects from this project. The release of a draft EA for public review is scheduled for Fall 2003.

Questions to consider when preparing scoping comments:

- Are there alternative approaches and ideas for accomplishing project goals?
- What issues (environmental, economic, etc.) should be considered in the environmental assessment?
- How would this project affect your use of the GGNRA?
-

Current Facility

BEFORE THE

UNITED STATES DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

GOLDEN GATE NATIONAL RECREATION AREA

and

THE PRESIDIO TRUST

PUBLIC MEETING

GGNRA Park Headquarters

Building 201, Fort Mason

San Francisco, California

Tuesday, May 20, 2003

REPORTER: JAMES W. HIGGINS, CVR

C O N T E N T S

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Then, on the National Park Service side, there were eucalyptus trees, which the national park took down. Basically, they probably shouldn't have been there to begin with. But there is no overhanding vegetation from where the restoration ends, until the bridge at Arnold.

And I called over — and I don't know who I talked to — at Fort Mason and asked if — couldn't they just plant some willows on the National Park Service side, so that there would be some overhanging vegetation on the creek there. Because, as it is right now, it's just a canal. There is no vegetation other than the eucalyptus tree and some things that are farther down.

But, anyway, the NPS could put some willows there, I would think, and I would hope that they could, you know, maybe add that to their — you know, so the creek stays cool in that area.

That's all.

MS. STOTT: Does staff want to add anything else for clarification, or anything?

(No response.)

MS. STOTT: Our second agenda item is the Marine Mammal Center Modernization Project (Master Plan Update). And, once again, I'd like to invite

Nancy Hornor to introduce this agenda item and its staff.

MS. HORNOR: This project is being managed in the Planning Division of the park. We are beginning the scoping process for an Environmental Assessment and we will be starting that — we started that process with mailing of the scoping announcement. Then, tonight, we have an opportunity for public comment on the scope of the Environmental Assessment that we prepared. So we're really looking for help on advising about the range of alternatives that should be considered and the isses that should be addressed in the Environmental Assessment that will be prepared for this project.

The Marine Mammal Center is one of our oldest park partners. They've been here, since the earliest days of the park. In 1990, a master plan was prepared; and, in a similar NEPA process, it was approved.

With changes in some of the things that the Marine Mammal Center does, and just the need to modernize and improve their site and their operation, they've proposed the changes that we'll see in a presentation tonight.

Here to make the presentation is B. J.

Griffin, the Executive Director at the Marine Mammal Center. She'll be providing a presentation on the proposed facility improvements.

She'll be followed by Ric Borjes, the Chief of Cultural Resources here at the park, who will talk a little bit about the 106 process, which is our National Historic Preservation Act compliance process.

Then Glenn Bixler will come back and talk about the NEPA process and the next steps, and how we'll proceed with that.

So, we'll begin with B. J. Again, I think we just need -- we're going to have a Power Point presentation, so we need the lights down.

MARINE MAMMAL CENTER MODERNIZATION

(MASTER PLAN UPDATE)

B. J. GRIFFIN, EXECUTIVE DIRECTOR

RIC BORJES, DIRECTOR OF CULTURAL RESOURCES, GGNRA

GLENN BIXLER, NEPA

MS. GRIFFIN: Well, thank you very much, Nancy. And it's a pleasure for me to be here tonight to tell you a little bit about the Marine Mammal Center and the need for the changes that we're proposing to the park through its Environmental Assessment, that triggered this Environmental Assessment.

Twenty-eight years ago, the California Marine Mammal Center, as it was known, began operating on the northern Nike Missile Site in the Marin Headlands. This is the footprint of the hospital (indicating).

The partnership with Golden Gate National Recreation Area is unique in the National Park System, with respect to ocean resources. The park covers 73 miles, or more, of one of the four richest habitats of marine mammals in the world. The Center's work contributes to learning about and protecting the marine mammal resources on the park's coastal area.

Today, the Center is the largest facility of its kind in the world. We treat, on average, 500 seals, sea lions, otters, dolphins and turtles each year. Threatened and endangered species treated at the Center includes Steller sea lions, the southern sea otter, and the northern and Guadalupe fur seals.

Our rescue range is about 600 miles of California coast. We are licensed by the National Oceanographic and Atmospheric Administration. This was all born out of the Marine Mammal Protection Act of 1972.

Our mission is to recognize our interdependence with marine mammals and to foster

their survival. We do this in three ways:

Through treatment of the animals at the Center. We rescue them, we treat them, and we release them. And while they're being treated, we learn about the populations in the wild.

Basic husbandry is done by 800 committed and wonderful volunteers. We have 14 crews for harbor seals, and 14 crews for the other species that we treat.

Our director of veterinary science, Dr. Frances Gullen, couldn't quite get this animal into our necropsy room, so she went to the animal. This is blue whale. It's about 70 feet long, and it was between Tennessee Valley and Rodeo Beach, right off the coast there. So we were able to get quite a good amount of samples from this animal.

Since she came, in 1994, our research program began to grow in earnest, and our list of scientific papers increases each year. Frances co-edited the Marine Mammal Medicine Handbook, which is the definitive work on the clinical marine mammal work. Several chapters were contributed from the Center Vets, researchers and doctoral students at UC-Davis.

The third part of our mission is education.

All programs at the hospital are done outside. And it's because there is no facility at the hospital to do education. That's part of the proposal.

This is one group that is learning from the statue of an adult elephant seal that is adjacent to the pens and pools of the hospital.

We reach 35,000 school children each year. Half of them are through our outreach programs called "The Whale Bus," and the other half come to the Center for programs. Most of them come by bus. We teach the work at the Center. We teach our findings. We teach about disease, and we teach about the natural history of marine mammals. It's the only comprehensive marine mammals education program in this area.

Harbor seals. There was one building that was on site from the Army era, and it was called "The Ready Room." So, in 1998, we did an adaptive restoration of this building, or reuse of this building, under the Historic Preservation Compliance Act. We opened it in 1998. At that time, we had 15 percent survival rate among harbor seals. In the year after we opened this facility, we had over 65 percent survival rate. So it was a dramatic exponential benefit from having facilities that were designed especially for the species. We learned that stress

was a problem for them. We learned that handling was a problem for them. And, so, we designed the facility especially for the species, which really resulted in that great survival rate.

This set the standard of care for this one species. And, so, now we need to do the same for the other species we treat, and give the staff the necessaary tools to serve their needs.

The Marine Mammal Center occupies a former Nike Missile Site that was associated with Fort Cronkite. The site was listed as a contributing element of the Forts Barry, Baker and Cronkite Historic District that was located — that was listed on the National Register of Historic Places in 1973. It appears that this site no longer has the integrity for listing on the National Register and an amendment to the 1973 National Register Form was written to reflect this fact.

Facilities have been cobbled together over the years. A few pens and pools here, an add on to the filtration system there. Most buildings are these modified frieght containers. The pipes are above ground and they're PVC. We have an ozone life support system, which reacts to the sunlight and frequently breaks the pipes. We lose a lot of blood that way.

Our pumps are old and break down frequently.

The filtration tanks and pipes are spead down the hill side. The proposal would recycle much more water than we do today. The current facility is long past its useful life.

The next few slides show the proposal that we had made to the National Park Service that triggered this Environmental Assessment. We plan to reuse as much as we can. We plan to reuse the harbor seal hospital, which was the original ready room. It is now the -- we plan to reuse the garage shop building that is really the northeast corner of the site, and we plan to reuse this set of pens and pools. This was built around the, in the 1990s, and it's perfectly usable. You can tell that the pen area and pool size is much larger than the older pens and pools.

Our plan is to get better, not bigger. We respond to all animals today, as we intend to do in the future. A goal of our communications is to preserve marine environments, preventing patient admissions, rather than adding to them. Our license from NOAH and from the Department of Agriculture does not allow us to be a display facility, in the sense of an aquarium or a zoo.

Our written proposal would consolidate all current functions that the Center does on this hospital site. The new filtration system would be housed underground in the east silo. That would get it out of the sun and get rid of the PVC and ozone problems. Significant investment would be made into the most efficient technology that we can afford so that we would have a greater water-holding capacity, but the intake and discharge would be no more than we have today.

The Ring Road, as we call it, and the remote parking, are the two features of our proposal that are outside of our current footprint. The Ring Road would allow for school buses to drop students off and then proceed on around for them to park. Right now, they back down the hill, which is a very unsafe situation.

There are daily deliveries by large trucks, garbage pickup, fish deliveries, supplies, and, of course, animal admissions. The Ring Road would separate vehicles from the animal patients, as well as the volunteers, staff and visitors who are there on foot.

Remote parking would cut down vehicle activity and be well hidden in the depression area,

which is now the old Army dog kennels.

An attractive sense of arrival would be developed. People would walk up here, and around, and enter right here. They would enter into the Discovery Room.

The older pens and pools were built almost 20 years ago, and we have found them to be too small. They allow for disease transmission pen to pen. They are not safe, as they could be, for volunteers and staff working with the animals. The old pens and pools need to be replaced.

Postmortem tissue and serum has been banked for 10 years. It enables research for the Center, as well as providing samples to researchers all over the world. A new state-of-the-art necropsy room is proposed adjacent to the new laboratory for faster diagnosis and much more efficient operation.

We propose to construct a classroom where students can see the animals they are learning about. This is an artist's rendering because we don't have anything like that and we can't perform these activities now. Interactive labs would be included for better learning.

Visitors now wander, who now wander around behind the fence, would enter through the Discovery

Room, as I pointed out earlier, so they can learn about these animals and our work. We propose exhibits in the windows of the animal care and functions, such as the fish kitchen, the chart room, the necropsy and the lab. They can actually see the volunteers and vet staff working and get a much better sense of what we do.

Our objective is to teach them more, stir their passions and inspire their actions to protect the animals in their habitat.

So, just quickly, going through the proposal again. We would keep the harbor seal hospital. We would keep this existing garage and shop, and we would keep this set of pens and pools. The rest of this is new. The filtration system goes in the east silo. Roughly, the site is divided about what looks to be about two-thirds of it in animal care. This is what we refer to as the wet buildings. We'll have the chart room for volunteers, and we have the animal food kitchen/pharmacy here. We would have the laboratory here, and the necropsy here.

This here is the medical offices and the education offices, and also the dispatch for the stranding functions in this building. This would be a two-story building in our proposal. This would be

also a two-story building in our proposal.

The classroom and Discovery Room, for visitors to enter here, come out into the courtyard, and then they would be able to look at exhibits and observe the functions going on here, here, here and here (indicating). Above here, on the second floor, is administrative offices.

The objectives of the project:

Improve treatment of marine mammals through more efficient and effective hospital facilities.

Improve the Center functionality, as it relates to the marine mammals brought to the facility.

Improve the location of current facility features for access by staff, volunteers and the public.

Minimize environmental impacts, including traffic congestion.

The Center's functions currently occupy 28,154 square feet of building space. That's enclosed space. The improvement project would reuse about 18,000 square feet and construct about 18,000 square feet, for a total of about 36,000 square feet of enclosed space; 7,700 square feet of that would be underground.

We propose to retain use of Building 1065,

which is currently the Administration Building. We will consolidate our current functions at the hospital site, and we would like to use this building as a research annex, for visiting researchers and students. This building is 4,860 square feet, and that is included in the 36,000 square foot total I just mentioned.

The current education and laboratory buildings, here and here (indicating), would be vacated.

Current water capacity is 47,152 gallons. The design of the new pools and holding tanks have a total capacity of 260,000 gallons. However, investment is being made into efficient filtration systems. Our water report indicates that, even with the increased capacity, water intake and discharge should be the same, or less, than it is at present.

Visual impacts will be mitigated as much as possible. We plan to have the two-story building tucked up against the hillside at the back of the site. And, as you recall, when you look up at the site from the road.

Computer-generated photos will be provided for popular trails and view points through the Environmental Assessment. Natural dark is being

incorporated into the design as much as possible. Lighting will be focused downward and be shielded structurally to allow for natural light sky.

The Environmental Assessment will study trip generation. We currently receive about 100,000 visitors a year, including school groups. About half of those school groups come in buses. The visitor experience will be a richer one, but we do not plan to significantly increase our visitors. We'll coordinate with the park's ongoing transportation study at the Marin Headlands, as well.

We currently have an excellent program, but it is not matched by the physical facilities. If this is accepted, we could have the best program of its kind and the facilities that express professionalism and the program success that we enjoy. The Golden Gate National Recreation Area and the Marine Mammal Center will have a one-of-a-kind organization for the public and for marine mammals we both protect.

I'm going to turn it over now to Ric Borjes. Thank you very much.

[Applause.]

MR. BORJES: Thanks, BJ.

I am Ric Borjes, Chief of Cultural Resources, Museum Management. This is going to be the

shortest presentation of the evening.

We are, we will, concurrently run our compliance requirements under the National Historic Preservation Act with the NEPA process, using all public input, public involvement, as public input for the 106 compliance action.

As BJ has said, the Marine Mammal Center occupies a Nike Missile Site that was associated with the Fort Cronkite. The site was listed as a contributing element to the Forts Baker, Barry, and Cronkite Historic District. That district was listed on the National Register in 1973. Also, as BJ has said, it appears to us that this former Nike Missile Site no longer has the integrity for listing on the National Register.

An amendment was prepared for the 1973 National Register Form, and we submitted this to the State Historic Preservation Office for review. Due to their workload, they weren't able to review it. But, currently, we had a focused historic preservation group out on the site, February 28, 2002, consisting of Fort Point Presidio History Association, members of our Advisory Commission, National Trust for Historic Preservation, and Marin Heritage. These members, all who agreed with the National Park Service that this

property no longer had integrity and felt that it — that the proposed amendment was acceptable; however, we did hear a strong opinion from this group that interpretation of the Nike-era missile site should still be part of the Marine Mammal Center program, the Center's program at the site.

We will continue to consult. We have just recently opened a full consultation under the National Historic Preservation Act. We have sent off letters to the State Historic Preservation Office, and the Advisory Council on Historic Preservation. We have resubmitted this detailed amendment to the National Register Form to that office. And, just as of today, they have agreed to review it now. We will get their opinion back on it.

We will continue the 106 compliance for this process because, in effect, we will still be reviewing new construction in the historic district. The historic district will be the same as it was before: Forts Baker, Barry and Cronkite. The Center will no longer be contributing to that historic district.

So we will be reviewing for new construction and historic district. As we go through the EA process, then, we will continue to take

comments from the public on concerns, and other issues around the National Historic Preservation impact on this.

Thanks. With that, I give it back to Glenn Bixler.

MR. BIXLER: The requirements for the National Environmental Policy Act, we will be doing an Environmental Assessment. We're currently in the scoping phase, which is basically to get early input on the project. We're currently in the scoping period, which will end the thirty-first of this month. Began on the first of the month. And beginning formulation with regulatory agencies, and will continue to coordinate with those agencies.

Following the scoping, we'll be able to develop a range of alternatives and preparation of the EA — which we are hoping to distribute in the fall of 2003.

As far as for what you can do to contribute in the public involvement process, you can provide scoping comments throughout the scoping period, until the thirty-first. There will be an open house at the Center. We'll be having that during the public comment period when the Environmental Assessment is out for public comment. So you cannot only be looking

at the document, you can come over to the Center and take a look at their facilities. Then, you can review and comment on the environmental document.

MS. STOTT: Thank you all, for that presentation.

We have, actually, two people to comment on this topic. The first is Gordon Bennett.

PUBLIC COMMENT

STATEMENT OF

GORDON BENNETT

MR. BENNETT: Gordon Bennett, again representing the Environmental Action Group for West Marin and the Sierra Club on southern Marin issues.

In general, a big supporter of the Marine Mammal Center. I call them for a lot of animals for you guys to pick up. Thank you.

I'm going to recommend that these organizations support this project. I think it's a very good one, but I want to bring up one concern: Traffic. I know that you worked to direct some of the, let's call them sightseers, through the Pier 39 facility, who are not really interested in being educated; they just want to see stuff. I encourage you to do that more. I'm really concerned, when I flip open my Marin County Phone Book, for example, and

see, in the list of attractions, the San Francisco Giants Stadium, and, right next to that, the Marine Mammal Center. Now something is wrong there. That tells me that the idea that this is not a zoo is somehow not fully carried through.

So, I hope that you encourage single-occupancy traffic not to increase at all. I think the idea of education is great. I think you get kids on buses, that's wonderful. But until we get the Comprehensive Transportation Management Plan going — where you get folks out to the facility on buses that don't disturb the adjoining communities, which are already upset about the traffic problem — I encourage you to kind of hold that steady and not have any increase at all in the single-occupancy visitation.

Thank you very much.

MS. STOTT: Our next speaker is Amy Meyer, and she has also served on the Advisory Commission, which is pending reauthorization.

STATEMENT OF

AMY MEYER

MS. MEYER: I had been out to the Marine Mammal Center last year, and I remember it from many years ago. This is a wonderfully successful organization. The scope and professionalism of the

work that has been done there has increased all the time.

One of the constraints that one might see — and this has been brought up by Ric Borjes — is that it is within an historic setting, within a historic district. But having seen other institutions grow elsewhere, my concern is that the EA express, very clearly, what the mission of the Marine Mammal Center is, and, perhaps, what the mission is not. And whether it's a question of traffic or space occupied, we could have, literally — and I haven't visited this, so I'm talking off the top of my head — we could have another Scripps Oceanographic Institute there. We could have a university institute there. We could have something that will spread and sprawl when its site really has to have some sense of constraint and its mission needs to be focused. It may be necessary that some things will be done not at this site, but may be done at pods elsewhere up and down the coast, because either they can be done equally effectively there, or it's because this is still within a national park.

So that's my concern for the expressions of the form of the EA.

MS. STOTT: And I was just handed a card of

Margaret Zegart, and I guess she wanted to speak, also.

STATEMENT OF

MARGARET ZEGART

MS. ZEGART: I see two accessible handicapped spaces, but I'm concerned about the school buses. I don't see where you're going to unload the children in the diagram of the parking. I think it's really important because children have to go in there in all kinds of weather, and it's often very windy and blowy and rainy. It's an exciting place. I know two people, one who instructs there, and one who volunteers. The highlight, for each of them, when they're in there.

So, on behalf of the volunteers, they said that it really isn't volunteer-friendly in terms of the ways now. So I hope you consider making it a very pleasant place for the volunteers who go there, because they — it's a very important part of their contribution.

Thank you.

MS. STOTT: Thank you.

Does staff have any clarifications or comments they want to add?

(No response.)

KETTZ@aol.com
05/29/2003 08:58 PM
EDT

To: admin@tmmc.org, glenn_bixler@nps.gov
cc:
Subject: marine mammal center scoping comments

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RE: Public Scoping for the Marine Mammal Center Modernization Project

Retrofitting and expanding the hospital facilities and improving the space for excellent research seems to be well considered by those familiar with medical expertise and I expect you have their comments as well from those who can
recommend the ease and appropriate transfer of mammals to and when recovered, from the facility. However, from a visitor's observation:
° The "tubs" are elevated and moving fatigued and underweight animals up and down ramps with buffer boards could be corrected by having the tubs sunken - to approximate a shoreline / water's edge within the "cages" for the elephant seals, seal lions, etc.

Center Functionality .
° Could a circular "cage" configuration design with access corridors [spokes] for gurneys / food / fish / supply access work? Visibly from a visitor's
viewpoint, it would seem a more efficient way to service mammals and provide access for care and feeding, etc.
° Improvements for staff
Staff includes volunteers and I think a more hospitable area; locker and an area for reading / reference / video recordings of mammals as well as flipper identification would enhance the experience for volunteers who "love" and respect the animals and their wellness due to care just as family. Photographs and
videos might help the volunteer teachers, too who take pride in sharing new knowledge about new friends.
° Enhancements for visitors
The information boards now may be placed to buffet the winds? I visited the Center recently with my 8 and 10 year old grandchildren. I think they should be
relocated. The high vertical information boards were a stretch to see and didn't hold their interest. Items relating to the mammals in the gift shop at hands level were more interesting for them. but it suggested to me that the education room should have hands-on access information & materials appropriate for

Glenn Bixler
Environmental Protection Specialist
National Park Service
Golden Gate National Recreation Area

the individual visiting youngsters to see out of doors as well as instruction materials for classes.
° An alternative information display might be boards and murals below a raised ramp around the center's "cages. This enclosed platform could buffet the
winds / rain and be ramped [for disabled, and strollers rather than stairs] and
then TO SEE wouldn't involve climbing up on the fence to try and look over the edge to see seals splashing or resting in the water.
° There could be marking pen boards - a space for comments - changed monthly by children about their experiences and volunteer's comments about "Lomita" or from whomever found / brought in the mammal/ special traits of the animals.
° Feeding schedules could be posted,
°An enhancement would be a map of the Coast from San Louis Obispo north with a push pin location for mammals brought in one color - their point of release in another color code. This would be a wonderful record of the year's accomplishment / service.
° Visitor accommodations, although on this high, windy overlook, for sunny days could include more areas with outdoor seating. Inside for rain season and high winds, there should be seating & video in Nation Park Service mode, opening onto the gift shop oriented as an "information center" with the experience
of the Center and memorabilia as sale items as well as the general information and selections about shore side birds, mammals and sea creatures.

The Environmental Impact report should include the role Golden Gate National Recreation Area:
° Roof materials and building color should relate to the other structures in the Ft. Kronkite area.
° This is an important destination for park visitors; an information experience and a rescue mission. Their publicity and public information should give
assistance to the visitors. I.e. at Ft. Mason & Presidio Information Centers - a
brochure and map.
The GGNRA might run shuttles there similar to the PresidioGo and from the forth coming Ft. Baker Conference / visitor complex.
° The GGNRA should improve the parking area for visitor bus, school bus and cars in lower area for visitors. Now it is just a dirt and gravel area not in keeping with the National Park Standard. Also, at the same time as the mammal center rehabilitation, the parking spaces adjacent to the GGNRA work / vehicle storage section should be improved

An alternative approach should stress the mammals within the seascape:
° A platform access around the area to reduce the fenced "cage" captured / victim image of the Center.
° Native plants, explanation of the food cycle, etc. could place the mammals within a visitor friendly place rather than an efficient, fenced hospital.

Stress level of visitors to the mammals:
° The appropriate number of visitors per day / week for well being of mammals
° the design to provide visitor's visible access without impingement upon mammal's well being should be emphasized along with scope of rescue response, care giving and research functionality.

Future expansion of care center and scope beyond this modernization project -
° international resource, etc.
° service area expansion
Even now visiting, it is a delightful experience to have young people
Cheerful to hear from volunteers about their work; to see students learning

Glenn Bixler
Environmental Protection Specialist
National Park Service
Golden Gate National Recreation Area

there of
all age groups and to know that your public relations staff is giving information to the media like the recent newspaper spread.

Sincerely,
Margaret Kettunen Zegart

Glenn Bixler
Environmental Protection Specialist
National Park Service
Golden Gate National Recreation Area

April 29, 2003

Golden Gate National Recreation Area
Attn: Glenn Bixler
Building 201 Fort Mason
San Francisco, Ca. 94123

Re: Marine Mammal Center Moderization Project

The Marine Mammal Center is one of the finest park partners within the GGNRA. It rescues, rehabilitates and releases marine mammals, does research benefitting the long-term health of those mammals and mankind.

We are fortunate enough to be Marin residents who frequent the Center taking visitors, our grandchildren and often just ourselves to view and listen to the work being done there.

We have watched them grow from the days of bathtubs and tin sheds to the current configuration of pools and buildings. They are certainly long overdue in having modern buildings and facilities enabling them to function at an even higher level of service to the marine mammals, their staff and visitors.

We can think of no other project in the GGNRA that the Park Service should bless immediately.

Sincerely,

Dean & Jane Woodman

Dean and Jane Woodman
6 Josephine Street
Sausalito, CA. 94965

Appendix E: Water Consumption Report

The Marine Mammal Center
Summary of Anticipated Water use
Relative to Historic Norms

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Contents

Part 1 *Introduction and Purposes of this Summary*

The purpose of this report is to summarize the projected annual water use for The Marine Mammal Center (TMMC) at Fort Cronkhite, Marin Headlands as represented by the Schematic Design and as compared to historic use.

As a non-profit organization reliant upon philanthropy and donations, TMMC has been very resourceful in acquiring the resources, materials and systems necessary for the care of more than 600 animals per year. Over time, systems have been incrementally expanded in the most economically feasible and expeditious manner available. The gradual expansion of the infrastructure was accomplished without the benefit of a master plan defining the goals and guiding the implementation of system revisions.

The majority of water used by TMMC programs is directly related to animal care; more specifically, the majority of water is utilized in the Life Support Systems (LSS) that clean and re-circulate water contained in the animal kennel pools. Domestic water utilization makes up the balance of total water use. As defined for this report, domestic water use includes washing the animal kennels. The current LSS systems have evolved into inefficient and often unreliable systems that deliver marginal water quality under certain environmental conditions.

The modernized LSS systems represented in the Schematic Design are based on a comprehensive analysis by TMMC and the design team defining the goals for animal care. Project goals and systems have been validated against comparable animal care institutions including the Bodega Marine Lab (UC Davis), Marine World, the Monterey Bay Aquarium, Long Marine Lab at Santa Cruz and consideration of TMMC historic records.

In preparing this report, the design team has researched current operations or conditions at TMMC and adopted fundamental assumptions that guide the design intent. These assumptions include:

- ✓ *That the total water available to all facilities in the Headlands is limited by the capacity of a single municipal supply pipe line.*
- ✓ *That the comprehensive project approval would be contingent in part upon environmental assessments including water use.*
- ✓ *That TMMC would be allowed to consolidate the institutional programs, improve animal care to more diverse species and modernize the LSS systems provided the water consumption remained relatively consistent with historic use.*

The team expects this report will demonstrate that the re-designed systems represented by the Schematic Design will improve and expand the diversity of animal care while reducing water consumption relative to historic use under 98% of environmental conditions.

Part 2 *Existing Systems Description*

Water use for the existing facilities is estimated based on water meter readings from December 1997 through June 2002. This data was provided by TMMC and is shown in the table in Appendix B-7.

For the purpose of this evaluation, annual water uses for existing conditions are presented in two categories. The first category is based on animal loading conditions and would represent a 'typical year', while the second category is based on higher animal loading conditions that occur during El Nino events occurring at approximately 7-8 year intervals. According to TMMC's records, the most recent El Nino event occurred during 1998.

The current total volume of water contained in existing pools totals about 47,000 gallons assuming all pools are concurrently filled. The total volume capacity of the pools is not, however, the basis of annual water use. Based on the utilities record (Appendix B-7), the following volumes are historical averages for annual water use at TMMC:

Category One, Typical Condition: 4,520,000 gallons per year
Category Two, El Nino Condition: 5,950,000 gallons per year

The average water use for typical conditions is based on water meter readings from quarter one of 1999 through quarter two of 2002. The average water use for El Nino conditions is based on water meter readings from quarters one through four of 1998. These averages include water use for the LSS systems, wash down of the animal pens and other general plumbing demands at the facility. The estimated percentage of

existing water use for each of these demands is summarized below and in Appendix A Domestic Water Use Calculation.

Water use for the existing life support systems is assumed to include demands for backwashing the filters, flushing of the pools for water quality purposes, dumping and filling of pools for animal husbandry purposes, and intermittent maintenance work associated with the life support systems.

Backwashing the Water Filters is a fundamental operation necessary to purge the filters of accumulated particles so that the filters can continue to cleanse the re-circulated water. Backwashing the filters uses a lot of water and modern LSS systems are often designed to 'recover' water during the backwash cycle. 'Backwash recovery' capability for the existing LSS is limited at TMMC.

Domestic water use includes the animal care program for feeding the animals and washing down their kennel enclosures; domestic water use for people includes personal hygiene, comfort and meal preparation. The Domestic Water Use Calculation is provided in Appendix A. Our investigation shows that the single largest source of domestic water use is in washing down the existing pen enclosures. On-site testing confirmed that the hose connections used in washing down the pens deliver 15 Gallons per Minute (GPM) of water. Each of the 28 existing kennels is 'washed down' for 10 minutes 3 times per day (when occupied). Pens are typically occupied by animals 4 months (30 days x 4 = 112 days) of the year. A quick calculation determines that the wash-down function is responsible for about 1.3 million Gallons Per Year (15 GPM x 10 Minutes x 3 wash-downs x 28 kennels x 30 days x 4 months = 1,512,000 gallons).

In their current configuration; the LSS systems Filters, Basins, Piping etc… at TMMC are all above-grade and are exposed to sunlight resulting in UV degradation of equipment (a-long-term maintenance issue) and, more importantly, heat-gain is introduced into the water circulating through the systems. An unfortunate dynamic exists whereas the heat-gain introduced to the water systems typically coincides during the months of highest animal populations. Bacteria flourish in warmer water therefore this operational coincidence results in the out-dated LSS systems under-performing and delivering the poorest water quality just when the systems and staff are the most stressed. The poorer water quality during this time is not only an added health risk to the animals but results in conditions that are not safe for the staff working with the animals in the pools.

Part 3 *Proposed Systems Performance*

The volume of water in pools represented by the Schematic Design totals about 207,000 gallons assuming all pools are concurrently filled. This represents an increase of 160,000 gallons over the 47,000 gallons current capacity. However; as we have demonstrated in the Existing Systems Summary the total volume capacity of the pools is not in itself the basis of annual water use.

Similar to existing water uses, future water use for the life support systems is assumed to include demands for backwashing the filters and flushing of the pools for water quality purposes. Because a pump-down basin for reserve water storage is designed into the new facility, it is assumed that dumping water directly to sewer and filling of the pools with fresh water directly from the water district for animal husbandry purposes will be minimal. The basin will allow water to be metered back to the sewer system in a predictable designed manner.

The estimated water use for each of these LSS demands is based on the new pool volumes and the anticipated animal and food loads provided by TMMC. These animal and food loads are summarized in Appendix B2-B4. These tables show that the average monthly animal loads (based on an annual average) are 50 animals during 'normal' conditions and 96 animals during El Nino conditions. The anticipated peak month animal loads are 72 animals during 'normal' conditions and 230 animals during El Nino conditions.

Water use is dependent upon operational practices; therefore a range of estimated water use was developed for the modernized life support systems. The highest estimated water uses are based on conservative operational assumptions; while the lowest estimated water uses are based on typical or average operating assumptions. The estimated water uses for both cases are shown in Tables 1.1 through 1.5 and Tables 2.1 through 2.5, respectively.

As shown in these tables, the water uses were estimated for each set of assumptions based on animal and food loads for typical and El Nino conditions. For the purposes of this evaluation, the conservative operating assumptions are based on an average backwash duration of six minutes and maximum filter loading of 0.4 lbs of solids per square foot of filter area; while the typical or average operating assumptions are based on an average backwash duration of five minutes and a maximum filter loading of 0.5 lbs of solids per square foot of filter area. All other operating assumptions were considered equal for both cases.

A backwash recovery system has been incorporated into the proposed design to conserve and minimize water use. Currently, backwash recovery capability is limited and some water is 'wasted' in the backwash process. The backwash recovery system will allow the water used during the backwash cycle to be recovered and reused rather than discharged to sewer. Because the backwash recovery filters can be more heavily

loaded than the main filters, the backwash recovery systems will significantly reduce the volume of water required to backwash the filters.

Comparing total water use in the LSS systems with and without a backwash recovery system; incorporating backwash recovery systems is expected to reduce the overall water use in the proposed design by approximately 60 percent (compare Appendices B3 and B4). This reduction is estimated to be approximately 3.5 million gallons per year and 6.8 million gallons per year for typical and El Nino conditions, respectively. The estimated water uses for backwashing the main filters without backwash recovery systems are shown in Tables 3.1 through 3.3 in Appendix B4.

Currently, the existing pools are dumped and filled approximately once per week during peak loading conditions to help maintain acceptable water quality. To maintain the same flushing rate for future conditions based on animal load per unit volume, the dump and fill rate is expected to change to approximately once every two and a half weeks for future conditions. It is assumed that this dump and fill rate will be used for all new animal holding pools, with the exception of the cetacean pools. Because the animal loads in the cetacean pools is expected to be very low compared to the animal loads in other pools, the design assumes that the new cetacean pools will be flushed at a rate of approximately ten percent per month over the course of the year. The estimated water volumes for flushing the new pools is 1,438,771 gallons as summarized in Table 4.1 Appendix B-5.

The estimated water volume for the modernized Life Support System (LSS) represented by the Schematic Design are summarized in Tables 1 and 2 of Appendix B-6. As shown in these tables, water uses are expected to range from 45 to 87 percent of the total existing water use during typical conditions and from 52 and 99 percent of the total existing water use during El Nino conditions. As mentioned above, these ranges have been developed to help illustrate the potential impact of operational practices on overall water use.

The domestic water use represented by the Schematic Design and summarized in Appendix A has been consolidated and reduced by incorporating low-flow domestic fixtures and by a strategy of reducing water use in the wash-down function at the animal pens. The design team proposes to reduce the water used in the wash-down operation by increasing the water pressure and limiting flow. By increasing the pressure to 1000 psi, slightly less than the water pressure at common coin-operated car wash facilities, with a flow of about 7.5 GPM would represent about a 25% reduction in the total water use compared with current practices.

The 25% reduction is derived by starting with the 1.512 million gallons of current use at 15 GPM (as validated in TMMC field testing) and adding a conservative 50% increase in surface area due to the new pen/pool design we would expect water use for the wash-down to equal 1.512 x 15 = 2.268 million gallons annual (a 756,000 gallon INCREASE)

By adopting a high-pressure washing strategy with 700-1000 psi water pressure at 7.5 GPM of flow we can reduce the expected flow by 50%. Multiplying the total demand at 2,268,000 gallons by 1/2 reduced flow equals a total anticipated demand of 1,134,000 gallons: a net reduction of 378,000 gallons annually compared to current practice. People oriented functions account for the remainder of domestic water use estimated at a total 1,223,232 gallons/year (see Appendix A).

Proposed Systems Basis of Design including backwash recovery:

Category One, Typical Environmental Conditions

The LSS systems represented in the Schematic Design will use approximately 2,476,000 gallons per year (table 1.4 Appendix B-2). Adding the estimated 1.225 million gallons per year for domestic use (Appendix A) equals 3,701,000 total gallons compared to 4,519,020 average annual benchmark (TMMC use during 1999-2002). The revised total water use represented by the Schematic Design is 82% of the current annual use under normal operating conditions.

Category Two, El Nino Environmental Condition:

The LSS systems represented in the Schematic Design will use approximately 4,775,799 gallons per year (Table 1.5 Appendix B-2): adding the estimated 1.225 million gallons per year for domestic use (Appendix A) equals 6,000,799 total gallons of total water use. Comparing the 5,949,167 gallons annual benchmark (TMMC water use during 1998 El Nino year shown on Appendix B7) the total water use represented by the Schematic Design is 101% of current use.

The totals represented in the tables should be understood to represent a range of water utilization with best-practice operational assumptions. Considering the precision inherent in the assumptions used to calculate these quantities, we conclude that water use will remain un-changed during El Nino conditions. Although the water use during extraordinary El Nino conditions (occurring every 7-8 years) remains within historic use; water use should be monitored to avoid exceeding budgeted amounts during extreme environmental conditions of the immediate micro-climate at the project site.

***Part 4** Conclusions*

The Schematic Design represents fully modernized Life Support Systems supporting the animal holding pens and pools. Although the Schematic Design increases the total water capacity in the holding pools from 47,000 gallons to 207,000 gallons, instantaneous demands remain unchanged and the annual use decreases to 82% of historic water use when compared to an average year. The design reduces water consumption in all but the most extreme El Nino conditions and only when those conditions coincide with very warm environmental conditions.

Further, the Schematic Design expands the diversity of animal care while conserving water and energy use by:

- ✓ *Incorporating backwash recovery systems into the LSS system*
- ✓ *Increasing water pressure for wash down functions (reducing volume)*
- ✓ *Hard shading at the pens replaces current spray misting (evaporative cooling)*
- ✓ *closed vessels reduce the percentage of evaporative water loss*
- ✓ *re-using water through backwash recovery that is otherwise wasted*
- ✓ *more dependable water quality reduces 'water dumping' operations*
- ✓ *Water metering and storage basins improve operational flexibility*
- ✓ *Automated electronic controls improve predictability & control of operations*
- ✓ *Specifying restricted-flow devices on domestic fixtures*
- ✓ *Minimizing fluctuations in water temperature by shading rather than by mechanical means (chilling).*

The comprehensive design reduces water consumption in all but the most extreme El Nino conditions when animal populations are at the maximum and the site micro-climate is experiencing seasonably warm conditions. To say this more simply, hot days + maximum animals = more water processing to keep the water healthy.

Animal populations during extraordinary El Nino conditions might coincide with seasonably warm environmental conditions for as long as a month during an El Nino event every 7- 8 years. This expectation correlates to 1 month out of every 84 months where water use represented by the Schematic Design might match or slightly exceed historic water use during an El Nino year.

Stated another way, the Schematic Design improvements with adjustments to the operational culture will result in using less water than TMMC has used historically in at least 98% of all environmental conditions at the project site. Calculating total water use during a seven year period where water use is reduced by 18% for 6 of seven years and matched during the El Nino year; the modernized systems in the Schematic Design could result in reducing annual water use by an average of more than 500,000 gallons per year.

End of Report

Part 5 Appendices

A. *Domestic Water Engineering Data/Calculation*
B. *LSS Water Engineering Data*
C. *Acknowledgements*

Appendix A: Domestic Water Data/Calculations for the proposed design

Assumptions for calculations

- ✓ *Staff - 40 people x 8 hours/day Monday thru Friday*
- ✓ *Volunteers - 12 people x 24 hours/day 7 days/week*
- ✓ *Visitors – 100,000 per year for 1 hour, 12 GP day /8 hour*
- ✓ *Hose Bibbs - 30 Pens x 7.5 GPM/HB x 10 minutes per wash down - 3 wash down per day (½ pens occupied / year)*
- ✓ *Fish Prep Kitchen - water used for food preparation for each animal would be 1/2 gallon/feeding (to thaw or rinse food) 4 feedings/day 600 animal year averaging a 28 day stay*

Average Daily Water Use Calculation/Person

Men Toilet Room Use

3 times at urinal = 3 gallons
1 time at water closet = 1.6 gallons
4 times at lavatory for 30 seconds at 2.5 GPM = 5 gallons
Total = 9.6 gallons

Women Toilet Room Use

4 times at water closet = 6.4
4 times at lavatory for 30 seconds at 2.5 GPM=5 gallons
Total= 11.4 gallons

Average of men & women = 10.5
Allow another 1.5 gallons/person for dishwasher /coffee making/janitor sink.
Total 12 gallons a day / person.

Continued…

Calculation of Water Use by Function

- ✓ *Staff 40 people on x 12 GPD x 5 days/week x 52 week = 124,800 GPYear*
- ✓ *Volunteers 12 people x 24 GPD x 7 days/week x 52 week = 104,832 GPYear*
- ✓ *Visitors 100,000 people/year x 1 hour / visit x 12 Gallons Per Day / 8hours / day = 150,000 Gallons Per Year*
- ✓ *High-Pressure Hose Bibbs for holding pen wash-down (pens occupied 4 months of year) 30 Pens x 7.5 GPM x 10 minutes / wash down x 3 wash down/day x 4 months (30x4) = 810,000 Gallons Per Year*
- ✓ *Fish Prep Kitchen - water used for food prep for each animal 1/2 gallons/feeding (to thaw or rinse food) 4 feedings/day 600 animal year averaging a 30 day stay = 1/2gal x 4 meals x 600 animals x 30 days = 36,000 Gallons Per Year*

Total Domestic Water Use Estimate
124800+104832+150,000+810,000+36000 = budget ***1,225,000 Gallons Per Year***

Appendix A continued

The Marine Mammal Center
Estimated Water Use for Future Life Support Systems
Prepared by PBS&J
January 9, 2002

CASE 1: CONSERVATIVE OPERATING ASSUMPTIONS

Table 1.1 - Filter Backwash Summary Based on Animal and Food Loads for Peak Month during Typical Conditions (Non El Nino)

System	No. of Animals	Average Weight of One Animal (lb)	Food Load (% of body weight/d)	Feed Rate (lb/d)	Percent Solids in Food by Weight (%)	Percent of Food Load to Filters (%)	Solids Load to Filters (lb/d)	Max Filter Load (lb/sf)	Area of Filter Required for One BW/Day (sf)	Main Filter Size	Area of One Main Filter (sf)	Qty of Main Filters	Total Area of Main Filters (sf)
General Pinniped Pools	33	200	5%	330	15%	85%	42	0.4	105	4' D x 8' L	32	4	128
Cetacean Pools	1	500	5%	25	15%	85%	3	0.4	8	3.5' D x 4' L	14	3	42
G Pools	28	200	5%	280	15%	85%	36	0.4	89	4' D x 6' L	24	4	96
Hospital	10	50	10%	50	15%	85%	6	0.4	16	36" D	7.06	4	28

Table 1.2 - Freshwater BWR Filter Backwash Summary Based on Animal and Food Loads for Peak Month during Typical Conditions (Non El Nino)

Max Solids Load to BWR Filters (lb/d)	Max BWR Filter Load (lb/sf)	BWR Filter Size	Qty of BWR Filters	Area of BWR Filters (sf)	Max Load Per Filter (lbs)	No. of BW per Day	BW Flow Rate (gpm)	BW Duration (min)	Volume per BW (gal)	BW Volume per day (gal)	BW Volume per Month (gal)
35	0.8	60" Dia.	1	20	16	2.2	353	6	2,120	4,668	141,979

Table 1.3 - Saltwater BWR Filter Backwash Summary Based on Animal and Food Loads for Peak Month during Typical Conditions (Non El Nino)

Max Solids Load to BWR Filters (lb/d)	Max BWR Filter Load (lb/sf)	BWR Filter Size	Qty of BWR Filters	Area of BWR Filters (sf)	Max Load Per Filter (lbs)	No. of BW per Day	BW Flow Rate (gpm)	BW Duration (min)	Volume per BW (gal)	BW Volume per day (gal)	BW Volume per Month (gal)
37	0.8	60" Dia.	1	20	16	2.4	353	6	2,120	5,048	153,543

Table 1.4 - Total LSS Water Demand for Backwashing BWR Filters and Flushing Tanks for Typical Conditions (Non El Nino)

Volume of Potable Water Req'd to BW All Filters for Peak Month (gal/month)	Annual Average Food Load as Percent of Maximum Month	Total Volume of Potable Water to BW All Filters (gal/year)	Existing Potable Water Use per Year for Typical Conditions 1999 - 2002 (gal)	Estimated Future LSS Water Use as Percentage of Existing Water Use
295,521	70%	2,476,340	4,519,020	54.8%

Table 1.5 - Total LSS Water Demand for Backwashing BWR Filters and Flushing Tanks for El Nino Conditions

Volume of Potable Water Req'd to BW All Filters for Peak Month (gal/month)	Annual Average Food Load as Percent of Maximum Month	Ratio of Food Loads for El Nino and Typical Conditions for Peak Month (May)	Total Volume of Potable Water to BW All Filters (gal/year)	Existing Potable Water Use per Year for 1998 El Nino Conditions (gal)	Estimated Future LSS Water Use as Percentage of Existing Water Use
295,521	42%	3.20	4,775,799	6,266,500	76.2%

Appendix B-2
(Appendix B-1 not used)

The Marine Mammal Center
Estimated Water Use for Future Life Support Systems
Prepared by PBS&J
January 9, 2002

CASE 2: TYPICAL OPERATING ASSUMPTIONS

Table 2.1 - Filter Backwash Summary Based on Animal and Food Loads for Peak Month during Typical Conditions (Non El Nino)

System	No. of Animals	Average Weight of One Animal (lb)	Food Load (% of body weight/d)	Feed Rate (lb/d)	Percent Solids in Food by Weight (%)	Percent of Food Load to Filters (%)	Solids Load to Filters (lb/d)	Max Filter Load (lb/sf)	Area of Filter Required for One BW/Day (sf)	Main Filter Size	Area of One Main Filter (sf)	Qty of Main Filters	Total Area of Main Filters (sf)
General Pinniped Pools	33	200	5%	330	15%	85%	42	0.5	84	4' D x 8' L	32	4	128
Cetacean Pools	1	500	5%	25	15%	85%	3	0.5	6	3.5' D x 4' L	14	3	42
G Pools	28	200	5%	280	15%	85%	36	0.5	71	4' D x 6' L	24	4	96
Hospital	10	50	10%	50	15%	85%	6	0.5	13	36" D	7.06	4	28

Table 2.2 - Freshwater BWR Filter Backwash Summary Based on Animal and Food Loads for Peak Month during Typical Conditions (Non El Nino)

Max Solids Load to BWR Filters (lb/d)	Max BWR Filter Load (lb/sf)	BWR Filter Size	Qty of BWR Filters	Area of BWR Filters (sf)	Max Load Per Filter (lbs)	No. of BW per Day	BW Flow Rate (gpm)	BW Duration (min)	Volume per BW (gal)	BW Volume per day (gal)	BW Volume per Month (gal)
28	1.0	60" Dia.	1	20	20	1.4	353	5	1,766	2,489	75,722

Table 2.3 - Saltwater BWR Filter Backwash Summary Based on Animal and Food Loads for Peak Month during Typical Conditions (Non El Nino)

Max Solids Load to BWR Filters (lb/d)	Max BWR Filter Load (lb/sf)	BWR Filter Size	Qty of BWR Filters	Area of BWR Filters (sf)	Max Load Per Filter (lbs)	No. of BW per Day	BW Flow Rate (gpm)	BW Duration (min)	Volume per BW (gal)	BW Volume per day (gal)	BW Volume per Month (gal)
30	1.0	60" Dia.	1	20	20	1.5	353	5	1,766	2,692	81,889

Table 2.4 - Total LSS Water Demand for Backwashing BWR Filters and Flushing Tanks for Typical Conditions (Non El Nino)

Volume of Potable Water Req'd to BW All Filters for Peak Month for Typical Conditions (gal/month)	Volume of Potable Water Req'd to BW All Filters for Peak Month for Typical Conditions (gal/month)	Total Volume of Potable Water to BW All Filters (gal/year)	Existing Potable Water Use per Year for Typical Conditions 1999 - 2002 (gal)	Estimated Future LSS Water Use as Percentage of Existing Water Use
157,611	70%	1,320,715	4,519,020	29.2%

Table 2.5 - Total LSS Water Demand for Backwashing BWR Filters and Flushing Tanks for El Nino Conditions

Volume of Potable Water Req'd to BW All Filters for Peak Month for Typical Conditions (gal/month)	Annual Average Food Load as Percent of Maximum Month	Ratio of Food Loads for El Nino and Typical Conditions for Peak Month (May)	Total Volume of Potable Water to BW All Filters (gal/year)	Existing Potable Water Use per Year for 1998 El Nino Conditions (gal)	Estimated Future LSS Water Use as Percentage of Existing Water Use
157,611	42%	3.20	2,547,093	6,266,500	40.6%

Appendix B-3

The Marine Mammal Center
Estimated Water Use for Future Life Support Systems
Prepared by PBS&J
January 9, 2002

CASE 3: COMPARISON OF WATER USE ASSUMING NO BACKWASH RECOVERY SYSTEMS

Table 3.1 - Filter Backwash Summary Based on Animal and Food Loads for Peak Month during Typical Conditions (Non El Nino)

System	No. of Animals	Average Weight of One Animal (lb)	Food Load (% of body weight/d)	Feed Rate (lb/d)	Percent Solids in Food by Weight (%)	Percent of Food Load to Filters (%)	Solids Load to Filters (lb/d)	Max Filter Load (lb/sf)	Area of Filter Required for One BW/Day (sf)	Main Filter Size	Area of One Main Filter (sf)	Qty of Main Filters	Total Area of Main Filters (sf)
General Pinniped Pools	33	200	5%	330	15%	85%	42	0.4	105	4' D x 8' L	32	4	128
Cetacean Pools	1	500	5%	25	15%	85%	3	0.4	8	3.5' D x 4' L	14	3	42
G Pools	28	200	5%	280	15%	85%	36	0.4	89	4' D x 6' L	24	4	96
Hospital	10	50	10%	50	15%	85%	6	0.4	16	36" D	7.06	4	28

Table 3.2 - LSS Water Use for Peak Month during Typical Conditions (Non El Nino) - Assuming No Backwash Recovery System

System	BW Flow Rate (gpm)	BW Duration (min)	Volume of BW Water during Peak Month (gallons)	Annual Average Food Load as Percent of Maximum Month	Total Volume of Potable Water to BW All Filters (gal/year)
General Pinniped Pools	576	6.0	345,541	70%	2,902,544
Cetacean Pools	252	6.0	26,177	70%	219,890
G Pools	432	6.0	293,186	70%	2,462,765
Hospital	127	6.0	52,392	70%	440,091
					6,025,289

Table 3.3 - LSS Water Use for Peak Month during Typical Conditions (Non El Nino) - Assuming No Backwash Recovery System

System	BW Flow Rate (gpm)	BW Duration (min)	Ratio of Food Loads for El Nino and Typical Conditions for Peak Month (May)	Volume of BW Water during Peak Month (gallons)	Annual Average Food Load as Percent of Maximum Month	Total Volume of Potable Water to BW All Filters (gal/year)
General Pinniped Pools	576	6.0	3.20	1,104,722	42%	5,567,799
Cetacean Pools	252	6.0	3.20	83,691	42%	421,803
G Pools	432	6.0	3.20	937,340	42%	4,724,194
Hospital	127	6.0	3.20	167,501	42%	844,203
						11,557,999

Appendix B-4

The Marine Mammal Center
Estimated Water Use for Future Life Support Systems
Prepared by PBS&J
January 9, 2002

CASE 4: ESTIMATE VOLUME OF WATER REQUIRED TO FLUSH POOLS

Table 4.1 - Volume Required to Flush Pools for Peak Month during Typical Conditions

System	Volume of Pools (gallons)	Percent Flushing per Month during Peak Month*	Volume Required for Flushing during Peak Month (gallons)	Annual Average Food Load as Percent of Maximum Month	Annual Average Volume Required for Flushing Pools (gallons)
General Pinniped Pools	47,000	150%	70,500	70%	590,759
Cetacean Pools	106,000	10%	10,600	70%	88,823
G Pools	54,000	150%	81,000	70%	678,745
Hospital	6,400	150%	9,600	70%	80,444
					1,438,771

*Percent flushing per month based on existing approach of dumping each pool once per week during peak conditions. Factoring this amount of flushing by the increase in water volume for the new facility requires approximately 150 percent flushing each month for the pinniped pools.

The Marine Mammal Center
Preliminary Comparison of Existing and Future LSS Water Consumption
Prepared by PC Aquatics, a PBS&J Program
January 2003

Table 1 - Summary of Water Use for Typical (Non El Nino) Conditions

Name of Life Support System	Estimated Water Consumption for Filter Backwash (gallons)		Estimated Water Consumption for Tank Flushing (gallons)		Total Estimated Water Consumption (gallons)	
	Low	High	Low	High	Low	High
1. General Pinniped Pools	N/A	N/A	295,380	590,759	295,380	590,759
2. Cetacean Pools	N/A	N/A	44,412	88,823	44,412	88,823
3. G Pools	N/A	N/A	339,372	678,745	339,372	678,745
4. Hospital Pools	N/A	N/A	40,222	80,444	40,222	80,444
5. Backwash Recovery Systems	1,320,715	2,476,340	N/A	N/A	1,320,715	2,476,340
Total Future Estimated Water Consumption	**1,320,715**	**2,476,340**	**719,385**	**1,438,771**	**2,040,100**	**3,915,111**
Total Existing Water Use Consumption					**4,519,020**	**4,519,020**
Future LSS Water Use as Percentage of Existing Water Use					**45%**	**87%**

Table 2 - Summary of Water Use for El Nino Conditions

Name of Life Support System	Estimated Water Consumption for Filter Backwash (gallons)		Estimated Water Consumption for Tank Flushing (gallons)		Total Estimated Water Consumption (gallons)	
	Low	High	Low	High	Low	High
1. General Pinniped Pools	N/A	N/A	295,380	590,759	295,380	590,759
2. Cetacean Pools	N/A	N/A	44,412	88,823	44,412	88,823
3. G Pools	N/A	N/A	339,372	678,745	339,372	678,745
4. Hospital Pools	N/A	N/A	40,222	80,444	40,222	80,444
5. Backwash Recovery Systems	2,547,093	4,775,799	N/A	N/A	2,547,093	4,775,799
Total Future Estimated Water Consumption	**2,547,093**	**4,775,799**	**719,385**	**1,438,771**	**3,266,478**	**6,214,569**
Total Water Consumption for Existing LSS					**6,266,500**	**6,266,500**
Future LSS Water Use as Percentage of Existing Water Use					**52%**	**99%**

Appendix B-6

The Marine Mammal Center
Water Use Data for 1998 through 2002
Data Provided by The Marine Mammal Center

Water Utilities Records					Program Cost					
Year	QTR	Service Period	Amount Paid	Total Pd/Yr	Program Water (KGAL)	Program Sewer (KGAL)	Rate per KGAL of Water ($)	Rate per KGAL of Sewer ($)	Total Program Cost	Total Program Water (KGAL)
1998	1	12/5/97 - 3/9/98	$7,616		952.0	952.0			$0	
	2	3/9/98 - 6/5/98	$15,538		1,942.2	1,942.2			$0	
	3	6/5/98 - 9/10/98	$17,576		2,197.0	2,197.0			$0	
	4	9/10/98 - 1/7/99	$9,402		1,175.3	1,175.3			$0	
				50,132						**6,266.5**
1999 *	1 to 2	1/7/99 - 5/10/99	$7,700		962.5	962.5			$0	
	2 to 3	5/10-9/10/99	$12,310		1,774.1	1,774.1			$0	
	4	9/10/99 - 12/11/99	$11,160		1,078.2	1,078.2	6.939	2.552	$10,233	
				31,171						**3,814.8**
2000	1	12/11/99 - 3/13/00	$9,692		1,016.5	1,016.5	6.939	2.552	$9,648	
	2	3/13/00 - 6/9/00	$10,597		1,030.5	1,030.5	6.939	2.552	$9,780	
	3	6/9/00 - 9/8/00	$25,094		2,528.8	2,528.8	6.939	2.552	$24,001	
	4	9/8/00 - 12/4/00	$18,113		1,715.5	1,715.5	7.48	2.858	$17,735	
				63,495						**6,291.3**
2001	1	12/4/00 - 3/8/01	$5,575		466.7	466.7	7.48	2.858	$4,825	
	2	3/8/01 - 6/5/01	$17,465		1,515.5	1,515.5	7.48	2.858	$15,667	
	3	6/5/01 - 9/10/01	$12,140		1,053.3	1,053.3	7.48	2.858	$10,889	
	4	9/10/01 - 12/7/01	$5,473		601.6	601.6	6.053	1.378	$4,470	
				40,653						**3,637.1**
2002	1	12/7/01 - 3/4/02	$4,870		460.5	460.5	6.822	1.966	$4,047	
	2	3/4/02 - 6/7/02	$9,230		960.2	960.2	6.906	1.861	$8,418	
	3									
	4									
				14,100						**1,420.7**

Summary and Averages :
6,266,500 Avearge gallons per year during El Nino Conditions Based on Q1 thru Q4 1998
4,519,018 Avearge gallons per year during typical (non El Nino) Conditions Based on Q4 1999 thru Q2 2002

*** Not including 1999 Q's 1-3 due to service period dates being off**

Note: to establish Benchmark El-Nino year reduce 'Total Program Water' for 1998 by 1/3 of water used in the first quarter to avoid double-counting the month of December.
1/3 x 952,000 Gallons = 317,333 gallons.
Total 6,266,500 less 317,333 gallons = ***5,949,167 gallons El Nino Benchmark Year***

Appendix B-7

The Marine Mammal Center
Monthly Animal and Food Loading by System
Data Provided by Richard Brown at TMMC
January 2003

Table 1. Average Monthly Animal and Food Loads for Typical Conditions

	January		February		March		April		May		June		July		August		September		October		November		December	
System	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)
General Pinniped Pools	0	0	29	290	37	370	29	290	33	330	19	190	2	20	23	230	28	280	35	350	0	0	0	0
Cetacean Pools	0	0	0	0	1	25	1	25	1	25	1	25	1	25	1	25	1	25	1	25	1	25	0	0
"G" Pools	24	240	15	150	15	150	10	100	28	280	32	320	32	320	32	320	32	320	32	320	30	300	14	140
Hospital Pools*	0	0	3	15	6	30	6	30	10	50	6	30	7	35	3	15	0	0	0	0	0	0	0	0
Totals	24	240	47	455	59	575	46	445	72	685	58	565	42	400	59	590	61	625	68	695	31	325	14	140
Percent of Maximum	33%	35%	65%	66%	82%	84%	64%	65%	100%	100%	81%	82%	58%	58%	82%	86%	85%	91%	94%	101%	43%	47%	19%	20%

Annual Average Food Load as Percent of Maximum = 70%

Table 2. Average Monthly Animal and Food Loads for El Nino Conditions

	January		February		March		April		May		June		July		August		September		October		November		December	
System	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)
General Pinniped Pools	27	270	47	470	69	690	71	710	168	1,680	118	1,180	52	520	46	460	26	260	40	400	0	0	0	0
Cetacean Pools	0	0	1	25	1	25	2	50	2	50	2	50	1	25	1	25	1	25	1	25	1	25	0	0
"G" Pools	32	320	32	320	32	320	32	320	32	320	32	320	32	320	32	320	32	320	32	320	30	300	15	150
Hospital Pools*	4	20	6	30	8	40	13	65	28	140	20	100	8	40	4	20	0	0	0	0	0	0	0	0
Totals	63	610	86	845	110	1,075	118	1,145	230	2,190	172	1,650	93	905	83	825	59	605	73	745	31	325	15	150
Percent of Maximum	27%	28%	37%	39%	48%	49%	51%	52%	100%	100%	75%	75%	40%	41%	36%	38%	26%	28%	32%	34%	13%	15%	7%	7%

Annual Average Food Load as Percent of Maximum = 42%

Ratio of Food Loads for El Nino and Typical Conditions = 1.93

* Hospital pools are based on 10% of the seal's body weight per day. All other pools are based on 5% of animal's body weight per day.

Table 3. Actual Monthly Animal and Food Loads for 1998 El Nino

	January		February		March		April		May		June		July		August		September		October		November		December	
System	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)	Average No. of Animals	Average Food Load (lb/day)
All Systems	70	700	82	820	110	1,100	132	1,320	274	2,740	198	1,980	99	990	68	680	31	310	42	420	11	110	7	70

Appendix F: SHPO Delisting Notification

STATE OF CALIFORNIA – THE RESOURCES AGENCY

GRAY DAVIS, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@mail2.quiknet.com

M. Bartling
Cy: R. Barjes
B. O'Neill

June 30, 2003

REPLY TO: NPS030519A Paul Scolari

Mai-Liis Bartling, Acting General Superintendent
Golden Gate National Recreation Area
National Park Service
FORT MASON, SAN FRANCISCO CA 94123

Re: Re-Evaluation of the National Register of Historic Places Eligibility of Site SF-87-L, Forts Baker, Barry, and Chronkhite Historic District, San Francisco and Marin Counties.

Dear Ms. Bartling:

Thank you for submitting to our office your May 14, 2003 letter and Amendment to the National Register Nomination (Amended Nomination) for Nike Missile Launch Site SF-87-L, a contributing feature to the Forts Baker, Barry, and Chronkhite (FBBC) Historic District, a property located in San Francisco and Marin Counties. The FBBC Historic District is listed on the National Register of Historic Places (NRHP). Nike Missile Launch Site SF-87-L (Site SF-87-L) was constructed circa 1955 at Fort Chronkite by the U.S. Army to house and operate a Nike missile designed to defend portions of San Francisco and Marin counties from naval or aerial attack. The facility operated under the Army's command until 1974. In 1975, the California Marine Mammal Center (CMMC), now the Marine Mammal Center (TMMC), began operations at the Launch Area of Site SF-87-L. TMMC is an animal hospital dedicated to the rescue, rehabilitation, and release of marine mammals; study of causes of their diseases; and education of the public about marine mammals.

TMMC is in the scoping phase of an Environmental Assessment (EA) through which it is planning to modernize its facilities for treatment and study of rescued marine mammals. In the intervening years since TMMC has been established, a number of modifications to the property have taken place, including the construction of new above-ground structures and roads, the removal of perimeter security fencing, the removal of all classified equipment and missiles used in the missile program, remodeling of he Sentry Station (S-1103) and the Ready Building (S-1104), the addition of water filtration systems, classrooms, evergreen trees, ornamental plants, and other vegetation, and the Harbor Seal Hospital.

NPS is seeking my determination of the eligibility of Site SF-87-L for inclusion on the NRHP in accordance with 36 CFR 800, regulations implementing Section 106 of the National Historic Preservation Act. A review of the Amended Nomination leads me to concur with NPS's determination that Site SF-87-L is no longer eligible for inclusion on the NRHP as a contributing element to the FBBC Historic District. The property no longer conveys any associations with its historic mission of coastal missile defense. The aforementioned modifications have diminished the property's integrity of design, materials, setting, workmanship, and feeling, as well as its association with its historic period of significance (1955-1975).

Thank you again for seeking my comments on your project. If you have any questions, please contact staff historian Clarence Caesar by phone at (916) 653-8902, or by e-mail at ccaes@ohp.parks.ca.gov.

Sincerely,

Dr. Knox Mellon
State Historic Preservation Officer

Appendix G: Draft Wetland Statement of Findings for the Marine Mammal Center Site and Facilities Improvements Project

Appendix G: Draft Wetland Statement of Findings for the Marine Mammal Center Site and Facilities Improvements Project

This Wetland Statement of Findings is included in this document for public review to meet the obligations of Executive Order 11990 (Protection of Wetlands) and NPS Procedural Manual 77-1: Wetland Protection.

Introduction

The Marine Mammal Center (The Center), which began its operation 28 years ago, is located in the Marin Headlands on land owned and managed by the Golden Gate National Recreation Area (GGNRA) under NPS. Figure 1-2 reproduced from the EA for this project shows the overall Area of Potential Affect for the project. The GGNRA manages about 72 miles of one of the four richest habitats for marine mammals in the world. A primary goal of The Center's work is to learn about and protect the marine mammal resources in the park's coastal areas. The partnership between the Center and the GGNRA is unique in the national park system with respect to ocean resources. The mission of The Center is carried out under three distinct but related function areas:

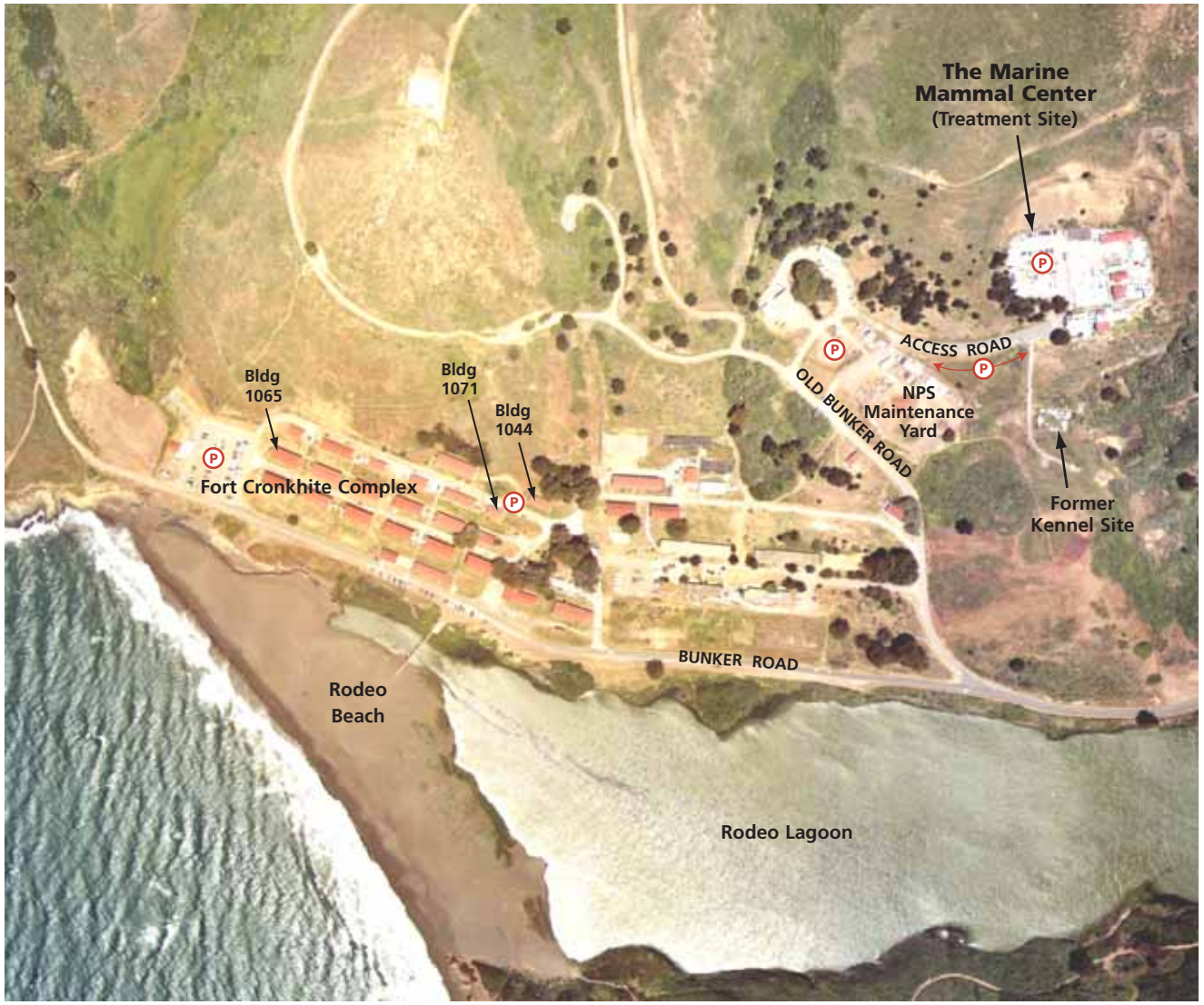
- rescue, rehabilitation, and release
- research
- education

The Center, which is an existing rehabilitation hospital for marine mammals, is in need of retrofitting its facilities to better achieve its mission, treating the hundreds of injured, ill or orphaned marine mammals that are stranded in coastal waters every year. The Center recently has secured funding to embark on this important retrofit and proposes to construct new facilities at its site to better accomplish it mission and consolidate its functions for improved operations. Proposed improvements include:

- an upgraded water filtration system;
- upgraded pens and pools;
- consolidation of administrative and education functions in several new buildings;
- improved research and medical facilities; and
- improved access to operations and consolidated parking.

The Center currently occupies approximately 28,000 sq. ft. of space at the former Nike Missile site (referred to as the treatment site) and in three buildings (1065, 1071 and 1044), at nearby Fort Cronkhite. The treatment site includes seven buildings, totaling 11,561 sq. ft. of enclosed space. Hospital functions and animal housing are located at the treatment site itself. The entire assigned site comprises about 3.0 acres.

Figure I-2
Area of Potential Effect



SOURCE: National Park Service and Environmental Science Associates

Purpose and Need for Action

The existing facilities no longer meet the operational needs of The Center, particularly those at the treatment site. The ability of The Center to achieve its mission has been diluted by the inefficiencies of widely dispersed location of services and sub-standard buildings and supporting infrastructure. The Center has undergone piecemeal changes over time, as needs and funding became available. As a result, there are inefficiencies and outdated facilities which now need to be modernized in order for The Center to fulfill its mission and continue its noteworthy programs.

In order to administer better care to marine mammals, educate the public, and improve research techniques, The Center is proposing to consolidate its facilities to one site. This would entail the retrofit of some of the existing facilities, demolition of some non-historic structures, and construction of new space on the former Nike Missile site. It would also improve current access, circulation, and visitor parking problems at the site, and address issues of access by emergency vehicles to the treatment site. In an effort to minimize impacts to the surrounding area, the proposal includes the modernization of existing facilities largely within the footprint of the developed site.

Please refer to Chapter 1, Project Need and Project Purpose/Objectives for more detail about the project need and objectives.

Purpose of this Statement of Findings

The purpose of this Wetland Statement of Findings is to review the Marine Mammal Center Site and Facilities Improvements Project in sufficient detail to:

- Avoid, to the extent possible, the short-and long-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative
- Describe the effects on wetland values associated with the proposed action
- Provide a description and evaluation of mitigation measures developed to achieve compliance with Executive Order 11990 (Protection of Wetlands) and NPS Procedural Manual 77-1: Wetland Protection

Alternatives

Four alternatives for the proposed Marine Mammal Center Site and Facilities Improvements Project are evaluated in this EA. Under Alternative 1 (No Action), the project area would remain unchanged, except for normal maintenance and repair. The other three alternatives propose varying configurations for accommodating the Center's program through some demolition of existing structures, some new building and infrastructure construction and new circulation and parking. Alternative 2, the Consolidated Program Alternative, locates most proposed uses, including parking, in one location at the current treatment site and is the preferred alternative. Alternative 3, the Consolidated Program, Remote Parking Alternative, locates most proposed uses at the current treatment site but places most of the required parking at an area below the treatment site. Alternative 4, the Split Program, Limited New Construction Alternative splits

Center functions and parking between its current location within the Ft. Cronkhite complex and accommodates the balance of the program uses and parking through some new construction at the treatment site.

All three action alternatives implement actions designed to improve and upgrade facilities at the Center. All three action alternatives would consolidate all or some of the administrative and animal care facilities in the same location, and would provide for construction of a new perimeter "ring road" to improve access for delivery of large animals and equipment, service and emergency vehicles. Placement of the ring road would result in the permanent fill of 0.08 acres of waters of the U.S. including wetlands. The small natural and constructed drainages would be filled as well as the larger swale drainage along the northern side of the property.

Alternatives Considered

The No Action Alternative (Alternative 1) is the only studied alternative that would completely eliminate effects on wetland resources. This alternative is not considered practicable because it would not meet the Purpose and Need for the proposed Action (see Chapter I).

In addition to the direct effects on the 0.08 acre of wetland, both Alternatives 3 and 4, in which a new parking lot would be constructed on the former kennel site, could have a potential local, long-term, adverse impact (due to sedimentation and run-off) on the wetland area located to the east. Sediment and other run-off from the new remote lot could impair this resource. Alternative 2, the preferred alternative, eliminates effects to these wetlands (compared to Alternatives 3 and 4) while meeting the proposed action's Purpose and Need.

One alternative considered to avoid construction of a ring road, but not studied in the EA, studied the inclusion of alternate new paved roads within the Center's built footprint. In particular, this alternative considered construction of a road directly through the middle of the site, in close proximity to the pens and pools. This alternative would have avoided impacts to wetlands but would have required substantially more grading and site work than the alternatives in the EA in order to accommodate emergency vehicles and delivery trucks. This particular alternative would also have been highly disruptive to the recovering mammals as a result of having a road and vehicles run adjacent to the pens and pools. In conclusion, this alternative had greater environmental impacts to achieve similar results when compared to the alternatives studied.

Other alternatives were considered to either eliminate the ring road or include only a partial ring road on the south and east sides. Alternatives that considered no construction of a ring road were dismissed from further consideration since this would eliminate the possibility of providing adequate emergency (fire truck) access to the treatment site's facilities and therefore not meet the project's objectives. One alternative considered the construction of a partial ring road, but would require construction of a hammer head turn-around at the southeast corner of the facility. Physical resource impacts would have included major cut and fill and construction of a large, prominent retaining wall. This alternative would have greater environmental impacts to achieve the project objectives when compared to the alternatives studied.

Affected Wetlands

Wetland Extent and Characteristics

The National Park Service (NPS) conducted a wetland inventory for the entire Rodeo Valley in 2002; however, the area around The Marine Mammal Center (Center) was not mapped either for reasons of access or because it fell below the minimum mapping area requirements. NPS staff have conducted a preliminary wetland assessment and it is estimated that there are 0.08 wetland acres that may fall under the jurisdiction of the U.S. Corps of Engineers (Castellini 2003). This wetland is seasonally saturated and has a mixed Cowardin Class for vegetation type: Palustrine Scrub-Shrub/ Emergent. (See figure III-1 from EA included below).

Of the 243 total acres of wetlands mapped in the Rodeo Lagoon Watershed (including Gerbode Valley), 4.7 acres were also Palustrine Scrub-Shrub/ Emergent. An additional 107.4 acres is considered Palustrine Scrub-Shrub, and 83.5 acres is Palustrine Emergent.

The wetland features adjacent to the Marine Mammal treatment site are narrow drainages along the northern side of the existing facilities and are the result of natural drainages and installed concrete or asphalt drainages that have accumulated sediment and debris resulting in establishment of wetland vegetation. Vegetation within these features include rush (*Juncus* sp.), umbrella sedge (*Cyperus eragrostis*), curly dock (*Rumex crispus*), and Italian ryegrass (*Lolium multiflorum*). A larger drainage swale is located along the north eastern side of the treatment site facilities at the bottom of the hillside and adjacent to the concrete drainage ditch. This swale includes curly dock, umbrella sedge, rush, and mature willows (*Salix* sp.). This wetland swale is seasonally saturated and of slightly higher habitat quality although still isolated from other like habitat. This area provides no habitat for special status species but does provide habitat for such species as pacific tree frog (*Hyla regilla*) and western toad (*Bufo boreas*).

This small wetland is not used by park visitors and the affected area does not constitute a public area of The Center. The wetland is not currently being used for research purposes. The wetlands do not constitute a visual resource, as the affected area is barely noticeable and adjacent to the built structures. Cultural Resources staff determined that there are no known or anticipated archaeological resources in this area.

Southeast of the treatment site adjacent to the former kennel site is a much larger contiguous wetland area that contains Palustrine Emergent vegetation at the top of the drainage and Palustrine Scrub-Shrub further down the drainage. This wetland would not be directly affected by the Marine Mammal Center project but mitigations have been included in the EA (and cited below) to ensure that potential development of a new parking lot (proposed in Alternatives 3 and 4) in this area would not allow harmful run-off to reach these wetlands.

Figure III-1
Potential USACE Jurisdictional Wetlands in the Vicinity of the Marine Mammal Center

SOURCE: National Park Service

Environmental Consequences of the Proposed Action on Wetlands

Impairment

Alternative 2, the Preferred Alternative, would result in local, long-term, moderate, adverse impacts to wetland resources at the Marine Mammal Center project area. The adverse effect of this alternative on wetland resources would be localized but clearly detectable. The Marine Mammal Center Project would not be expected to have an overall effect on the wetland resources of the area, due to the temporary duration of construction activity and the existing developed features in the area (i.e., the Marine Mammal Center, corporation yard, Fort Cronkhite, and the Marin Headlands Visitor Center). The local adverse impacts to wetland resources would not be of sufficient magnitude or nature to impair the integrity of wetland resources that are necessary to fulfill specific purposes identified in the park's establishing legislation, key to opportunities for enjoyment of the park, or identified as a goal in the park's *General Management Plan* or other relevant planning documents. Therefore, the impacts of this project would not impair resources or park values for future generations.

Design or Modifications to Minimize and Mitigate Harm to Wetlands

Construction of the ring road would result in the permanent fill of approximately 0.08 acres of jurisdictional wetland. Only the No Action Alternative would avoid impacts to wetlands. The Preferred Alternative avoids impacts to wetlands that could occur as a result of construction of a remote parking lot under the other action alternatives. The alternatives analysis is discussed above. Best management practices and resource-specific mitigation measures would be implemented, as appropriate, prior to, during, and/or after implementation of the proposed action to minimize direct and indirect wetland impacts. Below are several relevant mitigations described in Appendix A of the EA for the project.

- Utilize structural best management practices (oil filters, biofilters, control of run-on and run-off, etc.) and operational best management practices (including spill prevention and control) throughout the project design. Install easily cleanable catch-basins, debris screens, and grease separators or similar water quality protection devices in parking lots and drainage facilities.

- All buildings and parking areas shall be designed to provide the maximum opportunity for surface run-off to be directed away from sensitive habitat and infiltrate the soil. Use of vegetated swales and planting areas shall be utilized to reduce run-off and remove contaminants.

- Take measures to control erosion, sedimentation, and compaction. Use silt fences, sedimentation basins, etc. in construction areas to reduce erosion, surface scouring, and discharge to water bodies.

- To the extent possible, schedule the use of mechanical equipment during periods of low precipitation to reduce the risk of accidental hydrocarbon leaks or spills. When mechanical equipment is necessary outside of low precipitation periods, use National Park Service–approved methods to protect soil and water from contaminants.

- Dispose of volatile wastes and oils in approved containers for removal from construction sites to avoid contamination of soils, drainages, and watercourses.
- Inspect equipment for hydraulic and oil leaks prior to use on construction sites, and implement inspection schedules to prevent contamination of soil and water.
- Other Structural BMPs – Structural BMPs shall minimize discharge to the storm sewer system and control run-off quality to the maximum extent practical.
- With guidance from the NPS, the Center will monitor the effects of runoff to Rodeo Lake and Rodeo Lagoon from the new parking areas.

DO-77-1 states that every effort should be made to assure that wetland compensation requirements meet the needs of both DO 77-1 and Section 404 of the Clean Water Act.

Consultation with The Army Corps of Engineers will occur to determine if a Section 404 permit is required and if mitigation to replace the functions and values lost from the permanent fill of jurisdictional areas is necessary to comply with the Clean Water Act. NPS Procedural Manual for DO 77-1 (section 5.2.C.1.) allows for compensation of wetlands to be waived if the adverse impact on wetlands from the entire project totals less than 0.1 acres. No compensation is necessary since:

- the impacted area (0.08 acre) is below the 0.1 acre threshold
- the loss of wetland functions is considered to be minimal (similar wetlands exist throughout the park)
- Best Management Practices (BMPs) for activities in or affecting wetlands will be employed (as defined in Appendix 2 of the Procedural Manual for Director's Order 77-1).

Even though the impact to wetlands is minimal and the compensation requirement is waived for this project, The Center may complete wetland restoration in the project vicinity even if not required by The Corps, in order to support the NPS goal of increasing the quality and quantity of the nation's wetlands. The details of this restoration will be determined at a later date but will be in-kind if practicable.

Conclusion

The National Park Service finds that there are no practicable alternatives to disturbing 0.08 acres of wetlands adjacent to the Marine Mammal Center treatment site. Wetlands have been avoided to the maximum practicable extent, and the wetland impacts that could not be avoided will be minimized. This project supports the goal of "no net loss of wetlands" and will complete wetland restoration where practicable. The National Park Service, therefore, finds that this project is in compliance with Executive Order 11990: "Protection of Wetlands."

Recommended:

Superintendent, GGNRA Date

Certification of Technical Adequacy and Servicewide Consistency:

Chief Water Resources Division Date
or Professional Wetland Scientist, National Park Service

Approved:

Regional Director Pacific West Region, National Park Service Date

Appendix H: Acronyms and Glossary

Appendix H: Acronyms and Glossary

Acronyms

APE	Area of Potential Effect
AQMD	Air Quality Management District
BAAQMD	Bay Area Air Quality Management District
CARB	California Air Resources Board
CBSC	California Buildings Standard Code
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CZMA	Coastal Zone Management Act
CWA	Clean Water Act
DEIS	Draft Environmental Impact Statement
DO	NPS Director's Orders
EA	Environmental Assessment
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
FBBC	Forts Baker, Barry and Chronkhite
FESA	Federal Endangered Species Act
GMP	General Management Plan
gpm	Gallons per minute
GGNRA	Golden Gate National Recreation Area
LSS	Life Support System
LPG	Liquefied Petroleum Gas
MHW	Mean High Water Mark
msl	Mean sea level
NEPA	National Environmental Policy Act
NOAA	National Oceanographic and Atmospheric Administration
NPS	National Park Service
NRCS	National Resource Conservation Service
OWHM	Ordinary High Water Mark
PG&E	Pacific Gas and Electric Company
PM-10	Particulate matter
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
UBC	Uniform Building Code
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey

Glossary of Terms

Alluvium: A general term for clay, silt, sand, gravel, or similar unconsolidated rock fragments or particles deposited during comparatively recent geologic time by a stream or other body of running water.

Alternatives: Sets of management elements that represent a range of options for how, or whether to proceed with a proposed project. An environmental impact statement, such as the one in this *Merced River Plan*, analyzes the potential environmental and social impacts of the range of alternatives presented.

Backwash: A backward flow or movement (as of water or air) produced especially by a propelling force; also, the fluid that is moving backward.

Basin: Refers to a drainage basin. A region or area bounded by a drainage divide and occupied by a drainage system. Specifically, an area that gathers water originating as precipitation and contributes it to a particular stream channel or system of channels. Synonym**:** watershed.

Cetacean: Any of aquatic, mostly marine mammals that includes the whales, dolphins, porpoises, and related forms and that have a torpedo-shaped nearly hairless body, paddle-shaped forelimbs but no hind limbs, one or two nares opening externally at the top of the head, and a horizontally flattened tail used for locomotion

Colluvium: Rock detritus and soil accumulated at the foot of a slope.

Clayey: A substance that resembles clay in plasticity.

dB: A logarithmic decibel scale that measures intensities of air pressure vibrations.

dBA: A-weighted frequency scale considers the human response to the pitch and loudness of a given sound.

De Minimus: In order to attempt to minimize.

El Nino: An irregularly recurring flow of unusually warm surface waters from the Pacific Ocean toward and along the western coast of South America that prevents upwelling of nutrient-rich cold deep water and that disrupts typical regional and global weather patterns.

Environmental Assessment (EA): A public document required under the National Environmental Policy Act (NEPA) that identifies and analyzes activities that might affect the human and natural environment. An environmental assessment is a concise public document which provides sufficient evidence and analysis for determining whether to prepare an EIS, aids an agency's compliance with NEPA when no EIS is necessary, and it facilitates preparation of an EIS when one is necessary.

Environmental Impact Statement (EIS): A public document required under the National Environmental Policy Act (NEPA) that identifies and analyzes activities that might affect the human and natural environment.

Facilities: Buildings and the associated supporting infrastructure such as roads, trails, and utilities.

Finding of No Significant Impact (FONSI): The public document describing the decision made on selecting the "preferred alternative" in an environmental assessment. See "environmental assessment."

Hazardous material: A substance or combination of substances, that, because of quantity, concentration, or physical, chemical, or infectious characteristics, may either: (1) cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Hazardous waste: Hazardous wastes are hazardous materials that no longer have practical use, such as substances that have been discarded, spilled, or contaminated, or that are being stored temporarily prior to

Indian Trust Resources: Advisory Task Force on the Bureau of Indian Affairs Reorganization. provides advice, assistance, oversight, and acts as his/her representative in areas of policy development and support, technical assistance, participation on departmental committees, contact for federal Indian trust referrals, and indigenous peoples issues.

Liquefaction: A process by which water-saturated materials (including soil, sediment, and certain types of volcanic deposits) lose strength and may fail during strong groundshaking. The transformation of granular material from a solid state into a liquefied state as a consequence of increased pore-water pressure.

Ldn: The day/night time average of 24 hours.

Leq: An average of noise over a stated time period, usually one-hour.

National Environmental Policy Act (NEPA): The federal act that requires the development of an environmental assessment or environmental impact statement for federal actions that might have environmental, social, or other impacts.

Necropsy: To perform an autopsy.

No Action Alternative: The alternative in a plan that proposes to continue current management direction. "No action" means the proposed activity would not take place, and the resulting environmental effects from taking no action would be compared with the effects of permitting the proposed activity or an alternative activity to go forward.

Notice of Public Scoping: A notice to responsible agencies as well as the public and interested organizations requesting feedback and comments on an anticipated environmental project.

Particulate matter (PM-10 and PM-2.5): Fractions of particulate matter characterized by particles with diameters of 10 microns or less (PM-10) or 2.5 microns or less (PM-2.5). Such particles can be inhaled into the air passages and the lungs and can cause adverse health effects. High levels of PM-2.5 are also associated with regional haze and visibility impairment.

Pinniped: An aquatic carnivorous mammal (as a seal or walrus).

Queuing: To line up or wait in a queue.

Raptors: Are birds of prey.

Record of Decision (ROD): The public document describing the decision made on selecting the "preferred alternative" in an environmental impact statement. See "environmental impact statement."

Ring Road: All action alternatives include an 18-foot wide perimeter road (ring road) which is required for deliveries of animals and supplies and to provide fire and emergency vehicles.

Ruderal: Weeds growing where the natural vegetational cover has been disturbed by humans, weeds of old fields and roadsides.

Serum: The watery portion of an animal fluid remaining after coagulation.

Silos: A trench, pit, or especially a tall cylinder (as of wood or concrete) usually sealed to exclude air and used for making and storing silage.

Swales: A low-lying or depressed and often wet stretch of land; also a shallow depression on a golf fairway or green.

The Center: The Marine Mammal Center.

Threatened and Endangered Species: Species of plants that receive special protection under state and/or federal laws. Also referred to as "listed species" or "endangered species."

Treatment Site: The former Nike Missile site which currently houses the Marine Mammal facilities that administer to the mammals themselves.

Wilderness: Those areas protected by the provisions of the 1964 Wilderness Act. These areas are characterized by a lack of human interference in natural processes.

ERRATA

Marine Mammal Center
Site and Facilities Improvements Environmental Assessment

The following additions/changes are shown below in italics and are thus made to the Marine Mammal Center Site and Facilities Improvements Environmental Assessment (EA) dated April 2004, by inclusion in these Errata sheets. None of these revisions would affect the outcome of the environmental analysis provided in the EA or materially change the selected alternative.

Page II-4
Of the 16 parking spaces available for use by the Center in shared locations outside the Center's assigned area, 3 would be at Fort Cronkhite near Building #1065. This change will be made each time this language appears in the EA.

The EA will be clarified to explain that bus parking will be located in the NPS maintenance yard near the Center.

The following language appears in the EA:

Under all action alternatives, project construction would occur within two six-month periods to avoid the season (approximately March – September) of maximum animal occupation.

This language is replaced by the following language: *Under all action alternatives, pens and pools would not be constructed during the season (approximately March to September) of maximum animal occupation.*

Page 11-8
Figure II-2 has been revised to better show the parking for the Selected Alternative (attached).

Page II-21
Under Alternative 4 the parking at Fort Cronkhite should be 20 not 0.

Page III-14
Bedrock underlying the slopes and valleys around the project site also includes Franciscan chert (ancient sea floor) and greenstone (altered volcanic rocks), and young colluvium. The site is well above the floodplain, however surficial erosion gullies occur in the shallow soils on portions of this cut slope.

Page A-1
Event Coordination. Up to six times a year the Center holds events that require additional parking on a short-term basis. In advance of these special events, in order to avoid peak traffic conditions, the Center will be required to coordinate with GGNRA's Special Parks Uses Group.

The Special Parks Uses Group could implement limitations on programs offered and scheduling of large events. An example is the requirement to hold Run for the Seals during the early-morning (non-peak) hours. During special events, the NPS could require that the Center provide traffic control officers at potential bottleneck locations to improve traffic flow and safety, in coordination with other relevant agencies as needed to ensure coordination with their operations and assure that proper permits are received and qualified personnel employed. The Center will be required to monitor attendance and parking impacts during special events and make this information available to the Special Parks Uses Group.

Annual Report Mitigation. Under the Cooperative Agreement between the NPS and the Center, the Center will submit an Annual Report that will include things such as a description of services and programs, number of annual visitors, number of special event attendants, an annual maintenance plan, and sustainability program update. *The Center will be committed to keeping track of visitation and will develop a monitoring program with NPS staff.*

Page A-2

Water Conservation. Water saving devices, including low-flush toilets and low maintenance/drought tolerant landscaping shall be used. *The Center will coordinate with NPS to ensure that the water usage caps imposed by Marin Municipal Water District are maintained.*

Page A-4

Protection for Wetlands. *Construction of the ring road will result in the permanent fill of approximately 0.025 acres of non-jurisdictional wetland and indirect impacts to 0.055 acres of non-jurisdictional wetland. The U.S. Army Corps of Engineers verified the wetland delineation and determined that they will not take jurisdiction over the wetland. Even though the impact to wetlands is minimal and the compensation requirement is waived for this project, the Center will complete wetland enhancement in the project vicinity in order to support the NPS goal of increasing the quality and quantity of the nation's wetlands. The details of this enhancement will be determined at a later date but will replace the function, value, and overall area of the 0.08 acre wetland that will be directly and indirectly impacted by the project.*

Public Outreach and Review of the EA

- The environmental assessment was made available for public review and comment during a 30-day period beginning on April 20, 2004 and ending June 1, 2004. Public notice of the EA was provided to individuals, organizations, and agencies through the scoping process; notification on the GGNRA website; notices in the Marin Independent Journal on April 28 and 29, 2004 announcing the release of the EA; mailing of the EA to 79 recipients; noticing the project on the mailed agenda for the May GGNRA Public Meeting (over 1,300 recipients) and a postcard mailing to 130 other interested parties. The EA was sent to local libraries including Marin City Library, Marin Civic Center Library, Corte Madera Library, and Muir Woods National Monument Library. In addition, the EA was posted to the park's website and hard copies were sent to interested parties upon request.

- An Open House was held at the Marine Mammal Center on May 8, 2004. Tours were offered and several written comments were received. Approximately 35 persons stopped by during this open house.

- During the public comment period 15 letters were received. Of these, eleven primarily voiced support for the Center and the proposed improvements. Several of these letters expressed a preference for the Selected Alternative. Two commenters raised concerns regarding potential impacts from changes to traffic and projected increased visitation. Two others commented on specific issues of water use and flood control. A more detailed description of these letters and corresponding responses can be found in the Errata sheets attached to this document.

- The NPS conducted a public hearing on the EA on May 18, 2004. Four people spoke and provided public comments on the project. Their comments included support for the undertaking. One voiced concerns regarding the design of the proposed new construction. Details of these comments are also included in the Errata sheets attached to this document. Staff also presented the project and answered questions before the City of Sausalito on May 18, 2004.

In addition to the above efforts to solicit public input, the National Park Service and the Marine Mammal Center met with the representatives from the Marin Chapter of the Sierra Club. The intent of these meetings was to present the purpose and need for the upgrades and improvements, to describe how the EA addresses concerns regarding water and traffic and to answer any additional questions that either group might have. Comments from both these groups were incorporated into comment letters on the EA (described below).

Responses to Public Comments on the EA

1. Sierra Club Marin Group, Gordon Bennett, Sierra Club Marin Group Conservation Chair (Subsequent letter sent June 1, 2004)

The primary concerns addressed in the Sierra Club's two letters are increased visitation and potential traffic impacts. In particular Mr. Bennett calls into question the assertion made in the Environmental Assessment (EA) that an increase of up to ten visitors might be expected on peak days. Mr. Bennett had the opportunity to meet with staff of the Marine Mammal Center after his April 29th letter was submitted. As a result of this meeting the Sierra Club submitted a second letter that proposes several actions which, if taken, would mitigate their concerns. The major points from these letters are summarized below.

- *Parking* – The Sierra Club is specifically concerned that the preferred alternative proposes an increase in parking spaces at the treatment site. The Sierra Club letter makes specific suggestions for design and signage regarding designations of staff and visitor parking spaces within the proposed project area. The letter expresses the concern that if all staff spaces are not taken on a daily basis these empty spaces could attract additional visitors. The suggestion is made by the Sierra Club that parking for Center staff be designated and visitors be limited to specific spaces. They also suggest that visitor parking patterns be monitored and violations reported to NPS and dealt with through an adaptive management strategy. The implication from these comments is that available parking would increase visitation and thus increase traffic.

- *Increased Visitation/Traffic* - Given these concerns regarding parking and given that the EA describes a significant upgrade of visitor amenities, the Sierra Club does not believe that an increase of ten visitors per day is a reasonable estimate of increased visitation. The Sierra Club is concerned about what impact increased visitation might have on traffic in other locations within the Marin Headlands, especially given cumulative projects that are planned in the future for the Headlands/Fort Baker area.

  The Sierra Club believes that an analysis of current and projected conditions at the Bunker/Alexander Roads intersection should be made and should include cumulative impacts from the expansion of the Discovery Museum and implementation of the Fort Baker plan. The Sierra Club believes this intersection, after taking into consideration the cumulative effects, is likely to operate at an unacceptable LOS during peak days.

- *Monitoring and Events* - The Sierra Club letter requests that several monitoring requirements relating to traffic and increased visitor use be included in the Center's Annual Report. The letter expresses concerns regarding the timing and monitoring of special events, particularly given that on some occasions groups not connected with GGNRA or the Center could hold events within the Headlands. The letter recommends that the Center measure peak day usage and additional monitoring occur for special events.

Response:
Parking - The proposed plan is that parking would be consolidated at the treatment site. The Center would actually have fewer spaces available to staff and visitors then they currently are allocated. It is important to maintain flexibility in how these spaces are used (staff and visitors) as the number of staff needed significantly varies given the patient load at any given time. At times of peak patient load there are typically more staff and volunteers at the Center and more staff are typically needed during week days than on weekends. Staff also notes that there has always been an abundance of open parking available inside and outside the Center's designated area, and this has not increased visitation in the past.

Overall the number of parking spaces allocated for the Center's use would be reduced. However, the Center would be able to accommodate the projected demand for staff parking and the limited

visitor increase expected through both an improved, consolidated facility (one location) and by managing visitor hours to complement staff use peak hours.

Increased Visitation/Traffic - The EA's conclusion that increased visitation would not result in a significant impact in the future is based on the following:

- The Center is first and foremost a hospital. The welfare of patients is the first responsibility. As the commenter points out, the primary purpose of the Center is not to invite more people; it's to better treat the animals.

- The Center is not a display facility, such as a zoo or aquarium or museum. And the proposed facility improvements would not change this. Permitting/licensing granted by regulatory agencies prohibit the Center from being a display facility. The proposed changes at the treatment site would result in visitors having less access to animals in the new facility than exists today. The proposed design purposely places buildings between the public and the animals for the animals' protection. Viewing would be from an elevated deck which overlooks the hospital but does not provide close proximity to animals by the public. Therefore, it is not anticipated that there would be a significant increase in visitor trips.

- The Center is prohibited from charging admission and is not a marketed visitor destination. Therefore, there is no incentive to increase visitation except for the educational value of the Center's stewardship/conservation message.

- School groups and other educational programs are the only audiences targeted for visits. The Center is not specifically marketed as a visitor destination.

The Sierra Club voiced a specific concern that increased visitation to the Center would result in increased traffic impacts when assessed with the cumulative impacts of trips to the Bay Area Discovery Museum and Ft. Baker projects. In response to this concern, the Center and NPS contracted an additional study of the Level of Service (LOS) of the Bunker (Danes)/Alexander intersection, in combination with cumulative traffic growth resulting from the land uses identified in the Ft. Baker EIS. The results of this additional study show that there would not be a degradation of intersection operations below acceptable operating conditions.

The observation of potentially unacceptable operating conditions at the Danes Road / Alexander Avenue intersection referenced by the Sierra Club's comment letter is likely due to frequent congestion along the southbound U.S. 101 approach to the Golden Gate Bridge, as vehicles wait to access the southbound access ramp and queuing along Alexander Avenue occasionally extends to Danes Road. This queuing reduces the capacity of the study intersection. However, this is due to the downstream bottleneck and is not a result of inadequate capacity at the Danes Drive/Alexander Avenue intersection. The addition of project trips (excluding special events) to the Golden Gate Bridge approach on Alexander Drive would constitute just one trip during the Weekend Peak Hour, out of a total approach volume exceeding 600 trips. Therefore, the

addition of project trips to the southbound U.S. 101 approach would constitute less than 0.2 percent of the overall approach volume. However, under the "worst-case scenario" for a special event that distributed 100 trips through the Danes Road / Alexander Avenue intersection, sponsored by the Center or any other Park users, the distribution of trips to the southbound U.S. 101 approach would be 30 trips, therefore constituting up to five percent of the approach volume, which could constitute a significant impact.

Based upon this analysis, no significant impacts are expected at the Danes Drive / Alexander Avenue intersection as a result of typical daily traffic generated by the project or from the occasional special event. Additionally, project trips (excluding special events) are not expected to generate a significant impact to the southbound approach to the U.S. 101 ramps from Alexander Avenue.

Monitoring and Events - Mitigation included in the EA requires that the Center prepare an Annual Report that will include things such as a description of services and programs, number of annual visitors, number of special event attendants, an annual maintenance plan, and sustainability program update. This report will be used by the NPS to monitor the changes in visitor use, parking patterns, and the effects of special events. As a result, this will allow NPS to then require the Center to employ adaptive management techniques to address any problems that arise. This could include the adoption of further TDM strategies, in coordination with the park's TDM measures for the Headlands area. The Center will be committed to keeping track of visitation and will develop a monitoring program with NPS staff.

2. Marin Municipal Water District, Eric McGuire, Environmental Services Coordinator

This letter states that the Water District provides potable water to the project area and that the NPS has an annual water use entitlement for all of GGNRA. The letter points out that the NPS' yearly entitlement is 215.54 acre-feet annually and actual annual water use through the NPS meter has varied from 85.95 acre-feet to 191.99 acre feet. The District emphasizes the need for GGNRA to stay within its yearly use entitlement. The District also states that it does not have access to information to accurately measure the water used only by the Center. They claim that the information in the EA is difficult to compare for existing and future use of domestic water. The District also assumes that the use of high-pressure filtered seawater for wash-downs has been considered and rejected as part of this process.

Response:

The NPS is currently within its annual use entitlement and future projections that take into account improvements at Fort Baker show that NPS will still be within these entitlements and the projected water use at the Center would decrease under the proposed project. Therefore, the

Center's draw on the park's annual entitlement would decrease with the employment of conservation measures, water saving devices, and modern, efficient equipment.

3. Letters of Support

Eleven separate letters were received during the public comment period that primarily voiced support for the Center and the proposed improvements. Letters were received from volunteers, private citizens and several veterinarians from the University of California at Davis. Several of these letters expressed a preference for the Selected Alternative. Several comments involving minor site design recommendations and amenities were received, but determined to be outside of the scope of the EA.

Response:

The National Park Service acknowledges the comments. No further response is necessary. The suggestions outside of the scope of the EA will be considered in future planning efforts that do not involve NEPA compliance.

4. Federal Emergency Management Agency, Michael Shore, Community Mitigation Programs

This letter from FEMA gives the requirements for buildings that are planned for development within a floodplain as defined by the National Flood Insurance Program (NFIP).

Response:
The National Park Service acknowledges the comment. Since the project site is not within a floodplain, the stated requirements would not be applicable.

5. City of Sausalito, Drummond Buckley, AICP, Planning

The City of Sausalito's primary concerns are about potential traffic impacts. In particular The City calls into question the assertion made in the Environmental Assessment (EA) that an increase of up to ten visitors might be expected on peak days. This letter also requests that the environmental analysis look at potential impacts from the change of use in the buildings at Fort Cronkhite.

Response:
The response to Letter # 1 from the Sierra Club provides further explanation as to why increased visitation would not result in any significant impacts in the future. This response also references changes made to the Annual Report and Transportation mitigations, as discussed in this Errata, to require future monitoring and address potential impacts if they occur. The additional study referenced in the response to the Sierra Club letter also show that even with the changed use at

Fort Cronkhite, there would not be a degradation of intersection operations below acceptable operating conditions.

Oral Comments

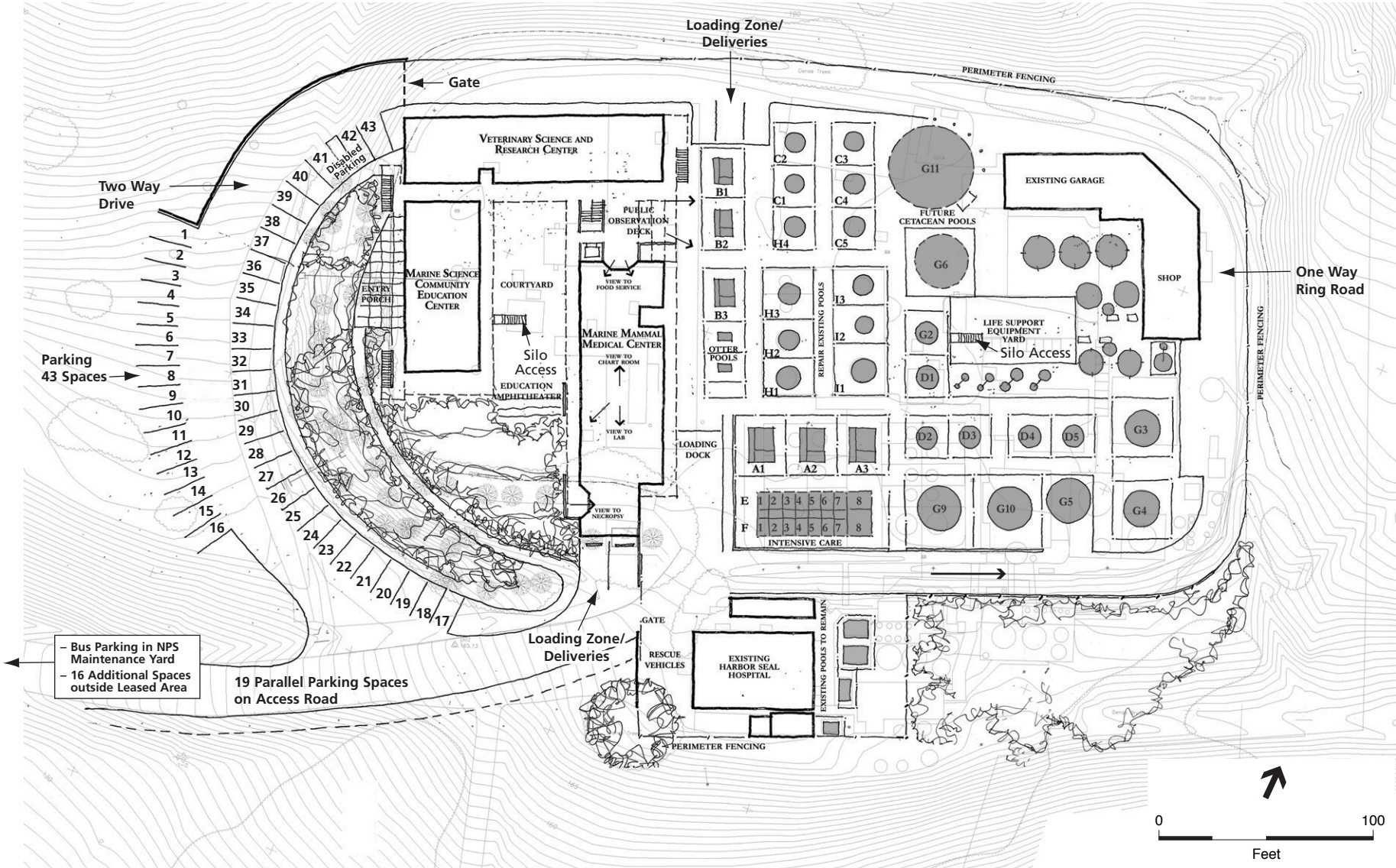
During the May 18, 2004 Golden Gate National Recreation Area Advisory Commission public meeting, four people provided oral comments. All four expressed general support for the Center and its mission. One commenter expressed concerns regarding the aesthetics of the proposed site plan and new buildings.

One commenter expressed the concern that the proposed project does not indicate bus parking.

Response:
In the Environmental Consequences section of the EA, under Cultural Resources (p.IV-24), the following statement is made: "New construction would be compatibly designed and sited in keeping with the character-defining elements of the Forts Barry, Baker, and Cronkhite Historic District. Compatibility Guidelines…would encourage the design of new buildings to be compatible in scale, massing, color, material and character with the historic district." Furthermore, mitigation provided on page A-6 of the EA states that "Historic Compatibility Guidelines for New Facilities at the Marine Mammal Center will be prepared as part of this project and will be subject to review and approval by NPS. All new designs shall be reviewed for compatibility with the cultural landscape of the Historic District per the Standards for the Treatment of Historic Properties. Design of all new construction, including site work, shall be compatible in terms of architectural elements, scale, massing, materials, and orientation."

The EA will be clarified to explain that bus parking will be located in the NPS maintenance yard near the Center.

Figure 1
Parking for Selected Alternative



SOURCE: Scott Dennis Architect, Noll & Tam Architects, and Environmental Science Associates

DECISION NOTICE
AND
FINDING OF NO SIGNIFICANT IMPACT

MARINE MAMMAL CENTER SITE AND FACILITIES IMPROVEMENTS PROJECT

National Park Service, U.S. Department of the Interior
Golden Gate National Recreation Area

INTRODUCTION

This Decision Notice and Finding of No Significant Impact (FONSI) is presented by the Golden Gate National Recreation Area (GGNRA), a unit of the National Park Service (NPS), for the Marine Mammal Center Site and Facilities Improvements. The FONSI, along with the Marine Mammal Center Site and Facilities Improvements Environmental Assessment (EA), and the Errata sheets comprise the full and complete record of environmental impact analysis. The FONSI and mitigation measures are specific to work to be completed at the Marine Mammal Center within the project area. The Errata sheets contain changes to the EA as a result of the public comment period; none of the comments resulted in major changes to the alternatives, mitigations, or other key sections of the EA.

PURPOSE OF ACTION

The Marine Mammal Center (the Center) located in the Marin Headlands on land owned and managed under NPS by the GGNRA. The Center is a rehabilitation hospital for marine mammals that treats hundreds of injured, ill or orphaned marine mammals that are stranded in coastal waters every year.

The Center operates under a Cooperative Agreement with the NPS that delegates responsibilities of operation and management of the site to the Center. The GGNRA General Management Plan was amended in 1981 to incorporate the Center as a core institution of the Headlands Center for the Environment. The Center rescues, rehabilitates, and releases marine mammals, some of which are threatened and endangered. Scientists at the Center not only research diseases that afflict marine mammals but also develop new treatments for these diseases. The Center reaches over 60,000 people each year with on- and off-site programs and conducts public education campaigns to reduce human interference in marine mammal habitat. Pursuant to the Marine Mammal Protection Act of 1972, the Center is licensed by the National Oceanographic and Atmospheric Administration (NOAA) to be the rescue organization for marine mammals for 600 miles of California coastline.

The purpose of the project is render a facility that will allow the Center to administer better care to marine mammals, educate the public, and improve research techniques. To meet these goals the Center is proposing to consolidate its facilities to one site. This would entail retrofit of the water filtration system, an upgrade of the pens and pools, consolidation of administrative and educational functions, and improved research and medical spaces through the reuse of some of the existing facilities, demolition of some non-historic structures, and construction of new space at the treatment site. It would also improve current access, circulation, and visitor parking at the site, and address issues of access by emergency vehicles to the treatment site.

NEED FOR ACTION

The existing facilities no longer meet the operational needs of the Center, particularly those at the treatment site. The ability of the Center to achieve its mission has been diluted by inefficiencies created by the widely dispersed location of services and sub-standard buildings and supporting infrastructure. The Center has undergone piecemeal changes over time as needs and funding became available. As a result, there are

inefficiencies and outdated facilities that now need to be modernized in order for the Center to fulfill its mission and continue its noteworthy programs.

The water transport and filtration systems only had minor modifications over time. The filtration tanks and pipes are spread above ground along the hillside on the southern edge of the facility, which are visually unappealing and also increase the exposure of facilities to sunlight. The ozone in the marine mammal life-support system reacts to sunlight and causes constant breakage of the poly vinyl chloride pipes and thus, leads to water loss through leakage. Old pumps malfunction and are unreliable, which is life threatening for the animals. The lack of shading over pools and the water treatment tanks causes algal blooms, which overstress the treatment system. Consequently, dirty water must be frequently dumped into the sewer and replenished with clean City water.

Old pens and pools need to be replaced. Many pens and pools were built almost 20 years ago and are deteriorated, undersized and now promote disease transmission from pen to pen. Also, the existing design of the pens and pools does not incorporate adequate safety precautions for volunteers working with the animals. Twenty-one of thirty existing pools are unfit for continued use and need to be demolished and replaced.

An NPS report produced in 2000 found that two to four times a year during heavy rainfalls, the sanitary sewer lift-stations overflow. The rainfall from the Center's pen enclosures appears to be a contributing factor to the lift-station failure.

Currently, circulation and parking are inefficient and in some situations unsafe, especially at the treatment site. Access by emergency vehicles to the treatment site and all of its built facilities is difficult and limited.

ALTERNATIVES EVALUATION

From the scoping process, the following objectives were developed and used to assess preliminary alternatives.

- Improve the current facility for access, job efficiency, and safety for staff and visiting public;
- Improve and diversify treatment of sick or injured marine mammals by increasing the number of pools and creating more areas for quarantine;
- Improve sanitation and reduce cross-contamination in animal care areas by upgrading pools and plumbing systems;
- Provide improved indoor space for school programs that are grade-specific, activity based, reflect current research, and correlate with the California Academic Standards;
- Enhance overall visitor education in support of GGNRA's and the Center's programmatic goals;
- Improve interpretive information and programs regarding the work, natural history, and necessity of the preservation of marine mammals, as well as the Center's ongoing partnership with GGNRA;
- Visually integrate the design of new elements into the historic setting of the Marin Headlands, respecting both its landscape and architecture;
- Consolidate services for improved interdepartmental interactions;
- Improve research laboratories and work spaces to enhance the Center's success. Specifically, co-locate the laboratory and necropsy functions, resulting in faster diagnoses and maximum tissue and serum collection;
- Modernize the decaying physical plant to improve animal care, increase electrical efficiency and operability, and decrease water usage;

- Minimize environmental impacts to the area, including traffic and circulation;
- Improve ability to control wet weather discharge to NPS wastewater system, thus reducing conditions of overflow; and
- Improve visual quality of the site, including the rehabilitation of the former kennel site.

Four alternatives, including the selected and no-action alternative, were evaluated based on NPS policies, federal regulations, project criteria, goals and objectives set forth by the NPS and the Center, as well as input from the public, regulatory agencies, and NPS staff. These four options included differing configurations for accommodating the Center's program through some demolition of existing structures, construction of some new buildings, infrastructure upgrades, and re-configured as well as new parking (on-site and near-site configurations).

Options to these alternatives were considered during the planning process but were dismissed from further consideration for various reasons. One alternative studied the inclusion of alternate new paved roads within the Center's built footprint, to ease delivery of large animals and equipment and to facilitate emergency access. In particular, this alternative considered construction of a road directly through the middle of the treatment site, in close proximity to the mammals' pens and pools.

Another alternative was considered that would have located small, dispersed parking areas throughout the facility, including on the southeastern side where the water treatment facilities are now located. Other alternatives were considered that either did not include a new perimeter road (the ring road) or included only a partial ring road, in various configurations.

An early alternative was considered that included installing a pipe in order to bring salt water to the site. Re-locating the Center to a new site, either within or outside of GGNRA, was also considered.

All these options were considered but not carried forward as alternatives for full analysis in the EA based on their inability to meet project objectives, issues and concerns raised by the public and regulatory agencies, and the criteria used to evaluate the success of the project.

SELECTED ALTERNATIVE

The Selected Alternative for the Marine Mammal Center Site and Facilities Improvements is based on a determination that the project as described below would best meet the Project Need and Purpose while still meeting the requirements of the National Environmental Policy Act (NEPA) and the National Park Service's NEPA guidelines. The consolidation of almost all of the Center's functions on or adjacent to the treatment site, including the location of new parking on the west side of the access drive and adjacent to the built area, would bring maximum efficiency to the Center's operations and avoid the impacts that would occur with the development of a remote parking lot. The depiction of buildout on page II-6 of the EA has been slightly modified to better show parking. A corrected map is attached to the Errata.

The Selected Alternative in the Environmental Assessment includes the following actions.

Buildings

- The demolition of approximately 5,600 square feet of non-historic structures at the treatment site.
- Approximately 4,800 square feet would be retained in Building #1065 at Fort Cronkhite for use by visiting researchers.
- Approximately 12,900 square feet of structures would be retained at the treatment site.

- The Selected Alternative includes the construction of three new buildings totaling approximately 17,500 square feet. New buildings would be constructed on the western portion of the treatment site. The buildings would be organized around a central open courtyard.

Utilities/Infrastructure

- The Selected Alternative would provide key upgrades to the treatment site's filtration system, much of which would be relocated and housed underground in the old Nike missile silo on the east end of the treatment site.
- Pens and pools in the patient boarding area would be upgraded in the Selected Alternative. These upgrades would include replacing approximately 15,400 square feet of existing structures with approximately 19,500 square feet of pens and pools made of sturdier materials. The project also would provide shade structures to many pools; build pools at, or near to, grade to enable easier transfer of animals; enable animals to access pools with less stress; and include constructing a permanent cetacean pool to replace the portable one used today.
- Under the Selected Alternative water holding capacity at the treatment site would be increased from 47,000 gallons to 207,000 gallons. This increased capacity would be accommodated within the new pens and pools that would be larger and deeper than existing ones.
- Under the Selected Alternative wastewater would be combined with drainage from the pens and pools by installing area drains designed primarily for the wash-down operations in the pen enclosure. This wash-down operation necessitates flushing out raw sewage. Therefore, these area drains would be connected directly to the sanitary sewer. The area within the existing pens (about 10,000 square feet), which receives rainfall, would also be directed towards the sanitary sewer.
- To address the sanitary sewer lift-station overflow situation, the Selected Alternative will improve the current situation and ensure that the overall combined outflow from the Center's facilities would not exceed current levels nor exceed the capacity of NPS facilities. The project would include the operational capability to interrupt rainfall flowing to the pen enclosure area drains either by using the 40,000 gallon cetacean pool as an equalization basin or some comparable basin to regulate the timing and flow of rainfall.
- Under the Selected Alternative, the stormwater system would be designed to provide the maximum opportunity for surface run-off to infiltrate the soil. Use of vegetated swales and planting areas would be used to reduce run-off and remove contaminants. Parking lot drainage would be designed so that run-off is directed away from sensitive areas and fed into the stormwater system, not the sewer system.
- Under the Selected Alternative, all exposed existing Life Support System (LSS) equipment at the southeast corner of the site would be removed, the site restored and native vegetation planted in this area. New LSS equipment, including pumps, filters, fractionaters, piping, valves, control panels, pressure gauges, contactor tank, and deaerators would be installed in and above the silos.
- Under the Selected Alternative, the two independent, above-grade, electrical feeds would be maintained but the feeds from the existing poles to new main switchgear equipment located within the new buildings at the northwest corner and within the above-grade silo enclosure on the east side of the treatment site would be placed underground.

Circulation and Parking

- The Selected Alternative includes construction of a new perimeter ring road and new parking on the west side (double-loaded drive with 43 spaces) of the site. In addition, the Center would expand the parallel parking along the access road from 13 to19 spaces. The former kennel site, south of the Center, would no longer be used for offsite storage and this area would be returned to open space with native plant restoration.
- Under the Selected Alternative, it is assumed that up to 16 parking spaces would be available for use by the Center in shared locations outside of the Center's assigned area. These spaces are needed for average daily operation of the Center and are currently within existing shared Fort Cronkhite parking lots and/or the NPS maintenance area.
- Under the Selected Alternative, the Center would continue to park up to two buses in the nearby NPS maintenance yard.
- Several times a year (no more than 6 times a year) the Center holds events that require additional parking beyond average daily operation for one-time events. In advance of these special events, the Center would be required to coordinate parking needs with GGNRA's Special Parks Uses Group. The Center will be required to monitor attendance and parking impacts during special events and make this information available to the Special Parks Uses Group.

Visitor Experience

- Pens and pools would not be constructed during the season during maximum animal occupation (approximately March to September).The Selected Alternative would provide an enhanced visitor experience. There would be a clear sense of arrival from the access drive to the designated parking area and a path from the main parking area to the entrance on the west side of the Marine Science Community Education Center. Visitors would enter a discovery room, which teaches them about the Center and its work as well as natural history of marine mammals.

Other Actions

- Pens and pools would not be constructed during the season during maximum animal occupation (approximately March to September).
- Under the Selected Alternative, preservation of natural dark would be incorporated into the site design to the greatest extent possible. Site lighting would be focused downward and shielded structurally to allow for natural night skies.
- Under the Selected Alternative, the Center's designers would incorporate principles of sustainable design throughout the project.

MODIFICATIONS TO THE SELECTED ALTERNATIVE

The following modifications were made to the selected alternative as a result of agency consultation and public comment. These changes will not result in new impacts beyond those discussed in the EA.

1. Of the 16 parking spaces available for use by the Center in shared locations outside the Center's assigned area, 3 would be at Fort Cronkhite near Building #1065.
2. Under all action alternatives, project construction would occur within two six-month periods to avoid the season (approximately March – September) of maximum animal occupation.
3. Construction of the ring road will result in the permanent fill of approximately 0.025 acres of non-jurisdictional wetland and may indirectly impact 0.055 acres of non-jurisdictional wetland.

The U.S. Army Corps of Engineers verified the wetland delineation and determined that they will not take jurisdiction over the wetland. Even though the impact to wetlands is minimal and the compensation requirement is waived for this project, the Center will complete wetland enhancement in the project vicinity in order to support the NPS goal of increasing the quality and quantity of the nation's wetlands. To replace the function, value, and overall area of the 0.08 acre wetland that will be directly and indirectly impacted by the project, a minimum of 0.16 wetland acres will be enhanced. A wetland enhancement plan with additional details will be developed at a later date.

NO ACTION

The No-Action Alternative is a continuation of existing conditions, with a continued split operation between Fort Cronkhite and the Treatment site. There would be no net change in occupied square footage (26,000 sq. ft.). Under this Alternative, the existing facilities in the project area would be maintained without significant alteration. The Center's facilities would continue to be housed in modified freight containers and trailers. The water transport and filtration system would not be significantly upgraded. Old pumps that currently malfunction would undergo minimal upgrades. Under this alternative there would be no significant improvements to the visitor experience and there would be no consolidation of the Center's program. Administrative and some research functions would continue to be located at Fort Cronkhite, physically separated from the treatment site. There would be no changes to the kennel area south of the treatment site, which is currently used for storage.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is the alternative that will promote the national environmental policy expressed in NEPA (sec. 101 (b)). This includes alternatives that:

- Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.
- Ensure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.
- Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.
- Preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.
- Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.

For this project the environmentally preferred alternative is discussed in the EA as Alternative 4. The smaller site and building footprint proposed for Alternative 4, when compared with Alternatives 2 and 3 would involve the least disruption to the biological and physical environment. Due to the reduced square footage of new construction, largely within the existing developed footprint, Alternative 4 would best protect, preserve, and enhance historic, cultural, and natural resources.

On the other hand, the Environmentally Preferred Alternative would bring no reduction in operational traffic and the associated safety improvements. In addition, operational functions under Alternative 4 would not fulfill project objectives for educational and site efficiencies as fully as the other action alternatives. The differences between the environmental impacts of Alternative 4 and the Preferred Alternative are not substantial given these considerations.

SCOPING

- The NEPA process was initiated in April 2003 when A Notice of a Public Scoping was mailed.

- The NPS conducted a public scoping meeting on May 20, 2003. The Marine Mammal Center was one of many items on the agenda for this meeting so attendance numbers specific to this project are not known. However, three people spoke and public comments included concerns regarding a potential increase in single-occupancy traffic to the site, adequate traffic flow for buses, improvements to the education program facilities, and the need for focused growth for the Center (so that future improvements do not cause sprawl at the site). In addition two letters were received expressing support for the project and suggesting three very specific improvements to Center facilities

- In addition to the scoping effort described above, B.J. Griffin, the Executive Director of the Marine Mammal Center, met with several community groups in 2003 to solicit input from surrounding stakeholders. In July of 2003, she met with the Parks and Open Space Committee of the Marin Conservation League. In October of 2003, Ms. Griffin addressed the Sausalito Women's Club on the work of The Marine Mammal Center. Also in late October 2003, Ms. Griffin provided a briefing and tour for Dana Whitsell, City Manager of the town of Sausalito. All of these meetings were met with positive response, expressing support for the project.

SUMMARY OF AGENCY CONSULTATION

Advisory Council on Historic Preservation and California State Historic Preservation Officer

The 1966 National Historic Preservation Act, as amended in 1992, requires federal agencies to consult with the Advisory Council on Historic Preservation (ACHP) and the State Historic Preservation Officer (SHPO) regarding undertakings that may affect historic properties. The NPS consulted with the ACHP and SHPO in the development of this Environmental Assessment to discuss specific aspects of the proposed project as well as compliance with Section 106 of the National Historic Preservation Act. Section 106 was opened on July 17, 2002. The NPS sent a letter dated August 20, 2004, asking the SHPO to concur with a finding of no adverse effect on the Forts Baker, Barry, and Cronkhite National Register District. The NPS and the Center will provide formal interpretation of the Nike/Cold War era at the improved site and will adhere to the Historic Compatibility Guidelines in design and construction. The NPS received written concurrence for this project from Mr. Milford Wayne Donaldson, the SHPO, dated September 28, 2004.

California Coastal Commission

The Federal Consistency Unit of the California Coastal Commission (CCC) implements the federal Coastal Zone Management Act of 1972 as it applies to federal activities. The NPS requested that the CCC concur with a negative determination that the preferred alternative would not adversely affect coastal zone resources. The NPS received a concurrence letter for the negative determination dated August 31, 2004.

San Francisco Bay Regional Water Quality Control Board

The San Francisco Bay Regional Water Quality Control Board (RWQCB) has the authority to regulate "Waters of the State" under the Porter-Cologne Act. The NPS contacted the RWQCB to determine if the proposed project may impact "Waters of the State" and to apply for General Waste Discharge Requirements under Water Quality Order No. 2004-004 DWQ. On July 19, 2004, the NPS sent the RWQCB a copy of the EA and wetland delineation. The Notice of Intent Application for the General Waste Discharge Requirements was signed and sent on September 15, 2004. The RWQCB sent back written confirmation dated September 17, 2004, stating that the project is enrolled with the Water Quality Order No. 2004-004 DWQ.

U.S. Army Corps of Engineers

The NPS requested that the U.S. Army Corps of Engineers (Corps) verify the wetland delineation to determine if there were any jurisdictional wetlands in or adjacent to the project site. The Corps verified the wetland delineation on July 15, 2004. The NPS received a letter from the Corps dated August 9, 2004, stating that they have determined that a Department of the Army authorization will not be required since any proposed activity on the site will not involve the discharge of dredged or fill material into a water of the United States, including adjacent wetlands, pursuant to Section 404 of the Clean Water Act.

U.S. Fish and Wildlife Service

The NPS requested a list of federally listed endangered and threatened species that may be present within the project area from the U.S. Fish and Wildlife Service (USFWS) in October 2003. The list received from the USFWS in November 2003 was used as a basis for the special-status species analysis in the environmental assessment. The NPS requested concurrence from the USFWS that the project is not likely to adversely affect any listed species or destroy or adversely modify designated or proposed critical habitat. The GGNRA received a memorandum dated August 31, 2004, from the USFWS concurring with the determination.

PUBLIC REVIEW

The environmental assessment was made available for public review and comment during a 30-day period beginning on April 20, 2004 and ending June 1, 2004. Public notice of the EA was provided to individuals, organizations, and agencies through the scoping process; notification on the GGNRA website; notices in the Marin Independent Journal on April 28 and 29, 2004 announcing the release of the EA; mailing of the EA to 79 recipients; noticing the project on the mailed agenda for the May GGNRA Public Meeting (over 1,300 recipients) and a postcard mailing to 130 other interested parties. The EA was sent to local libraries including Marin City Library, Marin Civic Center Library, Corte Madera Library, and Muir Woods National Monument Library. In addition, the EA was posted to the park's website and hard copies were sent to interested parties upon request.

An Open House was held at the Marine Mammal Center on May 8, 2004. Tours were offered and several written comments were received. Approximately 35 persons stopped by during this open house.

The NPS conducted a public hearing on the EA on May 18, 2004. Four people spoke and provided public comments on the project. Their comments included support for the undertaking. One voiced concerns regarding the design of the proposed new construction. Details of these comments are also included in the Errata sheets attached to this document. Staff also presented the project and answered questions before the City of Sausalito on May 18, 2004.

During the public comment period 15 letters were received. Of these, eleven primarily voiced support for the Center and the proposed improvements. Several of these letters expressed a preference for the Selected Alternative.

The local Sierra Club chapter wrote two letters and met with Marine Mammal Center staff during the public comment period. The primary concerns raised were regarding increased visitation and potential traffic impacts. In particular, the first letter called into question the assertion made in the Environmental Assessment (EA) that an increase of up to ten visitors might be expected on peak days. As a result of meeting with Center staff, the Sierra Club submitted a second letter that proposes several actions which, if taken, would mitigate their concerns. A letter was also received from the City of Sausalito expressing similar concerns. The major points from these letters and responses, including additional proposed mitigation measures, are summarized in the Errata sheets attached to this document.

A comment letter was received from the Marin Municipal Water District stating that the Water District provides potable water to the project area and that the NPS has an annual water use entitlement for all of

GGNRA. The letter points out that the NPS' yearly entitlement is 215.54 acre-feet annually and actual annual water use through the NPS meter has varied from 85.95 acre-feet to 191.99 acre feet. The District emphasizes the need for GGNRA to stay within its yearly use entitlement. The attached Errata explains that the NPS is currently within its annual use entitlement and future projections that take into account improvements at Fort Baker show that NPS will still be within these entitlements. Further, the Errata explain that projected water use at the Center would decrease under the proposed project.

A more detailed description of all letters received and corresponding responses can be found in the Errata sheets attached to this document.

WHY THE SELECTED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT

As defined in 40 CFR §1508.27, significance is determined by examining the following criteria:

Adverse impacts from the selected alternative may include:

- Local, Long and Short-term, Minor, Adverse Impact from stormwater impacts.
- Local, Long and Short-term, Moderate, Adverse Impact to wetlands, trees and non-native annual grasslands.
- Local, Long, minor adverse impact from increased contaminants that are carried over paved areas into Rodeo Lagoon.
- Local, short and long-term, minor - moderate, adverse effect on geology, soils and seismicity due to impacts associated with construction activity and adequate design of facilities.
- Local, short-term, minor, adverse impacts from hazardous materials.
- Local, short-term, minor, adverse impacts to air quality.
- Local, short-term, minor, adverse impacts from increased noise.
- Local, short and long-term, negligible - minor, adverse effect on transportation due to impacts associated with construction activity and increased visitor use.
- Local, long-term, moderate, adverse impact to cultural resources. These impacts would not have significant adverse effects on the Ft. Baker, Barry, and Cronkhite National Register Historic District.
- Local, long-term, moderate, adverse effect on visual resources due to visual intrusions associated with construction activity, and the introduction of new built features in the natural landscape of the Marin Headlands.
- The intensity and duration of these adverse effects would be mitigated by measures identified in the EA and in this document as "Mitigation Measures."

Beneficial impacts of the Selected Alternative may include:

- Long-term, moderate beneficial impact on water use in the project area.
- Minor, beneficial increased impacts from noise due to barrier formed by new buildings against an existing noise source.
- Local, long-term, minor, beneficial impact on recreation and public use in the project area.
- Local, long-term moderate impact to visual resources resulting from improvements to structures, placement of water filtration systems underground and clean up and restoration of the south-east corner of the treatment site and the former kennel site…
- Improvements to infrastructure for more efficient, effective, sustainable operation
- Better designed facilities for treatment and rehabilitation of injured or ill marine mammals.

- Better research into disease and parasites affecting marine mammals

Degree of effect on Public Health or Safety

The Selected Alternative would have a positive effect on public health and safety, by improving conditions for staff and volunteers working with the marine mammals. Unsafe conditions that now exist along the access road would also be remedied by the Selected Alternative.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas

Construction of a ring road would result in direct impacts to 0.025 acres off wetlands and indirect impacts to 0.055 acres of wetlands. The U.S. Army Corps of Engineers determined that these are non-jurisdictional wetlands not covered by its authority. A majority of the small, natural and constructed drainage would be filled as well as a small portion of the larger swale drainage along the northern side of the property. To offset impacts to wetlands, enhancement actions to nearby degraded wetlands would occur at a 2:1 ratio. Therefore, a total of 0.16 acres or more of palustrine scrub-scrub and emergent wetlands will be enhanced at a site near the impacted area in the Rodeo Lagoon Watershed in the Marin Headlands. An enhancement plan will be developed by The Center, and approved by the NPS, prior to the commencement of groundbreaking of the site and facilities improvement project. Enhancement activities will begin the same year as the commencement of construction. A copy of the enhancement plan will be sent to the California Coastal Commission and the San Francisco Bay Regional Water Quality Control Board.

The enhancement plan will include the removal of non-native invasive plants from the mitigation area to prevent loss of native vegetation through shading and competition. NPS plant ecologists will train The Center staff in identification and removal techniques. Native plants may be planted if it is determined that plantings will contribute to enhanced functions of the wetland area. The proposed enhancement plan will require The Center to act as stewards of the land to ensure the success of enhancement activities through ongoing management and monitoring for a minimum of five years. The Center will be responsible for documenting dates and type of work performed using existing Park "work performed" datasheets.

The enhancement plan will also include provisions for annual reporting that summarize the enhancement activities, progress-to-date, management, and monitoring. The report will include photographs of the site conditions so that they may be evaluated through time. Copies of the annual report will be provided to the NPS, California Coastal Commission, and San Francisco Bay Regional Water Quality Control Board.

The Center would undertake site restoration activities to restore native plant habitat on the south-east edge of the treatment site and at the former kennel site. The Center would work with NPS staff in tree removals in the development of the new parking area.

The cumulative effects of adding three new buildings to the historic district are being assessed in the Section 106 Consultation for any possible immediate or cumulative effects to the Forts Barry, Baker and Cronkhite (FBBC) National Register Historic District. Since these new structures are on a previously developed area and are screened from general view by the topography and vegetation of the site, the effects are not expected to be adverse. New construction would be compatibly designed and sited in keeping with the character-defining elements of the FBBC Historical District. Historic Compatibility Guidelines would be used to ensure that the design of new buildings to be compatible in scale, massing, color, material and character with the historic district.

Degree to which effects on the quality of the human environment are likely to be highly controversial

The project has generated substantial support during the public comment period. Some have raised concerns about the project resulting in an increase to traffic in the project area, stemming from an increase in visitation. During the public comment period, Center and NPS staff did additional traffic analysis, reviewed the visitor projections, and met with the concerned parties to address these issues. The Center has committed to keeping track of visitation and will develop a monitoring program with NPS staff. The NPS is proposing to monitor the situation, and if problems occur in the future, additional measures would be taken to minimize impacts.

Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks

The Selected Alternative would enable the continued viable operation of the Center for future generations. The potential upgrades and improvements would afford the Center a better opportunity to maintain and operate the services offered by the Marine Mammal Center. The Selected Alternative, thus, provides the NPS and the Center a clear understanding of the future of the Center. Rather than introducing highly uncertain unique or unknown risks, the Selected Alternative would allow greater stability and improved service at the Center.

Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration

The project would allow for the continued existence of a unique entity within GGNRA with specific needs and requirements. The Selected Alternative represents a decision that the Center and NPS are committed to an ongoing partnership. The benefits of this arrangement are detailed in the EA under the Purpose and Need for the action. Approval of this project would not establish a precedent for future actions with significant effects. Rather than establishing a precedent, these improvements would solidify an existing relationship that has been in effect since 1975.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts

The EA considered the cumulative impacts of the selected alternative with several past, present or reasonably foreseeable future projects and the analysis indicated that cumulative impacts would not have significant impacts.

Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources

The selected alternative would have negligible impacts to historic and archaeological resources. In July 2003, the Launch Area of the Air Missile Defense Site SF-87-L (the location of the treatment site) was determined to no longer be a contributing feature to the FBBC (National Register) Historic District. This determination was based on a recent assessment that concluded that successive modifications made by overtime had rendered the integrity of the site questionable.

Degree to which the action may adversely affect an endangered or threatened species or its critical habitat

Construction of the proposed facilities would temporarily disturb soils and vegetation in the project area. The past land use practices in the project area, including military operations, have substantially altered the native vegetation and it is likely that no special-status species occur at the site. Botanical surveys for

special status species and habitat assessments were conducted in April and August of 2004. The results of both survey efforts were negative. Therefore, no locally or regionally occurring special-status plants would be directly or indirectly affected under proposed Alternative 2.

Whether the action threatens a violation of Federal, state, or local environmental protection law

Implementation of the selected alternative would not violate any federal, state, or local environmental protection laws.

NO IMPAIRMENT OF PARK RESOURCES

The fundamental purpose of the National Park Service, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. Impairment is defined as an impact that, in the professional judgment of the responsible park manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources and values (NPS Management Policies 2001). The National Park Service has determined that implementation of the selected alternative and mitigation measures will not constitute impairment to Golden Gate National Recreation Area's resources and values. This conclusion is based on a thorough analysis of the environmental impacts described in the Marine Mammal Center Site and Facilities Improvements Environmental Assessment (EA), the mitigation measures, agency consultations, considerations of the public comments received, relevant scientific studies, and the professional judgment of the decision-maker guided by the direction in NPS Management Policies 2001.

MITIGATION MEASURES

The following mitigation measures are included as part of the Selected Alternative and will be implemented by staff either from the Center or NPS as described. In some cases additional descriptions of the mitigation measures discussed below are provided in the EA.

MITIGATION MEASURES INCLUDED AS PART OF THE SELECTED ALTERNATIVE

Topic	Responsible Party	Mitigation
GENERAL MEASURES		
Construction Staging Plan	Marine Mammal Center	A Construction Staging Plan shall be prepared by the Center and submitted for NPS review and approval prior to commencement of any excavation, demolition, removal, construction, or alteration of any site or structure. The Construction Staging Plan shall include information on schedule of work by dates and location where work would be performed, safety procedures, traffic management, noise mitigation, equipment to be used and procedures to be followed in the execution of work, solid and hazardous waste management, staging areas, clean-up, progress reports, complaint review process, and other areas of concern
Annual Report	Marine Mammal Center	Under the Cooperative Agreement between the NPS and the Center, the Center will submit an Annual Report that will include things such as a description of services and programs, number of annual visitors, number of special event attendants, an annual maintenance plan, and sustainability program update. The Center has committed to keeping track of visitation and will develop a monitoring program with NPS staff.
WATER RESOURCES		
General	Marine Mammal Center	Coordinate with the National Park Service regarding construction and maintenance of the new water system, sewer system and stormwater system. Particularly coordinate timing and rate regarding initial filling of facilities and demand and releases during peak use periods.
Water Conservation	Marine Mammal Center	Water saving devices, including low-flush toilets and low maintenance/drought tolerant landscaping shall be used.
Stormwater Management	Marine Mammal Center	Develop and implement a comprehensive stormwater pollution prevention plan for construction activities that complies with federal and state regulations and addresses all aspects of stormwater pollution prevention. The stormwater pollution prevention plan will be submitted to the park for review/approval prior to construction activities. The Plan will include structural best management practices (BMP's) (oil filters, biofilters, control of run-on and run-off, etc.) and operational best management practices (including spill prevention and control) throughout the project design. Parking lots and drainage facilities will include easily cleanable catch-basins, debris screens, and grease separators or similar water quality protection devices.

Topic	Responsible Party	Mitigation
Impervious Surfaces	Marine Mammal Center	To offset the effects of new pavement and/or hardened surfaces added within the project area, the Center will work with NPS to arrange for appropriate site restoration of previously disturbed areas, such as the former kennel site. This could include removal of pavement, soil decompaction, or similar measures that would be detailed in site restoration action plans.
BIOLOGICAL RESOURCES PROTECTION MEASURES		
Native Plant Habitat	Marine Mammal Center	For areas identified for native plant restoration, site-specific Vegetation Restoration Action Plans will be prepared for review and approval by NPS prior to implementation. These plans will also include prescriptions for weed control and ongoing maintenance until the sites are fully established.
Protection for Nesting Birds	Marine Mammal Center & contractor	Construction activities shall be performed from September through February to avoid the general nesting period for birds. If construction cannot be performed during this period, pre-construction surveys shall be performed during the breeding and nesting season by a qualified biologist. If active nests are observed, buffers will be established (500 feet for raptors, 250 feet for other birds).
Protection for Special Status Species	Marine Mammal Center	Surveys were conducted for rare and endangered plants and mission blue butterfly habitat; the survey results were negative. Although California red-legged frogs do not breed on the site, they may occur there. Pre-construction surveys for California red-legged frogs will be conducted and an educational tailgate session will be conducted for the work crew prior to groundbreaking.
WETLAND PROTECTION MEASURES		
Protection for Wetlands	Marine Mammal Center	NPS will require mitigation for impacts to 0.08 acres of wetlands. The Center will develop a mitigation plan and enhance degraded wetlands at a nearby site at a minimum 2:1 ratio. The enhancement plan will be reviewed and approved by the NPS, and copies will be sent to the California Coastal Commission and Regional Water Quality Control Board prior to implementation. The enhancement site will be managed and monitored for a minimum of five years and annual reports will be submitted to the NPS, California Coastal Commission, and Regional Water Quality Control Board. A Notice of Termination will be filed with the Regional Water Quality Control Board upon completion of the project.
Protection for Wetlands	Marine Mammal Center & contractor	The Center will be responsible for complying with California Regional Water Quality Control Board Water Quality Order No. 2004-004 DWQ. The Center will file a Notice of Termination with the Water Board after the project has been completed.

Topic	Responsible Party	Mitigation
Protection for Wetlands	Marine Mammal Center & contractor	As described in the Statement of Findings and Appendix A of the EA, the MMC will: 1) Design buildings and parking areas to provide maximum opportunity for surface runoff to be directed away from sensitive habitat and infiltrate the soil. 2) Take measures to control erosion, surface scouring, and discharge to water bodies. 3) Reduce risk of accidental hydrocarbon leaks or spills by scheduling use of mechanical equipment outside of low precipitation periods when possible. Use NPS-approved methods to protect soil and water from contaminants. 4) Dispose of volatile wastes and oils in approved containers. 5) Inspect equipment for hydraulic oil leaks prior to use on construction sites, and implement inspection for contamination of soil and water. 6) Monitor the effects of runoff to Rodeo Lake and Rodeo Lagoon from new parking areas.
GEOLOGY, SOILS, AND SEISMICITY PROTECTION MEASURES		
Protection from Settlement Impacts	Marine Mammal Center & contractor	The recommendations of the report on the site-specific geotechnical investigation conducted for this project (Cleary Consultants, Inc., 2003) will be implemented as part of the project. Report recommendations include site preparation requirements, fill placement and compaction parameters, and requirements for subsurface and surface drainage.
Excavation Activities	Marine Mammal Center	When possible, excavated materials will be reused on site or within the Park. Any remainder that cannot be reused will be disposed on site. If onsite disposal is not possible, appropriate disposal options will be used. Adjacent uphill slopes will be monitored for failure when work is being performed along the toe of the slope on the north side of the site.
Landslide and Slope Stability	Marine Mammal Center & contractor	NPS approved engineers will review the foundation and grading plans and be retained to provide soil engineering observation and testing services during the grading and foundation installation phases of the project. NPS approved engineers will approve final plans and conduct observations of the earthwork and foundation construction, as determined appropriate by this engineer.
Protection from Seismic Hazards	Marine Mammal Center & contractor	The design and construction of buildings and tanks will be in accordance with current standards for earthquake-resistance, and include measures to minimize the movement of objects within buildings and minimize the effects of such movement.
Additional Study	NPS	NPS approved engineers shall review the final design plans for the project and observe earthwork and foundation installation during construction.
TRANSPORTATION		
General	Marine Mammal Center	Prepare a construction routing plan for review and approval by NPS prior to initiating any site preparation and construction activities.

Topic	Responsible Party	Mitigation
Transportation Demand Management	Marine Mammal Center	The Center shall comply with the provisions of any future NPS Transportation Demand Management program for the Marin Headlands area. Provisions will be made so that carpools and vanpools receive preferential parking.
Event Coordination	Marine Mammal Center	Up to six times a year the Center holds events that require additional parking on a short-term basis. In advance of these special events, in order to avoid peak traffic conditions, the Center will be required to coordinate with GGNRA's Special Parks Uses Group. The Special Parks Uses Group may implement limitations on programs offered and scheduling of large events. An example is the requirement to hold Run for the Seals during the early-morning non-peak hours. During special events, the NPS could require that the Center provide traffic control officers at potential bottleneck locations to improve traffic flow and safety, in coordination with other relevant agencies as needed to ensure coordination with their operations and assure that proper permits are received and qualified personnel employed. The Center will be required to monitor attendance and parking impacts during special events and make this information available to the Special Parks Uses Group.
CULTURAL RESOURCES PROTECTION MEASURES		
Archeological Monitoring	Marine Mammal Center	If previously unknown cultural resources are encountered during construction, temporarily suspend work in the immediate area to document discovered resources according to National Park Service standards.
Compatible Design	Marine Mammal Center	All new designs shall be reviewed for compatibility with the cultural landscape of the Historic District per the Standards for the Treatment of Historic Properties. Design of all new construction, including site work, shall be compatible in terms of architectural elements, scale, massing, materials, and orientation. Review and approval will be carried out by NPS staff. Historic Compatibility Guidelines for New Facilities at the Center will be prepared as part of this project and will be reviewed and approved by NPS.
VISUAL RESOURCES		
General	Marine Mammal Center	Existing visual screening will be retained as deemed appropriate by NPS. This screening currently consists of invasive Monterey pines that must be managed as described below. Where screening is removed for purposes of construction activities, if requested by NPS it will be replanted with less invasive trees that still provide appropriate screening.

Topic	Responsible Party	Mitigation
HAZARDOUS MATERIALS MEASURES		
Hazardous Materials/Waste Management Plan	Marine Mammal Center	The Center shall submit for NPS review and approval plans and procedures for the management of hazardous materials and spill response consistent with current GGNRA standard operating procedures for hazardous waste management and the GGNRA Spill Response Plan.
AIR QUALITY/DUST ABATEMENT MEASURES		
General	Marine Mammal Center	Dust abatement measures will be developed and implemented that include restrictions on truck operations.
NOISE ABATEMENT MEASURES		
General	Marine Mammal Center	Perform all on-site noisy work above 76 A-weighted decibels (dBA) (such as the operation of heavy equipment) between September to March to minimize disruption to rescued marine mammals and related education programs. Within these months limit noisy work to week-days to minimize impacts to recreational users in the area.
General	Marine Mammal Center	During periods of concentrated construction potentially halt or limit on-site education programs to avoid noise exposure.
General	Marine Mammal Center	Submit a construction work plan/schedule that minimizes construction-related noise in noise-sensitive areas of the Center and the park. Submit to NPS for review and approval prior to commencement of construction activities.
General	Marine Mammal Center	Ensure that all construction equipment has functional exhaust/muffler systems. Use hydraulically or electrically powered construction equipment, when feasible. Locate stationary noise sources as far from sensitive receptors as possible. Limit the idling of motors except as necessary (e.g., concrete mixing trucks).
VISITOR USE AND EXPERIENCE		
General	Marine Mammal Center	The Center will develop and implement a visitor protection plan for park review/approval. The Center will keep track of visitation and will develop a monitoring program with NPS staff.
General	Marine Mammal Center	Provide protective fencing enclosures around construction areas to protect public health and safety.

Topic	Responsible Party	Mitigation
General	Marine Mammal Center	New public facilities shall be made accessible to people of all ages, backgrounds, and abilities. The goals of barrier-free accessibility shall be met and an emphasis shall be placed on affording visitors with disabilities the same experiences and opportunities as other visitors.
Interpretive Program	Marine Mammal Center	The Center shall include an expanded interpretive program from the current one in place to convey messages to visitors about park-related themes as well as the Center's mission. New exhibits and programs shall be developed in consultation with NPS interpretive staff.
Interpretive Exhibit	Marine Mammal Center	The Center shall work with NPS interpretive staff to develop a permanent interpretive exhibit that describes the former use of the land as a Nike Missile site during the Cold War era.
UTILITIES		
General	Marine Mammal Center	The Center will (except in an emergency) schedule peak water usage at non-peak times of day. In addition, washdowns and water system cycling shall not occur during peak storm events. During heavy rainfall events, the Center will have operational capability to interrupt sewage flowing from the pen enclosure area drains by means of an equalization basin to regulate flow under extreme conditions. The Center will coordinate with NPS to ensure that the water usage caps imposed by Marin Municipal Water District are maintained.
General	Marine Mammal Center	The Center will verify utility locations by contacting the Underground Services Alert prior to the start of construction.
General	Marine Mammal Center	The Center will observe all local, state, and federal standards in designing utility systems.
General	Marine Mammal Center	The Center will promptly reconnect utility services that are interrupted because of construction activities and provide advance notification to all residents, concessionaires, and others if utility service would be disrupted
General	Marine Mammal Center	Utilities shall, to the extent possible, be located underground or screened from principle viewing areas. Placement of above-ground appurtenances shall be screened from view to the fullest extent possible.
NIGHT SKY MEASURES		
General	Marine Mammal Center	Measures will be implemented to minimize effects of night lighting on the ability to view the night sky in the project area.

CONCLUSION

Implementation of the selected alternative for the Marine Mammal Center Site and Facilities Improvements will not have significant impacts on the human environment. The determination is sustained by the analysis in the EA, agency consultations, the inclusion of public review, and the capability of mitigations to reduce or avoid impacts. Adverse environmental impacts that could occur are minor or moderate in intensity, duration, and context. As described in the EA, there are no highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence. There are no previous, planned, or implemented actions, which in combination with the selected alternative would have significant effects on the human environment. Requirements of the National Environmental Policy Act have been satisfied and preparation of an Environmental Impact Statement is not required. NPS and the Center will implement the selected alternative as soon as practical.

Recommended:	**Original Signed**	**10/08/2004**
	Brian O'Neill, Superintendent	Date
	Golden Gate National Recreation Area, National Park Service	
Approved:	**Original Signed**	**10/20/2004**
	Jonathan B. Jarvis, Regional Director	Date
	Pacific West Region, National Park Service	

Wetland Statement of Findings for the Marine Mammal Center Site and Facilities Improvements Project

A draft of this Wetland Statement of Findings was included in the Marine Mammal Center Site and Facilities Improvements Project Environmental Assessment for public review. It meets the obligations of Executive Order 11990 (Protection of Wetlands) and Director's Order 77- 1 and the accompanying NPS Procedural Manual 77- 1: Wetland Protection.

Introduction

The Marine Mammal Center (The Center), which began its operation 28 years ago, is located in the Marin Headlands on land owned and managed by the Golden Gate National Recreation Area (GGNRA). Figure 1, reproduced from *the Marine Mammal Center Site and Facilities Improvements Project Environmental Assessment* (EA), shows the overall area of potential affect for the project. The GGNRA manages about 72 miles of coastline and adjacent waters in one of the four richest habitats for marine mammals in the world. A primary goal of The Center's work is to learn about and protect the marine mammal resources in the park's coastal areas. The partnership between The Center and the GGNRA is unique in the national park system with respect to ocean resources. The mission of The Center is carried out under three distinct but related function areas:

- rescue, rehabilitation, and release;
- research; and
- education.

The Center, which is an existing rehabilitation hospital for marine mammals, is in need of retrofitting its facilities to better achieve its mission, treating hundreds of injured, ill or orphaned marine mammals that are stranded in coastal waters every year. The Center recently has secured funding to embark on this important retrofit and proposes to construct new facilities at its site to better accomplish it mission and consolidate its functions for improved operations. Proposed improvements include:

- an upgraded water filtration system;
- upgraded pens and pools;
- consolidation of administrative and education functions in several new buildings;
- improved research and medical facilities; and
- improved access to operations and consolidated parking.

The Center currently occupies approximately 28,000 sq. ft. of space at the former Nike Missile site (referred to as the treatment site) and in three buildings (1065, 1071 and 1044), at nearby Fort Cronkhite. The treatment site includes seven buildings, totaling 11,561 sq. ft. of enclosed space.

Hospital functions and animal housing are located at the treatment site itself. The entire assigned site comprises about 3.0 acres.

Insert Figure 1, Map of Area of Potential Effect

Purpose and Need for Action

The existing facilities no longer meet the operational needs of The Center, particularly those at the treatment site. The ability of The Center to achieve its mission has been diluted by the inefficiencies of widely dispersed location of services and sub- standard buildings and supporting infrastructure. The Center has undergone various changes over time, as needs and funding became available. As a result, there are inefficiencies and outdated facilities which now need to be modernized in order for The Center to fulfill its mission and continue its noteworthy programs.

In order to administer better care to marine mammals, educate the public, and improve research techniques, The Center is proposing to consolidate its facilities to one site. This would entail the retrofit of some of the existing facilities, demolition of some non- historic structures, and construction of new space on the former Nike Missile site. It would also improve current access, circulation, and visitor parking problems at the site, and address issues of access by emergency vehicles to the treatment site. In an effort to minimize impacts to the surrounding area, the proposal includes the modernization of existing facilities largely within the footprint of the developed site.

Please refer to Chapter 1 of the EA, Project Need and Project Purpose/Objectives for more detail about the project need and objectives (attached).

Purpose of this Statement of Findings

The purpose of this Wetland Statement of Findings is to review the Marine Mammal Center Site and Facilities Improvements Project in sufficient detail to:

- Avoid, to the extent possible, the short- and long- term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative;
- Describe the effects on wetland values associated with the proposed action; and
- Provide a description and evaluation of mitigation measures developed to achieve compliance with Executive Order 11990 (Protection of Wetlands) and NPS Procedural Manual 77- 1: Wetland Protection.

Alternatives

Four alternatives for the proposed Marine Mammal Center Site and Facilities Improvements Project are evaluated in the EA. Under Alternative 1 (No Action), the project area would remain unchanged, except for normal maintenance and repair. The other three alternatives propose varying configurations for accommodating The Center's program through some demolition of existing structures, some new building and infrastructure construction and new circulation and parking. Alternative 2, the Consolidated Program Alternative, locates most proposed uses, including parking, in one location at the current treatment site and is the preferred alternative. Alternative 3, the Consolidated Program, Remote Parking Alternative, locates most proposed uses at the current treatment site but places most of the required parking at an area below the

treatment site. Alternative 4, the Split Program, Limited New Construction Alternative splits Center functions and parking between its current location within the Ft. Cronkhite complex and accommodates the balance of the program uses and parking through some new construction at the treatment site.

All three action alternatives implement actions designed to improve and upgrade facilities at The Center. All three action alternatives would consolidate all or some of the administrative and animal care facilities in the same location, and would provide for construction of a new perimeter "ring road" to improve access for delivery of large animals and equipment as well as for service and emergency vehicle access. Placement of the ring road would impact 0.08 acres of non-jurisdictional wetlands. Of that, approximately 0.025 acres of the natural and constructed drainages would be filled.

Alternatives Considered

The No Action Alternative (Alternative 1) is the only studied alternative that would completely eliminate effects on wetland resources. This alternative is not considered practicable because it would not meet the Purpose and Need for the proposed action (see Chapter I of the EA).

In addition to the direct effects on the 0.08 acre of wetland, both Alternatives 3 and 4, in which a new parking lot would be constructed on the former kennel site, could have a potential local, long- term, adverse impact (due to sedimentation and run- off) on the wetland area located to the east. Sediment and other run- off from the new remote lot could impair this resource. Alternative 2, the preferred alternative, eliminates effects to these wetlands (compared to Alternatives 3 and 4) while meeting the proposed action's Purpose and Need.

One alternative considered to avoid construction of a ring road, but not studied in the EA, studied the inclusion of alternate new paved roads within The Center's built footprint. In particular, this alternative considered construction of a road directly through the middle of the site, in close proximity to the pens and pools. This alternative would have avoided impacts to wetlands but would have required substantially more grading and site work than the alternatives in the EA in order to accommodate emergency vehicles and delivery trucks. This particular alternative would also have been highly disruptive to the recovering mammals as a result of having a road and vehicles run adjacent to the pens and pools. In conclusion, this alternative had greater environmental impacts to achieve similar results when compared to the alternatives studied.

Other alternatives were considered to either eliminate the ring road or include only a partial ring road on the south and east sides. Alternatives that considered no construction of a ring road were dismissed from further consideration since this would eliminate the possibility of providing adequate emergency (fire truck) access to the treatment site's facilities and therefore not meet the project's objectives. One alternative considered the construction of a partial ring road, but would require construction of a hammer head turn- around at the southeast corner of the facility. Physical resource impacts would have included major cut and fill and construction of a large, prominent retaining wall. This alternative would have greater environmental impacts to achieve the project objectives when compared to the alternatives studied.

Affected Wetlands

Wetland Extent and Characteristics

The National Park Service (NPS) conducted a wetland inventory for the entire Rodeo Valley in 2002; however, the area around The Marine Mammal Center (Center) was not mapped either for reasons of access or because it fell below the minimum mapping area requirements. NPS staff conducted a wetland delineation in November 2003, and estimated that there are 0.08 wetland acres in the project area (Figure 2). This wetland is seasonally saturated and has a mixed Cowardin Class for vegetation type: Palustrine Scrub- Shrub/ Emergent. The U.S. Army Corps of Engineers verified the wetland delineation and determined that they will not take jurisdiction over the wetland.

Of the 243 total acres of wetlands mapped in the Rodeo Lagoon Watershed (including Gerbode Valley), 4.7 acres were also Palustrine Scrub- Shrub/ Emergent. An additional 107.4 acres is considered Palustrine Scrub- Shrub, and 83.5 acres is Palustrine Emergent.

The wetland features adjacent to the Marine Mammal treatment site are narrow drainages along the northern side of the existing facilities and are the result of natural drainages and installed concrete or asphalt drainages that have accumulated sediment and debris resulting in establishment of wetland vegetation. Vegetation within these features includes rush (*Juncus* sp.), umbrella sedge (*Cyperus eragrostis*), curly dock (*Rumex crispus*), and Italian ryegrass (*Lolium multiflorum*). A larger drainage swale is located along the northeastern side of the treatment site facilities at the bottom of the hillside and adjacent to the concrete drainage ditch. This swale includes curly dock, umbrella sedge, rush, and mature willows (*Salix* sp.). This wetland swale is seasonally saturated and of slightly higher habitat quality although still isolated from other like habitat. This area provides no habitat for special status species but does provide habitat for such species as pacific tree frog (*Hyla regilla*) and western toad (*Bufo boreas*).

This small wetland is not used by park visitors and the affected area does not constitute a public area of The Center. The wetland is not currently being used for research purposes. The wetlands do not constitute a visual resource, as the affected area is barely noticeable and adjacent to the built structures. Cultural Resources staff determined that there are no known or anticipated archaeological resources in this area.

Southeast of the treatment site adjacent to the former kennel site is a much larger contiguous wetland area that contains Palustrine Emergent vegetation at the top of the drainage and Palustrine Scrub- Shrub further down the drainage. This wetland would not be directly affected by the Marine Mammal Center project but mitigations have been included in the EA (and cited below) to ensure that potential development of a new parking lot (proposed in Alternatives 3 and 4) in this area would not allow harmful run- off to reach these wetlands.

Insert wetland Map Figure 2

Environmental Consequences of the Proposed Action on Wetlands

Impairment

Alternative 2, the Preferred Alternative, would result in local, long- term, moderate, adverse impacts to wetland resources at the Marine Mammal Center project area. The adverse effect of this alternative on wetland resources would be localized but clearly detectable. The Marine Mammal Center Project would not be expected to have an overall effect on the wetland resources of the area, due to the temporary duration of construction activity and the existing developed features in the area (i.e., the Marine Mammal Center, corporation yard, Fort Cronkhite, and the Marin Headlands Visitor Center). The local adverse impacts to wetland resources would not be of sufficient magnitude or nature to impair the integrity of wetland resources that are necessary to fulfill specific purposes identified in the park's establishing legislation, key to opportunities for enjoyment of the park, or identified as a goal in the park's *General Management Plan* or other relevant planning documents. Therefore, the impacts of this project would not impair resources or park values for future generations.

Design or Modifications to Minimize and Mitigate Harm to Wetlands

Construction of the ring road would result in direct and indirect impacts to approximately 0.08 acres of non- jurisdictional wetland. Of this, approximately 0.025 acres of wetland would be filled for the ring road and 0.055 acres would be indirectly affected. Only the No Action Alternative would avoid impacts to wetlands. The Preferred Alternative avoids impacts to wetlands that could occur as a result of construction of a remote parking lot under the other action alternatives. The alternatives analysis is discussed above. Best management practices and resource- specific mitigation measures would be implemented, as appropriate, prior to, during, and after implementation of the proposed action to minimize direct and indirect wetland impacts. Below are several relevant mitigations described in Appendix A of the EA for the project.

- Utilize structural best management practices (oil filters, biofilters, control of run- on and run- off, etc.) and operational best management practices (including spill prevention and control) throughout the project design. Install easily cleanable catch- basins, debris screens, and grease separators or similar water quality protection devices in parking lots and drainage facilities.

- All buildings and parking areas shall be designed to provide the maximum opportunity for surface run- off to be directed away from sensitive habitat and infiltrate the soil. Use of vegetated swales and planting areas shall be utilized to reduce run- off and remove contaminants.

- Take measures to control erosion, sedimentation, and compaction. Use silt fences, sedimentation basins, etc. in construction areas to reduce erosion, surface scouring, and discharge to water bodies.

- To the extent possible, schedule the use of mechanical equipment during periods of low precipitation to reduce the risk of accidental hydrocarbon leaks or spills. When mechanical equipment is necessary outside of low precipitation periods, use National Park Service–approved methods to protect soil and water from contaminants.

- Dispose of volatile wastes and oils in approved containers for removal from construction sites to avoid contamination of soils, drainages, and watercourses.

- Inspect equipment for hydraulic and oil leaks prior to use on construction sites, and implement inspection schedules to prevent contamination of soil and water.

- Other Structural BMPs – Structural BMPs shall minimize discharge to the storm sewer system and control run- off quality to the maximum extent practical.

- With guidance from the NPS, The Center will monitor the effects of runoff to Rodeo Lake and Rodeo Lagoon from the new parking areas.

DO- 77- 1 states that every effort should be made to assure that wetland compensation requirements meet the needs of both DO 77- 1 and Section 404 of the Clean Water Act.

The NPS has consulted with the Army Corps of Engineers to determine if a Section 404 permit is required and if mitigation to replace the functions and values lost from the permanent fill of jurisdictional areas is necessary to comply with the Clean Water Act. The Army Corps of Engineers sent the NPS a letter dated August 9, 2004, stating that they will not take jurisdiction over the wetland at The Center and will not require mitigation. NPS Procedural Manual for DO 77- 1 (section 5.2.C.1.) allows for compensation of wetlands to be waived if the adverse impact on wetlands from the entire project totals less than 0.1 acres. No compensation is necessary since:

- the impacted area (0.08 acre) is below the 0.1 acre threshold

- the loss of wetland functions is considered to be minimal (similar wetlands exist throughout the park)

- Best Management Practices (BMPs) for activities in or affecting wetlands will be employed (as defined in Appendix 2 of the Procedural Manual for Director's Order 77- 1).

Even though the impact to wetlands is minimal and the compensation requirement is waived for this project, The Center will complete wetland enhancement in the project vicinity in order to support the NPS goal of increasing the quality and quantity of the nation's wetlands. The details of this enhancement will be determined at a later date but will replace the function, value, and overall area of the 0.08 acre wetland that will be directly and indirectly impacted by the project. The Center will mitigate at a ratio of 2:1 (2 acres of enhancement for every acre impacted). Therefore, a total of 0.16 acres or more of palustrine scrub- scrub and emergent wetlands will be enhanced at a site near the impacted area in the Rodeo Lagoon Watershed in the Marin Headlands. An enhancement plan will be developed by The Center, and approved by the NPS, prior to the commencement of groundbreaking of the site and facilities improvement project. Enhancement activities will begin the same year as the commencement of construction. A copy of the enhancement plan will be sent to the California Coastal Commission and the San Francisco Bay Regional Water Quality Control Board.

The enhancement plan will include the removal of non- native invasive plants from the mitigation area to prevent loss of native vegetation through shading and competition. NPS plant ecologists will train The Center staff in identification and removal techniques. Native plants may be planted if it is determined that plantings will contribute to enhanced functions of the wetland area. The proposed enhancement plan will require The Center to act as stewards of the land to ensure the success of enhancement activities through ongoing management and monitoring for a minimum of five years. The Center will be responsible for documenting dates and type of work performed using existing Park "work performed" datasheets.

The enhancement plan will also include provisions for annual reporting that summarize the enhancement activities, progress- to- date, management, and monitoring. The report will include photographs of the site conditions so that they may be evaluated through time. Copies of the annual report will be provided to the NPS, California Coastal Commission, and San Francisco Bay Regional Water Quality Control Board.

Conclusion

The National Park Service finds that there are no practicable alternatives to disturbing 0.08 acres of wetlands adjacent to the Marine Mammal Center treatment site. Wetlands have been avoided to the maximum practicable extent, and the wetland impacts that could not be avoided will be minimized. Although wetland compensation has been waived for this project in accordance with Procedural Manual 77- 1, The Center will complete wetland enhancement in the vicinity. The National Park Service, therefore, finds that this project is in compliance with Executive Order 11990: "Protection of Wetlands."

Recommended:

Original signed	9/03/2004
Superintendent, GGNRA	Date

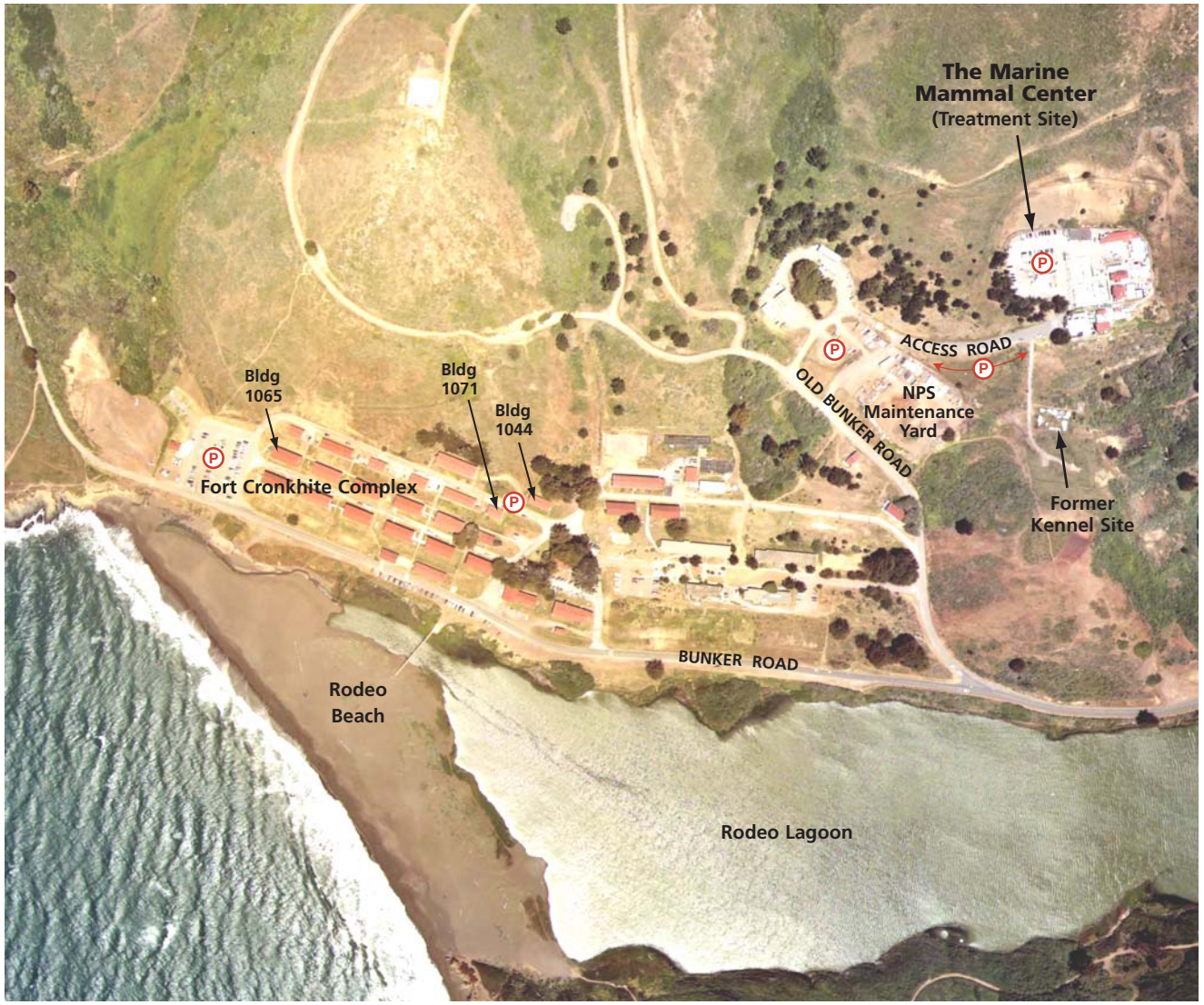
Certification of Technical Adequacy and Servicewide Consistency:

Original Signed	9/14/2004
Chief Water Resources Division or Professional Wetland Scientist, National Park Service	Date

Approved:

Original Signed	10/20/2004
Regional Director Pacific West Region, National Park Service	Date

Figure 1
Area of Potential Effect



SOURCE: National Park Service and Environmental Science Associates

Figure 2
Non-Jurisdictional Wetlands in the Vicinity of the Marine Mammal Center

SOURCE: National Park Service