general management plan
environmental analysis

september 1980

# GOLDEN GATE
# POINT REYES

NATIONAL RECREATION AREA / NATIONAL SEASHORE / CALIFORNIA

CONTENTS

PART ONE: THE PLAN

INTRODUCTION / 3
Purpose and Significance of the Parks / 3
Management Objectives: Golden Gate National Recreation Area / 9
Management Objectives: Point Reyes National Seashore / 11
Basis for the Plan / 13

LAND MANAGEMENT ZONING / 17
Natural Resource Zones / 17
Historic Resource Zones / 20
Special Use Zone / 21

CHARACTER AND INTENSITY OF USE / 23

INTERPRETATION AND OTHER PROGRAMS / 29

DEVELOPMENT / 35
General / 35
The Developed Areas / 37
- Alcatraz / 37
- Aquatic Park / 37
- Fort Mason / 41
- Crissy Field / 44
- Cliff House / 45
- Fort Baker / 49
- Rodeo Valley / 50
- Muir Woods / 53
- Stinson Beach / 55
- Bear Valley / 55

Dispersed Development / 56
- Hostels and Campgrounds / 56
- Trails / 58
- Other Facilities / 59

State Park Development / 61
Preliminary Recommendations for Expansion Areas / 61
Management Facilities / 62
Utilities / 65

TRANSPORTATION / 69
The Approach / 69
Immediate Considerations / 70
Long-Range Considerations / 77
Implementation / 84

CULTURAL RESOURCE MANAGEMENT / 85
Character and Status of Cultural Resources / 85
Proposed Management Strategies / 89
Research / 91
Interim Protection of Resources / 94
Authorities / 94

NATURAL RESOURCE MANAGEMENT / 95
Character of Natural Resources / 95
Proposed Management Strategies / 95
Future Research and Planning Requirements / 97

PART TWO: ENVIRONMENTAL ANALYSIS

INTRODUCTION / 103

IMPACTS / 113
Impacts on Visitors / 113
- Changing Activities and Use Levels / 113
- Effects of Construction / 125
- Effects of Transportation Changes / 125
- Visitor Safety / 126
- Summary / 128

Impacts on Surrounding Communities / 128
- Traffic Congestion and Parking / 128
- Community Services and Utilities / 131
- Other Impacts / 134
- Summary / 135

Impacts on Cultural Resources / 135
- Preservation / 135
- Adaptive Use / 136
- Restoration / 137
- Removal / 137
- Protection and Preservation of Historic Scenes / 138
- Preservation of Archeological Resources / 138
- Summary / 152

Impacts on Vegetation and Soils / 153
- Construction and Demolition Disturbance / 153
- Increases in Visitor Use and Changes in Visitor Activities / 160
- Resource Management / 162
- Summary / 163

Impacts on Wildlife and Marine Organisms / 163
- Changes in the Amount of Wildlife Habitat / 163
- Effects of Construction Activity and Noise / 165
- Visitor Disturbance of Fauna / 165
- Summary / 168

Impacts on Visual Quality / 169
Impacts on Air Quality / 169
- Effects of Park-Related Traffic / 169
- Summary / 172

Impacts on Water Resources / 172
Water Quality / 172
Water Demand / 175
Floodplain and Wetlands Management / 181
Summary / 181
Energy Efficiency / 182

FUTURE STUDIES / 183
Preservation of the Alcatraz Cell House/Citadel Complex / 183
Aquatic Lagoon Modification / 184
Ferry Service from Fort Mason / 184
Possible Removal of Historic Structures at Fort Mason or Fort Cronkhite / 185
Access into Crissy Field / 185
Shoreline Erosion and Lagoon Feasibility Study for Crissy Field / 185
Cliff House Structural Analysis / 185
Erosion of Ocean Beach / 186
Modification of Fort Baker Beach / 186
Increased Visitor Activity at Rodeo Lagoon / 186
New Southern Entrance to Stinson Beach / 187
Zone Camping / 187
Construction Projects / 187
Vegetation Management / 187
Grazing / 188

CONCLUSIONS / 189

FINDING OF NO SIGNIFICANT IMPACT / 191

CONSULTATION AND COORDINATION WITH OTHERS / 197

APPENDIXES / 205
A: Major Development Priorities and Cost Summary / 207
B: Summary of Alternatives Considered in the Development of the Plan / 211
C: Applicable Federal Laws Affecting Planning / 239
D: Rare, Threatened, or Endangered Plants and Animals of GGNRA and Point Reyes National Seashore / 255
E: Air Quality Data / 259
F: Water Demand Data / 265
G: Memorandum of Agreement with State Historic Preservation Officer and Advisory Council on Historic Preservation / 267

BIBLIOGRAPHY / 271

PLANNING TEAM / 273

GEOGRAPHIC INDEX / 275

## TABLES

1. Maximum Visitation Levels / 25
2. Parking Proposals / 76
3. Status of Cultural Resources / 87
4. Development Summary / 104
5. Activities, Alcatraz / 114
6. Activities, Aquatic Park / 116
7. Activities, Fort Mason / 117
8. Activities, Crissy Field / 119
9. Activities, Cliff House / 120
10. Activities, Fort Baker / 121
11. Activities, Rodeo Valley / 122
12. Activities, Muir Woods / 123
13. Activities, Stinson Beach / 124
14. Activities, Bear Valley / 125
15. Quantification of Transportation Impacts / 130
16. Solid Waste Disposal Requirements / 132
17. Proposed Management of Historic Structures / 139
18. Summary of Vegetation Changes Caused by Construction and Demolition / 158
19. Water Supply and Sewage Disposal / 176

## MAPS

Region / 4
Study Area / 6
Planning Units / 26
Alcatraz Development Concept / 36
Aquatic Park Development Concept / 38
Fort Mason Development Concept / 42
Cliff House Development Concept / 46
Fort Baker Development Concept / 48
Rodeo Valley Development Concept / 52
Muir Woods Development Concept / 54
Management Facilities / 64
Transportation, Immediate Considerations / 72
Transportation, Long-Range Considerations, Expanded Ferry and Shuttle Service / 78
Transportation, Long-Range Considerations, Expanded Staging Areas / 82
Cultural Resources / 88
Management Zoning / inside back cover
General Development / inside back cover

# INTRODUCTION

The legislative process that led to the establishment of Point Reyes National Seashore and Golden Gate National Recreation Area was truly a grassroots movement, motivated by social concern as well as a conservation ethic. People throughout the Bay Area worked to see these parks established and have helped plan their future. Residents of crowded city neighborhoods, people in rural towns, young people, old people--thousands contributed their thinking to create a vision of the national parks next door.

The new parklands offer possibilities for nearly every conceivable leisure-time pursuit. Not only are they beautiful, they are also replete with usable buildings from past inhabitants, blessed with a variety of landscapes from urban park to wilderness, and rich in historical associations. This plan was begun with the understanding that its mission was to carefully retain the parks' inherent values, correct their problems, and allow people of all ages, income levels, and lifestyles to enjoy them, now and in the future.

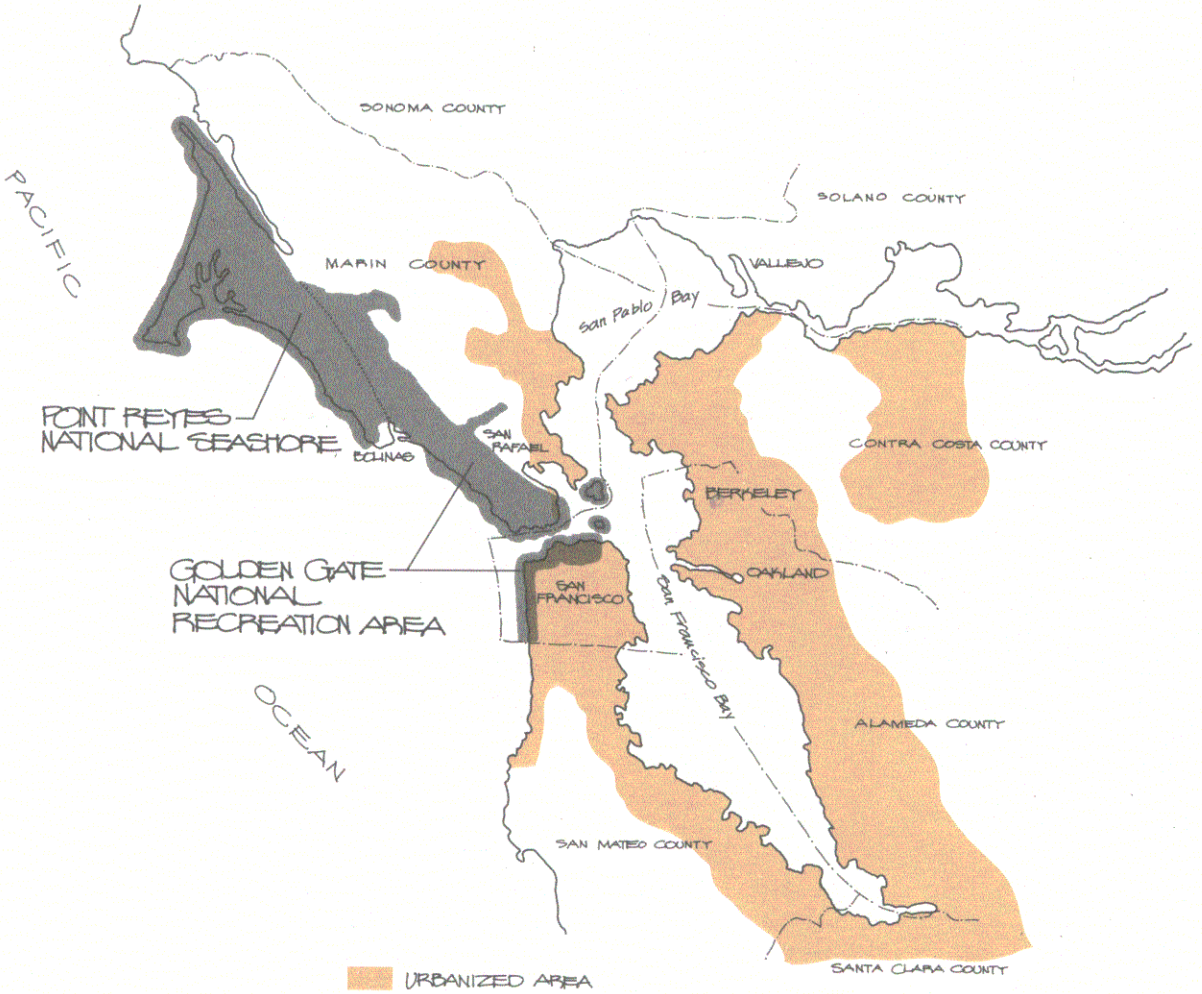
Even though GGNRA/Point Reyes attract many vacationers, most park visitors will continue to be local people, many of whom depend on the parks for a variety of daily leisure experiences. Many urban residents are eager to use the parks, but they have encountered obstacles when contemplating a visit, including indirect or nonexistent transportation, lack of knowledge about where to go and what to do, feeling out of place, and limited outdoor recreation skills.

The plan speaks to these urban needs of today and to predicted needs of tomorrow. It is a guide for the responsible management of some of the nation's most outstanding natural and cultural resources so that they may be enjoyed by the people. And it is a commitment by the National Park Service to share in the responsibility for improving the quality of urban living in the Bay Area.

## PURPOSE AND SIGNIFICANCE OF THE PARKS

Residents and tourists alike have long appreciated the scenic and historic qualities of the Marin and San Francisco shorelines. As highlights of this appealing territory the Cliff House, Mount Tamalpais, and Muir Woods have been popular picture post card subjects for many decades.

Luckily those who have most appreciated northern California treasures have also realized how easily they can be lost. While large military and agricultural holdings have effectively protected

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NATIONAL PARK SERVICE

# REGION

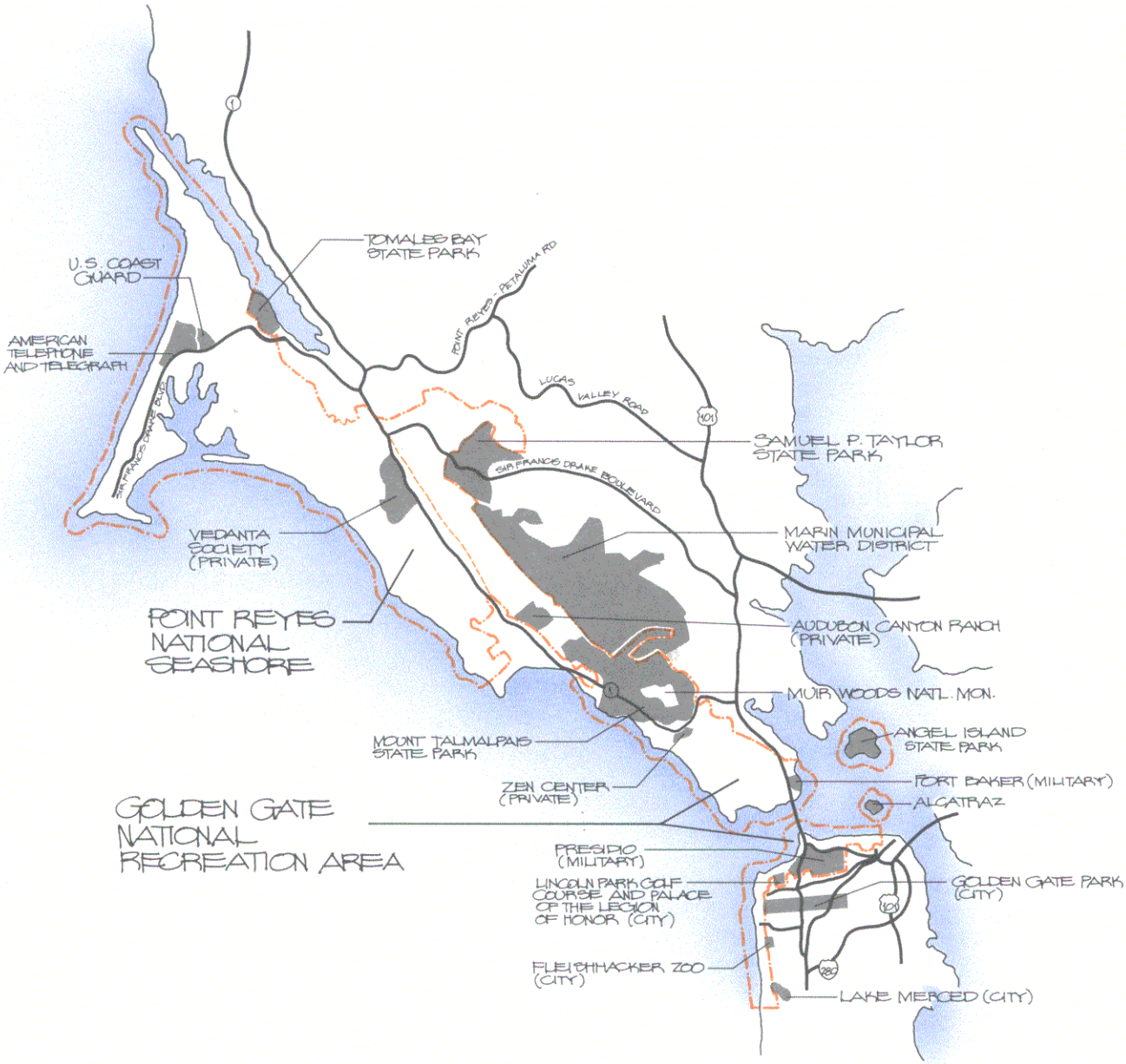
## GOLDEN GATE NATIONAL RECREATION AREA
## POINT REYES NATIONAL SEASHORE

much of the lands within the present boundaries of GGNRA/Point Reyes, resounding public protest to threats of overdevelopment or destruction of natural qualities since the late 1800s has protected other areas, helping to establish the Bay Area as the nation's unofficial headquarters for conservation activists.

The real beginning of serious park preservation efforts occurred in the Mount Tamalpais area, which by the turn of the century was crisscrossed by a vast network of hiking trails and a world-renowned scenic railroad. In 1905, Congressman William Kent, spurred by a personal goal to secure national park status for the entire mountain, purchased a redwood-filled canyon at its flanks to save its lofty trees from logging. Further motivated by the threatened condemnation of the canyon floor by a local water company to build a reservoir, Kent donated the land to the federal government and persuaded Theodore Roosevelt to declare it a national monument. The president's proclamation stated that the monument was being established to protect the grove of coast redwoods because "the trees are of scientific value because of the primeval character of the forest, the age and size of the trees (and) their location near centers of population and instruction." It is clear today that although larger, more extensive redwood forests occur along the more remote northern reaches of the California coast, the trees of Muir Woods are the only redwoods millions of tourists will ever see.

Kent's lofty dream of national park status for his mountain did not come any nearer to realization until 1925, when developers threatened to subdivide the mountain's coastal side. A local conservation group with Kent's assistance helped to raise enough money to purchase the initial piece of land that became Mount Tamalpais State Park in 1930. Additional efforts by many conservation organizations and individuals have since added more than 5,000 acres to the park, which is now included within the boundary of GGNRA and is operated by the state of California.

Miraculously saved from urbanization by rugged terrain and poor access roads, the Point Reyes peninsula has presented itself as an attractive coastal wilderness to a procession of interested park planners and preservationists since the 1930s. But not until serious threats of subdivision, logging, and freeway building in the late 1950s did something substantial happen. In 1958 the National Park Service published a coastline study which recommended the inclusion of the peninsula in the National Park System. Pressed by real incidents of logging and subdivision, local activists and a wise and sympathetic Congress finally forged a bill that was signed by President Kennedy in 1962, establishing Point Reyes National Seashore. For a national seashore at that time, Point Reyes' legislation was unusually clear in its intent that natural values should be scrupulously preserved. Its preamble states that the

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# STUDY AREA

GOLDEN GATE NATIONAL RECREATION AREA
POINT REYES NATIONAL SEASHORE

park was established "to save and preserve for the purpose of public recreation, benefit and inspiration, a portion of the diminishing seashore of the United States that remains undeveloped." The emphasis on preservation was even further strengthened in 1976 when Congress declared about 50 percent of the park a unit of the National Wilderness Preservation System.

Fort Point National Historic Site is the historic counterpart for Muir Woods National Monument, in that it also enjoys independent recognition as a separate unit of the National Park System even though it is now part of GGNRA. Strong local regard for its historical value and architectural and engineering merits was forcefully demonstrated in the 1930s when Golden Gate Bridge designers incorporated a special arch in the bridge structure to avoid destroying the old abandoned brick fortification. As a part of the army's Presidio of San Francisco, the fort was never again threatened, but a handful of dedicated military history enthusiasts worked hard for many years to earn special recognition for the fort and the maintenance, restoration work, and public visitation that would come with it. In 1970, two years before the establishment of GGNRA, they achieved success: An act of Congress established a new national historic site "to preserve and interpret for future generations the historical significance of Fort Point."

The greenbelt that many believe is now one of the world's most remarkable pieces of parkland was completed in 1972 with the establishment of Golden Gate National Recreation Area. Hot controversies over the question of what to do with Alcatraz Island and a proposal to build a federal record center on a small piece of federal land in San Francisco precipitated a chain of events that rapidly swept into an unprecedented grassroots park movement.

The language of the Golden Gate legislation states the parks purpose as follows: "In order to preserve for public use and enjoyment certain areas of Marin and San Francisco Counties, California, possessing outstanding natural, historic, scenic, and recreational values and in order to provide for the maintenance of needed recreational open space necessary to urban environment and planning, the Golden Gate National Recreation Area is hereby established." The mandate to preserve the varied resources of the park is obvious in this statement, but the reference to public use and enjoyment deserves additional emphasis. The hearing records pertinent to the enabling legislation reveal that the future use of the park was the subject of considerable discussion. The nearby presence of over five million people provided an unprecedented opportunity to make national park resources and programs available to a wide variety of visitors, many of whom had not been reached by the more remote national parks. Based on the record, this "parks to the people" idea was clearly intended by Congress and the administration to be a major purpose of GGNRA. Although the

idea of establishing more national parks in or near America's larger cities was an innovation of the 1970s, appreciation of the good fortune to have such fine recreational opportunities so close to home has been deeply felt by Bay Area residents since before William Kent started to work toward a national park in 1903. Certainly it was that appreciation which motivated the actions that established all of the parks comprising GGNRA/Point Reyes.

Most observers agree that the lands contained within the boundaries of GGNRA/Point Reyes would be of outstanding significance even if they didn't exist at the fringes of a great city. Together they represent one of the nation's largest coastal preserves--more than 100,000 acres of superlative North Pacific Coast landscape, including sandy beaches, rugged headlands, grasslands, forests, lakes, streams, estuaries, and marshes. Important scientific resources range from small rare plants in the San Francisco and Marin headlands, through towering redwood trees, to the diverse organisms of the mud flats and salt marshes of Point Reyes.

As the extensive wilderness segment of these parklands, Point Reyes displays the greatest diversity of wildlife and vegetation. Native land mammals there number about 37 species, including the elusive mountain lion and an endemic race of mountain beaver. Marine mammals augment this number by perhaps another dozen species. With 338 recorded species of birds, the seashore ranks as one of the best bird-watching and ornithological research areas in the United States. About 750 plant species are found on the peninsula, a few of which are found nowhere else. Coastline habitats harbor some of the richest and most diverse collections of marine organisms on the Pacific Coast.

What Point Reyes contributes in biotic diversity is easily matched by GGNRA's historic wealth. Park Service historians have noted that up to nine distinct areas of Golden Gate would independently qualify as historic units of the National Park System. Cultural resources of GGNRA/Point Reyes present a rich chronicle of two hundred years of history of one of the world's most important and spectacular seaports. Historic themes presented here include Indian culture, the Spanish Empire frontier, the evolution of American coastal fortifications, maritime history, and a multifaceted social history. Prehistoric village sites, lighthouses, a collection of historic ships, military forts, gun emplacements, ranch buildings, and a prison of worldwide infamy are but a few of the highlights of the parks' historic wealth.

But what may be the most significant aspect of the history of the parks remains a mystery. Point Reyes may contain the site of the first known English contact with what is now the United States. According to some experts, Sir Francis Drake probably landed on the peninsula in June of 1579 to refit his ship before sailing across the Pacific on his circumnavigation of the globe.

In spite of the outstanding quality of the scenic, natural, and historic resources of the parks, perhaps their most dramatic aspect is the sharp contrast between extensive undeveloped open spaces and the adjacent intensively developed urban environment of the San Francisco metropolitan area. In the city, the lively color of the GGNRA waterfront and the adjacent tourist bustle of Fisherman's Wharf and Ghirardelli Square are but a short distance from the isolated windswept cliffs and cypress groves of Lands End. Directly across the Golden Gate, facing the soaring towers of the bridge and the high-rise canyons of the city, the Marin Headlands appear much as they did when the gold-seekers poured through this symbolic portal more than a hundred years ago. A short hike from this vantage point can place the viewer in a valley totally remote from the sights and sounds of man. North of the headlands, wilderness quality scenery is common--from mountaintop panoramas to deep forest scenes. This wide variety of resources and outdoor settings provides opportunities for a correspondingly diverse array of recreational and educational activities of a quality and character found nowhere else.

## MANAGEMENT OBJECTIVES: GOLDEN GATE NATIONAL RECREATION AREA

Achievement of the following key management objectives will ensure that the purpose for which the parks were established is fulfilled.

### Preservation and Restoration of Natural Resources

To maintain the primitive and pastoral character of the parklands in northern Marin County by providing only minimum, dispersed development. Necessary concentrated developments will be confined to the southern Marin County and San Francisco portions of the recreation area.

To locate development in areas previously disturbed by human activity whenever possible.

To maintain grazing in certain suitable areas and at appropriate levels for the purpose of helping to control fire fuels and as an educational and aesthetic element for visitor enjoyment.

To maintain and restore 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.

## Preservation and Restoration of Cultural Resources

To reuse existing buildings for visitor and management needs in order to help preserve historic structures and reduce building costs.

To retain the current character of cultural resources pending completion of detailed resource management plans.

To recognize the importance of the cultural resources within the recreation area through a positive program of their identification, evaluation, preservation, management, and interpretation.

## Making the Recreation Area Readily Available to the Broadest Variety of Park Users

To pursue the extension of transit service between the park and transit dependent neighborhoods.

To offer recreational opportunities to a diversity of park users and to impart knowledge necessary for full enjoyment of park resources through a particular emphasis on interpretation, education, and information programs.

To develop facilities and programs that respond to the special needs of senior citizens, the handicapped, and cultural and ethnic minorities.

To encourage community organizations to utilize park areas and facilities as a setting for their own recreation and education programs.

## Provision of a Broad Variety of Park Experiences

To plan facilities to offer a wide variety of uses.

To retain opportunities for recreational activities pursued in the park today.

To develop a trail system for the use of hikers, bicyclists, and equestrians.

To offer visitors a more extensive exposure to the park's resources through the provision of a variety of overnight experiences.

To enhance the visitors' enjoyment of park resources by providing food and rental services where the need is demonstrated.

Consideration of Park Neighbors

To alleviate traffic impacts on adjacent communities and on park resources by the use of transit systems.

To balance the responsibility of meeting the needs of park visitors with the need to protect the interests of residents of adjacent communities.

MANAGEMENT OBJECTIVES: POINT REYES NATIONAL SEASHORE

Natural Resource Management

To identify, protect, and perpetuate the diversity of existing ecosystems which are found at Point Reyes National Seashore and are representative of the California seacoast.

To protect marine mammals, threatened and endangered species, and other sensitive natural resources found within the seashore.

To enhance knowledge and expertise of ecosystem management through research and experimental programs relating to wildlife, prescribed burning techniques, exotic plant and animal reduction, regulation and control of resource use, and pollution control.

To preserve and manage as wilderness those lands so designated under Public Law 94-567 and to also manage as wilderness to the extent possible those tidelands and lands legislatively designated as potential wilderness.

To retain research natural area status for the Estero de Limantour and the Point Reyes Headlands reserves and propose other suitable sites if found highly desirable for research and necessary for resource protection.

To manage seashore activities in the pastoral and estuarine areas in a manner compatible with resource carrying capacity.

To monitor grazing and improve range management practices in the pastoral zone in cooperation with the ranchers and the Soil Conservation Service.

To monitor and improve maricultural operations, in particular the oyster farm operation in Drakes Estero, in cooperation with the California Department of Fish and Game.

To monitor activities occurring on nonfederal properties within the national seashore owned by the Radio Corporation of America, the

American Telephone and Telegraph Company, and the Vedanta Society, to ensure that land uses are in agreement with the legislative acquisition exemption.

## Cultural Resource Preservation

To identify, protect, and preserve the significant historic and cultural resources of Point Reyes.

> To identify features and events that have played a vital part in the recorded history of Point Reyes, such as earthquakes, shipwrecks, land and water uses, the voyage of Sir Francis Drake, and the former U.S. Coast Guard lighthouse and lifeboat station.
>
> To enhance knowledge of the Miwok Indian culture through research and investigation of the numerous archeological sites located at Point Reyes.
>
> To preserve and protect all structures in or nominated to the National Register of Historic Places, and to stabilize and protect other structures and sites pending their historical evaluation.

To monitor and support productive land uses and activities which are consistent with historical patterns.

> To ensure that agricultural and maricultural activities are consistent with the historical evolution of land and water use at Point Reyes.

## Interpretation

To offer interpretive programs and services which further an awareness and appreciation of the wide diversity of seashore ecosystems and cultural resources, their variety and similarity, their interdependence, and their fragile nature.

> To develop programs for interpretation which foster an environmental awareness of the conditions imposed by preservation.
>
> To offer visitor orientation and information programs which furnish a general knowledge of the wide diversity of the seashore and enhance visitor appreciation and knowledge.
>
> To provide opportunities for emphasizing environmental education and programs related to the resource, including the coastal environment.

To continue to interpret the replica Miwok Indian village to further visitor understanding and appreciation of the Miwok Indian heritage.

Visitor Activities

To provide for and permit only those cultural, educational, and recreational activities which are compatible with the preservation of an undeveloped coastline.

Development

To ensure that park development is the minimum necessary for efficient and essential management and that visitor services are consistent with the seashore purposes and compatible with natural resource limitations and the special requirements imposed by the coastal environment.

Access and Circulation

To provide access to and circulation within the seashore which is compatible with other park objectives and considers a full range of alternative means of transportation.

## BASIS FOR THE PLAN

The basic tenets upon which this plan has been written are found in the enabling legislation for the parks and in the collection of knowledge gained about their natural and cultural resources. But the most noteworthy aspect of this document is that it represents an intensive effort to ensure that the future management and development of the parks is based on the desires of the people who will use them. Planning has involved extensive discussions with public agencies and conservation organizations and also more than one hundred workshops in Bay Area communities. About 10,000 people of all ages, incomes, and lifestyles have directly participated in this process through these public workshops, letters, and meetings with the planning staff.

In conjunction with this extensive public dialogue, the planning team has carefully compiled and analyzed information about the wildlife, vegetation, soils, history, socioeconomic setting, and other subjects that are key factors in making decisions about the parks' future (Preliminary Information Base, four volumes, October 1975). Public preferences and feelings were carefully filtered through this collection of knowledge. An important intermediate product of this process was the Assessment of Alternatives for the General

Management Plan (May 1977), supplemented by a popular summary, A People's Guide to the Future of the National Parks Next Door. These publications presented up to four alternative scenarios for the future of fourteen geographic units of the park. Each alternative related to one of the four basic park philosophies expressed by the public: (1) minimum visible change--things are O.K. the way they are today; (2) maximum natural appearance--wherever possible restore natural qualities and hold development to a minimum; (3) education/history--the park is an ideal learning environment and visitors need a lot of help to get maximum enjoyment and benefit from it; (4) recreation--the park is a place that offers many opportunities for leisure activities. All of the alternatives protected ecologically sensitive natural areas, retained significant historic structures, and proposed facilities only in areas suitable for development. Each alternative was accompanied by a thorough environmental analysis describing the potential results of each proposal.

During the public review of the Assessment of Alternatives, people were encouraged to interchange the individual proposals to design the park system they preferred. Public responses to the alternatives were gathered in five hearings held by the GGNRA Citizens' Advisory Commission (CAC) and through individual's and group's letters and worksheets. These responses were analyzed to determine areas where people were in general agreement and areas where issues were still to be resolved. These determinations and the recommendations of the planning staff were submitted in a series of position papers to the public and CAC, which voted approval of the recommendations and resolved the few remaining conflicts through additional meetings and committee work.

The analysis of the public responses to the planning alternatives revealed that a surprising number of proposals received nearly unanimous support from reviewers. These were generally recommended, and proposals that received little or no endorsement were rejected. There was one critical exception to this decision-by-vote process. Many key participants, such as the elderly, who were contacted early in the planning process through aggressive efforts to reach into the community, did not return to comment on the alternatives. Nevertheless, to fulfill their commitment to serve a variety of constituents, the planning team carefully considered the needs of these groups in the formulation of the plan.

When public preference for the future of a particular area was split, some basic valuations seemed to prevail in the decision-making process. On the one hand, emphasis was placed on urban recreational development in areas where the natural landscape has already been significantly disturbed. On the other hand, the proposals lean toward low-intensity use and minimal facilities in areas that retain substantial natural integrity.

Decisions were also tempered by a preference for stabilization and adaptive use of historic structures rather than alternatives for extensive demolition or authentic restoration of buildings and settings. At the same time, the plan favors tearing down nonhistoric buildings to increase outdoor recreational opportunities and enhance the natural scene.

As much as possible, the plan attempts to sustain park uses that are occurring now. However, some activities will be shifted to new locations where they will be more compatible with park resources and other uses.

The cumulative effects of all of the proposals in this plan for GGNRA/Point Reyes have been analyzed to determine if there will be any significant impacts on the environment resulting from plan implementation. The text of this environmental analysis is included as part two of this document.

The Draft General Management Plan (both full text and summary) was distributed to the public in June of 1979. Five public hearings were then conducted by the CAC to receive comments from the public. Generally, comments and suggestions offered by agencies, organizations, the CAC, and the public were supportive and primarily oriented toward clarifying the intent of plan proposals. There were no controversies or recommendations for substantial plan revisions apparent in any of the hearings or in any of the letters and position papers submitted in response to the plan.

Specific suggestions for numerous minor modifications were offered in ten CAC committee reports. These reports, which were approved by the full commission on November 15, 1979, resulted from an exhaustive page-by-page review and analysis of the draft plan by the committees prior to the public hearings. Subsequent to the hearings, two staff reports were submitted to the full commission responding to relevant issues and questions raised by the public in both written and verbal testimony.

At their December 8, 1979, meeting the CAC unanimously voted final approval of the General Management Plan subject to recommended modifications contained in the ten committee reports and the two staff reports. This document contains all of these modifications as well as numerous other specific changes requested by the public during the public hearings and review period.

Because the park has a fulltime planning staff and a citizens' advisory commission which meets regularly, the process of making needed revisions in the plan in the future should be relatively simple and expeditious. Proposals for change may be submitted to the commission or the superintendent either verbally or in writing. An annual review of these proposals by the commission and Park

Service staff will determine which proposals, if any, are worthy of further consideration. Those that are will be subject to full staff analysis, public hearings, and the basic decision-making process prescribed by the by-laws and rules of the commission. Subsequent to necessary committee work and full commission and staff deliberations, recommendations on the proposed revision will be submitted to the NPS regional director for his review and approval. It is anticipated that most approved revisions could be incorporated into the plan simply by the preparation of addendum sheets.

# LAND MANAGEMENT ZONING

The following zone designations represent a composite picture of how the park will be managed and developed in the future based on legislative and administrative requirements, resource studies, and public preferences. Because the different values that characterize each zone often overlap, it is nearly impossible to produce an understandable graphic representation of them that is also precise. Therefore the accompanying zoning map located in the pocket on the inside back cover should be used only as a general reference.

## NATURAL RESOURCE ZONES

### Intensive Landscape Management Zone

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

Natural Appearance Subzone: (Ocean Beach, Fort Funston, Lands End, Baker Beach, and Rodeo Lagoon picnic area)

To many park users lands in this subzone may appear to be as natural as wilderness areas at Point Reyes, but they are in fact man-created landscapes which in many cases will require the same degree of maintenance as an urban park setting. The primary management goal in these areas will be to continue to accommodate relatively high use levels with a commitment to intensive maintenance in order to retain the appearance of a natural landscape. Examples of intensive measures that will be required in this subzone include reforestation of Monterey cypress and stabilization and maintenance of planted sand dunes.

Urban Landscape Subzone: (Crissy Field, West Fort Mason, Fort Baker waterfront, Fort Barry parade ground, Stinson Beach developed area)

This subzone is characterized by familiar elements found in traditional city parks--well tended trees, shrubs and flowers, irrigated and mowed lawns, and hard-surfaced areas for walking and congregating. These areas are designed for intensive use and should look complete only when filled with people. Primary resource management activities will include

mowing, irrigation, weeding, fertilization, replanting, and trash pickup.

Pastoral Landscape Management Zone

(northern Olema Valley and northern Point Reyes peninsula)

This zone includes lands within which it has been determined that dairying and cattle ranching are desirable aspects of the scene from both an educational and aesthetic point of view. At a minimum, agricultural buildings and open grasslands will be retained in these areas, and where feasible, livestock grazing will continue within the limits of carefully monitored range capacities. Additional resource management studies may significantly alter the configuration of this zone as it now appears in GGNRA. Also included in this zone is the heather and flower farming operation near Muir Beach, which is considered to be a desirable aspect of the local agricultural scene.

Natural Landscape Management Zone

(Marin Headlands, Stinson Beach area, southern Olema Valley, and a few areas in Point Reyes)

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

Special Protection Zone

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

Wilderness Subzone: (Point Reyes)

Public Law 94-567 designated more than half of Point Reyes National Seashore as a part of the National Wilderness Preservation System, prohibiting nearly all development and mechanical conveyances.

National Monument Subzone: (Muir Woods)

Although contained within the boundary of GGNRA, Muir Woods retains its special status as a national monument, the sole purpose of which is to protect a stand of virgin coast redwoods for public enjoyment of their scientific, scenic, and educational values.

Marine Reserves Subzone: (Point Reyes Headlands, Limantour Estero)

At the recommendation of the National Park Service, marine reserves (research natural areas) were established at the Point Reyes Headlands and Limantour Estero in 1972 by the California Department of Fish and Game to preserve them "in a natural condition, and to protect the aquatic organisms and wildlife found thereon for public observation and scientific study." Management of the headlands reserve prohibits all human intrusion except that associated with approved research projects. The estero reserve protects all lifeforms from removal or disturbance without state and federal collecting permits. The National Park Service maintains a standing proposal to the state to also obtain research natural area status for the Double Point and Bird Rock areas of Point Reyes.

Biotic Sensitivity Subzone: (shoreline and stream courses)

This subzone, derived from high sensitivity ratings in the information base, generally identifies those natural resources in the park that are particularly sensitive to human use or are especially valuable from an ecological or scientific point of view. Use and development in these areas should be either discouraged or mitigated sufficiently to avoid significant levels of deterioration.

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

## HISTORIC RESOURCE ZONES

### Preservation Zone

(Fort Point, ships, lighthouses, fortifications, historic buildings at Alcatraz)

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

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

### Enhancement Zone

(Sutro Baths, Sutro Heights, Cliff House, Aquatic Park)

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

### Adaptive Use Zone

(Alcatraz grounds, north and east Fort Mason, Haslett Warehouse, East Fort Miley, areas of Marin Headlands)

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

modification is deemed necessary to properly accommodate public use.

## SPECIAL USE ZONE

(Vedanta Society, Audubon Canyon Ranch, Zen Center, Mount Tamalpais and Angel Island state parks, Lincoln Park and Marina Green city parks, Presidio of San Francisco)

Lands within this zone are located within the authorized boundaries of GGNRA or Point Reyes National Seashore but are not currently or expected in the foreseeable future to come under the jurisdiction of the National Park Service. Management policies and practices of the agencies and organizations administering these lands appear to adequately provide for the continued preservation of the natural, scenic, recreational, and historic values which motivated their inclusion within the boundaries.

## CHARACTER AND INTENSITY OF USE

The opportunities for park activities provided by thousands of acres of open land and hundreds of vacant buildings are practically limitless. Clearly, GGNRA/Point Reyes can be many things to many people. Because most visitors will continue to be local people, there will be a basic orientation to residents of the Bay Area and their needs for cultural expression, socializing, physical exercise, and the whole variety of daily leisure experiences. But many vacationers will be attracted as well, and there will be a great deal for them to enjoy, also.

GGNRA/Point Reyes is many parks. Some have an urban character, some are wilderness. There are opportunities for gathering together, for solitude, for adventure, for relaxation, for education, and for entertainment. Furthermore, there is enough room that people can pursue all these different activities without getting in each other's way.

So many activities are possible and appropriate that a comprehensive listing of them would be excessively long. Inappropriate activities would be those that would create a hazard, a disturbance, or a severe inconvenience for other visitors, cause adverse impacts on adjacent communities, or cause significant deterioration of park resources. Based on public comments over the past several years, of all the common outdoor leisure activities, shooting, hunting, and off-road vehicle driving are considered by park users to be inappropriate because they would conflict with other uses. Significant environmental deterioration will generally be avoided by ensuring that activities are pursued in suitable settings by a reasonable number of people.

The recreational opportunities of GGNRA/Point Reyes should be enjoyed by the widest variety of people, and this makes access extremely important. There are different kinds of barriers to access. Lack of transportation to the park is the most obvious. The lack of necessary facilities, such as restrooms and picnic areas for day use and campgrounds for overnight use, is another. The deteriorated condition of park resources, particularly of buildings and ruins at Alcatraz and Fort Mason, creates another serious obstacle to use. Barriers may selectively restrict specific groups or individuals. For example, fees can discourage people with low incomes, physical barriers can exclude the disabled, and lack of group facilities can discourage organizations. Despite the closeness of the park to the city, in the minds of many people it will continue to be distant and inaccessible if these barriers are not overcome.

Many of these barriers can be eliminated. The National Park Service and other agencies capable of influencing park-related

transportation will work cooperatively to improve transit service so that people without cars and people preferring not to drive their cars can get to the park. A trail system with overnight camps will let hikers and backpackers enjoy longer excursions. Different kinds of campgrounds and hostels will provide overnight opportunities for people with a range of abilities, experience, and equipment. Recreational equipment, including fishing tackle and sports gear, will be available for loan or rent to visitors who cannot afford to bring their own. The park staff will continue to do all it can to ensure that use of facilities is as convenient as possible for visitors with physical disabilities. These and other efforts will help create a park that is accessible to all who wish to visit, promoting a park population with a diversity of lifestyles, cultures, and interests as rich as the variety of park settings.

GGNRA/Point Reyes is an especially important place for people living in communities with limited recreational resources. To help meet the recreational needs of these people, community gardens at Fort Mason will be expanded, there will be a new senior center at Fort Mason, community meeting rooms will be made available at several locations, and multipurpose indoor recreation space will be provided. Community groups will also be able to reserve other special facilities, including campgrounds, picnic areas, and overnight retreats.

As a result of park development, the theoretical visitor capacity of most park areas will increase. An exception is the heavily used Mount Tamalpais area, where it is hoped that excessive use will decline as recreational opportunities are improved in other areas.

Large increases in the number of visitors are anticipated at Fort Mason, Crissy Field, and Marin Headlands, as a wide range of new activities, services, programs, and transportation options is created in these currently undeveloped and underused areas. New focal points will attract additional visitors to already popular recreation areas like the Cliff House and Aquatic Park. Dispersed use throughout large open areas of the Marin Headlands, Olema Valley, and Point Reyes will also increase.

Maximum visitation levels have been estimated for the different park units, primarily so that impacts on the environment could be quantitatively analyzed. These levels are projections of the number of people that can visit any park area before overcrowding occurs. Thus, they are limits based mainly on people's tolerance of other park visitors, rather than being based on the sensitivity of the physical environment. Environmental factors were carefully considered, but it was determined that in most cases people's enjoyment of the park would be impaired by overcrowding before the environment was significantly disturbed. As the plan is implemented, the projected levels, which are listed in table 1, may

be revised if onsite monitoring indicates that they are too high or too low.

TABLE 1. MAXIMUM VISITATION LEVELS

| Unit | Maximum Visitation at Any One Time[a] | |
|---|---|---|
| | Existing | Projected |
| Alcatraz | 300 | 600 |
| Aquatic Park | 2,000 | 4,340 |
| Fort Mason | 1,900 | 7,615 |
| Marina Green | 3,400 | 3,400 |
| Crissy Field | 100 | 4,300 |
| Fort Point | 650 | 1,200 |
| San Francisco Headlands | 1,500 | 2,500 |
| Cliff House | 700 | 1,850 |
| Ocean Beach | 2,350 | 4,020 |
| Marin Headlands | 1,167 | 5,466 |
| Mount Tamalpais[b] | 9,334 | 8,800 |
| Olema Valley | 250 | 1,615[c] |
| Point Reyes | 6,720 | 10,080 |

[a]Maximum visitation levels for San Francisco units are based on the estimated capacities of the existing and proposed facilities. Maximum visitation levels for Marin County units are based on known daily visitation rates at Mount Tamalpais State Park and Point Reyes National Seashore, converted to people per acre, and divided by the known turnover rate for each unit.

[b]Figures for the Mount Tamalpais unit include drive-through visitors and assume that a light reduction in visitation can be accomplished by improving recreational opportunities in other areas.

[c]This figure represents a major reduction in the original projection for the Olema Valley contained in the Draft General Management Plan and in the Assessment of Alternatives (3,250). Due to substantial adverse public comment the projection was recalculated based on more detailed and conservative estimated capacities of the land and facilities.

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UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

# PLANNING UNITS

## GOLDEN GATE NATIONAL RECREATION AREA
## POINT REYES NATIONAL SEASHORE

The maximum visitation levels will not be absolute limits. During special events and good weather weekends they could periodically be exceeded without significant long-term effects. They should not be considered as goals, either. Some of them may never be reached. Transportation constraints and weather conditions, in particular, may keep visitation consistently lower. Based on present visitation patterns, however, it is likely that these maximum visitation levels will occur on about 25 to 50 good weather weekend days per year. Visitation will be generally maintained within these maximum limits by controlling auto access wherever possible, informing visitors of opportunities in less heavily used areas, and other practical management strategies.

# INTERPRETATION AND OTHER PROGRAMS

During the 1960s and 70s, many Bay Area residents recognized something that needed changing. Their traditional relationship with the landscape was becoming obsolete--a zealous commitment to urban development was giving way to a contemporary need for protection of open space. The land and water surrounding the Golden Gate had served the city well: The harbor had fostered early immigration and trade; the rich soil and towering trees had supplied food and construction materials for a growing city; the coastal cliffs had provided a strategic location for military fortifications protecting nearby residents. But all the while, another attribute of this landscape had been surfacing and growing more recognizable as the city enlarged. San Francisco residents had always flocked to the coast to enjoy their leisure time. They were attracted to this shoreline environment for play and exploration and for their inspiration and education. Over the years, however, urban sprawl had been greatly reducing the availability of this recreational space, with a corresponding increase in people's appreciation of its value.

The establishment of Point Reyes National Seashore and Golden Gate National Recreation Area represented a change in land use to respond to people's changing needs. The parks' programs will reflect this modern perspective and the recent commitment to make the city more livable by preserving quality recreational environments for all its residents and for visitors from throughout the country.

Programs will serve a variety of functions. The first, aimed at people who still are unfamiliar with the parks' availability, will be to encourage discovery and to prepare first-time visitors by informing them about the weather, facilities, access, and hazards. Second, programs will promote a feeling of ownership and a sense of responsibility for the parks' condition and preservation. They will also seek to impart an understanding of the area's social and natural history and increase people's awareness of their interactions with their environment. Most importantly, however, programs will be intended for enjoyment. A great variety of programs, from Sunday afternoon concerts to bike races to community picnics, will help people have fun with the hope that relaxation and creative use of their leisure time will make them better able to face the frustrations and enjoy the advantages of urban living.

## Discovering the Parks

Informational programs are essential to visitors' enjoyment of GGNRA/Point Reyes. The parks' facilities and programs will continue to change, so repeat visitors as well as first timers will need to know what to expect at each area. The following basic programs are proposed.

General Information. Information centers, information stations, and park publications are proposed to help visitors arriving from nearby or out-of-town to easily understand what the parks offer. Major information centers are proposed for Aquatic Park, Cliff House, Fort Baker, and Bear Valley. Secondary information stations are proposed for Alcatraz, Fort Mason, Fort Cronkhite, and Muir Woods. National Park Service personnel at these locations will extend their informational abilities beyond the parks' boundaries--particularly to understanding transit connections and other public recreational opportunities in the Bay Area. Multilingual staff will be on duty at least at the Aquatic Park and Cliff House information centers. The information program will be coordinated with other public agencies, such as the Visitor and Convention Bureau, involved in the same activities.

Outreach Efforts. A special effort must be made to reach many urban dwellers. People with little money or no mobility often have great recreational needs but few opportunities to learn about and enjoy these parklands. A continual program will be designed to help these potential visitors. Special staff members will be assigned to community outreach, and they will spend more time in the neighborhood than in the park. By making special publications available, attending neighborhood meetings, and presenting out-of-park programs they will help people overcome obstacles to park use such as lack of transportation, timidity, and lack of recreational equipment. A continual effort will be made to supply community service groups with the information and assistance they need to make the park a vital part of their programming. The park staff will be knowledgeable about Bay Area recreational programs, public transit services, new program ideas, and funding sources, and will maintain an up-to-date resource library for use by all interested organizations.

## Understanding the Parks

These parklands contain a wealth of natural and cultural resources. They are rich in a variety of terrestrial and marine forms and weather patterns. They are strewn with landmarks, fortifications, monuments, and gun emplacements that bear silent witness to the Spaniards, Russians, Mexicans, Chinese, Japanese, and others who sailed through the Golden Gate, settled by the bay, and added

their own pages to Bay Area history. The historic ships, the Golden Gate Bridge traffic, the pastoral scene at Olema Valley, the military presence, the wilderness of Point Reyes, and the city's old recreational settings begin to illustrate the abundance of contemporary and historic lifestyles that are the essence of the Bay Area. Interpretation will provide an opportunity for visitors to understand the significance of these resources.

Interpretive facilities, which are described in the "Development" section of this plan, will accommodate the variety of needs and interest levels of visitors. Such facilities, however, will be kept to a minimum, and most interpretation will be accomplished using publications, films, park libraries, information centers, and structured activities.

## Environmental Awareness

Programs are not provided only for enjoyment, but as opportunities to learn as well. An urban conservation ethic will be stressed, using the parks as a laboratory for learning how to enrich and perpetuate urban living--on an individual and collective scale. Interpretive programs will help translate environmental problems occurring within the park and the community to visitors. This will create an awareness of these problems and encourage a self-commitment to help in their alleviation both at the park and through day-to-day activities in the community.

These programs will also encourage discovery of recreational skills that involve interaction with the natural environment and foster activities that participants can enjoy independently and inexpensively throughout their lives.

The National Park Service will initiate these programs but strive to give community organizations and individuals the capabilities to proceed with them independently. Examples of potential subjects for programs include transit, cultural and natural resource management, environmental education, and energy conservation. Camping programs, visits to the proposed children's farm, community gardening, water safety classes, living history programs, alternative energy demonstrations, bicycle adventures, and sailing are typical of programs that will foster environmental awareness.

## A Sense of Ownership and Responsibility

Interpretation and other visitor programs will strive to build a feeling of cooperation between the parks and their neighbors. Park visitors who recognize their public ownership will feel more welcome and responsible for the parks' well-being. Park managers will be

able to more effectively communicate with visitors and seek their assistance in program development, resource management, and safety. The following program concepts will help foster this relationship.

Public Involvement. Since inception, GGNRA and Point Reyes have been planned and managed with the public's involvement. The public's advice has helped resolve various controversial issues and improved the quality of decisions. Public workshops held during the preparation of the general management plan have also been one of the parks' strongest interpretive programs--giving the public an idea of the resource variety and of difficult management choices. Public involvement will continue to be an important program, enabling visitors to influence management decisions and assist in their implementation.

Cooperative Activities. Local groups such as environmental education associations, community service agencies, and cultural institutions have special expertise and programs to offer. The National Park Service will support and utilize these local talents for environmental education, cultural programs, and special events.

Many ways of "sharing the load" in program development, planning, and facilities are possible. One way is by the Park Service providing the space--an open lawn for a special event or a building for a continuing indoor program--and cooperating groups helping with program direction and staffing. Successful examples of this have been the Fort Mason Foundation, the Point Reyes Seminars, and the Frontier Arts Institute, all continuing programs, and the Western Regional Folk Festival, a special event.

Special events are organized activities that occur on an irregular basis, like a string quartet performance in Sutro Heights Park or a regional craft fair at Fort Mason. Audiences range in size from a few dozen people to tens of thousands, and programs can last from a few hours to a few days. The large events are best accommodated at Fort Mason, Aquatic Park, the Fort Baker parade ground, and the Fort Barry rifle range. However, other areas may be used, considering the event's compatibility with the environment and feelings of other park visitors. Specific criteria will be developed to help determine what purposes, sizes, visitor costs, frequency, timing, transit needs, and disruptions to existing users are appropriate for special events.

Work Programs. Perhaps one of the strongest ways of encouraging public stewardship of the park is to have people participate in its maintenance, development, and staffing. There are three existing programs that rely heavily on local communities for their operation: Volunteers-In-Parks, Youth Conservation Corps, and the Young Adult Conservation Corps. Programs of this nature will be

encouraged, giving nearby residents a chance to get involved with the parks' growth. A Senior Conservation Corps is proposed, to utilize the talents of the elderly. A work program for the disabled is also proposed. The Bay Area has a large population of disabled persons due to the progressive measures taken by many of its cities and institutions to ensure that facilities are accessible to everyone. The program will provide opportunities for disabled persons to develop interpretive programs for this audience, help the park recognize and solve access problems, and provide informational services for visitors.

Cultural Heritage Programs. The San Francisco Bay Area is well-known for the strength and diversity of its minority populations, and no other location in the Bay Area is so clearly related to its cultural evolution as the lands near the Golden Gate. The National Park Service will thoroughly investigate the cultural history of these parklands and promote broad-based community interest in the parks by relating their historical relationships with urban dwellers of all backgrounds. An important aspect of these cultural heritage programs will be to welcome all people to the parks and provide a stimulus for cross-cultural communication.

## Program Implementation

From discovery to responsibility--that is the goal. Proposed programs should embark the National Park Service on a course of serving a hierarchy of urban needs.

The implications of these programs are many. Managerially, they will depend on a number of changes. New people will be needed--employees with more specialized skills capable of serving a diverse urban population, local people with language skills, knowledge of urban recreational problems, and dedication to solving them. The programs will demand better training for Park Service rangers in social service skills as well as in natural history and protection.

A broader and more detailed definition of interpretation and other visitor programs will be provided in an interpretive plan which will deal exclusively with this subject. This plan will give the needed direction for program and facility development, publications, and items and artifacts that should be included in the park curatorial collection and library. Point Reyes now has an approved Interpretive Prospectus stating the interpretive needs for that park.

# D E V E L O P M E N T

## GENERAL

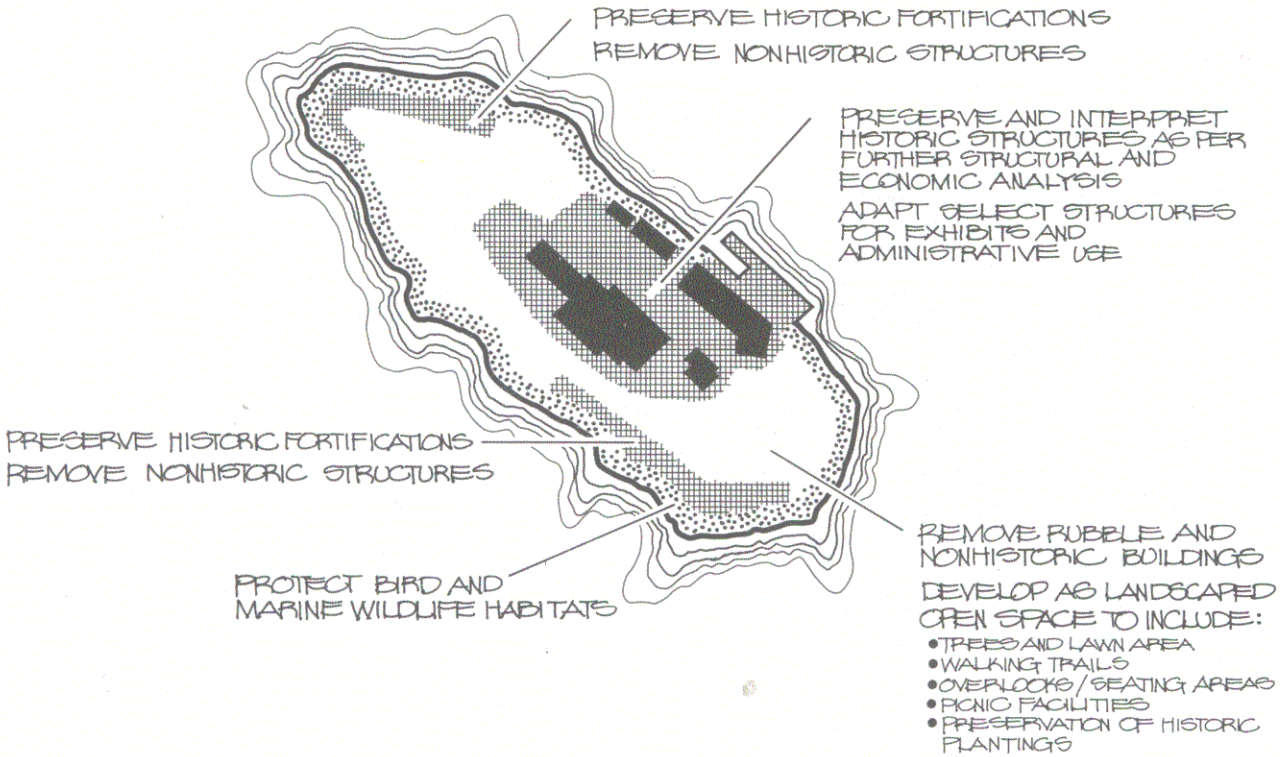
Most areas of GGNRA/Point Reyes are easily accessible by road or trail, and nearly every location currently offers something exciting to see or do. But due to changing functions, deterioration of land and buildings, a desire to serve new users, and the simple existence of opportunities to make some good things better, there is a need for changes in these parks.

GGNRA/Point Reyes displays a fairly typical national park structure, being a large expanse of natural landscape with scattered concentrations of development. The natural landscape, representing most of the park, does not need much more than careful preservation. Proposed improvements there can be termed as modest enhancement measures intended to add depth to a park experience that is already outstanding. They include such facilities as small campgrounds, improved trails, picnic areas, and hostels.

Unlike the typical national park where developed areas are usually clusters of functional support facilities (food service, lodging, etc.), each of these parks' developed areas is a special setting comprised of a unique mix of scenic, cultural, and recreational values. Any one of them has the potential to provide enough experiences to easily occupy an entire day's visit.

All but three of the park's eleven "major" developed areas are located in or near the city--clustered at the edges of the Golden Gate. Primarily because of public preferences, and the need to use and preserve historic resources, these same spots are proposed to remain as developed areas and will continue to represent the focus of park use. Most of them need substantial adaptive measures to fulfill their total potential for public use.

Six of these areas were formerly occupied by the military and derive much of their present appeal from that association. But a large part of these potentially attractive places is marred by deteriorating and unsafe conditions, and their transition to usable parkland is far from complete. Extensive restoration and adaptation measures at Alcatraz, Fort Mason, Crissy Field, Fort Baker, and Rodeo Valley will restore a sense of dignity to these historic settings as well as make them as effective as possible in serving leisure activites. Even though the basic identity of the Aquatic Park and Cliff House areas will not be altered, similar actions will produce a metamorphosis in their appearance. Fort Point, Muir Woods, Stinson Beach, and Bear Valley will all receive improvements, but none will compare with the kind of transformation that is envisioned for their counterparts mentioned above.



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UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

# ALCATRAZ

## DEVELOPMENT CONCEPT

GOLDEN GATE NATIONAL RECREATION AREA
POINT REYES NATIONAL SEASHORE

## THE DEVELOPED AREAS

### Alcatraz

From a strict resource management viewpoint, historic preservation will be the primary concern at this location. Perhaps the majority of future visitors to the island will continue to be attracted by the intrigue of the prison. But this plan also emphasizes the restoration of the island's parklike qualities and a recognition of its key position in the bay as a spectacular viewpoint.

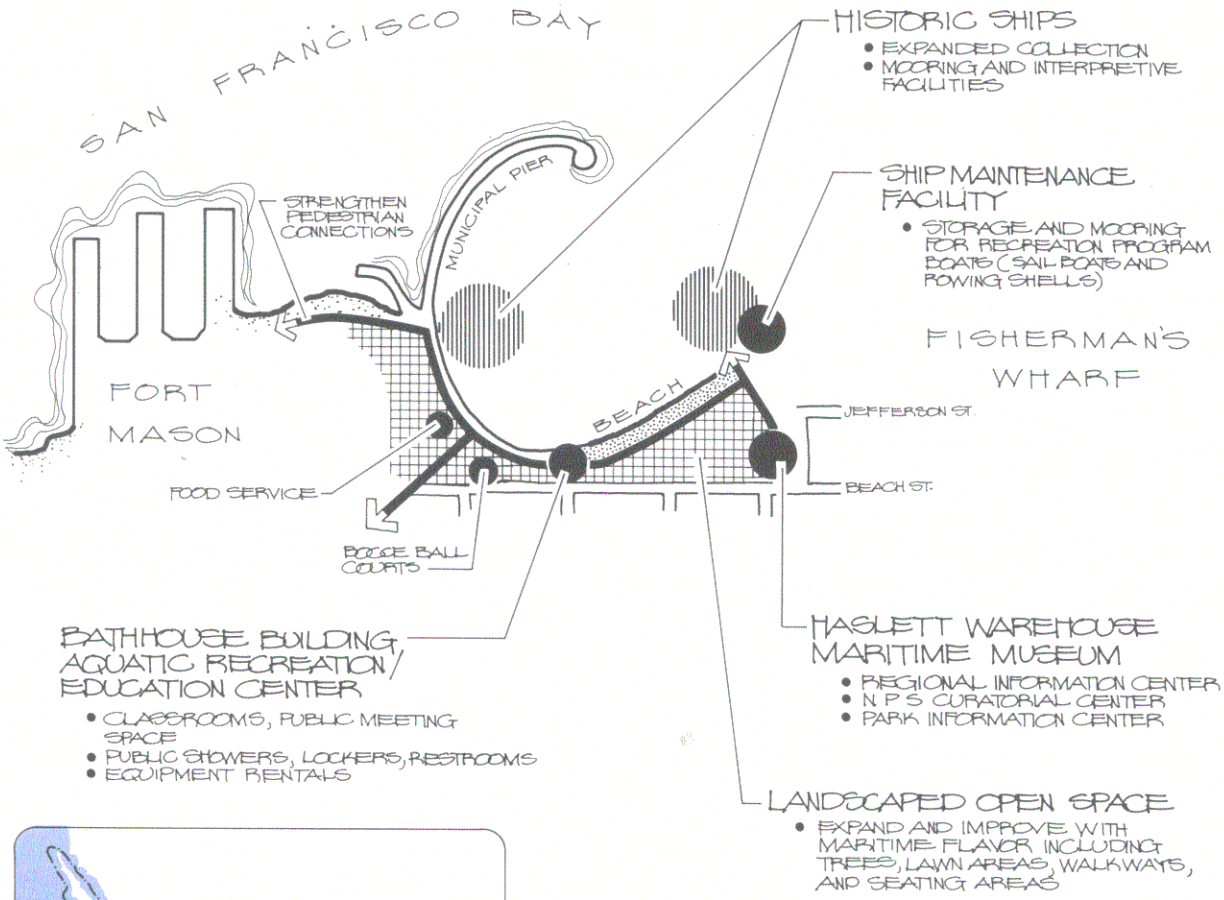
The piles of building rubble and debris and crumbling nonhistoric structures will be removed. The resulting open space will be refilled with topsoil, trees, shrubs, grass, walkways, overlooks, and picnic facilities. Within this pleasant landscaped setting, the stark prison and military structures will stand in honest contrast. To most people this will seem to be a brand new look for the island. But since Civil War times, carefully tended plantings have been an important element there. While literal restoration of historic gardens is not feasible, in a general sense proposed landscape development will return the island to a more accurate historic setting.

Buildings to be stabilized and made safe will be selected on the basis of historic value and economic and structural feasibility. The main cell house, all military fortifications, the barracks, the wharf and the lighthouse have all been identified as historically significant structures that should be preserved if feasible. Suitable space in these structures will be adapted for exhibits relating to the prison era, military era, natural history, and Indian occupation of the island.

The rocky cliffs and shoreline of the island will remain untouched as important habitat for birds and marine organisms.

### Aquatic Park

This aptly named feature of San Francisco's colorful waterfront will continue to be a focal point for interpreting man's historical and contemporary dependence on the water. Elements relating to maritime history dominate the scene and will be made even more prominent with a new maritime museum and an expanded collection of historic ships. Historical interpretation will focus on the subject of San Francisco maritime history, with reference to other regional events, such as the gold rush, only as they help to present the main theme. Although not as prominent visually, water recreation will also remain as a primary activity in this area.



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UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

# AQUATIC PARK

## DEVELOPMENT CONCEPT

GOLDEN GATE NATIONAL RECREATION AREA
POINT REYES NATIONAL SEASHORE

The old brick Haslett Warehouse will be adapted for a museum and information center with its exterior architectural and historical integrity retained. Artifacts from the existing museum will be displayed there along with appropriate additional pieces exemplifying San Francisco maritime history--perhaps even full-sized boats or ships' hulls not suited for exterior display. Most park curatorial museum storage and library space will be incorporated into this new structure. Although extensive interior modifications will be required, an effort will be made to retain a significant portion of the original post and beam construction for interpretive purposes.

A major park information center within the new museum building will describe what GGNRA and Point Reyes have to offer and provide related transportation advice. Because Aquatic Park is already part of one of this country's busiest tourist scenes, a portion of the warehouse will also be used as a regional recreational information center, informing visitors of state, federal, local, and private recreational resources--a place to find out about winery tours, San Francisco historic houses, or Forest Service campgrounds.

If the availability of vessels and funds permit, the current collection of 5 historic ships will be expanded (tentatively up to 12 including the Balclutha, which is owned by the National Park Service but is now berthed outside the park). Additional ships must be small to medium sized and compatible with the 19th and early 20th century steam and sail maritime flavor now evident in the area. The lagoon defined by the municipal and Hyde Street piers will be the setting for the display of these vessels. Until more detailed studies (including a continuing U.S. Army Corps of Engineers study of a proposed Fisherman's Wharf breakwater) address the practical problems of wind, surge, and wave protection, it will be assumed that most of the ships will be docked at pier structures on both the east and west sides of the lagoon. For visual and practical purposes, several could be moored in the center with special care to avoid conflict with swimmers and rowers.

If further study confirms the desirability of continued ship mooring in the Hyde Street pier area, the National Park Service will propose to abandon that substandard structure and construct a pier in a new configuration in the same general area. As many ship maintenance functions as possible will be incorporated into the design of this structure, with maximum exposure to visitor viewing. The fate of the existing structure, which is owned by the Port of San Francisco, must be determined through discussions with that agency.

To further strengthen the relationship between the new maritime museum and the Hyde Street pier, a common entry plaza will be developed at the intersection of Hyde and Jefferson streets. The swimming and rowing clubs along Jefferson Street are major visual and physical barriers to the bay, and they will be relocated if they

are placed under the jurisdiction of the National Park Service. New facilities for swimmers and rowers will be provided in the old museum building, and the historic club buildings and associated boats will either be incorporated into the new Hyde Street pier structure or moved to the west side of the lagoon at the foot of Van Ness Avenue. The portion of Hyde Street within the park boundary (between Jefferson and Beach) will be obliterated.

To visually emphasize pedestrian access between all of the ships, the existing waterfront promenade will be made more prominent with new seating areas, street furniture, and paving materials that contribute to the maritime setting.

The existing maritime museum building (originally built and known as the Aquatic Park bathhouse) will be adapted as the Aquatic Recreation and Education Center, carefully preserving valuable interior as well as exterior architectural details. The renovated lower level will have supervised showers and lockers and a concession for rental of equipment such as small boats, fishing gear, bikes, and bocce balls. The remainder of the building will serve as multipurpose space suitable for use as classrooms, laboratories, and meeting rooms for various-sized groups. National Park Service and community programs accommodated there will carry out the broad Aquatic Park theme; specific program subjects might include lifesaving, sailing, canoeing, maritime history, and wooden ship restoration. The senior center will gradually be phased out of this building as a new center in Fort Mason develops.

All of Van Ness Avenue inside the park boundary will be removed and replaced with landscaping. In recognition of parking deficits in the northern waterfront, the National Park Service in coordination with appropriate departments and officials of the city and county of San Francisco will explore the possibility of constructing a multilevel parking structure at the terminus of Van Ness.

The Sea Scout clubhouse and maintenance docks will also be removed. The Sea Scouts' boats will be moved to the east side of the lagoon, and their programs and meetings will be held in the aquatic center. (The implementation of these proposals will require full breakwater protection. All detailed planning for them will involve consultation with the Sea Scout organization.) The food concession at the foot of Van Ness will receive a good sprucing-up. The municipal pier will also get a substantial cleanup and minor improvements such as fish-cleaning stations and restrooms. (It may also require major structural renovation.) Night lighting throughout the area will be upgraded.

Few facilities will remain unchanged in Aquatic Park--only the bocce ball courts and most of Victorian Park. A park and transportation information kiosk will be developed near the cable car turnaround to

serve those in the crowd who might not make it into the Haslett Warehouse.

When detailed design work is done for this unit, it will explore ways of making the bleachers adjacent to the aquatic center more attractive and useful as a casual seating and sunning area while retaining their usefulness as seating space for special events. To enhance this function, the original plans for a floating stage should be reassessed and implemented if feasible.

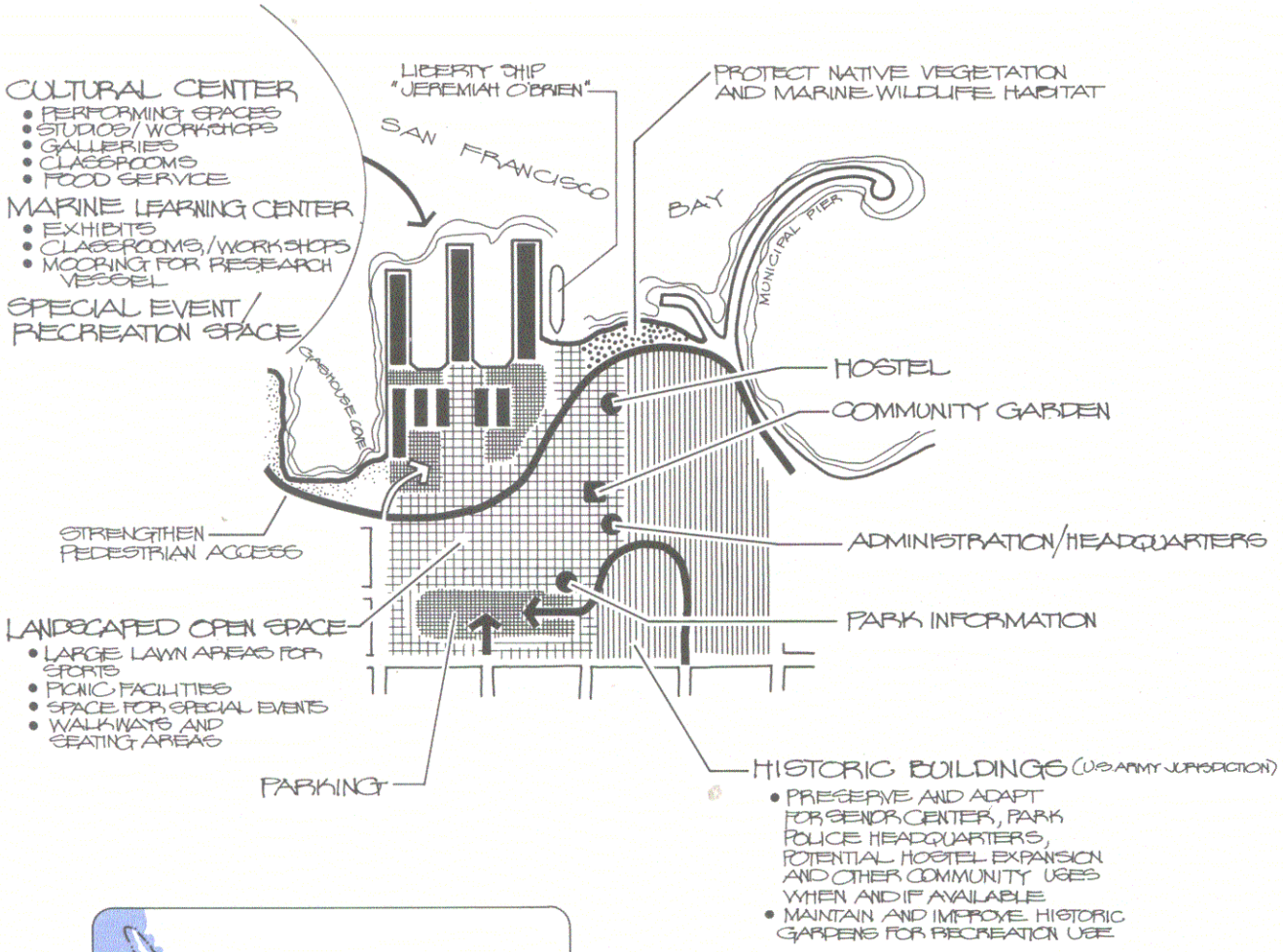
## Fort Mason

Acres of vacant or asphalt-paved land adjoining the red-roofed buildings of Fort Mason will be dramatically exchanged for a generous dose of traditional park landscaping, including trees, shrubs, great expanses of lawn, and meandering walkways. The buildings themselves, varying from massive pier structures to match-box 19th century houses will be adapted for a variety of cultural, recreational, and educational programs.

Because of the obvious appeal of the bayshore, the imposing stature of the buildings, and the attractive programs they will contain, the pier and warehouse area will remain the center of attention at Fort Mason. Here the cultural color and diversity of the people of the San Francisco Bay Area will be revealed in theaters, studios, workshops, galleries, and classrooms imaginatively created within one pier building and two or more warehouses. To the Bay Area resident this center will represent one more important source of entertainment and enrichment. To the out-of-towner spilling in from Fisherman's Wharf it could become a convenient place to learn more about one of the Bay Area's prime attractions--its people.

Another pier structure and warehouse will be adapted to accommodate programs concerning San Francisco Bay marine ecology. Specific programs and exhibits offered in these facilities should appeal to drop-in visitors as well as to local school groups and could cover such subjects as marine wildlife, tidal dynamics, bay pollution, and shipping. Although some static museum presentations may be included, emphasis should be placed on visitor participation in learning experiences. Space for docking appropriate research vessels relating to the above programs will be provided adjacent to the pier structure.

The remaining pier structure will be developed as a multipurpose facility to be used for large special events or by community organizations for indoor recreational activities. Space should be reservable to encourage groups to utilize it when participating in other Fort Mason programs.



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# FORT MASON

## DEVELOPMENT CONCEPT

GOLDEN GATE NATIONAL RECREATION AREA
POINT REYES NATIONAL SEASHORE

Fort Mason's developed waterfront space--now a stark, lifeless industrial scene--will retain its rather grand scale but will become a more pleasant place through the judicious introduction of trees and other landscaping. Specific design of these elements will consider the ability of the space to accommodate outdoor events and performances. Continued access for fishermen and people simply strolling the waterfront will be assured. As a convenience to the many people who will enjoy waterfront programs and activities at Fort Mason food service facilities will be provided.

The waterfront's former wartime role has begun to be spotlighted in a visually impressive manner. The Jeremiah O'Brien, a remarkably well-preserved World War II Liberty ship of the type that formerly docked at Fort Mason (the last of its kind) has been rescued from the scrapper's torch and is now permanently moored at Pier 3. Volunteer efforts to totally renovate the vessel and equip it with interpretive exhibits are well underway and should result in a highly appealing historic feature of the waterfront.

Limited parking for Fort Mason visitors will be provided in the pier area and at the southwest corner of the fort. In conjunction with optimum transit access, these facilities should adequately serve average parking demand. Parking for special events will continue to be satisfied in cooperation with the army through shuttle service and remote parking areas in the Presidio.

The pleasant historic plantings within the military residential areas along the eastern side of Fort Mason provide a starting point for the greening of the rest of the site. Many old building foundations and unnecessary roadways have been removed from the west side to make way for landscaping, but known prehistoric cultural materials beneath have been preserved. Elements of the new "upper fort" will include large lawn areas suited for sports and other activities, paved areas with benches and wind shelters for socializing, picnic facilities for both groups and individuals, a garden designed for community participation, a small children's play area, a through-path for walkers, joggers, and cyclists, and a modest park information center and park police headquarters.

The old post hospital building (later the port of embarkation headquarters) will continue to serve as National Park Service administrative offices. Across the historic parade ground (to be restored) the old Civil War barracks has become a hostel. In the future, this type of overnight facility might also be offered in the nearby historic residences overlooking Aquatic Park. Because these and other structures on the east side are still under the jurisdiction of the army, park uses for them will not be contemplated beyond this brief discussion until it has been determined that the army has no further use for them. When any of these structures do become available, they will be specifically analyzed for potential historical interpretation and adaptation into

various community program facilities. The senior activity center now located in Aquatic Park will be one of the uses considered for this location. When buildings are available, relocation will take place over a long-term transition period.

On one hand, people have continually requested that the open space within Fort Mason be maximized; on the other hand, Fort Mason contains numerous historic buildings which need preservation. While the structures in the southeast corner of Fort Mason have been nominated to the National Register of Historic Places, they are visually the least attractive and probably are the most difficult to adapt for public uses. If park uses cannot be found for these buildings which justify the cost of their maintenance and the loss of the open space they occupy, selected structures may be removed as permitted by NPS management policies.

The National Park Service central maintenance facility, serving warehousing as well as fabrication and repair functions, is presently located in pier 1 at Fort Mason. The Park Service has long recognized that this is an inappropriate use for a location with such a high potential for public use; however, there are simply no suitable alternative sites under National Park Service jurisdiction offering either the physical space or isolation to accommodate this potentially obtrusive operation. In spite of decentralization efforts, the facility will continue to be comparatively large. The ideal solution to this dilemma would be for the National Park Service to negotiate with the army for a site or facility with minimal visibility and minimal potential for public use within the Presidio of San Francisco. A second, but less desirable, location might be found in Fort Baker. (See "Management Facilities" section.)

## Crissy Field

The flat barren expanses of Crissy Field will be transformed through a subtle blend of natural and manicured landscaping into a setting that will greatly enhance its recreational potential and remarkable views of the Golden Gate.

The primary components of this semicivilized shoreline will be a sandy beach and broad expanses of lawn. These grassy areas will be designed in various configurations to accommodate active recreation, programs, special events, picnicking, and even sunbathing when the weather allows. Tables and charcoal grills for family picnicking will be located on and adjacent to these green spaces. Walkways, boardwalks, and seating areas will create pleasant spaces for strolling, viewing the bay, and socializing.

Most of the area will remain level, but some dune-like earth berms planted with natural-appearing ground covers will be created to increase the natural appearance and to help provide wind protection

and visual screening. Trees will be carefully introduced into the scene to also act as windbreaks without blocking desirable views. In recognition of the historical value of the old airfield, new landscaping will avoid significantly changing the present openness of the area. In response to known needs for safe water play opportunities, detailed design studies will also consider the creation of a lagoon, possibly connected with the bay.

Because there are no historic structures suitable for adaptation for indoor space within the Crissy Field 45-acre permit area, most existing structures will be removed. (Many nearby historical buildings relating to Crissy Field remain under the jurisdiction of the army and will be appropriately preserved.) The nearby historic Fort Point lifesaving station could possibly accommodate a small information station and public restrooms. Discussions will be initiated with the Coast Guard to determine the possibility of a space-sharing arrangement. If this is not feasible, those services and also minor food service and recreation equipment rental will be contained in a new structure.

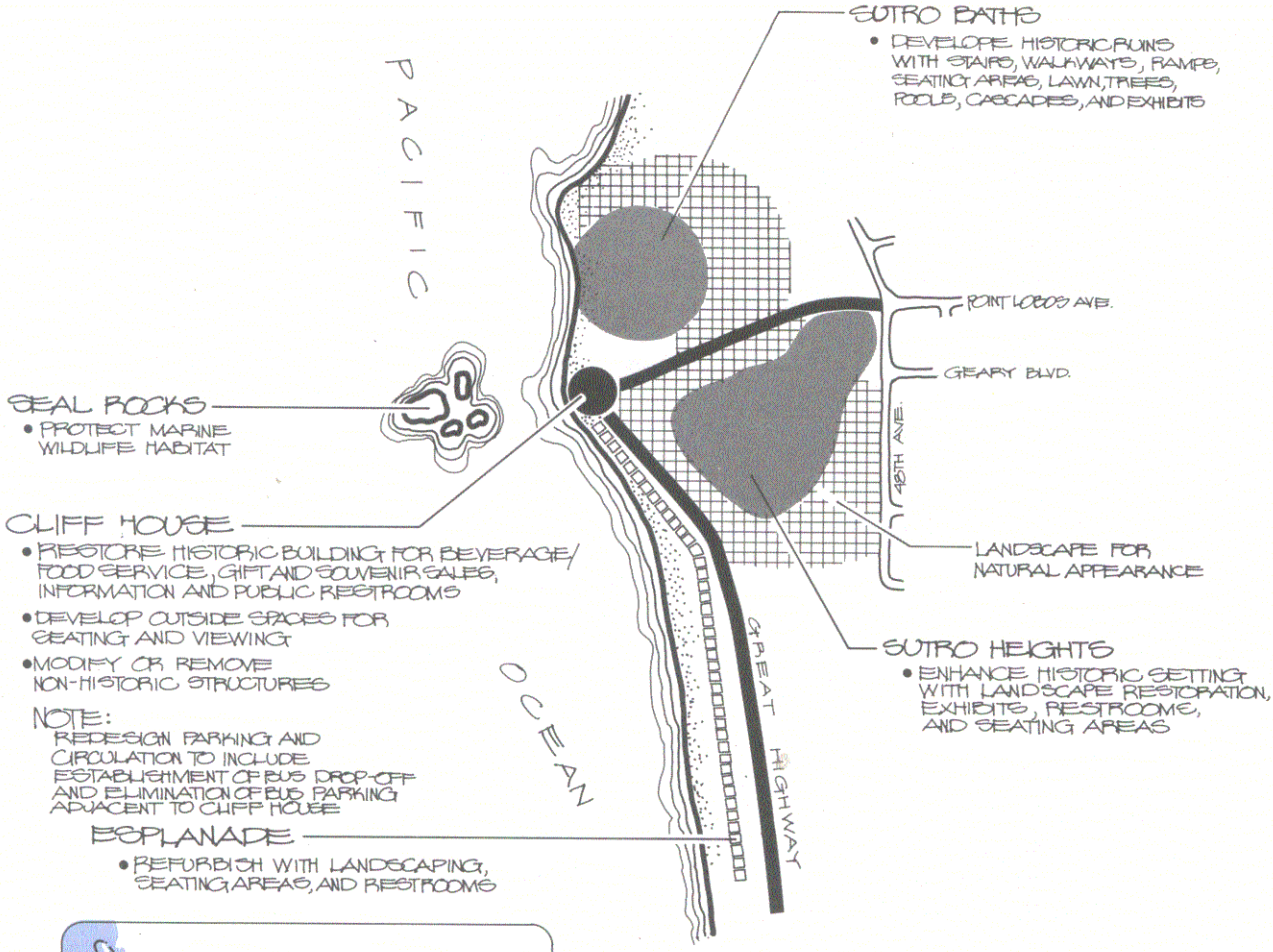
Beach erosion is a continuing problem at Crissy Field. In the past the army has controlled it by placing concrete and asphalt rubble along the shore. However, this solution will be aesthetically unacceptable as the area becomes more parklike, and future design work for Crissy Field will include engineering studies to determine the best methods of stabilizing a natural-appearing beach in this location.

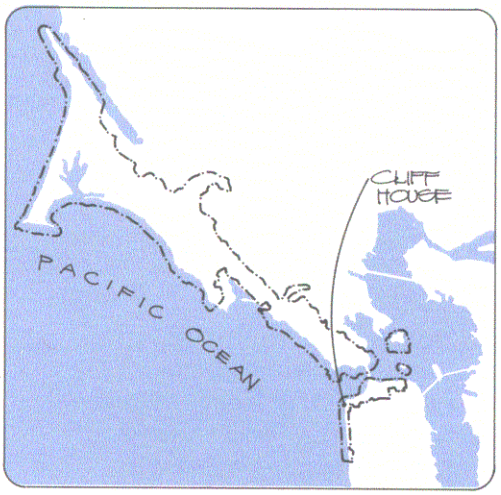
Army plans for further development of commissary and administrative facilities adjacent to this area should be carefully coordinated with recreation use patterns and plans, with a particular concern for access points and parking.

## Cliff House

Despite the deteriorated condition of both the land and facilities in this area, everything that has made it one of the world's most popular coastal overlooks for more than 100 years is still here--the sea lions, the wave-swept expanses of Ocean Beach, and views across the Golden Gate to the wild and rugged Marin coastline. The intent here will be to rejuvenate the unsightly development and green up the landscape--and to recapture the spirit of another era when San Franciscans flocked here to frolic in the water, promenade along the beach, or enjoy elegant dining made special by the sights and sounds of the Pacific.

If necessary further study determines that the present Cliff House, built in 1909, still possesses sufficient structural soundness and historical integrity (the building has been altered significantly), the exterior facade will be restored to its former appearance. The

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UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

# CLIFF HOUSE

## DEVELOPMENT CONCEPT

GOLDEN GATE NATIONAL RECREATION AREA
POINT REYES NATIONAL SEASHORE

building will continue to be used as a restaurant, lounge, and gift shop. It will also house exhibits relating to the historic role of the Cliff House, public restrooms, and a National Park Service visitor information and publication sales facility. In conjunction with the exterior restoration, other structures in the vicinity that do not appropriately fit into the historic setting will be removed or modified.

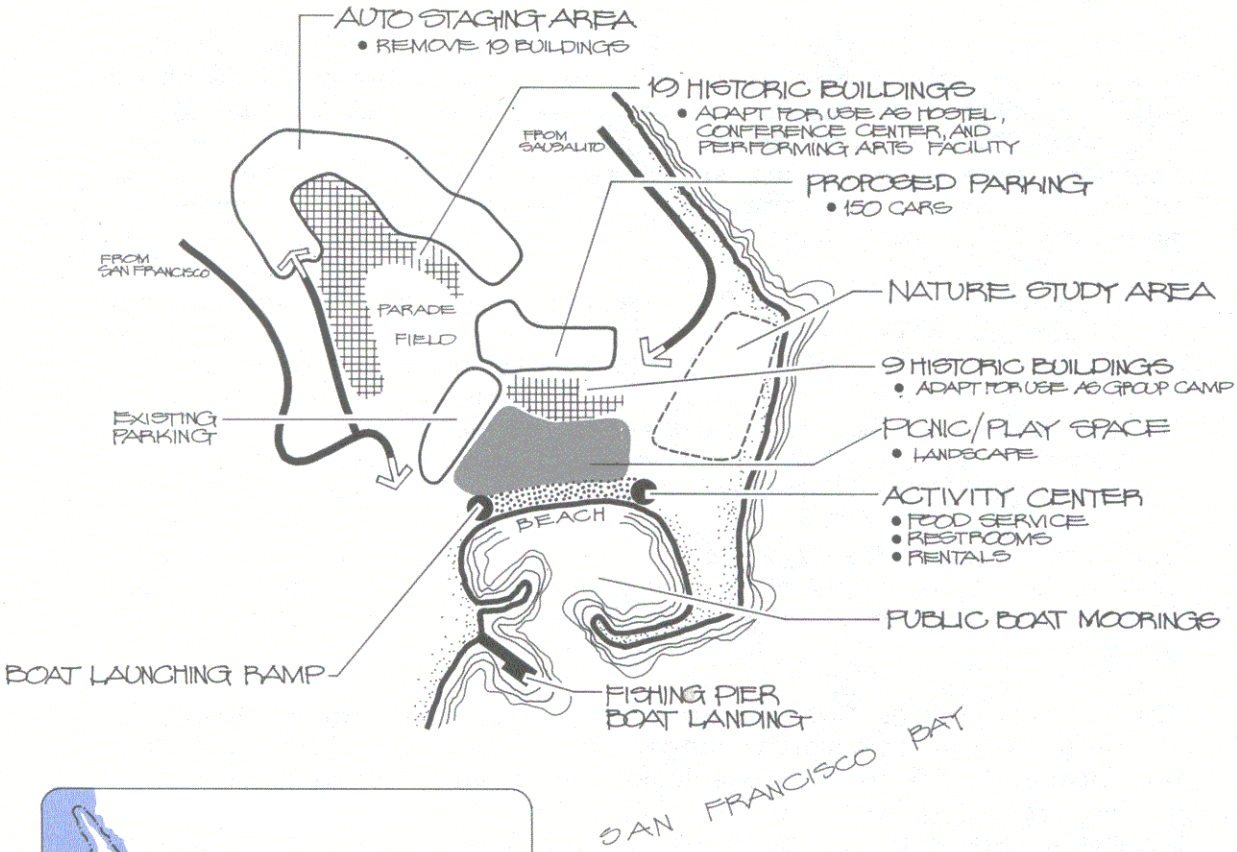
If restoration of the old Cliff House does not prove feasible, design and construction of a contemporary version will be considered as an alternative. A new building should assume an entirely new aspect, as has each of the succession of structures built here since the 1850s. But it should also aspire to generate the same kind of excitement that the 1896 French chateau version prompted, without emulating the visual dominance and opulence of that structure.

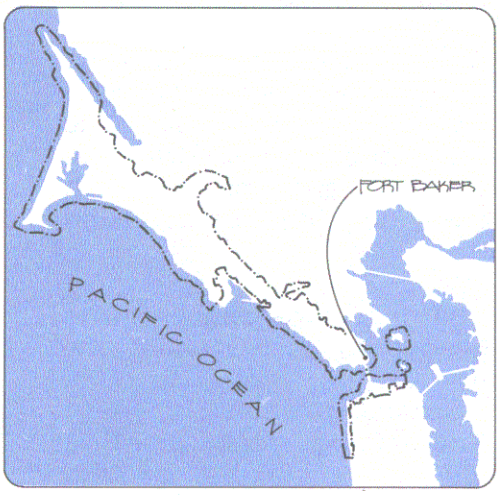
Whatever final choice is made for the Cliff House itself, the site's primary value as an overlook will be increased by adding attractive exterior paving and seating areas for those who come only to enjoy the view.

The former site of Sutro Baths will be improved as a setting for enjoying the seaside a little longer, closer, and more privately than the nearby Cliff House overlook will allow. This picturesque, barren, eroding cove filled with crumbling concrete ruins will become a safe and attractive space, easily accessible from the Cliff House. A system of stairs, walkways, ramps, and seating areas will be placed around selected elements of the bath ruins. The special visual appeal and symbolism of the ruins will be complemented by the addition of decorative pools and cascades. A few outdoor exhibits with photos and text will help visitors envision the baths as they once existed.

Landscape improvements will increase the natural appearance of the site. Some alteration of terrain will be needed to accommodate the development described above, to provide for visitor safety, to bury undesirable components of the ruins, to protect prehistoric sites, and to enhance the natural character of the setting. New planting will include Monterey pine and cypress and native shrubs, ground covers, and herbaceous plants. Consideration will be given to the possibility of restoring the small sandy beach that once fringed the cove.

With the hope of reviving its former dignity without disturbing present users, the seawall/esplanade stretching from the Cliff House south to Golden Gate Park will receive a substantial facelift, including new plantings, seating areas, restrooms, and street furniture (benches, lighting fixtures, waste containers, etc.). The National Park Service will continue to work with the city of San Francisco toward the goals of improving pathways for pedestrians

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UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

# FORT BAKER

## DEVELOPMENT CONCEPT

GOLDEN GATE NATIONAL RECREATION AREA
POINT REYES NATIONAL SEASHORE

and cyclists and strengthening the visual connection between the beach and Golden Gate Park.

Sutro Heights Park will retain its quiet neighborhood orientation. The plantings and statuary of Adolph Sutro's garden will be partially restored, and modest exhibits will explain who he was. Improved overlooks with comfortable benches will help visitors to better enjoy the views. A restroom will be provided.

Future design efforts will focus on rectifying the unsafe, congested, and unsightly conditions created by existing parking and circulation arrangements. Possible improvements might include remote bus parking with a drop-off area in front of the Cliff House, and a safe on-grade pedestrian crossing between the Cliff House and Sutro Heights Park.

Fort Baker

This secluded bowl-shaped valley and quiet-water cove nestled at the foot of the Golden Gate Bridge could become one of the most attractive recreation spots in the Bay Area. Although predominant U.S. Army jurisdiction over this area is expected to continue into the foreseeable future, many improvements in public accessibility and usability could happen relatively soon.

The 6-acre waterfront area now occupied by deteriorated nonhistoric frame buildings and protected by a wood and rubble seawall will be cleared and graded to make way for a sandy beach backed by grass and trees. (Prior to seawall removal a study will be conducted to determine potential beach erosion problems in this location, although it appears that the original shoreline configuration will be restored, and the cove will continue to be protected by two breakwaters.) Backed by a village of historic buildings grouped around a 10-acre parade field, and fronted by 10 acres of quiet bay waters, this spot should become an instant success with picnickers, swimmers, fishermen, sunbathers, and boaters.

If and when it is no longer utilized by the military, the Presidio Yacht Club building will be converted to a day center serving this exciting new activity area. The structure would be modified to contain a food service facility with indoor and outdoor eating space, areas for socializing and playing games, comfort stations, and a place for rental of equipment such as fishing tackle, bicycles, and volleyballs and nets. The yacht club finger piers would be made available to all boaters for one-night berthing. On the opposite side of the cove, the existing boat-launching ramp will be repaired and resurfaced, and the nearby historic pier will be improved with new railings, benches, comfort stations, and fish-cleaning stations. Ferry boat passengers bound for Marin Headlands destinations could

disembark at this pier. An adjacent building will be adapted for use as an information station.

In addition to their great visual appeal, Fort Baker's historic turn-of-the-century buildings also offer abundant program space. In the event of the army's release of these structures a group of them will be converted to a conference/seminar center with classroom, workshop, conference, and short-term residential facilities provided for the study, discussion, and teaching of conservation, ecology, and other park-related subjects. Other structures in the same area could be converted for use as hostel facilities for the general public as well as conferees. The former post industrial center, including a blacksmith shop, bakery, stable, and warehouses, is conveniently located adjacent to the proposed waterfront park. Its interior spaces could be refurbished to create classrooms, dormitories, and work/play areas for the use of school, church, and other groups who may reserve space for their own environmental education or recreation programs. Space in and around nearby Battery Cavallo, an earthwork fortification located on what appears to be a piece of untouched natural bay shoreline, could be used as an environmental study area and overnight campsite by groups occupying the education/recreation center. Extra care will be exercised in the siting of trails and tent sites to protect the earthworks from erosion.

As part of, or at least related to, the Fort Barry artists-in-residence program, several suitable historic buildings at Fort Baker could be adapted to accommodate the performing arts. The old post gymnasium is a likely candidate for this kind of use. If and when the army ceases to use the 19 nonhistoric residential units located behind the parade field, Fort Baker could become a staging area for use by visitors bound for Rodeo Valley. Removal of the structures would provide a parking area with a design capacity of 700 cars for use when Rodeo Valley is closed to private vehicles and is accessible only by transit. Preservation of existing trees and additional plantings will mitigate the visual impact of this parking facility. Some redesign of intersections and circulation routes will be required for adequate access.

## Rodeo Valley

The Marin Headlands area is a frontier--an impressive rugged mass of land thrusting the great outdoors almost to the heart of the city. Rodeo Valley, the historic and geographic center of the headlands, is totally isolated from the urban scene, yet it is only a few minutes away. Development here is intended to facilitate the enjoyment of this "accessible wilderness" by people who are unaccustomed to this kind of setting as well as by experienced backcountry users. A scattering of historic army buildings and former building sites will be the primary objects of this effort.

These are confined in two distinct clusters--Fort Barry and Fort Cronkhite.

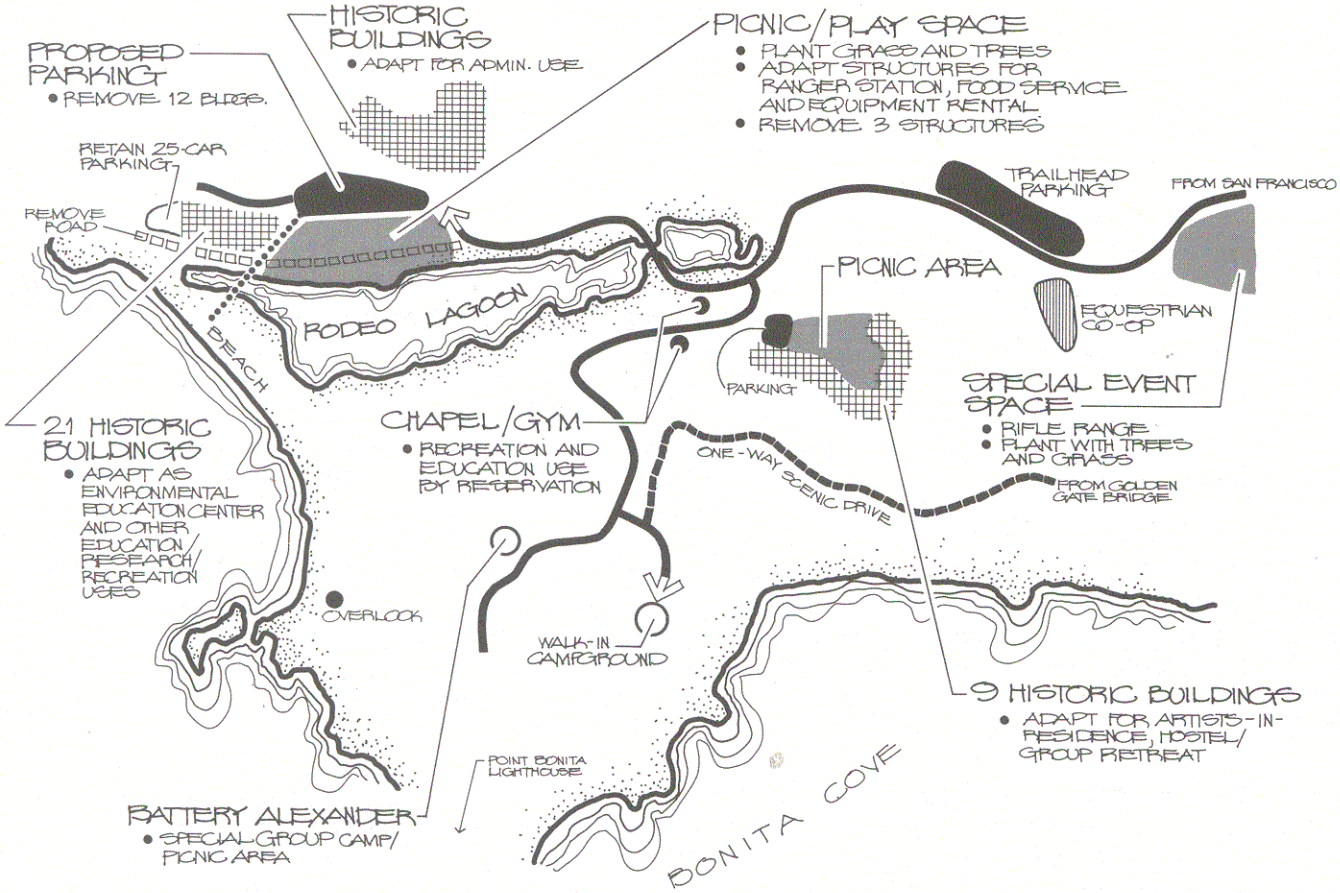
Fort Cronkhite occupies the north side of Rodeo Lagoon and provides access to the popular Coast Trail and Rodeo Beach. Of the more than 40 structures clustered in this area, a distinct group of 25 World War II vintage barracks has been determined to be historically significant, and these will eventually be adapted to accommodate environmental education and community recreation programs. Selected structures may possibly be removed to help improve the appearance and usability of exterior spaces, but care will be taken to ensure the preservation of the historical visual integrity of the complex.

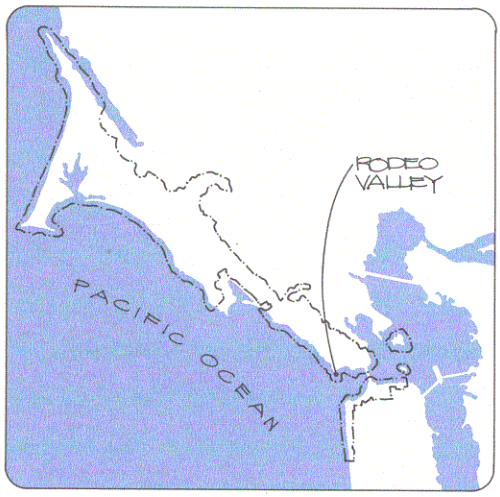
The remaining structures have no historic or architectural value, and most of them will eventually be removed. Because of their good condition some of these buildings have recently been adapted as classroom, dormitory, and conference space for environmental education programs, and they will not be removed until these improvements have been amortized sufficiently.

Within the open space resulting from building removal the area furthest away from the lagoon will be developed as a parking area, screened from view by planting and topography. This will replace the existing lot directly adjacent to the beach and allow the removal of nearly a half mile of roadway bordering the lagoon. The 10 acres directly fronting on the lagoon will be enhanced by the addition of natural-appearing plant materials. More Monterey pines, cypress, grass, and picnic tables will transform this old development site into a park setting that will appeal to a wide variety of people. Of the existing structures located within the confines of this proposed picnic/play space, one or more will be retained to provide for a ranger station, restrooms, minor food service, and the rental of bicycles.

The former Nike missile support facilities located on the hillside to the north of the lagoon are considered historically significant structures, and they will continue to be adaptively used for park maintenance and other administrative activities.

Like Fort Baker, Fort Barry lies within a bowl-shaped valley and contains an old parade field rimmed with red-roofed buildings. These structures will be adapted to accommodate a hostel and an artists-in-residence program. The hostel will provide individual and family accommodations and facilities suited for group retreat-type gatherings. The artists-in-residence program will take advantage of the park setting as an inspiration to the creation of the visual arts and the active sharing of that process with park visitors. Actual short-term residencies will be limited. All artists' studios, workshops, and galleries will be open to the public at specified times.

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UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

# RODEO VALLEY

## DEVELOPMENT CONCEPT

GOLDEN GATE NATIONAL RECREATION AREA
POINT REYES NATIONAL SEASHORE

The parade field and adjacent open space will be used primarily as a picnic area with tables, restrooms, charcoal grills, and a small parking area at the edge.

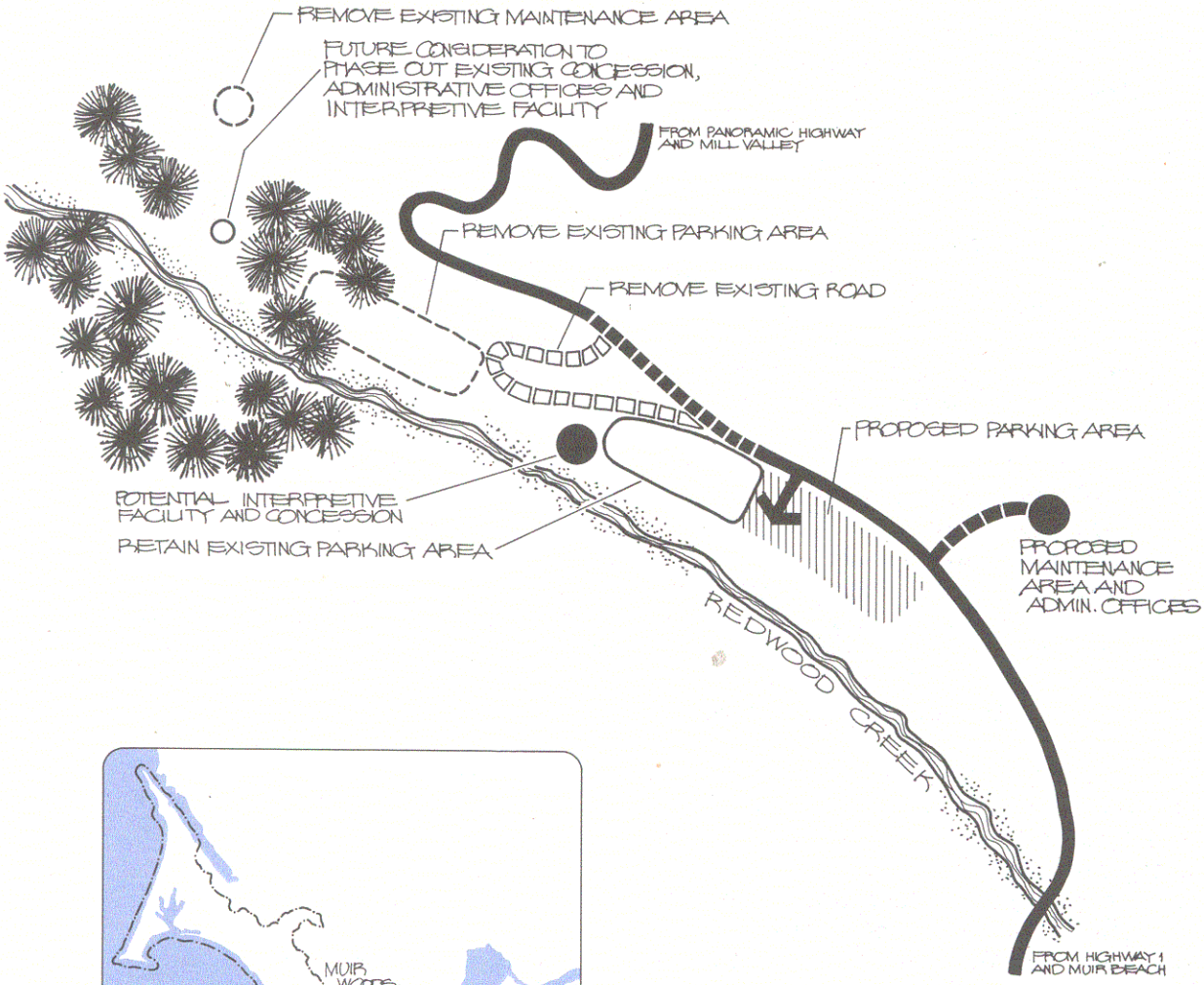
The chapel and gymnasium at the head of the lagoon will be available by reservation to community groups. Farther up the valley, the stables will be retained as a public horse-boarding cooperative with a small complement of rental animals, and the historic balloon hangar will continue to be used as an indoor riding ring. Across the road from the stables a 7-acre site formerly occupied by army quarters will be converted to a well-screened trailhead and interim parking area for use until full public transit service is implemented. Some 400 spaces will be delineated by planting and surfaced with native grasses. This will provide clearly defined but temporary special event and peak use parking that will not be an intrusion during low and normal use periods. The spacious but barren rifle range will receive modest landscape improvements to create an ideal setting for special events such as folk festivals and symphony performances. When not serving this function it will double as a picnic area and playfield. During landscaping efforts, care will be taken to ensure that the former shape and size of the rifle range will remain sufficiently intact to allow adequate historic interpretation.

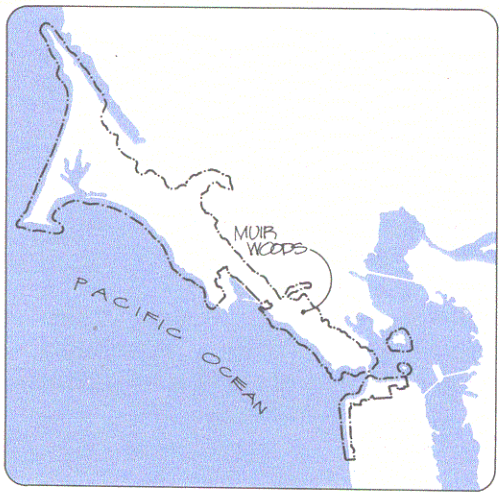
The 16-acre army Capehart housing area near the Baker-Barry tunnel, with its generous supply of irrigated lawns and trees, will make a fine picnic area. Large open areas suited for sports activities will make it especially attractive to groups. All military housing facilities located in the Marin Headlands currently occupied by the army will continue to be used for this purpose into the foreseeable future. When and if they become available, plan proposals affecting them should be carefully reevaluated.

Back toward the lagoon, Battery Alexander will be adaptively used as a small picnic area, day camp, and overnight facility reserved for special groups such as inner-city children, the elderly, and the handicapped.

## Muir Woods

Muir Woods National Monument contains some of the world's tallest trees and it is an international attraction. Nearly all development needs relate to one objective--to eliminate the inconvenient and unsightly congestion that now plagues the entrance to the monument during its ever-increasing heavy use periods. The following proposals are essentially a reiteration of those contained in the monument's current master plan, reconfirmed through the public involvement process.

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UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

# MUIR WOODS

## DEVELOPMENT CONCEPT

GOLDEN GATE NATIONAL RECREATION AREA
POINT REYES NATIONAL SEASHORE

To improve circulation patterns and to remove auto congestion from the immediate vicinity of the big trees, the 100-space parking lot located within the redwood grove will be removed, and the area it occupies will be restored to a natural condition. The resulting parking deficit will then be corrected by providing 100 new spaces in the open area adjacent to the remaining parking lot.

To ease a mutually disruptive association between visitors enjoying the woods and Park Service functional activities, the maintenance facilities and administrative offices will be relocated to a small canyon at the extreme eastern end of the monument, well removed from areas of heavy visitor use. Space made available by moving office functions can then be used for information and interpretive facilities.

Because they may cause visitors to stay longer in the grove and therefore aggravate congestion, the excellent restaurant and gift shop now located adjacent to the NPS offices should not be expanded or modified to significantly increase their capacities. In the future when the investment in the existing structure has been sufficiently amortized, or when major repairs or refurbishment are required, consideration should be given to removing the facility and replacing it with a new structure outside the woods at the west end of the parking area. The interpretive center may be relocated at the same time to the same location.

## Stinson Beach

No finer swimming beach can be found on the north coast and none offers a more spectacularly beautiful setting than Stinson Beach. These assets help to generate many pleasant park experiences, but as always, this kind of success brings congestion.

Stinson Beach has only one significant development need--to find a way to move hordes of cars in and out of the beach parking lot without directly mixing that flow with the nonvisitor traffic and pedestrians of the adjacent town. In an attempt to solve this problem, a new parking lot entrance is proposed to be developed south of the town to intercept most beach visitors before they drive through the community.

## Bear Valley

To the many wilderness travelers and beach-goers who frequent Point Reyes National Seashore, Bear Valley may only be a functional spot--a place to park for a hike in the forests of Inverness Ridge, a place to catch the shuttle bus to Limantour Beach, a restroom stop on the way to Drakes Beach, or a place to buy a needed map or book. But to those who may not have the time or the ability to

fully explore the seashore's expanses (like the out-of-towner passing by) Bear Valley may be the highlight of his or her visit.

The rich blend of rural and natural scenery in this area is already supplemented by fine interpretive facilities such as the Morgan horse ranch, the Miwok Indian village, the Woodpecker Trail and the Earthquake Trail. Nevertheless, some expansion of interpretive programs is in order, particularly to help first-time visitors.

The public's expressed desire is that onsite interpretive facilities should be kept to a minimum throughout the park. Therefore, instead of providing major informational services onsite, programs and exhibits will be expanded at the Bear Valley information center.

A new information center will be developed to offer improved personal information services, an audiovisual introduction to the seashore, an easily grasped geographic orientation to activities and scenery, and additional publications such as maps, books, and pamphlets. The new structure will be modest in size and appropriate to the rural setting in appearance. Its location should provide a degree of isolation from administrative and maintenance areas, which are now a very visible aspect of Bear Valley.

Other minor actions that will significantly increase visitor convenience in this location include the conversion of pit toilets to flush toilets at the heavily used trailhead, expansion of the small picnic area near the trailhead parking lot, and provision of enough food service to satisfy the minimal needs of transit dependent visitors who may reach this distant point by bus without having thought to bring their lunch.

## DISPERSED DEVELOPMENT

### Hostels and Campgrounds

In keeping with National Park Service policies, most park visitor needs for overnight accommodations will be satisfied through the numerous motel facilities in San Francisco and eastern Marin County. This will not only accrue tax benefits to the local community but will also help to spare the parks' valued scenic qualities from new intrusions.

Despite the sizable unmet demand for all types of camping facilities in the region, environmental and aesthetic constraints seriously limit the ability of the National Park Service to significantly alleviate the shortage.

As previously mentioned, most proposals for facilities outside the developed areas are for small campgrounds and hostels. Hostels are intended to provide low-cost overnight accommodations for hikers

and cyclists of all ages, but car-driving visitors would not be turned away. Whenever possible, these hostels will be developed within historic buildings designated for preservation. Depending upon the structures to be adapted, hostels may offer one of two types of facilities. Army barracks and barns are particularly suited to become dormitory-type facilities, where overnight guests will share common sleeping quarters and kitchen facilities. Ranch houses and old army family quarters are better adapted as places where a family can obtain an individual room.

Proposed hostels have been located no more than a day's travel apart to create a system, that will be reasonably convenient to hikers and cyclists. Because all of the structures that might be adapted as hostels north of Rodeo Valley are still leased and occupied by their former owners, only general hostel locations are indicated in this plan. When a building within these general locations is vacated, it will be determined if it is architecturally and environmentally suitable for a hostel.

Campgrounds are proposed, not as a convenience for people passing through the park, but because the activity of camping is considered an important aspect of a park experience here. Thus, the location, size, and number of campgrounds proposed in this plan reflect a concern for the quality of the camping experience rather than an attempt to satisfy the demand for camping facilities--which probably could never be satisfied at any rate.

All campgrounds in the park will be relatively small and are proposed in locations with minimum visibility from well-used trails and roadways (see General Development map for specific campground proposals). All camps will be used on a permit/reservation basis. No open fires will be permitted.

Hike-in campgrounds are intended for use by backpack campers and will be accessible only by trail. Some will include tables and a few sites will offer simple shelters consisting of a shingled roof over a wood deck to provide protection from fog drip, wind, and rain. All camps will be equipped with sanitary facilities and trash receptacles.

Walk-in campgrounds will be identical to hike-in camps except that the campsites will be clustered within walking distance of a small central parking area (generally 100 to 500 feet). These are intended for use by people with tent-camping equipment that can be carried from the parking area to the campsite. Facilities will include tables, charcoal braziers, restrooms, trash receptacles, and shelters in select locations. One particular campground site in the north end of the Olema Valley offers the space and visual isolation suited for a relatively large group of camp shelters.

Because many people and organizations have expressed a serious concern over increased use in the Olema Valley, facilities in this

area should be developed with great caution only after the complete development of similar facilities in other areas of the park. Conservation organizations, county planners, and local people should be directly involved in the specific siting and design of these facilities. The most important aspect of the proposals as they appear in this document is their character, number, and general distribution.

The proposed walk-in camp at Morse's Gulch should be developed only after satisfactory resolution of concerns for harbor seal habitat voiced by the staff of the Point Reyes Bird Observatory and the Marine Mammal Commission.

The idea of establishing primitive camping zones at Point Reyes, where backpackers would be permitted to camp in generally specified areas with no provision of sanitary facilities, was strongly advocated by most workshop and public meeting participants. However, park management and some organizations are concerned about the potential for fire hazard and water pollution. After the proposals for conventional campgrounds have been implemented, a special study will fully analyze the feasibility of zone camping. The study will focus primarily on the success or failure of zone camping in other park and wilderness settings, with comparative interpretations developed for Point Reyes's unique combination of conditions (climate, accessibility, terrain, resource sensitivities, etc.). If the study results are positive, an experimental zone camping program, including regular monitoring and evaluation, will be instituted based on study recommendations. The success of such an experiment and subsequent establishment of primitive zones could require the elimination of some conventional campgrounds.

## Trails

This plan contains no specific proposals for expansion of trail systems in GGNRA/Point Reyes. Because both parks were originally endowed with extensive low-standard military and agricultural roads, effective riding and hiking trail systems have been created largely through designation only. In a few isolated instances short connecting trails have been constructed. Trail improvement for correcting safety and erosion problems is an ongoing management program.

Most of the credit for the difficult job of designating routes compatible with the differing needs of hikers and horsemen is due to the efforts of the Citizens' Ad Hoc Trail Committee and the trails committee of the GGNRA Citizens' Advisory Commission. The work of these committees is partly reflected in the main trails indicated on the General Development map. The basic goal of the ad hoc committee in more than three years of regular meetings was to establish continuous trail access from Fort Funston in San Francisco

to the tip of Tomales Point, providing wherever possible the choice between a ridge route and a coastline route.

Little has been done so far toward designating bicycle routes. A detailed analysis of existing roadways is needed first to determine which ones can accommodate a bicycle lane. Factors to be considered in such a study will include speed and volume of auto traffic, accident occurrences, pavement widths, gradients, scenic qualities, and connections with transit systems. At the same time, separate bike trails will also be considered as a means of increasing safety for cyclists, creating opportunities to visit more remote areas, and providing easier gradients. Good opportunities for separate bike trails seem to exist in the Marin Headlands and the Olema Valley. Bike trails may be paved; however, use of other surfaces, such as stabilized soil, will be explored.

Plans for bicycle trails will be coordinated with the plans of state and local agencies and local bicycle clubs. Both Marin County and the city of San Francisco have bicycle route plans, and these will be regarded as an important basis for GGNRA/Point Reyes bike trail planning.

All future trail and transportation planning should be sensitive to the need to coordinate transit routes and stops with trail routes and related facilities.

## Other Facilities

Minor improvements in existing picnic facilities will be accomplished at Fort Funston, West Fort Miley, Baker Beach, and Muir Beach. A small picnic area with associated play equipment is proposed for East Fort Miley, and there will also be a new picnic area at Oakwood Valley in the Marin Headlands that will include some facilities suitable for group use.

Only a few interpretive facilities will be located outside of the major developed areas. Subsequent to full development of a consolidated environmental education center in Rodeo Valley, if there is enough demand to warrant two such facilities, the historic buildings of Rancho Bolinas at the head of Bolinas Lagoon may be adapted as another center to accommodate the outdoor education programs of Bay Area schools. A wayside exhibit explaining the ecological importance of the lagoon may be located along Highway 1 near the mouth of McKinnan Gulch in accordance with the Bolinas Lagoon plan and the recommendations of the lagoon advisory committee.

Somewhere in the Tennessee Valley area a small barn and corral will be moved in from another location and stocked with a representative collection of farm animals as the basis for a children's educational program serving drop-in visitors and organized school groups.

The historic Octagonal House in West Fort Miley will be adapted to house exhibits covering its role in San Francisco maritime history and nearby interpretive and recreational opportunities. A space including a small campfire circle will also be developed at West Fort Miley, to accommodate community day camp activities and occasional group overnights.

There will be interpretive exhibits and tours provided at the Point Bonita lighthouse.

At Point Reyes, exhibits will be expanded at the Drakes Beach center, and special tours and programs may be conducted at both the Pierce Point Ranch and the lifeboat station. Most new exterior signing and wayside exhibits at the seashore will be for necessary resource and visitor protection purposes.

The lack of suitable restroom facilities can ruin an otherwise enjoyable park experience, particularly for young children and the elderly. Although it may seem obvious that all visitor facilities, including backcountry campgrounds, should have suitable public restroom facilities, some current deficiencies indicate that this point needs additional emphasis. For example, at the Cliff House area, the only restrooms available are those inside the restaurant--an inconvenient situation for the concessioner as well as for visitors who are not interested in concession services. At Limantour Beach in Point Reyes visitors don't seem to mind a moderately long walk from the parking area to the beach, but they do object to repeating that walk throughout the day to avail themselves of the restrooms. All areas of the park will be carefully analyzed for these kinds of deficiencies, and appropriate steps will be taken to correct them.

Responding to the horseback-riding opportunities available in the park, and to an apparent shortage of boarding facilities in the region, individual horse owners have organized cooperative stables in three southern Marin County locations. These facilities will continue to operate in their present general locations; but whereas they were originally conceived and operated to only offer boarding services to members, they will now be modified to provide such services to the general public as horse rental, overnight boarding, and trailer parking. In addition, application of their membership policies and regulations will be monitored regularly to ensure against discriminatory practices.

Particularly in Marin County areas of GGNRA much of the development proposed in the plan is of a dispersed, small-scale nature. Many of these projects may be accomplished with operating funds or through work programs such as the Young Adult Conservation Corps. Some may be done using funds provided by other organizations or agencies occupying space or conducting programs in the parks.

Although these small projects basically will be programmed in response to known demand and the availability of funds, it is important to recognize an additional consideration that will control the appropriate timing of their implementation. Because of the area's inherent appeal and the unusual proximity of a large number of people, there is a high potential for overuse in the rural and primitive areas of the park. Therefore, no development proposal that could result in significant increases in visitation should be undertaken without sufficient assurances that staffing levels are or will become adequate to properly manage the increase.

## STATE PARK DEVELOPMENT

Certain lands within the authorized boundary of GGNRA and Point Reyes are outside the jurisdiction of the National Park Service (see special use zone under "Management Zoning" section), but the Park Service maintains a protective interest in these areas and will continue to exert whatever influence is necessary to ensure that natural, historic, and scenic values are preserved and recreational opportunities complement what is available in other park areas. Within this context, the Park Service recommends that a hikers' campground and a hostel be located within the southern limits of Mount Tamalpais State Park, where they will be key links in a system of overnight facilities serving people without cars. The Park Service also endorses moderate expansion of visitor facilities on Angel Island in accordance with the current state park plans.

## PRELIMINARY RECOMMENDATIONS FOR EXPANSION AREAS

Expansion of the boundaries of both Golden Gate and Point Reyes was recently accomplished through Public Law 95-625 and Public Law 96-199. Additional lands may be included through further legislation. Most of the resulting additions will simply provide for protection of scenic and ecological values. Some of the larger areas will be suited for hiking, horseback riding, and informal picnicking, but for the most part these new areas are unsuited for development or extensive use. A major walk-in campground and/or hostel should be considered for the Cheda Ranch, and scattered roadside pullouts and picnic facilities (tables, trash cans, and chemical or vault toilets) might be established along Lagunitas Creek. Potential impacts upon this important salmon spawning area will be carefully considered before any of these ideas is implemented. Study of the possible development or extensive use of these lands should proceed cautiously until a reasonably firm northern boundary is established. When this has been done, facilities proposed in the Olema Valley should also be reviewed to determine what, if any, influence new use and development

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proposals might exert upon them. Cautious consideration is also being given to the establishment of access trails within the Bolinas Mesa addition to Point Reyes with particular attention being paid to the high sensitivity and existing accessibility of Duxbury Reef. The small addition in the Stinson Beach area will facilitate construction of the proposed southern entrance to the beach parking area. New acquisitions adjacent to Sutro Heights Park, now barren and unsightly, will be extensively planted.

## MANAGEMENT FACILITIES

### Office Space

Under the terms of a current administrative agreement, the superintendent of Point Reyes, who has management authority over all of the national seashore, also has operational authority over the Olema Valley portion of GGNRA north of the Bolinas-Fairfax Road. As long as this agreement is in effect, the headquarters in Bear Valley will continue to be the center of operations for Olema Valley as well as the seashore. The superintendent of GGNRA, based at headquarters facilities at Fort Mason, has administrative supervision over all National Park Service lands south of the Bolinas-Fairfax Road.

Ranger stations will be required at the following locations:

Alcatraz
Aquatic Park
Fort Mason
Fort Point
East Fort Miley
Fort Baker
Fort Cronkhite
Tennessee Valley
Muir Woods
Stinson Beach
Hagmaier Ranch
Tomales Point
Drakes Beach
Point Reyes lighthouse

With the exception of Muir Woods, all ranger stations will be housed within existing structures. In addition, at least minimal office space will be required wherever permanently manned interpretive or information facilities exist or are proposed.

### Maintenance

Maintenance operations for the parks are presently supported by two major work and storage centers at Fort Mason and Bear Valley.

The Fort Mason center occupies a considerable amount of space for which there is a clear demand for recreational use (see Fort Mason development proposals). Therefore, it will be phased out in conjunction with the development of a new storage and repair/fabrication center in a location to be negotiated with the army, preferably within the Presidio. This facility will be kept as small as possible through the strengthening of smaller centers in the following locations:

Alcatraz
Aquatic Park
Fort Mason
Fort Point
East Fort Miley
Fort Baker (unless the primary maintenance center is located here)
Muir Woods
Stinson Beach

As supplements to the Bear Valley center, the following existing maintenance substations in Point Reyes National Seashore will continue in operation:

Hagmaier Ranch
Tomales Point
Drakes Beach
Point Reyes lighthouse

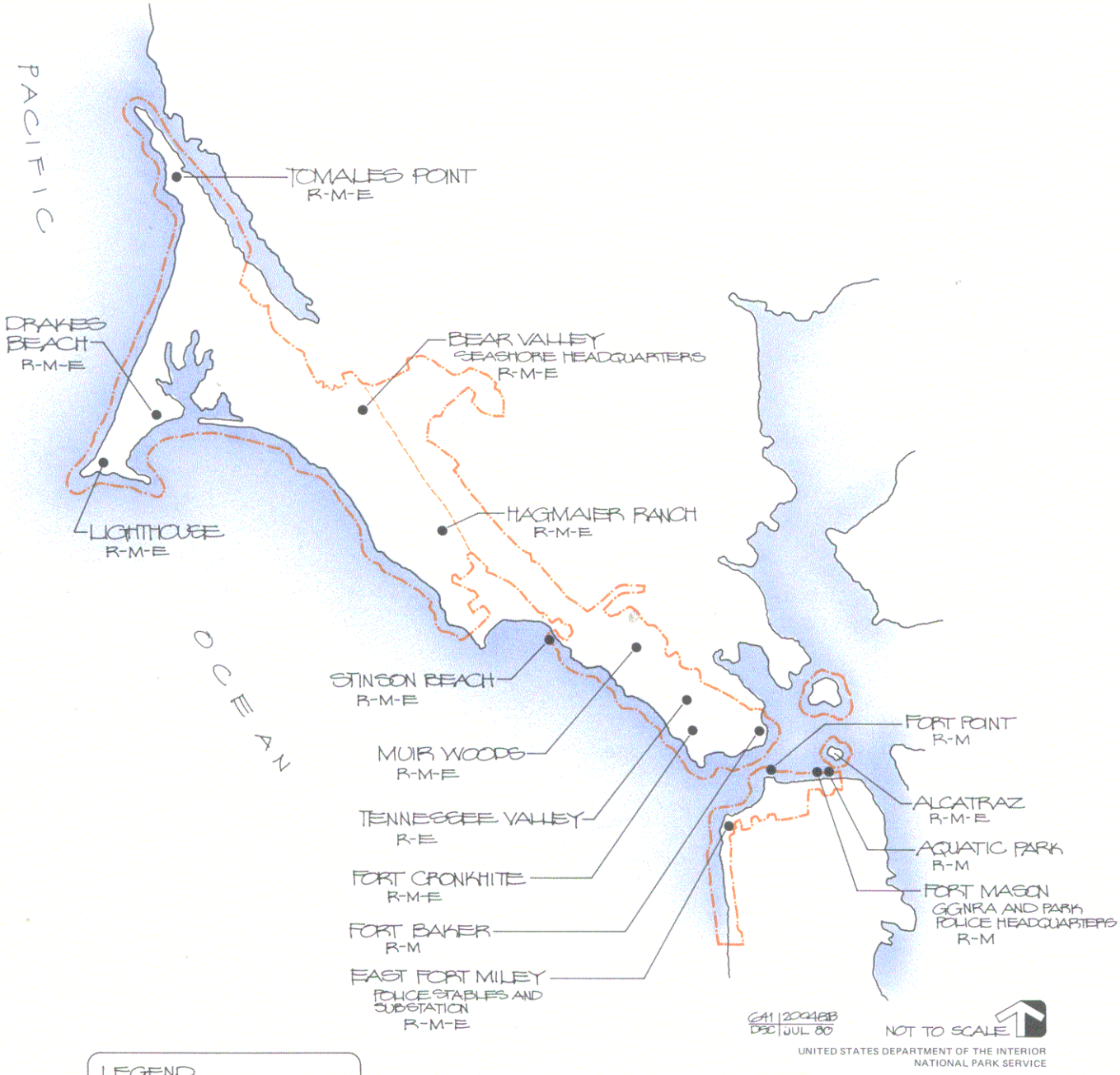
At Fort Funston a small previously disturbed area will be used for the purpose of propagating plants to be used in dune stabilization and other erosion control efforts.

## U.S. Park Police

Visitor protection services for the San Francisco portions of the park will continue to be provided by park police based at their present headquarters at Fort Mason. Stable facilities for their horse patrols will remain at East Fort Miley in conjunction with a substation serving police functions for the San Francisco Headlands and Ocean Beach areas. Adaptive use of gun batteries for administrative purposes in this area should be pursued in a manner that would not foreclose future in-depth historical interpretation of those resources.

## Emergency Equipment

The National Park Service will maintain fire-fighting and search and rescue equipment at the following locations:




LEGEND

R - RANGER STATION
M - MAINTENANCE SUBSTATION
E - EMERGENCY EQUIPMENT STATION

# MANAGEMENT FACILITIES

GOLDEN GATE NATIONAL RECREATION AREA
POINT REYES NATIONAL SEASHORE

Alcatraz
Fort Point
East Fort Miley
Fort Cronkhite
Tennessee Valley
Muir Woods
Stinson Beach
Hagmaier Ranch
Bear Valley
Tomales Point
Drakes Beach
Point Reyes lighthouse

Employee Housing

Generally speaking, Bay Area employees of the National Park Service will reside in the community outside park boundaries. Whenever possible, the many residential structures to be retained in the parks will be used for visitor activities. However, there will be exceptions to this policy for purposes of resource or visitor protection--for example, situations where no other reasonable use can be immediately determined for a vacant historic structure or where 24-hour employee availability is deemed desirable. All nonhistoric structures presently functioning as employee housing but not serving essential management needs will be removed as soon as possible or converted to public use.

UTILITIES

Utilities are a major concern at GGNRA/Point Reyes and will be an important consideration in the future use and management of the parks. In some areas no systems exist; in many other areas, particularly former military sites, the existing systems are deteriorated and need substantial upgrading. Sewage disposal is currently handled by a combination of conventional sewage systems and treatment plants, leachfields and septic tanks, composting and pit toilets, and portable self-contained chemical or vault toilets. Water is provided by means of conventional pumping stations and water mains, creek and spring diversions, and wells. Gas, telephone, and electric service are provided by conventional service lines.

The National Park Service will adhere to all applicable provisions of Executive Order 11752 for the prevention, control, and abatement of environmental pollution for all facilities under its jurisdiction. This includes adequate sewage collection and disposal, solid waste collection and disposal, and protection of the quality of waters within, or flowing through, the area. To accomplish this goal, wherever possible sewage and water systems will be connected to

public utilities. The National Park Service will strive to sell or transfer government-owned electrical, telephone, and natural gas distribution systems to public utilities.

San Francisco Parklands

For the most part, the existing utility systems have the capacity to provide the level of service required by the plan. Existing water systems will be modified or extended when possible. The provision of water in sufficient quantity for moderate amounts of washing, drinking, and toilet use should not be difficult. However, when existing systems are not available, alternative means of supplying water will be studied. These may include the use of cisterns and rain catchments, importation, and tank storage.

Existing sewers will be modified or extended wherever feasible. However, where the existing onsite or adjacent sewer is inadequate to serve present or potential needs, alternative systems, including composting and chemical toilets and treatment plants, will be considered.

In San Francisco, a more detailed technical analysis of utility requirements for existing as well as proposed facilities will be undertaken to determine present conditions and the appropriate source for utility service.

Alcatraz is unique in its utility demands. Present utilities include chemical toilets, imported freshwater (for limited washing, irrigation, and emergencies), an onsite generator, and radio for communications. Consideration will be given to converting water and electrical systems to those more appropriate for site conditions (water cisterns, stormwater catchments, wind and solar generators). Additionally, extension of telephone lines will be considered.

Marin County Parklands

In Marin County, expected levels of visitation will be adequately served by the upgrading of existing wastewater facilities or, if necessary, the development of new facilities. Proposed walk-in, hike-in, and group campgrounds, as well as picnic areas and trailheads, will be served by self-contained toilets.

Wherever possible, wells will be used to supply water. Water storage will be provided where necessary for visitor accommodation and fire protection. Where water cannot easily be provided to proposed camps, they will be operated as "dry camps" with no water provided. Where feasible, septic tanks and leachfields will be installed or upgraded to meet the disposal needs of all proposed

indoor overnight accommodations. Secondary treatment will be preferred for major proposed beach comfort facilities. However, where no secondary treatment is available and the ground conditions are acceptable, beach comfort facilities will be serviced by septic tanks and leachfields.

At this time there is not enough information to declare specific solutions for the provision of water and sewer services to larger areas and facilities in Marin. A separate study will be undertaken to determine the most appropriate methods of service. Preliminary findings suggest that the following approaches to utilities may be desirable:

| | | |
|---|---|---|
| Marin Headlands: | Sewer - | New sewage collection system. Hookup with Sausalito system. |
| | Water - | Possible long-term noninterruptible water service commitment from Marin Municipal Water District, or use of local water sources with storage for peak periods. |
| Mount Tamalpais: | Sewer - | Develop new onsite disposal or vault system. Existing service adequate at Muir Woods. |
| | Water - | Cooperative development of new water sources with Stinson Beach for village and park use, or separate water supply and storage system. Existing service adequate for Muir Woods. |
| Olema Valley: | Sewer - | Where feasible, expansion of existing septic tank systems. |
| | Water - | Development of new sources or upgrading of wells, with storage for peak periods. |
| Point Reyes: | Sewer - | Expansion of existing system at Bear Valley. |
| | Water - | Existing service adequate. |

In Marin County, if future studies show that visitor needs exceed the ability of an area to provide adequate water, facilities will be relocated to more suitable sites or scaled down to a level consistent with available supply. Groundwater sites that have shown a concentration of solids due to seawater intrusion will not be utilized as water sources. Groundwater utilized for drinking will be treated.

# TRANSPORTATION

## THE APPROACH

Transportation issues are critical, for their resolution will affect how successfully the park provides an enjoyable recreational experience for a diverse group of people. Unless action is taken, expected visitation increases will result in too many people coming to the park by car. More auto traffic will contribute to more congestion, more impacts on adjacent communities, and more frustration for people traveling to the park. Unfortunately, time will not make transportation problems disappear; it will only make them more apparent. Meanwhile, for those without automobiles, a sizable population in the Bay Area, the park will remain largely inaccessible.

The National Park Service, with the cooperation of other interested agencies, must respond to these problems. This section outlines the transportation proposals that the National Park Service feels merit the most consideration--by itself and by other agencies. The aim of these proposals is to alleviate existing problems and minimize potential ones in the interest of making park access as pleasant, safe, and convenient as possible.

No issue facing the future of GGNRA/Point Reyes has been studied as thoroughly or scrutinized as constantly as transportation. The 3½-year Golden Gate Recreational Travel Study (GGRTS) explored this complex subject with the assistance of many agencies and citizen groups. The GGRTS now serves as the basic blueprint for action, describing what transportation changes are needed, suggesting which agencies are responsible, and designating priorities for implementation. With some minor exceptions, this plan coincides with National Park Service thinking and contains the transportation proposals that are essential to proper development of the park. This general management plan contains few proposals that differ from the GGRTS plan; it does, however, more adequately discuss the transportation proposals derived in conjunction with the other park proposals.

The plan will not solve every foreseeable transportation problem facing GGNRA/Point Reyes. Every congested roadway will not be cleared, in many cases because park visitors cause only a portion of a much larger traffic congestion problem. In fact, long-range, more elaborate planning approaches aimed at addressing the whole problem, although attempted by the GGRTS, were troublesome because of projected expense, lack of conclusive data, and the need for a great deal of interagency cooperation. Also, more drastic solutions were difficult to agree upon, both because of a paradoxical public sentiment about cars (I want to drive there, but

everyone else should take the bus) and the real unpredictability of future transportation influences, from gas shortages to new transit systems to available funding.

Because of this, both GGRTS and NPS planning recognize the need to occasionally reevaluate the transportation picture, and each suggests long-range considerations to be kept in mind as more immediate problems are relieved.

This represents a twofold approach to transportation planning. First, immediate consideration has been given to problems that can be alleviated soonest, easiest, and with the least expense. There are recommendations for new transit systems, adjustments in existing transit service, and adjustments in roads and parking. Some of these proposals will have to be implemented through cooperative efforts by several agencies, and some the National Park Service can implement alone. These recommendations are considered to be practical responses to park transportation problems that can be implemented within a 5-year time frame.

Second, long-range strategies have been identified for solving anticipated problems or current problems that are especially difficult to rectify because of expense, general complexity, lack of conclusive data, or the need for extensive cooperation between affected agencies or publics. These options, which would involve many agencies and basic changes in how people travel to recreational sites, may be considered if more immediate actions prove to have little effect on park access problems.

## IMMEDIATE CONSIDERATIONS

### Improve Transit

The National Park Service and other agencies with influence over park-related transportation will work cooperatively to improve transit service to the park. This improved access will serve two main audiences: the transit dependent, many of whom live in neighborhoods with high recreational needs; and park visitors who wish a transit alternative to driving on congested access roads. The goal is to provide some form of transit reaching almost every park site. The proposed transit improvements will be implemented concurrently with proposals for necessary parking and access adjustments discussed in the next section. Proposals for better transit service include the following.

Improve Transit Service to the Park. Better scheduling and direct routing of weekend public transit to the park (in many cases simply extending an existing bus route three to five blocks) will greatly improve the probability of greater reliance on transit for park access. The following improvements are recommended:

Improved service connecting southeast San Francisco neighborhoods and San Francisco parklands; route connections to the Southern Pacific and East Bay terminals.

Extended routes and expanded service from San Francisco to Marin County park destinations (Stinson Beach, Mount Tamalpais, and Point Reyes); route connections to the Larkspur ferry terminal

"Recreation specials" - expanded service by public carriers or charter companies to allow point-to-point travel between specific neighborhoods and the park; weekend express bus service

Bus connections to the Mount Tamalpais unit and Point Reyes from the Larkspur ferry terminal

Provide Transit Service Within the Park. To complement improved transit service to the park, park shuttles are proposed to give visitors a more flexible and complete system for getting around inside the park. These within-park shuttles will connect different park destinations and essentially expand the reach of transit service ending at the park's boundary. They will also help alleviate some of the potential problems in parts of the park where parking deficits are forecast and will extend the range of the hiker by facilitating more one-way outings. They could either operate separately from external transit systems or be an extension of one of these routes into the park. The following shuttles are proposed:

A shuttle connecting the San Francisco bayfront parklands from Aquatic Park to Fort Point and continuing across the Golden Gate Bridge to the Marin Headlands

A shuttle connecting the western San Francisco waterfront of GGNRA, starting in the Ocean Beach unit and terminating at the Golden Gate Bridge toll plaza. This shuttle will allow for transfer to the Marin Headlands shuttle. Eventually, if demand is adequate, this shuttle can also continue to the Marin Headlands

A shuttle to connect the major visitor destinations in the Point Reyes/Olema Valley units: the Point Reyes lighthouse, Drakes Beach, Limantour, Bear Valley, Five Brooks, Palomarin, and Ridgecrest

A shuttle connecting parklands along the northern San Francisco waterfront utilizing the beltline railroad right-of-way. This shuttle, which may utilize historic San Francisco trolley cars, will travel along the existing railroad

# TRANSPORTATION

## IMMEDIATE CONSIDERATIONS

GOLDEN GATE NATIONAL RECREATION AREA
POINT REYES NATIONAL SEASHORE

tracks from Aquatic Park to Crissy Field and may be extended as far as Fort Point. This shuttle will be closely coordinated with current considerations by the city of San Francisco to operate a similar system along the northeastern waterfront, which would create a continuous rail link from the Bay Bridge (S.F. terminal and BART station) to the Golden Gate Bridge. Incremental implementation of this proposal will be done only after extensive consultation with neighborhood residents concerned over its potential traffic impacts.

Special shuttles connecting Fort Mason and other special event locations with remote parking areas within the Presidio (coordinate with U.S. Army)

Expand Ferry Service. The increasing weekend traffic on the Golden Gate Bridge is making recreational travel more and more difficult for many park visitors. Ferry service could avoid this problem area and also provide a travel means that people view as part of a recreational outing, not a difficult prelude to one. The following ferry service improvements are recommended:

A new ferry route from San Francisco to Fort Baker. This service will provide access to the Marin Headlands and aim at increasing the appeal of this Marin County park area, possibly diverting attention from more heavily used areas to the north.

Weekend service by the Larkspur ferry on a schedule attractive to those wishing to visit the Mount Tamalpais, Olema Valley, or Point Reyes units. This service would have to be timed to coincide with bus service from the terminal to park destinations.

A ferry terminal located in or near park sites. Two locations in San Francisco (the Embarcadero ferry terminal and Fisherman's Wharf) currently serve ferries and might be used for the new service between San Francisco and Fort Baker until a suitable landing within the park could be provided at one of the Fort Mason piers. Before in-park ferry service is established, the ability of Fort Mason to handle its own traffic will be tested. The option of eventually providing ferry service from this location will be delayed until the traffic situation of an operating park can be analyzed. Initially, the within-park landing would be used as a point of origin for people going to the Marin Headlands via ferry; of secondary importance, but included for consideration in this proposal, is the utilization of this landing as a point of origin for Alcatraz visitors. The estimated number of peak-hour ferry users who would funnel through either Fort Mason or Aquatic Park, depending on which pier was chosen for a landing site, is 1,200--600 bound for or returning from Fort Baker, and 600

bound for or returning from Alcatraz. This estimate assumes that the same percentage of Marin Headlands visitors will continue to come through San Francisco, and that half of the people who use public transit will take the ferry. Modification of one of the Fort Mason piers will be required to adapt one or two slips for recreational ferry use. The three main piers were originally designed for movement of military men and materials and they would require only minor modification. The Alcatraz pier near Aquatic Park would require more extensive modification.

Develop an Information System and Transfer Stations. An important element will be an information program to publicize transit access. In particular, this program will assist schools in using their buses to transport school children to the park and assist peer groups (like senior citizens, teenagers, and neighborhood organizations) in organizing discovery bus programs.

In addition to media publicity, brochures, and communications to neighborhood organizations and service clubs, park access information will be provided by exhibits or onsite personnel at transit transfer stations at the following locations:

Van Ness Avenue (Aquatic Park): Juncture of five Muni lines, extended Golden Gate Transit line, and National Park Service shuttle

Upper Fort Point/toll plaza: Juncture of 97 Golden Gate Transit round trips, Muni recreation line, and National Park Service shuttle

Point Lobos Avenue (Merrie Way): Juncture of four Muni lines and National Park Service shuttle

San Francisco zoo area: Juncture of streetcar line, Muni line, and Golden Gate Transit line

Fort Baker: Juncture of Golden Gate Transit lines, National Park Service shuttle, and ferry system

Larkspur ferry terminal: Juncture of ferry system and Golden Gate Transit line

Bear Valley headquarters: Juncture of Golden Gate Transit lines and National Park Service shuttle

Design and Schedule Transit Systems for Recreational Travel. Making transit access attractive to a wide range of park visitors will require modifications and innovations in design and scheduling. Transit systems will have to be scheduled to allow ease of transfer

between one route and another. Pricing schedules will also have to be coordinated to permit transfers from one system to another without additional costs. Group rates will be developed. Transit stops will have to be equipped with shelters, benches, and refuse containers. Transit vehicles will be modified to transport bicycles and other forms of equipment visitors will want to use after they reach the park.

Improve Auto Access

While the improvement of transit access will have the most effect on visitation to the park units, some proposals for improving auto access can be accomplished which will contribute to making total park access a better situation.

Adjust Parking Capacities. The following parking proposals represent a maximum--they indicate how much parking the National Park Service feels can be supplied onsite without seriously damaging the visitor's enjoyment of the park or the scenic quality of the area. This parking limit may not always be reached; parking will only be developed in response to a demonstrated need, either to relate directly to newly developed facilities or to partially accommodate major visitation increases.

In some park areas, there will not be enough parking to accommodate projected numbers of visitors, but surplus parking in other areas of the park will be connected by shuttle service to special event areas, and if necessary, overflow parking will be provided on lawn areas and along roadsides on a few peak use days each year.

All proposed San Francisco parking lots will be considered permanent, but the situation in Marin is different. There, the availability of transit service will greatly affect the location and size of needed parking areas, and some will be used on an irregular basis; therefore, most parking developed in Marin County will be considered nonpermanent. Grass or gravel will be used instead of asphalt surfacing to allow for relocation or removal as appropriate and to create a more aesthetic appearance when areas are not being fully utilized.

Throughout the review process the parking requirements calculated for the Olema Valley have generated substantial comments of concern from the public. Therefore the final parking capacity of this area will be formulated within the limits of the calculated figure on a site-by-site cumulative basis with the direct involvement of local officials and other concerned people.

TABLE 2. PARKING PROPOSALS

| Unit | Number of Parking Spaces Existing | Proposed |
|---|---|---|
| Alcatraz | 0 | 0 |
| Aquatic Park | 85 | 0 |
| Fort Mason | 514 | 614 |
| Marina Green | 1,200 | 1,200 |
| Crissy Field | 50 | 400 |
| Fort Point | 210 | 270 |
| Baker Beach | 200 | 330 |
| Lands End | 480 | 480 |
| Cliff House | 335 | 335 |
| Ocean Beach | 220 | 220 |
| Fort Funston | 165 | 300 |
| Marin Headlands | 1,480 | 1,565 |
| Mount Tamalpais | 1,946 | 1,910 |
| Olema Valley | 100 | 400 |
| Point Reyes | 2,095 | 2,595 |

Relieve Traffic Congestion Points: Cliff House and Stinson Beach. Traffic congestion is currently severe at two park areas as a direct result of visitor traffic. In San Francisco, traffic congestion at the nationally famous Cliff House is compounded by a curve in the roadway, poor visibility, and parking problems created by automobiles and tour buses at this site. To alleviate this problem, some of the car parking space in front of the Cliff House will be removed and replaced in a lot farther east. A tour bus drop-off station only will be available at the Cliff House, and bus parking will be provided in the Ocean Beach lot. Most visitors will reboard their buses in a turnout in the lower Sutro lot. Pedestrian connections across Point Lobos Avenue will be improved.

In Marin County, the village of Stinson Beach suffers from the traffic that must proceed through the town in order to enter the beach parking area. A southern entrance to the Stinson Beach parking area is proposed to divert park-bound traffic from village roads.

Develop a Marin Headlands Staging Area. The Marin Headlands is attracting an enthusiastic and growing group of local, regional, and national visitors. Given the rapid rate of visitation increase and the level of use that this area will receive in the future, a program to restrict auto access during peak times will be implemented before visitor access patterns become too well established. To accomplish this, a staging area with a design capacity of 700 cars will be developed in East Fort Baker, and shuttle bus service will be

provided to locations in Rodeo Valley. The rest of the Marin Headlands will continue to be accessible by auto.

## LONG-RANGE CONSIDERATIONS

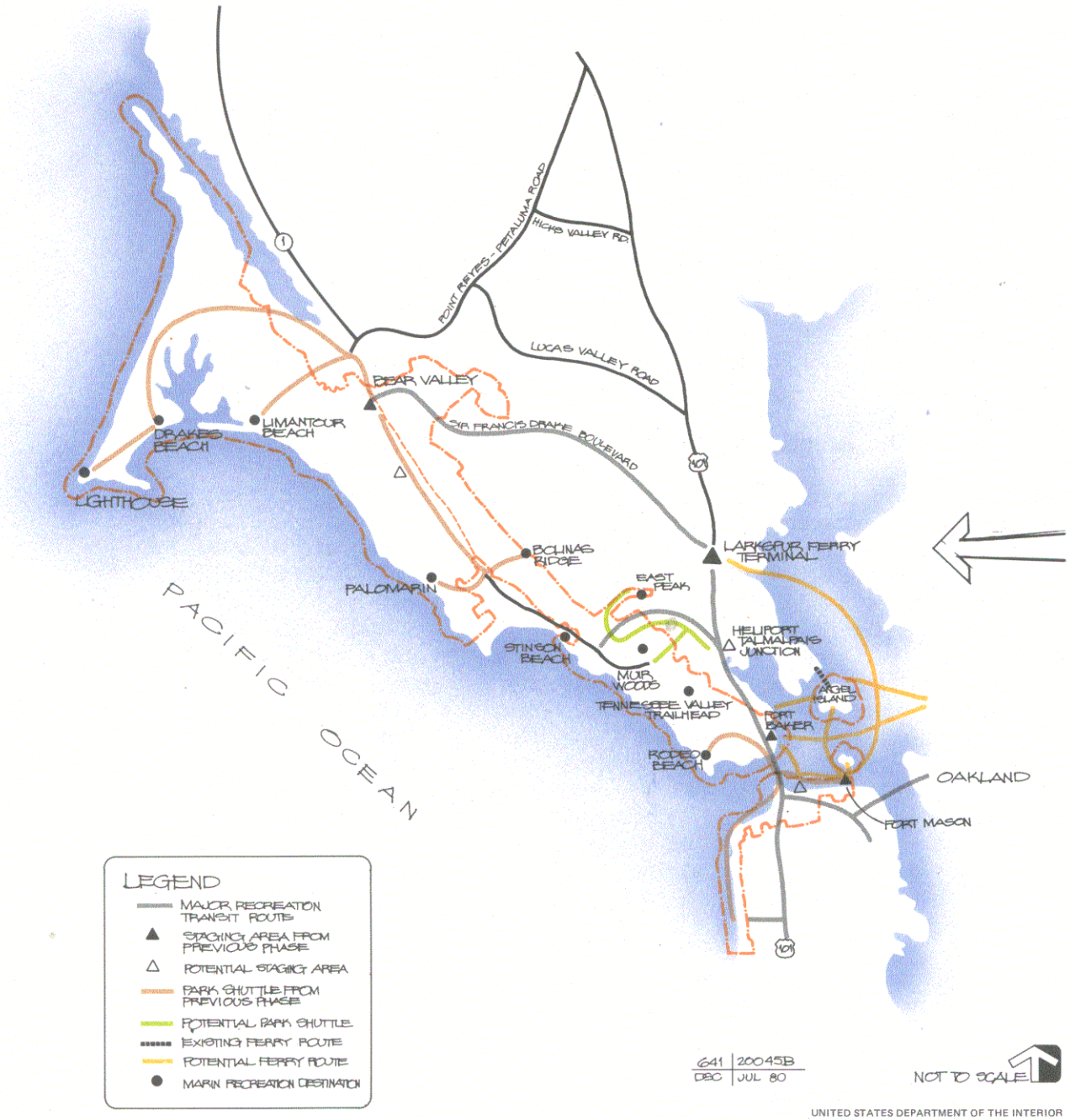
Within the next 10 years, many economic, social, and technological changes, including rising gas costs, more free time, and transit improvements, will probably affect how people travel. These changes will also affect transportation planning for the park. Because of this, the National Park Service has separated the transportation options that appear long range in approach from those that can be implemented more quickly. The considerations contained in this section have been formulated in a tentative way, recognizing the need for continual reevaluation and adjustment.

Long-range considerations reach beyond park boundaries to resolve the potentially extreme transportation problems facing recreational travel. Because in some cases park attractions represent only a portion of the factors that will create future congestion and parking problems, it is recognized that transportation solutions must be regional in nature. Marina Boulevard and the Golden Gate Bridge corridor are two primary places where park travelers will be caught up in traffic largely generated by others. The park's transportation actions can have only limited effect on these problems unless measures are implemented that affect all the contributors to the situation. Regardless, projections indicate that within 10 years the above roads and Route 1 (where park visitors are a more significant element of the problem) will receive heavy traffic congestion. The main question that long-range considerations address is how far the National Park Service can go to resolve these problems, or at least to give park visitors a way around them.

Long-range options to address these problem areas will generally be considered in the following order.

### Expanded Ferry Service

The concept of expanded ferry service addresses some of the large-scale transportation issues related to Marin County access. Emphasizing ferry access would reduce recreational automobile traffic in Marin County park areas and provide a travel means to avoid the Golden Gate Bridge corridor and portions of Marina Boulevard. However, the location of the terminal would create additional traffic related to ferry use in San Francisco areas of GGNRA, in a sense shifting auto traffic out of the north to a ferry terminal in the south.




UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

# TRANSPORTATION

## LONG-RANGE CONSIDERATIONS
## EXPANDED FERRY AND SHUTTLE SERVICE

GOLDEN GATE NATIONAL RECREATION AREA
POINT REYES NATIONAL SEASHORE

Ferry adjustments could include:

Expand ferry service to Fort Baker as Marin Headlands visitation increases and auto access is more controlled

Develop service to Fort Baker from the East Bay

Develop an additional ferry stop at Crissy Field to handle increases in ferry use

Develop ferry service to provide a waterfront loop connecting Fort Mason, Crissy Field, Fort Baker, and Angel Island

Expand ferry service to the Larkspur ferry terminal as bus service to Mount Tamalpais and Point Reyes becomes more available from this point

Have recreational ferries bound for the Larkspur terminal use Fort Mason as a point of departure

Two ferry landings within the park would be considered--Crissy Field and Fort Mason. If ferry use expanded as hoped, ferry users would demand almost all available onsite parking spaces in the bayfront units; these users would compete with visitors to south GGNRA for available spaces. Additionally, traffic in this area would increase. The impact could be adjusted by either reducing site visitation, reducing ferry service, expanding parking, or developing remote parking areas for ferry users.

Crissy Field has some advantages as a park ferry landing, given its relative isolation from residential areas. However, parking would still be a problem. Special ferry parking could probably be provided in the Presidio, and a short shuttle connection could be provided to the ferry terminal (possibly a variation of the bayfront shuttle route). There are also spaces potentially available in the parade ground adjacent to Crissy Field and in the proposed commissary complex. Their use for GGNRA purposes would have to be negotiated with the Presidio. There would be three transfers required, but visitors would be inside the park, and time lags would be minimal.

Another possibility for handling ferry traffic would be to develop remote staging areas--parking places outside the park boundary that would provide shuttle connections to the park ferry terminal. The difficulty with a shuttle for ferry passengers is that a large number of people would need to be accommodated at one time. Also, several transfers would be required (i.e., from car to remote shuttle, shuttle to ferry, ferry to shuttle, and shuttle to destination), and considerable time would elapse before people reached their destinations.

A number of ferry service increases are possible, and given the above conditions, careful decisions would be required about which to expand. The ferry from East Bay to the Marin Headlands would not have a major impact at its landing site, most likely the Berkeley Marina. This ferry could expect reasonable patronage, because almost 25 percent of Marin Headlands visitors arrive from East Bay.

The Larkspur ferry route (connecting to bus access to the park) already has an established terminal (Embarcadero), but relocating it to a park site would be expected to increase its recreational patronage. However, the ability of this route to draw recreational travelers at its current origin should be tested before relocation is considered.

## Transit Preferential Lanes

Increasing transit access to the park would have little advantage to visitors if buses were caught up in the traffic created by automobile drivers. Travel times would be lengthened to such an extent that park visitors would have little incentive to use transit. To give transit riders an advantage as traffic on park access roads increases, the following options could be considered:

> For Muni connections to the park, explore the possibility of transit preferential lanes, particularly in the following congested areas: Aquatic Park, Van Ness Avenue, Marina Boulevard, 19th Avenue, and the Cliff House area.
>
> In the Golden Gate Bridge corridor, explore the feasibility of preferential lanes for weekend afternoon southbound buses from San Rafael to the Golden Gate Bridge.

This system, in some cases, would severely tax automobile drivers in order to give transit riders a competitive advantage in travel time. In San Francisco, auto drivers might move to other roadways as main thoroughfares became congested, possibly affecting residential areas. Auto travel time would be extended on the Golden Gate corridor, perhaps significantly, depending on the length and location of the transit preferential lane.

## Expanded Shuttle Service

Unless visitation to the Mount Tamalpais area is stabilized, people traveling along Route 1 can expect increasing congestion, possibly to the point of continual weekend stop-and-go traffic within the next 10 years. Although park-bound visitors do create a significant portion of the problem, the situation is not easily rectified due to the fact that all roads are through-routes to other

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

# TRANSPORTATION
## LONG-RANGE CONSIDERATIONS
## EXPANDED STAGING AREAS

GOLDEN GATE NATIONAL RECREATION AREA
POINT REYES NATIONAL SEASHORE

destinations. Any reduction in traffic, however, would help alleviate a growing problem, and long-range transportation recommendations related to this situation could include the following:

> Develop shuttle service to this unit from a staging area at Tamalpais Junction where visitors could leave their cars before entering the park. Auto access to East Peak would be closed, and the shuttle would serve this and other Mount Tamalpais destinations. Parking availability at Mount Tamalpais would be gradually reduced to encourage transit access. Information and road signing would direct visitors to the Tamalpais Junction staging area.
>
> Develop shuttle service to Tennessee Valley from the above staging area.

If properly designed, shuttle service from the Tamalpais Junction staging area might provide an alternative way to sightsee in the Mount Tamalpais unit. To make the shuttle successful, additional auto disincentives--high parking fees, limitations on parking time, ticketing for illegal parking, reduced parking areas--would need to be employed. Closed access to East Peak would remove some auto traffic (estimated 800 cars/summer day) and serve as an incentive to utilize the shuttle service. This could dramatically affect well-established use patterns in this unit. The shuttle would provide many advantages for hikers by connecting to various trailheads. The shuttle could not eliminate through-traffic, but it could significantly reduce the presence of moving and parked cars at Mount Tamalpais destinations. The entire system would be very costly and address mainly a summer weekend problem. If the staging area could be utilized for commuter day travel also, the benefit of the project would be extended.

## Remote Staging Areas

Potential remote staging areas would be places that offer good regional and local transit connections and have substantial amounts of existing parking. These areas could serve another purpose on weekdays so long as they were generally available for park visitors on weekends when recreation demands would be greatest. In addition, the intercept sites would be located in the areas that have less weekend traffic congestion than communities adjacent to the park. From the intercept point, expanded shuttle or transit service to the park would be required. Potential locations are listed below:

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

# TRANSPORTATION
## LONG-RANGE CONSIDERATIONS
## EXPANDED STAGING AREAS

GOLDEN GATE NATIONAL RECREATION AREA
POINT REYES NATIONAL SEASHORE

San Francisco

South city areas - BART station, Stonestown, or San Francisco State (for connection to BART and southern peninsula traffic)

Civic Center (for connection to BART, southern peninsula, and San Francisco traffic)

Embarcadero (for connection to ferry terminal, East Bay terminal, and East Bay traffic)

Upper Fort Point/toll plaza (for Marin visitors to San Francisco and San Francisco visitors to Marin)

Marin (all located along the Highway 101 corridor)

Fort Baker (parking for Rodeo Valley destinations when transit-only restrictions are in effect)

Tamalpais Junction/Shoreline Highway (as discussed before--see "Expanded Shuttle Service")

Larkspur ferry terminal

San Rafael bus terminal

Marin Civic Center

Hamilton Air Force Base

The general concept of remote auto intercepts raises fundamental questions related to people's attitudes about transit, changing modes of travel, and park arrival. Auto intercepts in areas remote from the ultimate destination might never be fully used simply because visitors would not associate the intercept sites with the park. Proper design of the staging areas and shuttle system would help make this association, but creating a sense of park arrival at the intercept sites would be a difficult task. Intercepts might be ignored, and people arriving at the park finding onsite parking full might search for spaces in adjacent neighborhoods. Simple modification of an existing bus service might not be readily accepted as part of a park experience. Perhaps transit access to the park could be more easily associated with park arrival if the transit system had a unique recreational characteristic identified with GGNRA (for example, a special bayfront rail system such as the beltline, specially designed buses, or a cog railroad incorporated into existing rail and road systems.)

Directly related to acceptance of a transit ride as a park experience are the number of transfers and the amount of time required to

## CHARACTER AND STATUS OF CULTURAL RESOURCES

The cultural resources of Golden Gate National Recreation Area and Point Reyes National Seashore are immense. They represent two hundred years of history and an indeterminate amount of prehistory revolving around one of the world's most spectacular seaports. Reflected is the area's evolution from Indian villages to a major metropolitan area. Historic themes include the Spanish Empire frontier, Mexico's legacy, the disruption of California's coastal Indians, America's westward expansion, the gold rush, international relations, a number of wars, the evolution of coastal fortifications, maritime history, military history and architecture, agriculture, commerce, transportation, industry, natural disasters, the development of a great city, and many others.

Today, tangible evidence of these themes can be found throughout GGNRA/Point Reyes. Cultural resources are an integral part of the park environment. The historic sites and structures include military fortifications, a notorious prison, century-old ranches, recreational facilities from the 1890s, lighthouses, and lifesaving stations. Less conspicuous, but also numerous, are archeological resources--buried indications of the park's historic and prehistoric inhabitants.

Prehistoric resources include evidence of aboriginal, or native, occupation of parklands. The complete story of northern California Indians is represented--from prehistory to European contact. One hundred three sites are known to exist within the planning area.

Historic resources follow the history of the area since the arrival of European man. The majority of historic resources relate to one of the following land uses:

> Coastal Defense. For 200 years, the San Francisco Bay has been viewed as a key to the defense of the Pacific Coast. Spanish and Mexican governors established and maintained the Presidio of San Francisco as a northern outpost in a network of frontier garrisons. Later the Americans also recognized that the magnificent harbor was essential to defense of the Pacific shores. San Francisco became an important port of embarkation for the Spanish-American War, the Philippine Insurrection, the Boxer Rebellion, World War I, and the Siberian Intervention. Then, during World War II and the Korean War, army installations in the Bay Area evolved into an immense funnel that dispatched millions of troops and millions of tons of supplies to the length and breadth of the Pacific. After the Korean War, Nike missiles reared skyward to protect

the great harbor and its cities. Structures representative of all these events are contained within the former military lands facing San Francisco Bay. The Presidio lands, within GGNRA boundaries but still retained by the army, relate to historic themes beyond coastal defense representative of the Presidio's involvement in West Coast events since 1776.

Agriculture. Early settlers of Marin County recognized the area's suitability for agricultural production. Today, portions of northern park areas depict rural settings typical in American history and provide important reminders of Marin County's agricultural industry.

Maritime. Because of the park's critical relationship to the ocean and the bay, many maritime-related structures are found within its boundaries: lighthouses, lifesaving stations, seawalls, even a collection of historic ships, the largest in the United States. The resources are scattered throughout the park, primarily near important and hazardous navigational points. The maritime museum contains one of the finest maritime libraries in the world, consisting of books, drawings, photographs,and tape-recorded materials, as well as one of the outstanding collections of maritime artifacts in the United States.

Recreation. Leisure-time pursuits were important in the history of the area even before it became a park. Many historic resources, including recreational railroad grades, trails, 1890 recreational facilities, WPA projects, and the site of an international exposition, relate to this theme.

Although these categories are not all-inclusive, they provide a general description of the park's cultural resources. Research to date has focused on properties that may be eligible for the National Register of Historic Places. The national register is an authoritative guide used to identify the nation's cultural resources and to indicate what properties should be protected from destruction or impairment. Approximately 410 structures in the park have been identified as historically significant structures. Many are already contained on the national register; others will be nominated to the national register, either individually or as historic districts.

## TABLE 3. STATUS OF CULTURAL RESOURCES
(November 1978)

### Properties on the National Register of Historic Places

Fort Baker, Fort Barry, and Fort Cronkhite
Fort Point
Fort Mason
Alcatraz
Point Lobos archeological sites
Haslett Warehouse
Olema lime kilns
Historic ships (each ship is a separate entry): Wapama, C.A. Thayer, Balclutha, Alma, Eureka, Tugboat Hercules
Six-inch rifled gun no. 9 (Baker Beach)
Lewis Ark
Tubbs Cordage Company office

### Properties on the National Register
(but not administered by Golden Gate)

Angel Island
Presidio of San Francisco
San Francisco cable cars system (Aquatic Park)
San Francisco pumping station No. 2
Steamship Jeremiah O'Brien

### Properties Determined Eligible for the National Register

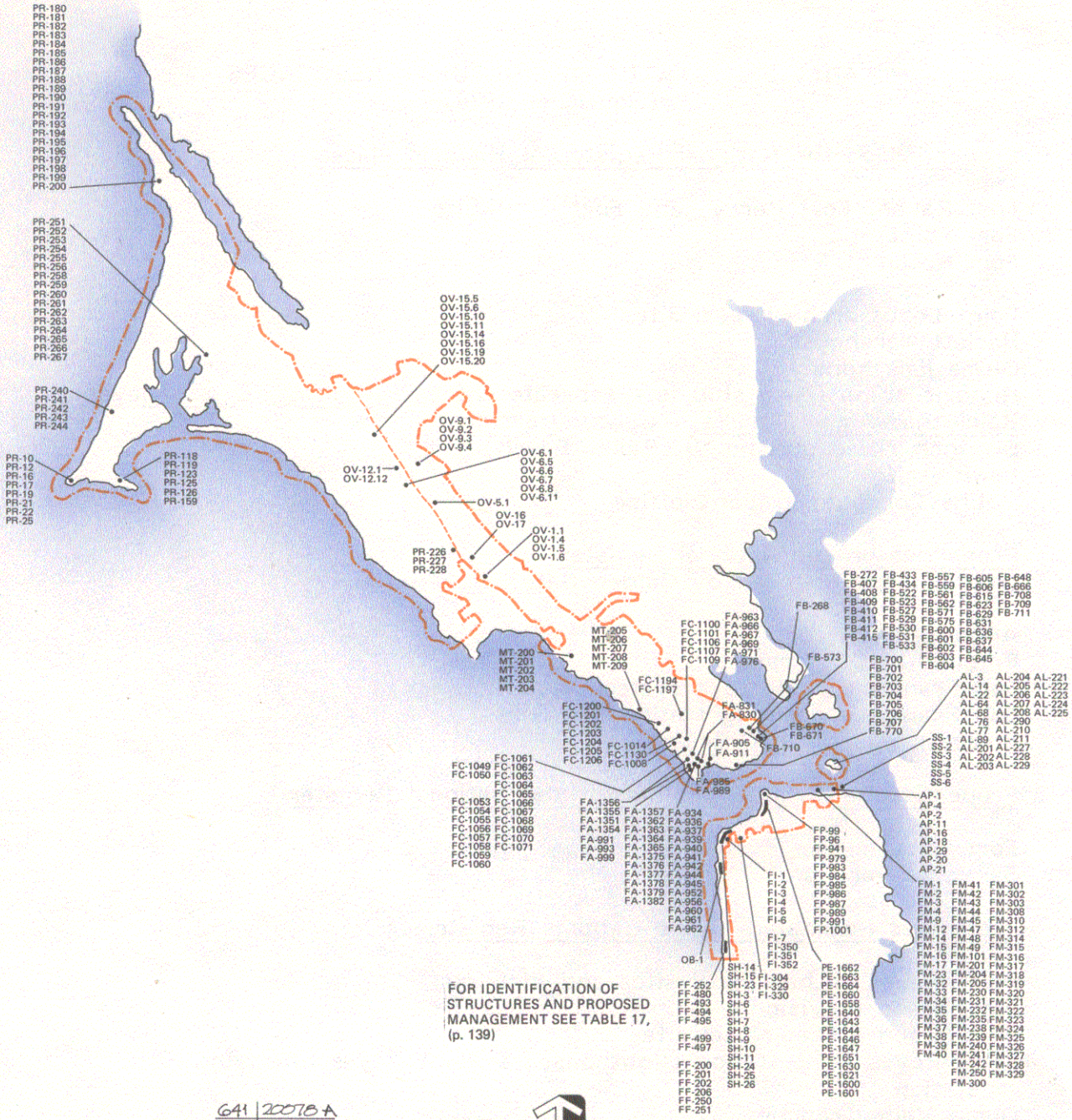
Fort Miley
Sarah Seaver Randall house

### Properties Nominated to the National Register

Point Reyes archeological sites and districts
Fort Mason (revision)
Fort Mason archeological sites
Point Reyes light station (lighthouse) & Point Reyes lifesaving station
Olema Valley ranches
Aquatic Park historic district
Point Bonita lighthouse
Hill 640

### Properties in Process of Being Nominated to the National Register

Forts Baker, Barry, Cronkhite (revision)
Presidio fortifications (to be part of a joint U.S. Army/NPS nomination)
Point Bonita lifesaving station
Point Lobos marine lookout station
Sutro Baths ruins and site
Sutro Heights Park

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UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

# CULTURAL RESOURCES

## GOLDEN GATE NATIONAL RECREATION AREA
## POINT REYES NATIONAL SEASHORE

Properties That Appear to be Eligible for Nomination to the National Register

Pierce Point Ranch
Home Ranch
Point Reyes lifesaving stations (2)
Fort Point lifesaving station
Point Bonita lifesaving station site
Point Bonita light station

## PROPOSED MANAGEMENT STRATEGIES

### Historic Structures

The National Park Service recognizes the importance of managing cultural values within GGNRA/Point Reyes. In accordance with the legislation establishing these parklands and the Act of 1916 establishing the National Park Service, all sites, objects, and structures of historic, architectural, or engineering significance will be maintained and preserved. No removal of historic structures is envisioned.

Preservation of historic resources will include stabilization, arresting decay, and/or mothballing to prevent further deterioration. Examples of where this action will be used are the Alcatraz fortifications and prison ruins, the historic ships at Aquatic Park, most of the batteries and fire control stations throughout the park, outbuildings of the Olema Valley and Point Reyes ranches, and various archeological sites.

Adaptive restoration for park use is also proposed for many of the historic structures, which will involve modifications to meet basic life safety codes, structural standards, and handicapped access. Every attempt will be made to design changes to avoid effects on the quality and character that qualifies the property for the national register and to design changes to be reversible in nature. Adaptive use is very important if many of the 410 historic structures are to be maintained and preserved over a long term. Structures to be adaptively used for community program space, hostels, interpretive displays, recreational space, museums, environmental education centers, administrative offices, and other park facilities include the Haslett Warehouse in Aquatic Park, the Cliff House, most military quarters and administration buildings, some fortifications, and the main ranch buildings in the Olema Valley and Point Reyes. Some historic landscape features, such as the Fort Barry rifle range and the Fort Mason parade ground, will be adaptively used in a way that will enable their general historic appearance to be retained.

Restoration, which involves complete rehabilitation of a structure or scene to its most historically significant condition, is the most expensive form of management and will not be applied to many structures. Some places that will be restored are the Point Reyes lighthouse, Fort Point, Sutro Heights Park grounds, and a few fortifications in various key locations.

Many of the structures have deteriorated in their harsh marine environment. Additional studies and evaluations will determine the alternatives, cost, and feasibility of preserving specific structures, and while no historic structures are proposed to be removed, some may be found to be unpreservable. In such cases, consultation with the state historic preservation officer and the Advisory Council on Historic Preservation would be undertaken, in full compliance with the National Historic Preservation Act of 1966.

## Historic Settings

The historic scene around many historic structures is in a highly deteriorated and sometimes hazardous condition. Rubble from demolished structures and remains of former utility systems and foundations have not been removed, and there is widespread crumbling of concrete, advanced deterioration of metal, and undercutting of viewpoints by natural erosion. In these places, action will be taken to improve the historic settings and create a safe environment for people, but full restoration of historic settings is not considered feasible, due mainly to cost and the changes in use which will occur (from military and agricultural to park use). As improvements are made, close and careful consideration will be given to the resources for which the parks were established, to ensure preservation of all cultural, natural, scenic, and recreational values.

New plantings will be compatible with whatever remains of the historic landscape. Minor facilities such as trails, walkways, benches, picnic tables, and comfort stations will be designed and sited in appropriate consideration of historic values and styles.

The open grasslands characteristic of pastoral landscapes, which have long provided a pleasing contrast with the park's forests and brushlands, are not necessarily self-sustaining. The most historically accurate condition for these lands includes the presence of grazing animals. This will be appropriate in some cases, but natural resource management considerations will not support grazing in all areas where it has occurred historically. Consequently the maintenance of grasslands for their historic value will occur only where it is ecologically feasible and may sometimes be accomplished by mechanical means (such as mowing).

## Prehistoric Sites

Prehistoric sites will be preserved, and where natural or human forces are causing erosion of these resources, professional studies will be accomplished to determine how to eliminate the adverse effects. All lands not adequately surveyed for archeological resources will be surveyed prior to beginning projects involving land disturbance. The National Park Service procedures for archeological clearance will be followed for documentation of projects having no effects, and projects involving adverse effects or potential effects will be submitted for consultation under the procedures of the Advisory Council on Historic Preservation.

## Museum Collections

The maritime museum collections will be preserved and carefully expanded to include only objects highly relevent to the subject. Specially trained librarians and curators will be needed to preserve the rare books and maintain the historic ships.

# RESEARCH

Archeological and historical studies of GGNRA and Point Reyes have located, inventoried, and identified a great variety of cultural resources. These studies have also designated resources that may meet the criteria of the National Register of Historic Places. Where necessary, future research will be conducted to determine an appropriate level of treatment for individual structures based on their present condition and degree of significance. The following research programs have been completed or will soon be completed.

## Archeological Overview

This study focuses on the understanding of cultures through the technological materials of both prehistoric and historic periods. Prehistoric times--periods lacking in historical documentation--and more recent centuries when records were made combine to form a very long period during which parklands were occupied by various peoples. The overview identifies already known or potential resource locations where archeological mapping, testing, description, and comparison can be used to more fully evaluate cultural resources.

Prior archeological research within GGNRA has been limited, particularly in San Francisco areas. Although within the past 100 years 31 archeological sites have been recorded within the city and county of San Francisco, only 6 remain. Research in Marin County

has been more extensive, but the total data base of aboriginal presence within the park has been severely damaged over time. However, additional aboriginal sites may be discovered because much of the area, especially interior valleys, ridges, and drainages, has not yet been sampled or extensively examined. Consequently, the archeological overview study recommends further research and survey, especially prior to any park development that might affect an area's cultural resources. So far, specific management and research recommendations of this study include:

Intensive Surveys

Wilkins Gulch to Stinson Beach
Rocky Point and Slide Ranch
South Rodeo Lagoon and Bird Island coastal areas
Buried coastal fortifications of Fort Baker

Sample Surveys

Eastern Olema Valley (stratification between ridge and stream-side environments)
Uplands between Route 1 and Ridgecrest Boulevard
Uplands of Mount Tamalpais
Green Gulch
Redwood Creek to Muir Woods National Monument
Coyote Ridge
Ridges between Gerbode Preserve and Tennessee Valley
Rodeo Creek drainage and Gerbode Preserve
San Francisco coastal headlands and Baker Beach

Action Plans for Resource Management

Angel Island
Alcatraz Island
Fort Point (for preservation of buried deposits and structures)
Point Lobos (vertical and horizontal mapping of archeological sites)

The Exercise of Caution During Any Land Alteration

Aquatic Park
Fort Mason
Marina Green/Crissy Field

In contrast to GGNRA, Point Reyes is well along in archeological research. Approximately 70 percent of the peninsula has been adequately examined, yielding a total of 95 archeological sites. About 36 of these sites have been tested, extensively examined, or sampled by archeologists who were largely motivated by interest in Drake's landing.

As a general management action, the archeological overview recommends formulation of a parkwide system for identification, description, and preservation of all archival documents, archeological specimens, and resource terrain, as well as continued use of the national register and compliance procedures as a planning tool.

## Historic Resource Study

This study presents a thorough park history. Although overlapping with some areas of the archeological study, this research focuses primarily on post-aboriginal settlement, or historic periods with written documentation. The study includes a description of intangible park historic resources such as folklore, lifestyle, and traditions. Additionally, the report identifies physical historic resources, analyzes their significance, and completes necessary nominations to the National Register of Historic Places.

The historic resource study will be a major aid in future planning, management, and interpretation. This study has not included resources within the parts of GGNRA not under the administration of the National Park Service. The study will be enlarged to include them only if they become the management responsibility of the National Park Service.

## List of Classified Structures

The history of GGNRA/Point Reyes is richly portrayed by some 1,500 park structures. Many of these structures are historically valuable because of their associations with military, agricultural, or recreational land use. The list of classified structures documents these resources through photograph and physical description. This list analyzes the significance of each structure and recommends a future management treatment (e.g., preservation of the structure in its current condition, restoration to its former historic appearance, or reconstruction). The 410 park structures now on this list will be treated as though they had been nominated to the National Register of Historic Places until a final determination of their eligibility is made. This list does not contain any structures from the state parklands within GGNRA, but initial recommendations regarding significant structures in these areas have been made. These structures will be added to the list of classified structures only if the state parklands are transferred to the National Park Service.

## INTERIM PROTECTION OF RESOURCES

As cultural resources are tentatively identified, it will be necessary to maintain their current character until they have been fully evaluated in relationship to national register criteria and the detailed planning proposals of the general management plan. Even now, as previously private or military structures are transferred to the park, interim vacancies raise their susceptibility to vandalism. Numerous actions will be required to maintain these structures. Possible actions include public education about cultural resource values, restriction of visitation in sensitive resource areas, guarding by uniformed personnel, formulation of compatible maintenance activities, and adaptive use of structures.

## AUTHORITIES

The cultural resources of GGNRA/Point Reyes will be managed in accordance with the Antiquities Act of 1906, Historic Sites Act of 1935, Historic Preservation Act of 1966, National Environmental Policy Act of 1964, Historical and Archeological Data Preservation Act of 1974, Executive Order 11593, and the American Indian Religion Act of 1979.

The federal regulations, standards, and guidelines of the secretary of the interior (established to carry out the above cited legislation) will be used.

The National Park Service management policies, standards, directives, and procedures for cultural resource management will also be applied. The latter includes the "Policy Guidelines for Native American Cultural Resource Management."

# NATURAL RESOURCE MANAGEMENT

## CHARACTER OF NATURAL RESOURCES

Much of Point Reyes National Seashore retains its natural character, but most of the land in GGNRA has been altered by man in some way. Coastal defense installations have reshaped much of the shoreline and have introduced many new species of trees and shrubs. On the San Francisco side there remains only a few hundred feet of original bay shoreline. Waterfront areas such as Aquatic Park and Crissy Field are in fact constructed out into the bay on large landfills. In the Marin areas of GGNRA most of the parklands have historically been grazed or cut over since the days of early Spanish habitation. Through the years, only a few areas like Muir Woods have been spared some form of economic utilization.

Fortunately, most of these past uses have neither compromised the spectacular visual qualities of these parklands nor reduced their potential for recreational opportunities. In fact, the park characteristics we enjoy today and perhaps assume to be natural are, in most cases, the result of some degree of human intervention with natural processes. Most of the trees at Baker Beach and Lands End, for example, were planted by the army, and the steep open grasslands so characteristic of coastal Marin may have been in some measure perpetuated by livestock grazing. To maintain these qualities as we know them may require continued intervention or management.

Even natural settings such as Muir Woods and Point Reyes will require some manipulation of the environment to assure that future generations of visitors will be able to enjoy them. In the future, careful management will also be needed to protect areas such as campgrounds and trails from overuse. Campgrounds, for example, may have to be relocated from time to time.

## PROPOSED MANAGEMENT STRATEGIES

Different landscapes invite different experiences. For example, the Monterey cypress trees at Baker Beach provide shelter from the wind and an excellent setting for picnicking. The following types of landscapes will be favored, and the park staff will develop a plan of management actions to maintain these various settings. First consideration should always be given to native species for any new plantings in the park.

The natural appearance of Ocean Beach, Fort Funston, East and West Fort Miley, Lands End, and Baker Beach will be maintained. Wooded areas from the Golden Gate Bridge to the Cliff House will be

protected, and wherever possible along the ocean shoreline the dune environment will be restored. These lands will continue to have a relatively natural character, but intensive management actions such as reforestation of the Monterey cypress stands may be required to preserve wooded areas. This part of the park will attract people seeking closer contact with nature within the city.

Crissy Field, Fort Mason, Aquatic Park, Alcatraz, and Sutro Heights Park will be developed and managed as urban park settings, with special attention given to preserving the historic character of many of these areas. Sutro Park, for example, will have its traditional formal gardens partially restored, and Crissy Field will receive new turf areas and tree planting for wind protection and recreational activities. These areas should draw the most people and will be intensively managed to encourage a variety of park programs and activities.

The GGNRA land in Marin County south of Olema Valley will be managed to preserve a diversity of settings. The mosaic coastal scrub and prairie will be maintained. To achieve this may require a prescribed program of mowing, grazing, and burning. It is particularly important that grasslands be maintained or even expanded near facilities in the Marin Headlands and along access roads to encourage casual uses of open space.

Muir Woods will be managed to protect and interpret the large redwood trees. To do this will require continued intervention in the normal ecological succession of the forest. This may involve, for example, the planting of new trees and the selective thinning of old stands, or even prescribed burning.

The pastoral landscape of the northern Olema Valley reflects the important role that dairying has played in the cultural history of the valley. This area will be managed to preserve the visual contrast between woodland and open grassland so characteristic of a pastoral setting.

Most of Point Reyes National Seashore is either legally designated as wilderness or is under lease or permit for grazing purposes in accordance with its enabling legislation. Within the legal and administrative constraints imposed by these two designations, the unusual variety of scenic qualities and biotic communtiies that make the seashore attractive to scientists as well as recreationists will be aggressively maintained. Although the majority of the seashore is generally viewed as a wild area where natural processes are allowed to predominate, manipulation of those processes through methods such as selective thinning, burning, and mowing will be cautiously pursued when necessary to protect its scenic, ecological, and recreational values. Restoration of historic natural conditions (such as reestablishment of Tule elk) will continue to be implemented when such actions will not seriously diminish scenic and recreational values.

There are very important habitat areas throughout the park, including the habitats of several threatened or endangered species, that will require special management efforts. Salmon spawning streams, tide pools, and bird habitats have been identified as areas warranting special protection, and visitor use will be carefully controlled in and near these areas. A joint federal and state management program, for example, will be developed to protect Redwood Creek from overfishing. Another important area of concern is the apparent decline in the integrity of Pine Gulch Creek, the principal source of freshwater flow into the critical wildlife habitat of Bolinas Lagoon.

## FUTURE RESEARCH AND PLANNING REQUIREMENTS

Point Reyes and Muir Woods both have approved natural resources management plans, but research and additional planning is needed to complete such a document for GGNRA. It is intended that this be accomplished in the near future and that the plan will prescribe specific management actions, including research and monitoring. The plan will also present projects in priority order so that the most critical actions will be carried out first, as funds become available. At this time it appears that the following areas will be high in priority.

### Vegetation Management Plan

Symptomatic of the need for a parkwide vegetation management plan are the dramatic spread of thistle throughout the Marin Headlands and the rapid encroachment of brooms moving in from road cuts and disturbed areas adjacent to the park. The expansion of thistle has resulted in the loss of much valuable grassland in the Marin Headlands over the last three years. Unless steps are taken to better manage these grasslands, the wide variety of vegetation communities we wish to preserve may be diminished over the next several years.

As an important first step in an overall vegetation management plan, research on the life-cycle of exotic thistles will provide the park with a clearer understanding of colonization of these species throughout the headlands and potential management measures that can influence that change. Experimentation with different control methods will lead to the most effective means to accomplish large scale eradication.

French, Scotch, and Spanish brooms, with their attractive yellow flowers, present a less obvious, but potentially much greater, threat to the native flora. With no natural enemies, these aggressive plants spread steadily into grasslands and chaparral,

over-shading and crowding out native plant varieties. Fortunately several groups, including the California Native Plant Society and the Marin Garden Club, are recognizing the potential threat of and are organizing work parties to remove these plants from open space lands throughout the county. Pampas grass also presents a major concern. The vegetation management plan will address actions for control of these problem exotic species.

Other topics that will be addressed in the vegetation management plan will include suitability of plant species for landscaping and revegetation of disturbed sites, fire management, and habitat requirements and status of threatened, and endangered species.

A monitoring program will be developed to quantify human impacts on plant communities and to identify nondestructive limits for different areas of the park.

## Grazing Management Plan

Thousands of acres of GGNRA land are currently leased for grazing, in part to smooth the transition from private to public ownership, as most of this land has been previously grazed. No plan or guidelines now exist for the issuance of grazing permits, nor are there monitoring procedures to ensure that proper range management practices are followed.

Developed concurrently with a vegetation management plan, the grazing plan will

- Monitor current grazing operations to determine suitability of grazing tracts based on forage production capability, management objectives, and visitor use levels

- Identify any additional land where grazing could be utilized for vegetation management

- Draw up a comprehensive grazing allotment plan, including a rotational schedule if required

- Determine proper purposes, such as brush reduction, for grazing levels for each unit

- Set up a monitoring system to observe the effects of grazing on the land, with the particular objective of eliminating all overgrazing, improving range conditions to good or excellent, and making better use of grazing as a vegetation management tool

Unless this plan is prepared and implemented, overgrazing will probably continue in some areas, resulting in soil erosion, loss of wildlife habitat, and destruction of desirable vegetation types.

The Soil Conservation Service has recommended a moratorium on grazing from Tennessee Valley to Green Gulch to allow the recovery of overgrazed grasslands. Some experts have also expressed particular concern over the past effects of grazing on the Bolinas Lagoon watershed and the southern portions of the Olema Valley.

## Shoreline Monitoring Program

The city of San Francisco has proposed to construct a major wastewater storage and transport culvert along the eastern boundary of the Ocean Beach unit of GGNRA. From August 1 to 3, 1978, a panel of experts in coastal processes, ecology, and engineering convened at Fort Mason to prepare recommendations to guide the National Park Service response to the city's plans and also to prepare a plan for managing the shoreline at Ocean Beach. The concerns expressed over the sewer proposal and the magnitude of the recession of the shoreline has spotlighted the immediate need for more basic data on dune and beach behavior. The Park Service's Ocean Beach Erosion Control Conference Report found that "the lack of a systematic data base on shoreline processes and previous human modification of the shoreline has severely limited the panel's ability to make more definite recommendations." The Erosion Conference Panel recommended that a data collection and beach monitoring program be designed and implemented immediately.

The Littoral Environment Observation Program (LEO) will be initiated at Ocean Beach and expanded to other areas along the park shoreline where resource management decisions will soon be necessary. Areas now identified as needing monitoring include Crissy Field, Aquatic Park, Fort Baker, and Stinson Beach. The data collected will be correlated with information gathered by the Army Corps of Engineers, California Coastal Data Collection Program.

## Other Research

The vegetation management and grazing plans and the Ocean Beach monitoring program are the park's most immediate priorities. Future resource management planning will include but will not be limited to the following additional studies:

> Developing measures for the protection of critical habitats for endangered species and other sensitive resources such as the intertidal zones

Developing wildlife censusing and management strategies for certain wildlife species (this may be determined somewhat by vegetation management strategies)

Developing measures to provide for the recolonization of native species such as the sea otter and elephant seal

Continued monitoring of environmental parameters to assess the impacts of use on the recreation area

# Part Two: Environmental Analysis

# INTRODUCTION

Four alternatives for visitor use were presented and evaluated in an Assessment of Alternatives published in May 1977. The plan presented in part one is a melding of these four alternatives--programs and facilities were taken from each and were combined with new ideas that resulted from public review. Tables summarizing the alternatives considered are included in the Appendix.

The impacts of the plan on the social, cultural, and natural environments are analyzed in this section. The impact analysis is organized by component of the environment affected by the plan as a whole. To refresh the reader's memory and to make cross-referencing between elements of the plan and impacts easier, a summary table of the development proposals and existing conditions precedes the impact analysis (table 4).

Several environmental issues were of concern to the public during the review of the assessment and position papers and to preliminary reviewers of this environmental analysis. At this point, most of these issues have been resolved by strengthening the environmental analysis, reviewing and redefining proposals, or giving more consideration to check points, monitoring studies, or mitigating measures that will reduce potential impacts. For example, more thought has been given to possible effects of increased visitor use levels on air quality, water consumption, and residents of surrounding communities.

The plan contains a number of conditional actions that will require careful study and review of all available options before a specific course of action can be chosen. Analysis of impacts of these actions at this time would be sketchy at best. Therefore, these actions are singled out in a separate section for special treatment. These actions will not be undertaken until appropriate studies and environmental documentation have been completed and reviewed by the public.

TABLE 4. DEVELOPMENT SUMMARY

| Area | Existing | Proposed |
|---|---|---|
| Alcatraz | Museum (50 people) | Museum and historic structures (300 people) |
| | Ranger tour area (5.5 acres, 300 people) | Landscaped open space with picnic areas, walking trails (22.5 acres, 300 people) |
| | Ferry terminal | Ferry terminal |
| | Protected wildlife habitat (5 acres) | Protected wildlife habitat (5 acres) |
| Aquatic Park | Hyde Street pier and historic ships (5 ships, 500 people) | Historic ships docked at new facilities near Hyde Street and municipal piers (12 ships, 850 people) |
| | | New breakwater protecting lagoon (Army Corps of Engineers) |
| | | Ship maintenance area near docking facilities |
| | | Entry plaza between Hyde Street pier and Haslett Warehouse |
| | Maritime museum (250 people) | Maritime museum relocated to Haslett Warehouse, and information center added (1,000 people) |
| | Senior center (200 people) | Senior center relocated to Fort Mason |
| | Rowing and swimming clubs | Public rowing, swimming, and sailing facilities in aquatic center (400 people) |
| | Sea Scout facilities | Building removed, Sea Scouts to meet in aquatic center |
| | Food concession | Upgrade food concession |

| Area | Existing | Proposed |
|---|---|---|
| Aquatic Park (cont.) | Municipal pier (250 people) | Municipal pier with fish cleaning stations (250 people) |
| | | Waterfront shuttle along Belt Line Railroad right-of-way |
| | Beach with comfort station | Beach with comfort station (1 acre, 500 people) |
| | Recreation space - includes lawn, bleachers, bocce ball courts (5 acres) | Recreation space - includes lawn, bleachers, bocce ball courts (10 acres, 1,100 people) |
| | Cable car turnaround (240 people) | Cable car turnaround with interpretive kiosk (240 people) |
| | Roads and parking - includes Jefferson Street west of Haslett Warehouse, Hyde Street north of Beach Street, Van Ness north of Kodak building | Roadways removed, landscaped open space (1 acre) |
| Fort Mason | Open space (21.5 acres)--includes picnic area, community garden, lawn | Open space (25 acres)--includes lawn and picnic areas, community garden, walkways, and seating areas (3,000 people) |
| | Pier area - includes park maintenance headquarters, special events, interim educational and cultural programs | Pier area - includes cultural center, indoor recreation space, marine learning center, food service (4,100 people). Fort Mason piers modified to accommodate recreational ferry |
| | Historic residences and grounds and nonhistoric structures - includes visitor center and hostel. Some still in use by military | Historic structures adapted for uses such as senior center, community rooms, hostel, NPS offices. Nonhistoric structures removed for more open space (515 people) |
| | Existing roads, parking, and trails | Most interior roads removed, major access roads relocated to the south, redesigned parking space, improved bicycle and pedestrian paths |

| Area | Existing | Proposed |
|---|---|---|
| Crissy Field | Open space - includes picnic area, runway for game courts (36 acres) | Open space - includes large lawn areas, picnic areas, trails, walks, plazas (38 acres, 2,900 people) |
| | Beach (7 acres) | Beach and a lagoon (6 acres, 1,400 people) |
| | Coast Guard structures | Adapted for small interpretive facility and comfort stations<br>or<br>New building added for interpretive facility, comfort stations, small food service, sports equipment rental |
| | | Bicycle path (1.25 miles) and jogger path (1.25 miles) |
| | | Parking (400 cars) |
| Cliff House | Cliff House complex - includes food and beverage service, gift sales and amusement facilities (770 people), National Park Service information station | Cliff House restored to 1909 appearance (if feasible) - includes food and beverage service, gift sales, exhibits, collections (770 people) |
| | Sutro Baths - ruins | Water oriented park with stabilized ruins, walkways, plazas, decorative pools, interpretive exhibits, small beach (13 acres, 730 people) |
| | Sutro Heights Park - neighborhood park | Restored historic garden and landscaping, minor interpretive displays, seating areas (21.5 acres, 350 people) |
| | Parking lots and circulation patterns | Redesigned parking and circulation, bus drop-off, pedestrian crossing from Cliff House to Sutro Heights Park |
| Fort Baker | Presidio Yacht Club | Adapted for day use center with food service, bait sales, equipment station, and places for game tables and socializing |

| | | |
|---|---|---|
| | Beach and open space | Rubble removed, new sandy beach and landscaping (6 acres, 900 people) |
| | Historic structures | 15 historic structures adapted for educational conference center and artists-in-residence program (350 people); 8 structures adapted for a group camp and environmental study area (150 people); 5 structures adapted for hostel (200 people) |
| | Nonhistoric structures | 4 removed and an NPS maintenance facility built; 19 removed and site regraded for a 700-car parking lot; 1 adapted as a ranger information station |
| | Pier | Ferry landing (600 people), pier with fish-cleaning station, railings, and rod holders for fishermen |
| | Yacht club piers | Public overnight berthing (1 night only), and day use slips (50 slips) |
| | Parade grounds | Adapted as field for sports and informal activities (10 acres, 300 people) |
| | Satterlee breakwater | Parking for fishermen (50 cars), fish-cleaning station, comfort stations |
| Rodeo Valley | Parade grounds (Fort Barry) | Picnic area with tables, grills, and comfort stations (250 people) |
| | | 400-car trailhead parking at former housing area adjacent to Presidio stables (7 acres) |
| | Riding co-op | Riding co-op/public stables |
| | 9 historic structures at the parade grounds | Hostel/group retreat (125 people), artists-in-residence program (150 people) |

| Area | Existing | Proposed |
|---|---|---|
| | Rifle range (Fort Barry) | Special event space (9 acres, 15,000 people) |
| | Chapel and gym (Fort Barry) | Group recreation and education facilities (reservation only) |
| | Battery Alexander (Fort Barry) | Special group picnic and camp area (reservation only, 50 people) |
| | Theater (Fort Barry) | Removed |
| | Nonhistoric structures (Rodeo Lagoon) | Most nonhistoric structures removed, picnic area with turf play areas north of Rodeo Lagoon, one or more structures adapted for a comfort station, food service, and equipment rental facility, adjacent parking area (6 acres) |
| | Rodeo Beach | Rodeo Beach (10 acres, 1,500 people) |
| | 15 historic structures at Rodeo Lagoon | Adapted as environmental education center with classrooms, labs, and dormitories (300 people) |
| | 10 historic structures at Rodeo Lagoon | Preserved for future uses, possibly center for alternative energy and technology research |
| | Roadway (½ mile) and paved parking (75 cars, 3/4 acre) at Rodeo Lagoon | Paved parking (25 cars, ¼ acre); landscaping (2½ acres) |
| | Historic former Nike missile support facilities | Adapted for park maintenance and other administrative activities |
| | Nike missile launch site, Battery 88 | Continue public tours |
| | Historic balloon hangar | Adapted for indoor riding rink |

| Area | Existing | Proposed |
|---|---|---|
| | Fort Barry Capehart military housing | 33 nonhistoric structures removed, group picnic area (15 acres, 400 people) |
| | Kirby Cove group camp | Group camp (120 people) |
| | Nonhistoric structures on Hill 88 | Removed |
| | | Gerbode Valley hike-in camp (60 people) |
| | | Oakwood Valley picnic area (350 people) |
| | | Educational farm in Oakwood Valley (1 acre, 50-75 people) |
| | Tennessee Valley trailhead, riding co-op | Tennessee Valley trailhead, riding co-op/public stables |
| | | Tennessee Valley hike-in camp (60 people) |
| | Point Bonita | Point Bonita tours and exhibits |
| | Overhead utilities | All utilities buried underground |
| Mount Tamalpais | Morses Gulch | Walk-in camp (60 people) |
| | Old Mine (Bolinas Ridge) | Hike-in camp (60 people) |
| | | Exhibit at Bolinas Lagoon as proposed by lagoon advisory committee |
| Muir Woods | Concession, administrative offices, visitor contact facility in grove | Possible relocation of interpretive facility and concession near the existing southern parking lot (long-term potential plan), administrative offices relocated with the new maintenance facilities SE of the new parking lot |
| | Parking lot in grove, adjoining road | Parking removed, road realigned, area restored to its natural condition |

| Area | Existing | Proposed |
|---|---|---|
| | | New parking area (100 spaces) just south of the existing parking area |
| | Maintenance area | Maintenance area relocated in new building with administrative offices SE of the new parking lot |
| | | Hostel (50 people, long-range plan) |
| Stinson Beach | Access road | New entrance |
| | Beach with parking (1,100 spaces), comfort station, food service, ranger station, maintenance substation | Beach with parking (1,100 spaces), comfort station, food service, ranger station, maintenance substation |
| Muir Beach | Beach with parking and comfort station | Beach with parking, improved comfort station, mobile food service, picnic area (80 people) |
| Olema Valley | Five Brooks trailhead, public stables, picnic area | Five Brooks trailhead, public stables, picnic area, walk-in camp (20 sites, 80 people, 20 parking spaces) |
| | Truttman Ranch | Walk-in camp (40 sites, half with tent frames, 160 people, 40 parking spaces) |
| | Bolinas Ridge | Hike-in camp east of Five Brooks (15 sites, 60 people) |
| | Historic structures | Two historic structures at north and south ends of valley adapted for hostels (50 people each, long-term), other structures maintained through use as park staff housing or management facilities, Rancho Bolinas adapted as environmental education center (30-50 people) |

| Area | Existing | Proposed |
|---|---|---|
| | Local ranches | Current agricultural enterprises continued, a working ranch used to interpret historical agricultural use of the valley |
| Point Reyes | Bear Valley visitor center-interpretation, information and comfort station, picnic area, Morgan horse farm, trailhead, Miwok Village, self-guiding trails | Bear Valley visitor center - expanded interpretive activities, improved comfort stations, food service, picnic area, Morgan horse farm, trailhead, Miwok Village, self-guiding trails |
| | Drakes Beach information center | Drakes Beach information center - exhibits expanded |
| | Tours and exhibits at lighthouse | Tours and exhibits at lighthouse |
| | | Tours and programs at Pierce Point Ranch |
| | | Tours and programs at lifesaving station |
| | Beach access at North Beach, South Beach, Drakes Beach, Limantour | Beach access at North Beach, South Beach, Drakes Beach, Limantour |
| | Environmental education center along Limantour Road | Environmental education center along Limantour Road |
| | Hostel at Laguna Ranch | Hostel at Laguna Ranch |
| | | Hostel along Highway 1 |
| | Mount Vision overlook | Mount Vision overlook |
| | Johnson's Oyster Farm | Johnson's Oyster Farm |
| | Sky camp | Sky camp |
| | Glen camp | Glen camp |
| | Coast camp | Coast camp |
| | Wildcat camp | Wildcat camp |

| Area | Existing | Proposed |
| --- | --- | --- |
| | | Home Ranch hike-in camp |
| | | Muddy Hollow Ranch hike-in camp |
| | | Marshall Beach boat-in camp |
| | Palomarin trailhead | Palomarin trailhead |

## IMPACTS ON VISITORS

### Changing Activities and Use Levels

Opportunities for visitor use will be greatly expanded by the plan. New recreational activities, educational and interpretive programs, and visitor services will be provided, primarily by using existing facilities and structures. As the kinds of activities in various areas change, the visitors who are attracted to these areas will change also.

Visitation throughout GGNRA/Point Reyes could increase by as much as 200 percent over existing visitation as a result of park development. The increase is expected to be about 230 percent for the San Francisco parklands and about 160 percent for the area north of the Golden Gate, based on the maximum number of people possible in every facility at each location at any one time. An exception to this general projection of increased visitation is the heavily used Mount Tamalpais area, where use is already in excess of desired capacity and will hopefully decrease by about 6 percent.

Wherever increased use levels are not accompanied by a corresponding increase in facilities, visitor enjoyment will be affected. In the case of parking, for example, a deficit of 1,180 parking spaces during peak use periods in the San Francisco Bay waterfront area will decrease the enjoyment of visitors who have to search for parking some distance from their destination. However, the use levels used for assessing impacts on visitors are generally higher than what will actually occur because they are based upon the assumption that all available facilities and spaces will be used at their maximum capacities at the same time. In reality, all facilities will not be filled simultaneously; for example, a beach will be full at midday, but a campground will not be full until evening.

Carrying capacities established in the plan will be continuously reevaluated to assure that visitor satisfaction and enjoyment are not compromised to an unacceptable extent by large numbers of visitors. Visitors will expect high use levels in the southern units because of the structured setting, maintained landscapes, proximity to the city, and high use levels that have already been established. North of the Golden Gate Bridge, however, feelings of overcrowding may be intense for visitors expecting solitude, even when visitor levels are relatively low.

Alcatraz. Activities on Alcatraz will be greatly increased. Currently, visitors are allowed on only about 25 percent of the island. As more of the island is opened, however, both the level

of use and types of visitors will change. People interested in the prison's history, the focal point of present tours, will continue to be attracted to the island. Expanded tours (from a current maximum of 225 people to 300 people), and interpretation of additional historic buildings will provide increased opportunities for visitors to see more of the important structures and gain a better understanding of the area's history. At the same time, an increase in unstructured activities may attract different visitors, such as artists, sightseers, and people interested in a day's outing on an island. New activities will provide additional opportunities for people to enjoy Alcatraz Island and will accommodate a larger number of users.

TABLE 5. ACTIVITIES, ALCATRAZ

| Activity | Present Use | Expanded | New Activity |
|---|---|---|---|
| Guided tours | X | X | |
| Interpretation/exhibits | X | X | |
| Strolling | | | X |
| Picnicking | | | X |
| Bird watching | | | X |
| Photography, painting, sketching | | | X |
| Frisbee, kite flying | | | X |

While the maximum number of people allowed on the island will be 600 (double current use figures), crowding to the detriment of visitor enjoyment is not expected, since much more of the island will be open to visitors.

Aquatic Park. As this area is developed into the front door of GGNRA, some established patterns of use will be disrupted. As facilities are relocated, removed, or adapted for new uses, people who use them will be shifted to new areas, but generally to improved locations within Aquatic Park. For example, some of the pier area now used by swimmers, fishermen, and boaters will no longer be available to them because of the mooring of up to seven additional historic ships. Also, the removal of the rowing clubs (if and when their ownership is transferred to the National Park Service) and the removal of the Sea Scout building will cause temporary inconvenience to the users of these facilities. However, new facilities to support swimming, rowing, sailing, and fishing (including rentals, lockers, and showers) will be developed on the ground floor of the proposed Aquatic Recreation and Education Center. The former rowing club members will be accommodated here, and in a new Hyde Street Pier facility, along with the general public. Sea Scout meetings and programs will also be transferred to this building. If any of the ships are anchored in the center of

the lagoon, great care will be taken to avoid conflicts with swimmers and rowers.

The municipal pier will be upgraded, and restrooms and modest fish-cleaning stations will be added, enhancing its usability for fishermen.

Since the capacity of the lagoon and pier for water-oriented activities has not yet been reached, those who traditionally used the piers for fishing will not be affected by the minor loss of space. The development of a promenade through the area will provide a more attractive setting for sitting, strolling, and board games, thus attracting additional local visitors and tourists to the area.

Additional activities in the Aquatic Recreation and Education Center will enhance educational and recreational opportunities available to all visitors, and encourage programs for all ages and for community-oriented groups.

Over a gradual period of time, the senior citizen's center will move to a new location at Fort Mason. The senior center at Aquatic Park will phase out only as the membership itself shifts to the Fort Mason center, so no impact on members is anticipated. Since the new location will be equally convenient to projected public transportation and parking, be less congested, and provide more outdoor space, it should be a more comfortable and pleasant setting for senior programs.

The conversion of the Haslett Warehouse from office space to a museum and information center will cause the displacement of approximately 70 tenants. By the time adaptation of the warehouse to a visitor facility begins, however, it is anticipated that few, if any, of the tenants will remain and have to move. The benefits of this conversion will be substantial. Expansion and improvement of the maritime museum will increase the educational and cultural experiences of visitors. The inclusion of a major park information and interpretation center will provide much needed direction to both local and national visitors, decrease their confusion, enhance their understanding of the parks' resources, orient them to other opportunities available in the region, and add to their knowledge of the historical significance of the area.

New artifact collections and exhibits, additional ships, and the waterfront shuttle will attract more regional and national visitors to Aquatic Park, and increase opportunities for interpretive and educational activities.

The removal of the rowing clubs and the Sea Scout building, the possible redevelopment of the Hyde Street pier area, development of

a common entry plaza at the intersection of Hyde and Jefferson streets, improvement of the promenade, cleaning up of the municipal pier and bleachers, and closure of some areas to automobile transportation will greatly improve the aesthetic value of the area, thus further highlighting and enhancing visitors' experiences. The overall effect of these various improvements and additions will substantially benefit both local residents and tourists.

TABLE 6. ACTIVITIES, AQUATIC PARK

| Activity | Present Use | Retained | Expanded | Phased Out |
|---|---|---|---|---|
| Sitting and socializing | X | | X | |
| Strolling | X | | X | |
| Sunning | X | | X | |
| Picnicking | X | | X | |
| Eating out | X | X | | |
| Fishing | X | | X | |
| Senior center activities | X | | | X |
| Jogging | X | X | | |
| Bocce ball | X | X | | |
| Water-oriented recreation | X | | X | |
| Kite flying | X | X | | |
| Bongo drums | X | X | | |
| Board games | X | X | | |
| Maritime museum | X | | X | |
| Environmental education | X | | X | |
| Interpretation/ information | X | | X | |

Visitation to this area of the park is expected to more than double, from 2,000 people to 4,340 people maximum at any one time. These visitors will be accommodated in both additional structures and increased open space along the waterfront. Much of the anticipated use will be concentrated in the new maritime museum and at the expanded collection of historic ships. Because these maximum use levels will be reached only on occasion and because the setting is in San Francisco, where large numbers of people are expected, crowding is not anticipated to be a problem a majority of the time. However, parking will not be available anywhere in Aquatic Park and during peak use periods, if all facilities are being used, as many as 678 parking spaces may have to be found in surrounding areas (see table 15 in the section "Impacts on Surrounding

Communities," which includes auto traffic projections and possible parking deficits). The search for parking will delay and inconvenience visitors and require them to walk farther to participate in activities.

Fort Mason. An increase in the number and variety of activities (recreational, cultural, and educational) will make all areas of Fort Mason more attractive to visitors. New opportunities will include overnight visits at the hostel, activities for seniors, indoor recreational activities, and limited food service.

TABLE 7. ACTIVITIES, FORT MASON

| Activity | Present Use | Retained | Expanded | New Activity |
|---|---|---|---|---|
| Strolling | X | | X | |
| Sitting | X | | X | |
| Bicycling | X | | X | |
| Jogging | X | | X | |
| Sightseeing | X | | X | |
| Fishing | X | X | | |
| Arts/crafts | X | X | | |
| Picnicking | X | | X | |
| Eating out | | | | X |
| Lawn sports | X | | X | |
| Dog running | X | X | | |
| Sunbathing | X | | X | |
| Community gardening | X | | X | |
| Hostel | | | | X |
| Senior center activities | | | | X |
| Cultural center activities | X | | X | |
| Environmental education | X | | X | |
| Indoor recreation | | | | X |
| Special events | X | | X | |
| Interpretation/ information | X | | X | |

By moving maintenance facilities from the Fort Mason pier area to a more suitable location, valuable waterfront space will be made available for visitor uses, expanding the kinds of opportunities available in the pier area.

The main emphasis of change in this area is on providing day-to-day recreational opportunities for local and regional residents. The diversity and range of uses provided will attract a wide variety of local groups. While national visitors will certainly

find much to do here, they are not expected to be the primary users.

With the exception of the pier area, Fort Mason is largely unused at present. The large projected increase in visitation from 1,900 to 7,615 reflects this underutilized condition.

During planning, concern was expressed by many groups that Fort Mason keep its tranquil and unstructured qualities. Consequently, care will be taken to ensure that certain times and places are reserved for visitors to enjoy a peaceful park setting by carefully scheduling events and frequently monitoring the effects of crowds.

Visitor parking at Fort Mason will be limited to 614 spaces to preserve as much open space as possible. This amount of parking will be inadequate during special events and peak use periods when activities in the pier sheds and unstructured recreational activities are all occurring simultaneously. During such periods the demand for parking may exceed the number of available spaces by 1,000 or more. Visitors will be inconvenienced by losing time looking for parking spaces and by having to walk or take public transportation from distant parking to Fort Mason. Lack of parking may discourage some visitors from using the area after initial visits. The peak use periods when parking will be a problem are expected to occur on summer weekends and evenings when special events are planned, 25 to 50 days each year. Special attention has been placed on providing alternative forms of transportation to help mitigate the impact of this problem.

Crissy Field. The overall purpose of the plan for Crissy Field is to provide much needed open space. Because it is so underutilized now, recreational use is expected to increase dramatically. The area will be much more accessible and conducive to a number of water and shoreline activities, especially with the possible creation of a lagoon. Both local and regional residents will be drawn to the area for a wide variety of outdoor recreational activities.

Two environmental education programs will be displaced to more suitable park areas. The Applied Aquatic Resources, which in 1978 had 3,710 visitors, will possibly be relocated to Fort Barry, to the center for alternative technology demonstrations and research. The Promenade Classroom, which had 2,185 visitors (138 groups) in 1978, will possibly be relocated to the Fort Point area. These moves will cause a temporary disruption to the organizations and users. However, because of the provision of new facilities, the impact is expected to be slight.

TABLE 8. ACTIVITIES, CRISSY FIELD

| Activity | Present Use | Retained | Expanded | Phased Out | New Activity |
|---|---|---|---|---|---|
| Strolling | X | | X | | |
| Bicycling | X | | X | | |
| Jogging | X | | X | | |
| Dog walking | X | X | | | |
| Fishing | X | X | | | |
| Picnicking | X | | X | | |
| Sunbathing | X | | X | | |
| Environmental education | X | | | X | |
| Boat launching | X | X | | | |
| Water play (lagoon) | | | | | X |
| Lawn sports | | | | | X |
| Sitting | | | | | X |
| Self-guided nature tour | | | | | X |

Use at Crissy Field is expected to grow from the current number of 100 people to a maximum of 4,300 people at any one time. It is not expected that high use levels will lead to uncomfortable overcrowding for several reasons. The park is in an urban area, where there is higher tolerance of crowds than exists in the northern, more rural parklands. The activities will usually be unstructured, allowing people to space themselves and use the park when it is not crowded. Design of lawn areas, walkways, and earth berms will separate areas for intensive recreation from more secluded and quiet settings.

Minimal amounts of parking (400 spaces) will be provided at Crissy Field. Overflow parking will occur either on grassy areas of Crissy Field or in nearby army lots. In the future, improved transit service to Crissy Field, the proposed waterfront shuttle service, and improved pedestrian and bicycle access will help avoid traffic congestion and should ensure that a high level of visitor satisfaction is attained.

Cliff House. The rejuvenation of this area will substantially enhance visitors' enjoyment of both existing and newly available activities by creating a more aesthetically pleasing setting. Improvement of the parking and circulation arrangements will also improve visitors' enjoyment of the area by reducing congestion.

During the restoration of the Cliff House to its 1909 appearance, or during the construction of a new building if restoration is not feasible, visitors will experience some inconvenience if the facility is

temporarily closed. However, either action will increase the building's attractiveness and reduce its commercial character. The food and beverage service at the Cliff House will be appropriate to a reasonable range of tastes and incomes.

Pedestrian access to the Sutro Baths ruins will be easier and more attractive, drawing more visitors into the area and providing an enjoyable and safe visit.

The Cliff House unit will attract both regional and national visitors. A major interpretation and information center will provide an understanding of the history of the area and the available recreational opportunities.

TABLE 9. ACTIVITIES, CLIFF HOUSE

| Activity | Present Use | Retained | Expanded | New Activity |
|---|---|---|---|---|
| Fishing | X | X | | |
| Exploring | X | X | | |
| Strolling | X | | X | |
| Sitting | X | | X | |
| Picnicking | | | | X |
| Eating out | X | X | | |
| Sightseeing | X | X | | |
| Shopping | X | X | | |
| Interpretation/ information | X | | X | |

Once all improvements are completed, this area will have a maximum one-time capacity of 1,850 people. Most of the total increase in visitation for the area will be absorbed by the new Sutro Baths Park, with little change in visitation at the Cliff House itself. The total parking will remain at 335 spaces. Traffic congestion and parking are problems even now, when the area has a capacity of only 700 people; however, improvement of parking facilities, relocation of bus parking to the upper Ocean Beach esplanade, and establishment of a pedestrian crossing from the Cliff House to Sutro Heights Park should help alleviate congestion in the future.

Sutro Heights Park is currently a quiet neighborhood park. Traditional users may be disturbed as more people are drawn in and create a busier, less tranquil atmosphere.

Marin Headlands. The Marin Headlands, covering approximately 4,700 acres, currently has a maximum visitation of 1,167 visitors at any one time. This is expected to increase to a maximum of 5,466 visitors at any one time with proposed improvements at Fort Baker and Rodeo Valley.

During periods of peak use, when Rodeo Valley is closed to automobile traffic and shuttle service is operating from Fort Baker, there will be a total of 1,565 parking spaces available to visitors, which will be sufficient to accommodate projected auto traffic. However, parking lots and roads may occasionally become congested on peak use weekends, thus causing visitor inconvenience and dissatisfaction.

Fort Baker is currently under the jurisdiction of the army; thus, few recreational use patterns have been established and no traditional users will be displaced. Opportunities for fishing, about the only current use, will be expanded and improved by the plan. This area could become one of the most attractive recreation spots in the Bay Area and will serve as the transportation hub for the Marin Headlands portion of the park. The interpretation/ information center will provide a key link in the parkwide system intended to expand awareness of GGNRA/Point Reyes and the historical importance of the area. The wide range of activities planned will substantially increase the recreational, cultural, and educational options available to visitors.

TABLE 10. ACTIVITIES, FORT BAKER

| Activity | Present Use | Retained | Expanded | New Activity |
|---|---|---|---|---|
| Sunbathing and swimming | | | | X |
| Jogging | X | X | | |
| Fishing | X | | X | |
| Strolling | | | | X |
| Sitting | | | | X |
| Picnicking | | | | X |
| Eating out | | | | X |
| Hostels | | | | X |
| Conferences/ seminars | | | | X |
| Day camps | | | | X |
| Performing arts | | | | X |
| Environmental education | | | | X |
| Boat launching and berthing | | | | X |
| Lawn sports | | | | X |
| Bicycling | | | | X |
| Special events | X | | X | |
| Interpretation/ information | | | | X |

The proposed beachfront will increase visitation in the area to approximately 1,900 people at any one time. In addition, many other visitors will be passing through from the ferry terminal and parking lot to other parts of the headlands. Visitors seeking low-density recreation will not find Fort Baker suitable, but they will find suitable areas in nearby Rodeo Valley.

Proposed improvements in Rodeo Valley will enhance opportunities for the wide range of park activities already occurring there and make the area more appealing to visitors from the inner cities. The educational centers, special event area, rental equipment, hostel, stables, food service, and cultural programs are intended to attract a large variety of users, and visitation could increase to a maximum of 2,926 people at one time (the combined capacities of Fort Cronkhite, Fort Barry, and the Capehart picnic area). This area is one of the most sensitive to crowding, since traditional users have come to expect few people and little activity. Traditional visitors will experience varying degrees of resentment over sharing the headlands with more people. However, development will be consolidated in a few small areas, and the majority of visitors will stay in these locations. Therefore, the hills and some beachfront will remain open to those seeking a more natural setting for hiking and picnicking.

TABLE 11. ACTIVITIES, RODEO VALLEY

| Activity | Present Use | Retained | Expanded | Restricted | New Activity |
|---|---|---|---|---|---|
| Beachcombing | X | X | | | |
| Strolling | X | X | | | |
| Sitting | X | | X | | |
| Sunbathing | X | X | | | |
| Picnicking | X | | X | | |
| Eating out | | | | | X |
| Beach sports | X | | X | | |
| Sightseeing | X | X | | | |
| Dog walking | | | | X | |
| Hiking | X | | X | | |
| Jogging | X | X | | | |
| Birdwatching | X | | X | | |
| Fishing (ocean) | X | | X | | |
| Hostels | X | | X | | |
| Camping | X | | X | | |
| Bicycling | X | X | | | |
| Environmental education | X | | X | | |
| Artists-in-residence program | | | | | X |
| Water activities | X | | X | | |
| Horse riding | X | | X | | |
| Special events | X | | X | | |
| Interpretation/ information | X | | X | | |

Special events at the rifle range will disturb users of adjacent areas. Until transit service is implemented, special events may cause traffic congestion and competition for available parking spaces. When transit service is operating, visitors bound for other destinations in the valley may be inconvenienced by having to park at Fort Baker at times when large special events are scheduled.

Members of the horseback riding co-ops in Rodeo Valley and Tennessee Valley will not be affected, except that their organizations will have to make arrangements to provide five to ten horses for public rental. These rental animals will provide riding opportunities for park visitors who do not own horses.

Two other organizations operating in Rodeo Valley, the YMCA and Yosemite Institute, will continue their programs in their current locations until the facilities are amortized. At such time, these organizations will move to historic structures at Fort Cronkhite, thus consolidating all environmental education program facilities in the valley. With the exception of increased visitation, little impact on these organizations is expected from the plan.

Mount Tamalpais Area. The increase in visitor use of both Marin Headlands to the south and Olema Valley to the north should reduce the pressure on the well-established, heavily used Mount Tamalpais area and allow a more enjoyable visit for traditional users. Very few changes in activities or use levels are foreseen for Muir Woods and Stinson Beach.

Expansion of the interpretive program to include information about all of GGNRA/Point Reyes and other recreational areas in the region will provide a needed link between Muir Woods and the rest of the parks and help visitors become aware of the opportunities available to them.

When and if the restaurant and gift shop are replaced outside the grove, additional food and shopping services will be provided. Service may be temporarily disrupted during the move.

TABLE 12. ACTIVITIES, MUIR WOODS

| Activity | Present Use | Retained | Expanded |
|---|---|---|---|
| Strolling | X | X | |
| Interpretation | X | | X |
| Jogging | X | X | |
| Eating out | X | | X |
| Shopping | X | | X |

A new entrance to the parking lot at Stinson Beach will benefit both visitors and townspeople by reducing conflicts between town and visitor traffic. No change in activities is expected at Stinson Beach.

TABLE 13. ACTIVITIES, STINSON BEACH

| Activity | Present Use | Retained |
|---|---|---|
| Sunbathing | X | X |
| Picnicking | X | X |
| Swimming | X | X |
| Beachcombing | X | X |
| Fishing | X | X |
| Wildlife observation | X | X |
| Beach sports | X | X |

Two new campgrounds will allow visitors to hike through the Mount Tamalpais area on a journey that could last for several days.

Olema Valley. This area currently accommodates around 250 people at one time. Even if the theoretical use capacity of 1,615 people at a time is attained, the overall average visitor density will still be only 1 person per 8 acres. Ease of access at the northern end will cause an uneven distribution of visitors, with visitation expected to be lighter in southern areas of the valley. This area is expected to be attractive to those persons seeking a more isolated type of experience. New campgrounds will allow visitors to stay overnight and hike through this area on a journey that could last for several days.

Congestion may occur along the roadway, particularly the section between Five Brooks and Bolinas Lagoon. The proposed shuttle and improved transit should help alleviate congestion that would otherwise occur along the roadway. The acquisition of additional lands at the northern limits of the park could raise future use levels in this area.

Point Reyes. Visitation to Point Reyes is currently 6,720 people at any one time on a peak day and is expected to increase to 10,080 people when the entire plan is implemented. The approximate acreage of Point Reyes is around 55,000 acres, making the overall average density less than one person per 5 acres. Use is expected to spread throughout the seashore, with small concentrations of people along the beaches, in campgrounds, and at the Bear Valley visitor center. Six new campgrounds and two new hostels will greatly expand overnight opportunities and complete the system of

accommodations designed to allow visitors to hike from San Francisco to Point Reyes in a continuous journey.

Improved information and interpretation at Bear Valley will help people become aware of the historical and ecological significance of Point Reyes and the recreational opportunities available at different locations.

TABLE 14. ACTIVITIES, BEAR VALLEY

| Activity | Present Use | Retained | Expanded |
|---|---|---|---|
| Picnicking | X | | X |
| Informal sports activities | X | X | |
| Interpretation | X | | X |

Traditional users seeking a low-density wilderness experience may feel Point Reyes is crowded, especially at the new campground sites. However, it is expected this use level will still allow for relatively secluded recreation. Careful monitoring of visitor levels and sensitivity to crowding will ensure that the quality of recreation at Point Reyes remains high.

## Effects of Construction

Throughout the parks, construction activity to adapt structures, update facilities, and provide for new uses will inconvenience visitors. The movement of material, increase in noise levels, and closure of some park areas until construction activities are complete will be disturbing. These inconveniences, however, will all be temporary. Construction projects will result in vastly improved conditions for visitors.

## Effects of Transportation Changes

The proposal emphasizes use of mass transit, shuttle buses, and other forms of public transportation. While having the advantages of reducing congestion, pollution, visual intrusions, and oil consumption, and increasing access for those without cars, public transportation also causes some inconvenience to visitors. Users will have to plan ahead and arrive earlier for events and wait longer to get to different areas. They will have to carry things with them and be aware of schedules and transit routes. Each of these conditions could potentially reduce visitors' satisfaction with their park experience.

Visitor Safety

Development proposals will correct a number of existing safety hazards, primarily by removing deteriorated structures and by constructing safer trails and access. However, more visitors will be attracted to an area that contains many natural hazards--steep cliffs, unpredictable ocean currents and waves, and earthquake zones.

Rehabilitation of historic structures for new park uses and removal of other structures will reduce possible safety hazards to visitors who might otherwise explore deteriorating buildings and batteries. Hazards will be most significantly reduced on Alcatraz when nonhistoric structures are removed. At present, weakened structures and rubble necessitate closing off most of the island, but use of the island can be expanded after these potential hazards are removed. Removal of abandoned structures in Rodeo Valley and Fort Baker will eliminate other major hazards.

Trail improvements throughout the park, but especially in the San Francisco Headlands, will rectify a dangerous potential for sliding in areas of unstable and slumping coastal cliffs.

Use of coastal areas throughout the park is inherently hazardous because of instability of coastal cliffs, possibility of landslides, and potential for earthquake-related flooding along low-lying coastal areas. While only minor new visitor facilities are proposed for coastal areas, some risk will be taken to provide for visitor use of beaches and the adjacent coastal zone. However, this risk is not considered to be sufficient to preclude shoreline recreation use. As required by Executive Order 11988, areas subject to 1 percent or greater chance of tsunami flooding in any given year (100-year frequency) were identified in the Information Base as flood-prone areas. The following new or existing facilities are planned for use within these areas:

Aquatic Park
- New ship maintenance facility
- Hyde Street pier (existing, to be replaced)
- Maritime museum and information center in Haslett Warehouse (existing structure, new use)
- Aquatic Recreation and Education Center in Aquatic Park bathhouse (existing structure, new use)

Fort Mason
- Pier buildings (existing structures)

Crissy Field
- New information station

Information about tidal flood prone areas is not available for Marin County; however, several facilities may be located in flood prone areas:

Fort Baker
- Beach/picnic/play area
- Pier and improvements for restrooms, fish-cleaning station (existing structure, new use)
- Historic structures adaptively used for food service, equipment rental (existing structures, new uses)

Fort Cronkhite
- Historic structures adaptively used for environmental education center (existing structures, new uses)

Muir Beach
- Picnic area

Stinson Beach
- All existing facilities

None of these facilities is expected to harm floodplain natural values and none is particularly detrimental to human safety, health, or welfare. Tsunami run-up may cause some flooding of lower floors, but building stability is not expected to be affected. The structures of concern are either existing as part of previously developed areas, or are support facilities that will provide for recreational use of beach and shoreline areas. Use of existing historic structures in the flood zone is considered, in spite of their coastal locations, because of a mandate to utilize historic structures, because their functions often require a water-oriented location, and because their use is not hazardous to visitors. For example, the Haslett Warehouse was acquired to function as a major visitor information center and maritime museum because of its location near the popular Fisherman's Wharf and because of its proximity to the bay, water recreation facilities, and historic ship collection. Similarly, the Aquatic Recreation and Education Center (old Aquatic Park bathhouse building) will house water recreation and education facilities that require a waterfront location. In the rehabilitation of historic structures for adaptive uses, the flood-prone nature of their locations will be taken into account to decrease the potential for visitor injury. To assure compliance with Executive Order 11988, the review procedure described in the order will be followed.

Structural damage and visitor injury are real possibilities throughout most of the park in the event of a major earthquake. While no new facilities will be built in seismically unstable areas, existing facilities in Olema Valley lie close to the San Andreas fault

and could be damaged by activity along the fault. Whenever work is undertaken on historic structures to make them suitable for adaptive uses, they will be brought up to structural standards to make them more capable of withstanding seismic activity.

### Summary

The plan will provide a wide range of high quality recreational, educational, and cultural opportunities for local and national visitors. Areas in San Francisco and Marin will be cleaned up, new activities will be provided, access will be increased, and community service will be stressed. From the maritime museum at Aquatic Park in downtown San Francisco, to the windswept beaches of Point Reyes, the park will provide recreational experiences for a wide variety of users.

The plan was shaped by careful attention to both existing uses and public demand for new activities. Visitor use levels will be monitored to ensure that overcrowding does not become a problem. Public transportation to and from park areas, as well as routes and parking for private autos, will be improved to provide access for all users. Information centers will focus on recreational opportunities in the entire region. Old and unsafe buildings will be torn down, and rubble will be removed. Currently unused areas in prime locations will be rejuvenated and utilized for new activities. These additions and improvements will greatly enhance visitor experiences and recreational opportunities in the San Francisco Bay Area.

## IMPACTS ON SURROUNDING COMMUNITIES

### Traffic Congestion and Parking

Traffic along park access roads is often congested on weekends, especially on the Golden Gate Bridge and Route 1, where traffic periodically exceeds the roads' capacities. Whether or not the plan is implemented, recreational traffic will increase; however, traffic along certain access roads will increase at a more rapid rate as a result of the plan. Periods when traffic is above the capacity of the Golden Gate Bridge and Route 1 will increase in frequency. Roads such as Marina Boulevard, Point Lobos Avenue, and Sir Francis Drake Boulevard, where traffic is presently below the road capacities, will become more congested and reach their capacities sooner. Increased traffic congestion will affect local residents and commuters who regularly use park access roads by reducing travel speeds and increasing the number of times they will be ensnarled in traffic jams. Planned transit systems will reduce potential traffic congestion by reducing the number of private cars being driven through and parked in adjacent communities, but the amount of slow

moving buses pulling in and out of traffic will also affect road travel speeds.

The traffic congestion problem will be noticeably improved in the town of Stinson Beach once heavy park traffic is diverted around the community. The town will no longer be disturbed by excessive traffic, noise, or parking on public streets following the modification.

There will be a parking deficit on peak use days in the San Francisco waterfront units, with the largest deficit occurring in the Aquatic Park/Fort Mason area. The designed parking capacity will provide for more than 50 percent of peak visitation and will be adequate most of the time. However, on peak use days the burden of providing overflow parking will fall on adjacent communities that may not be willing or able to handle the parking problem. Local residents will be harassed by competition for parking and illegal parking in their driveways. It is expected that peak use periods, when parking could be a problem along the San Francisco waterfront, will occur on as many as 25 to 50 days each year; most likely on sunny summer weekends or when special events are planned.

The northern waterfront area can reasonably be examined as a whole in terms of parking requirements because a shuttle system, the waterfront beltline railroad, will be available to transport visitors from their cars to the desired activity area. A total of 4,290 parking spaces will be required between Aquatic Park and Fort Point on a peak use day, based upon the estimates of the number of visitors who will arrive by car (see table 15). This total figure also assumes that ferry service to Alcatraz and Fort Baker will be provided at Fort Mason and includes the parking requirements of ferry users. There will be only 2,480 spaces available in the waterfront section of the park and an additional 630 adjacent spaces available outside of the park; so there will be a deficit of 1,180 parking spaces.

While this deficit appears large, especially in the Aquatic Park/Fort Mason area where an additional 1,300 parking spaces would be required, the impacts on surrounding communities are not expected to be severe for the following reasons. Deficits are calculated based upon peak capacities and assume that all facilities are in operation at one time, but this will not be the case. For example, up to 50 percent of the activities in the Fort Mason piers are scheduled for evening, when outdoor activities will not be taking place, reducing the amount of parking needed by Fort Mason users at any one time. In addition, the period of peak use will be of a limited frequency and duration--a few hours on 25 to 50 days each year. The plan provides for a number of mitigating measures that will prevent excessive impacts on surrounding communities.

TABLE 15. QUANTIFICATION OF TRANSPORTATION IMPACTS
(at one time/peak day)

Existing

| Park Unit | Visitation | Modal Split Percent Auto/Transit/Other | Parking Spaces | Parking (Deficit) Surplus | Traffic (cars) | Transit (people) | Other (people) |
|---|---|---|---|---|---|---|---|
| Alcatraz | 300 | 60/20/20 | 0 | (60) | 60 | 60 | 60 |
| Aquatic Park | 2,000 | 60/20/20 | 85 | (290) | 375 | 400 | 400 |
| Fort Mason | 1,900 | 77/11.5/11.5 | 514 | 65 | 450 | 220 | 220 |
| Marina Green | 3,400 | 75/12.5/12.5 | 1,200 | 400 | 800 | 425 | 425 |
| Crissy Field | 100 | 85/7.5/7.5 | 50 | 25 | 25 | 10 | 10 |
| Fort Point | 650 | 94/3/3 | 210 | 20 | 190 | 20 | 20 |
| Baker Beach | 950 | 80/10/10 | 200 | (40) | 240 | 95 | 95 |
| Lands End | 600 | 90/5/5 | 480 | 325 | 155 | 30 | 30 |
| Cliff House | 700 | 50/45/5 | 335 | 225 | 110 | 315 | 35 |
| Ocean Beach | 2,000 | 75/12.5/12.5 | 220 | (250) | 470 | 250 | 250 |
| Fort Funston | 350 | 84/8/8 | 45 | (45) | 90 | 30 | 30 |
| Marin Headlands | 1,167 | 86/10/4 | 1,480 | 1,166 | 314 | 117 | 46 |
| Mount Tamalpais | 9,334 | 91/6/3 | 1,946 | (504) | 2,450 | 547 | 217 |
| Olema Valley | 250 | 95/2/3 | 100 | 25 | 75 | 5 | 8 |
| Point Reyes | 6,720 | 95/3/2 | 2,095 | 375 | ,720 | 200 | 134 |

Proposed/Potential

| Park Unit | Visitation | Modal Split Percent Auto/Transit/Other | Parking Spaces | Parking (Deficit) Surplus | Traffic (cars) | Transit (people) | Other (people) | Available Adjacent Parking |
|---|---|---|---|---|---|---|---|---|
| Alcatraz | 600 | 0/100/0 | 0 | 0 | 0 | 600[a] | 0 | |
| Aquatic Park | 4,340 | 50/30/20 | 0 | (678) | 678 | 1,302 | 868 | 315 |
| Fort Mason | 7,615 | 67/21.5/11.5 | 614 | (980)[a,b] | 1,594[a,b] | 1,636 | 876 | |
| Marina Green | 3,400 | 65/22.5/12.5 | 1,200 | 500 | 700 | 765 | 425 | |
| Crissy Field | 4,300 | 75/17.5/7.5 | 400 | (600) | 1,000 | 763 | 322 | 315 |
| Fort Point | 1,200 | 85/12/3 | 270 | (48) | 318 | 244 | 36 | |
| Baker Beach | 1,500 | 70/20/10 | 330 | 0 | 330 | 300 | 150 | |
| Lands End | 1,000 | 80/15/5 | 480 | 230 | 250 | 150 | 50 | |
| Cliff House | 1,850 | 50/45/5 | 335 | 45 | 290 | 833 | 92 | 146 |
| Ocean Beach | 4,020 | 75/12.5/12.5 | 220 | (722) | 942 | 500 | 500 | 1,265 |
| Fort Funston | 800 | 77/15/8 | 300 | 146 | 164 | 120 | 64 | |
| Marin Headlands | 5,466 | 72/22/6 | 1,565[c] | 335 | 1,230 | 1,200 | 328 | |
| Mount Tamalpais | 8,800 | 81/15/4 | 1,910 | (210) | 2,125 | 1,317 | 350 | |
| Olema Valley | 1,615 | 84/11/5 | 400 | 0 | 400 | 178 | 81 | |
| Point Reyes | 10,080 | 87/10/3 | 2,595 | 225 | 2,370 | 1,008 | 302 | |

[a]Assumes that Alcatraz and Fort Baker ferry terminals are located at Fort Mason.

Surplus parking in other areas of the park and overflow lots will be connected by shuttle to special events areas. If necessary, overflow parking will be provided on lawn areas or along roadsides on a few peak days each year. In the case of special events, a set carrying capacity will not be exceeded by event crowds and two large events will not be scheduled for the same day to minimize parking and traffic congestion problems.

Exploring the possibility of constructing a multi-level parking structure at the northern terminus of Van Ness Avenue could result in significant alleviation of the northern waterfront parking deficit.

As the waterfront parks are developed and visitation rises, the parking situation will continuously be reevaluated. If parking problems become apparent, parking options will be reassessed before the following actions are implemented:

- termination of military use of buildings at Fort Mason and initiation of visitor use
- opening of Haslett Warehouse as a maritime museum/information center
- development of Crissy Field
- initiation of ferry service from Fort Mason to Alcatraz and Fort Baker
- extension of transit service west of Aquatic Park.

Parking deficits are also indicated for Ocean Beach and northern Marin, but adjacent communities will not be affected. At Ocean Beach a large amount of adjacent parking is available, and it will more than compensate for the lack of parking space within the boundary. Proven parking deficits in northern Marin areas eventually may be gradually alleviated through the development of additional off-road parking facilities. To as great an extent as possible, additional off-road parking will not intrude visually on roads or major trails and will be concentrated in major impact areas such as Bear Valley and Five Brooks, with transportation to surrounding areas provided by shuttle buses. As an interim step, before adequate shuttle bus service is available, some additional parking in northern Marin will be provided by dispersed roadside parking.

## Community Services and Utilities

The park will rely on surrounding communities for municipal services such as water, power, waste removal, and fire control.

TABLE 16. SOLID WASTE DISPOSAL REQUIREMENTS

| Area | Structures to be Removed | Type of Material | Possible Disposal Methods | Approx. Amount of Material (cubic yards) |
|---|---|---|---|---|
| Alcatraz | Rubble piles (from 8 structures)<br>Nonhistoric buildings (5) | Concrete<br>Steel | Landfill<br>Use on site<br>Offshore ocean dumping in approved area | 10,000 |
| Aquatic Park | Road section<br>Nonhistoric buildings (2) | Asphalt<br>Wood | Wood salvage<br>Use on site | - |
| Fort Mason | Road sections<br>Concrete foundations | Concrete<br>Asphalt | Use on site | - |
| Crissy Field | Temporary buildings<br>Concrete shoreline revetment<br>Road sections | Concrete<br>Wood<br>Asphalt | Army to remove structures in permit area | - |
| Fort Baker | Bulkhead<br>Temporary buildings (23) | Concrete<br>Wood | Wood salvage<br>Landfill | 2,400 (bulkhead)<br>350 (structures) |
| Fort Barry (Capehart) | Nonhistoric buildings (33) | Wood | Army to remove structures | - |
| Fort Cronkhite | Temporary buildings (15) | Wood<br>Concrete | Wood salvage<br>Landfill | 500 |
| Muir Woods | Nonhistoric buildings (2)<br>Parking lot | Concrete<br>Wood<br>Asphalt | Wood salvage<br>Landfill | 200 |
| | | | Total | 13,450 |

Demands will not be excessive, and the National Park Service will pay for services rendered. Due to the isolation and large numbers of buildings at Forts Barry and Cronkhite, the National Park Service must provide its own structural fire protection in those areas.

Water. Water consumption within the park will increase as visitation increases (see "Impacts on Water Resources" for water demand rates and water sources). Marin Municipal Water District (MMWD) supplies water to Marin Headlands and Mount Tamalpais. During drought years, the park will face the possibility of having a reduced water supply or having the water supply to the park cut off entirely if emergency conditions exist so that other customers can be served. A greater reliance on local water resources or curtailment of park activities may result under such a situation.

Watersheds for the Stinson Beach County Water District and Muir Beach Community Services District are almost wholly contained within the boundary of the park. It is not anticipated that park proposals will affect the potential of these watersheds to supply water to the communities of Stinson Beach and Muir Beach. The National Park Service will make every effort to cooperate with these communities to ensure an adequate and dependable water supply. These water districts supply park users at Muir Beach and Stinson Beach as well as community residents. In the event of a drought and insufficient water supply, the park will curtail use if necessary so that residential demands can be met without adverse effects on the communities.

Solid Waste Disposal. Rubble and a number of structures (buildings, road sections, paved parking, and bulkheading) will be removed from the park as a result of the plan. Waste material from demolition will have to be disposed of, possibly in a community landfill, or recycled for use on or off the site. The majority of the solid waste will be generated on Alcatraz from the demolition of nonhistoric structures and the removal of existing rubble piles. Material from Fort Baker (bulkheading and temporary buildings), Fort Cronkhite (temporary buildings), and Muir Woods (buildings and parking lot) will also require disposal. Existing structures at the Capehart housing area in Fort Barry and the Crissy Field permit area will not be needed for park uses and will be removed by the army before the areas are turned over to the National Park Service; therefore, the solid waste disposal requirements of these actions have not been calculated.

Possible disposal methods for waste material are listed in table 16. At Fort Mason and Aquatic Park, all waste material can be either used onsite as part of landscaping plans or salvaged. But in the case of Alcatraz, large amounts of rubble and concrete foundations need to be removed from the island. Disposal of the large quantity

of material from Alcatraz will cause special problems because of possible transport difficulties on both land and water. Several alternative disposal methods are being investigated, but traditional disposal in an existing landfill appears to be the most feasible at the present time. However, a combination of disposal methods including use onsite and disposal in either a landfill or offshore in an approved ocean dumping area may be the final solution to the waste problem. Recycling, which would be preferable to disposal, was investigated, but the desirability and need of the material for control of shoreline erosion or for creation of bay marine habitat appears to be limited at the present time.

A total of up to 14,000 cubic yards of material may be disposed in area landfills. Material will be "clean" construction material, free of hazardous wastes that could contaminate surrounding water or air. Disposal in an existing local landfill, such as Mountain View landfill, will reduce the capacity of the facility for community use by the amount of material deposited, but otherwise community services and residents will not be affected.

Fire Control. Fire control within the park is provided by municipal fire departments and by trained personnel at both Point Reyes and Golden Gate. As the number of visitors and park activities increases, so will the potential for accidental fires requiring suppression. The prohibition of open fires and the provision of charcoal braziers should limit fire potential within the park, but fire-fighting services could be required periodically and could temporarily strain resources of nearby fire departments. Special precautions will be taken to prevent fire during special events in the northern park areas, but stand-by fire control service may occasionally be required for special event areas. All fire suppression costs for fires initiating within the park will be assumed by the National Park Service.

## Other Impacts

Higher visitor use levels will increase the demand for commercial services--food, lodging, and souvenirs--in surrounding areas as well as increase vehicular and pedestrian traffic and crowding of establishments. Businesses in the surrounding areas will be stimulated, but most are already tourist oriented and may experience little noticeable change. This is especially true of business along the San Francisco waterfront and in Sausalito. Smaller towns such as Point Reyes Station, Olema, and Inverness may experience some increased demands for visitor services, but provision of a food service at Bear Valley will reduce the potential for change in these communities. The plan will not promote growth or change growth patterns in any adjacent communities.

Reserved rights of residency have been retained by a number of landowners in Olema Valley and Point Reyes. Increased use by campers and hikers could result in an invasion of the privacy of these residents.

Property owners in the Paradise Cay/Greenbrae Boardwalk vicinity near the Larkspur ferry terminal have voiced complaints and drawn up a legal suit stating that high wave action generated by ferry operations at Larkspur has damaged their property and significantly eroded the shoreline. The high speeds of the ferries create greater wave height and agitation in Corte Madera Bay, which in turn produces more disturbance of the shore. Increased use of Larkspur by the addition of park-related ferries could potentially contribute to this property damage. Studies have determined measures which will mitigate the effects of wave action from ferry operation. Hopefully these measures will be in effect before park-related ferry operations are initiated. If they are not, the speed of park-related vessels will need to be regulated in order to avoid any adverse effects on private property and residents.

### Summary

The parks are not self-sufficient and must rely on surrounding communities for parking, utilities, and municipal and visitor services, but they will not unduly strain these services or adversely change any community. As the attractiveness of the parks increases, so will traffic and congestion in surrounding neighborhoods. Some inconvenience to local residents is bound to result even though the plan provides for a transit system and other mitigating measures to reduce traffic problems.

## IMPACTS ON CULTURAL RESOURCES

Overall, the plan provides for maximum maintenance and preservation of significant cultural resources and for adaptive uses of historic structures that will not affect either their quality or character. Every historic structure in the park and the way it will be managed to protect its historical value is listed in table 17 at the end of this section. All historic structures will either be preserved, adaptively used, or restored in accordance with applicable legislation; none will be removed. All archeological sites will be protected and preserved.

### Preservation

Techniques to stabilize resources and arrest decay will assure the long-term preservation of valuable historic resources and lengthen

their life for visitor use and scientific study. Significant structures on Alcatraz, the historic ships at Aquatic Park, batteries throughout the park, and ranch out-buildings in Olema Valley and Point Reyes will be preserved and maintained.

In some cases preservation techniques, such as stabilization, may result in a change in the quality of a resource or in physical damage. For example, stabilization of the cell house on Alcatraz might change the structure itself or damage the historic citadel beneath the cell house. Both are significant historic structures, but the preservation of one may result in the loss of the historical and structural integrity of the other. A preliminary study indicates that it may be possible to stabilize the main cell house and citadel without major loss of either structure, but future structural studies will be needed to determine the final proposal and its impacts on the cell house/citadel complex.

Fortifications and batteries throughout the park will be preserved by securing and "mothballing" for the time being, but the structures will still continue to deteriorate as a result of the weathering by the elements, visitor use, and vandalism.

If lagoon modifications or breakwater construction prove feasible, the provision of calm mooring for the historic ships will greatly lengthen their lives and reduce the amount of maintenance they require, thus aiding in the preservation of the fleet.

## Adaptive Use

Using historic structures whenever possible for traditional and new uses will increase visitation to these structures and people's appreciation of them. Most of the habitable historic structures in the park will be adaptively used. The majority of these structures are old military quarters or ranch houses. While utilization and maintenance will retard deterioration and reduce security problems, some modifications of historic structures will be necessary to make them suitable for park uses, safe for visitor occupancy, and free of physical barriers for the handicapped. These modifications may result in the alteration of historic fabric or may introduce elements that are out of character with the rest of the structure.

Most alterations to allow visitor use will be interior changes and will not visibly alter exterior historic values. In cases where the interior as well as the exterior of a structure is significant, alterations will be reversible in nature to minimize adverse effects. For example, adaptation of the bathhouse building at Aquatic Park to provide classrooms, laboratories, and meeting rooms may require the use of temporary or movable partitions to minimize adverse effects.

Modifications to bring historic structures such as the Haslett Warehouse up to structural earthquake standards will involve some alteration of historic fabric.

The dramatic increase in use that will accompany adaptive rehabilitation of most structures could increase the wear and tear on historic fabric. In the case of Battery Cavallo, use of the area as a group campsite may disturb the earthworks of a post-Civil War coastal defense structure. Public education about cultural resource values and the presence of park staff in adaptively used structures should prevent destructive vandalism, but periodic maintenance of structures will still be necessary.

Adaptation of a historic structure will, in some cases, also include exterior restoration. For example, the Cliff House, proposed for adaptive use, will also be restored to its exterior 1909 appearance if feasible. This restoration will re-create the historic setting, facilitate historical interpretation of the area, and preserve the historic remains, as well as provide for adaptive use of the building as a restaurant, information center, and gift shop.

Historic grounds, ruins, and landscape features will also be adapted for recreational uses. For example, the Sutro Baths ruins will be preserved in a recreational park setting. While park elements (walkways, benches) could detract from the historical value of the ruins, they will also allow long-term preservation of the ruins and facilitate visitation.

Adaptive use of grounds areas (rifle range, parade grounds) will allow the historic scene to be preserved, but in a new role as space for recreational use. For example, the rifle range maintained in turf will appear much as it did historically, but the use of the area for special events will be radically altered.

### Restoration

Restoration or complete rehabilitation of a structure or scene will result in slight modifications of historic fabric when it has been altered in the past or requires structural rehabilitation, but it will greatly enhance the historical aspects of the area. Restoration of a few key structures, the Point Reyes lighthouse, Fort Point, a few fortifications, and the grounds of Sutro Heights Park, will heighten the visual historical character of these areas and greatly aid historical interpretation.

### Removal

No removal of historic structures is planned. However, some historic structures may have to be removed in the future if they

cannot be preserved or adaptively used in their present form. Additional structural studies will be necessary to determine the final proposal for at least two structures. If the cell house on Alcatraz has deteriorated to such an extent that it is not feasible to stabilize and preserve it, removal may be required. Similarly, if sufficient historic fabric and structural integrity is not present to allow restoration of the 1909 Cliff House, it may be removed and replaced with a modern structure. If it appears that either of these buildings should be removed, the public will be made aware of the situation and the National Park Service will consult with the state historic preservation officer and the Advisory Council on Historic Preservation, in full compliance with the National Historic Preservation Act of 1966, to determine the final solution and all possible techniques for mitigating the loss of historic resources.

### Protection and Preservation of Historic Scenes

Historic scenes at Alcatraz and the Fort Mason piers will be somewhat modified by landscaping. However, historical values will be protected by making only modest use of landscaping that could screen or change the scene and use of historical gardens when possible. Removal of unsightly conditions and deteriorated structures will improve the scene around historic structures throughout the park, especially when temporary military structures are removed from the three forts in the Marin Headlands and from Fort Mason and when nonhistoric structures and rubble are removed from Alcatraz. Demolition and construction activities will disrupt the historic scene by introducing noise, machinery, and dust, but these effects will be temporary and local in nature.

### Preservation of Archeological Resources

The plan will preserve known archeological sites, including three native American sites at Fort Mason and a site near the Cliff House. Construction activities proposed near these sites will be carefully designed to avoid archeological resources, but an archeologist will be onsite during the construction period to ensure that no impacts on important archeological resources will result. All other archeological resources throughout the park will be protected in compliance with applicable federal legislation. All lands not adequately surveyed for archeological and historical archeological resources will be surveyed prior to the implementation of any project involving land disturbance. The National Park Service procedures for archeological clearance will document determinations of no effect on archeological resources and will pinpoint projects where caution or monitoring is necessary. Any project which is found to involve adverse or potential adverse effects will be submitted for consultation under the procedures of the Advisory Council on Historic Preservation.

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TABLE 17. PROPOSED MANAGEMENT OF HISTORIC STRUCTURES

| Area | Structure No. | Name | P | AR | R | National Register |
|---|---|---|---|---|---|---|
| Alcatraz | AL-3 | Lighthouse | X | | | 1 |
| | AL-14 | Guard tower | X | | | 1 |
| | AL-22 | Guardhouse | X | | X | 1 |
| | AL-64 | Barracks, casemates | X | X | X | 1 |
| | AL-68 | Prison | X | | | 1 |
| | AL-76 | Commandant's quarters/ warden's house | X | | | 1 |
| | AL-77 | Guardhouse, apts. | X | | X | 1 |
| | AL-89 | Prison, salvage storehouse/ electrical shop | X | | X | 1 |
| | AL-201 | Stockade, exercise yard | X | | | 1 |
| | AL-202 | Fortification arch & bombproof | X | | | 1 |
| | AL-203 | Fortification arch & magazine | X | | | 1 |
| | AL-204 | Fortification arch & magazines | X | | | 1 |
| | AL-205 | Fortification wall | X | | | 1 |
| | AL-206 | Fortification wall | X | | | 1 |
| | AL-207 | Fortifications and tunnel | | | X | 1 |
| | AL-208 | North Caponier & fortifications | | | X | 1 |
| | AL-209 | Fortifications under indust. bldg. | X | | X | 1 |
| | AL-210 | Parade ground | X | | | 1 |
| | AL-211 | Wharf dock | | X | | 1 |
| | AL-227 | Road from wharf to NW end of island | X | | | 1 |
| | AL-228 | Road from guardhouse to top of island | X | | | 1 |
| | AL-221* | Ruins of officers' qtrs. #7 & gardens | X | | | 1 |
| | AL-222* | Ruins of officers' qtrs. #8 & gardens | X | | | 1 |

Key:
P = preservation
AR = adaptive restoration
R = restoration

1 = on register
2 = nominated to register
3 = being nominated

*indicates new number of structures that did not have a number

| Area | Structure No. | Name | P | AR | R | National Register |
|---|---|---|---|---|---|---|
| Alcatraz | AL-223* | Ruins of officers' qtrs. #9 & garden | X | | | 1 |
| | AL-224* | South Battery | X | | | 1 |
| | AL-225* | Citadel retaining wall & steps | X | | X | 1 |
| | AL-229* | Three-Gun Battery | X | | | 1 |
| Aquatic Park | AP-1 | Bathhouse | | X | | 2 |
| | AP-2 | West restroom | X | | | 2 |
| | AP-4 | Municipal pier | X | | | 2 |
| | AP-11 | East restroom | X | | | 2 |
| | AP-16 | Amphitheater | X | | | 2 |
| | AP-18 | Seawall | X | | | 2 |
| | AP-19 | West speaker tower | X | | | 2 |
| | AP-20 | East speaker tower | X | | | 2 |
| | AP-21 | Haslett Warehouse | | X | | 1 |
| | SS-1 | C.A. Thayer Schooner | X | | | 1 |
| | SS-2 | Schooner Wapama | X | | | 1 |
| | SS-3 | Ferry Eureka | X | | | 1 |
| | SS-4 | Scow Schooner Alma | X | | | 1 |
| | SS-5 | Tugboat Hercules | X | | | 1 |
| | SS-6 | Balclutha | X | | | 1 |
| Fort Mason | | | | | | |
| | FM-1 | McDowell Hall | | X | | 1 |
| | FM-2 | Officers' qtrs. #2 | | X | | 1 |
| | FM-3 | Officers' qtrs. #3 | | X | | 1 |
| | FM-4 | Officers' qtrs. #4 | | X | | 1 |
| | FM-9 | NCO quarters | | X | | 1 |
| | FM-12 | Entrance gate, Van Ness and Bay | X | | | 1 |
| | FM-14 | Tennis court | | X | | 1 |
| | FM-15 | Searchlight shelter | X | | | 1 |
| | FM-16 | Pier 4 | X | | | 1 |
| | FM-17 | Waiting room, Pier 4 | X | | | 1 |
| | FM-23 | Mine casement | X | | | 1 |
| | FM-32 | Laundry | X | | | 1 |
| | FM-33 | Officers' qtrs. | X | | | 1 |
| | FM-34 | Officers' qtrs. | X | | | 1 |
| | FM-35 | Officers' qtrs. | X | | | 1 |
| | FM-36 | Officers' qtrs. | X | | | 1 |
| | FM-37 | Officers' qtrs. | X | | | 1 |
| | FM-38 | Officers' qtrs. | X | | | 1 |
| | FM-39 | Officers' qtrs. | X | | | 1 |

| Area | Structure No. | Name | P | AR | R | National Register |
|---|---|---|---|---|---|---|
| Fort Mason | FM-40 | Waiting station | X | | | 1 |
| | FM-41 | Officers' qtrs. | | X | | 1 |
| | FM-42 | Officers' qtrs. | | X | | 1 |
| | FM-43 | Officers' qtrs. | | X | | 1 |
| | FM-44 | Officers' qtrs. | | X | | 1 |
| | FM-46 | Officers' qtrs. | | X | | 1 |
| | FM-47 | Officers' qtrs. | | X | | 1 |
| | FM-48 | Officers' qtrs. | | X | | 1 |
| | FM-49 | Officers' qtrs. | | X | | 1 |
| | FM-101 | Post headqtrs. | | X | | 1 |
| | FM-201 | Admin. offices | | X | | 1 |
| | FM-204 | NCO qtrs. | | X | | 1 |
| | FM-205 | Flagstaff | X | | | 1 |
| | FM-230 | Chapel | | X | | 1 |
| | FM-231 | NCO qtrs. | | X | | 1 |
| | FM-232 | NCO qtrs. | | X | | 1 |
| | FM-234 | NCO qtrs. | | X | | 1 |
| | FM-235 | NCO qtrs. | | X | | 1 |
| | FM-238 | NCO qtrs. | | X | | 1 |
| | FM-239 | NCO qtrs. | | X | | 1 |
| | FM-240 | Barracks | | X | | 1 |
| | FM-241 | Transient BOQ | | X | | 1 |
| | FM-242 | Battery Burnham | X | | | 1 |
| | FM-250 | 1898 magazine | X | | | 1 |
| | FM-300 | Railroad tunnel | X | | | 1 |
| | FM-301 | Gate to piers | X | | | 1 |
| | FM-302 | Provost marshal's office | | X | | 1 |
| | FM-303 | Guard station | | X | | 1 |
| | FM-308 | Repair shops | | X | | 1 |
| | FM-310 | Storehouse D | | X | | 1 |
| | FM-312 | Storehouse C | | X | | 1 |
| | FM-314 | Storehouse B | | X | | 1 |
| | FM-315 | Storehouse A | | X | | 1 |
| | FM-316 | Pier #1 | X | | | 1 |
| | FM-317 | Pier #1 shed | | X | | 1 |
| | FM-318 | Pier #2 | X | | | 1 |
| | FM-319 | Pier #2 shed | | X | | 1 |
| | FM-320 | Pier #3 | X | | | 1 |
| | FM-321 | Pier #3 shed | | X | | 1 |
| | FM-322 | Battery charging station | | X | | 1 |
| | FM-323 | Parade ground | | X | | 1 |
| | FM-324* | MacArthur Ave. | | X | | 1 |
| | FM-325* | McDowell Ave. | | X | | 1 |
| | FM-326* | Franklin St. | | X | | 1 |
| | FM-327* | Van Ness retaining wall | X | | | 1 |

| Area | Structure No. | Name | P | AR | R | National Register |
|---|---|---|---|---|---|---|
| Fort Mason | FM-328* | Retaining wall dock area | | X | | 1 |
| | FM-329* | East & West Batteries | X | | | 1 |
| | | Beltline railroad tracks through Aquatic Park, Fort Mason & Marina Green | X | | | 1 |
| Presidio (Permit to NPS) | | | | | | |
| | PE-1600 | Old mine casemate | X | | | 1 |
| | PE-1601 | New mine casemate | X | | | 1 |
| | PE-1621 | Battery Chamberlain | | | X | 1 |
| | PE-1630 | Battery Crosby & fire control station for Battery Chamberlain | X | | | 1 |
| | PE-1640 | Magazine | X | | | 1 |
| | PE-1643 | Magazine | X | | | 1 |
| | PE-1644 | Radio hut | X | | | 1 |
| | PE-1646 | Magazine | X | | | 1 |
| | PE-1647 | Battery Godfrey | X | | | 1 |
| | PE-1651 | Battery Boutelle | X | | | 1 |
| | PE-1658 | Battery Marcus Miller | X | | | 1 |
| | PE-1660 | Battery Marcus Miller | X | | | 1 |
| | PE-1662 | Fire control station | X | | | 1 |
| | PE-1663 | Fire control station | X | | | 1 |
| | PE-1664 | Fire control station | X | | | 1 |
| Cliff House | SH-1 | Cliff House | | X | | 3 |
| | SH-3 | Sutro Baths ruins | | X | | 3 |
| | SH-6 | Tunnel | X | | | 3 |
| | SH-7 | Well house Sutro Heights | X | | | 3 |
| | SH-8 | Base end station | X | | | 3 |
| | SH-9 | Parapet | X | | | 3 |
| | SH-10 | Parapet stairway | X | | | 3 |
| | SH-11 | Rocks & steps | X | | | 3 |
| | SH-14 | Marine exchange lookout | | X | | 3 |
| | SH-15 | USS San Francisco memorial | X | | | 3 |
| | SH-23 | Railroad remains | X | | | 3 |
| | SH-24 | Sutro Heights Park grounds | | | X | 3 |

| Area | Structure No. | Name | P | AR | R | National Register |
|---|---|---|---|---|---|---|
| | SH-25 | Fire control station | X | | | 3 |
| | SH-26 | Fire control station | X | | | 3 |
| Ocean Beach | | | | | | |
| | OB-1 | Seawall | X | | | 3 |
| Fort Miley | | | | | | |
| | FI-1 | Battery James Chester #3 | X | | | 3 |
| | FI-2 | Battery James Chester #1 and #2 | X | | | 3 |
| | FI-3 | Powerhouse, Battery Chester | X | | | 3 |
| | FI-4 | Battery Construction #243 | X | | | 3 |
| | FI-5 | Flagpole | X | | | 3 |
| | FI-6 | Base end station, 2 connected units | X | | | 3 |
| | FI-7 | Searchlight station | X | | | 3 |
| | FI-304 | Ordnance storehouse | | X | | 3 |
| | FI-329 | Battery Livingston & observation station | | X | | 3 |
| | FI-330 | Battery Springer #3 and #4 | | X | | 3 |
| | FI-350* | Fire control station | X | | | 3 |
| | FI-351* | Fire control station | X | | | 3 |
| | FI-352* | Fire control station | X | | | 3 |
| Fort Funston | | | | | | |
| | FF-200 | Nike missile battery | X | | | 3 |
| | FF-201 | Nike missile battery | X | | | 3 |
| | FF-202 | Nike missile battery | X | | | 3 |
| | FF-206 | Nike missile warhead bldg. | | X | | 3 |
| | FF-250* | Fire control station | X | | | 3 |
| | FF-251* | Fire control station | X | | | 3 |
| | FF-252* | Fire control station | X | | | 3 |
| | FF-480 | Battery Bluff (Pamona Mounts) | X | | | 3 |
| | FF-493 | Magazine, AA Battery | X | | | 3 |

| Area | Structure No. | Name | P | AR | R | National Register |
|---|---|---|---|---|---|---|
| | FF-494 | Casemated concrete structure | X | | | 3 |
| | FF-495 | AA Battery #3 | | X | | 3 |
| | FF-497 | Plotting room, Battery Davis | X | | | 3 |
| | FF-499 | Battery Davis | X | | | 3 |
| Fort Baker | | | | | | |
| | FB-268 | Fort Baker-Fort Barry tunnel | X | | | 1 |
| | FB-272 | Sentry station | | X | | 1 |
| | FB-407 | Mine storehouse | | X | | 1 |
| | FB-408 | Unknown structure | X | | | 1 |
| | FB-409 | Mine powerhouse | X | | | 1 |
| | FB-410 | Mine explosives magazine | X | | | 1 |
| | FB-411 | Mine explosives magazine | X | | | 1 |
| | FB-412 | Mine loading rooms | X | | | 1 |
| | FB-415 | Mine wharf | | X | | 1 |
| | FB-433 | Fire control station | X | | | 1 |
| | FB-434 | Fire control station | X | | | 1 |
| | FB-522 | Hospital stewards' quarters | | X | | 1 |
| | FB-523 | NCO qtrs. | | X | | 1 |
| | FB-527 | NCO qtrs. | | X | | 1 |
| | FB-529 | NCO qtrs. | | X | | 1 |
| | FB-530 | NCO qtrs. | | X | | 1 |
| | FB-531 | NCO qtrs. | | X | | 1 |
| | FB-533 | Hospital | | X | | 1 |
| | FB-557 | Bakery | | X | | 1 |
| | FB-559 | Quartermaster & subsistence storehouse | | X | | 1 |
| | FB-561 | Wagon shed | | X | | 1 |
| | FB-571 | Battery George Yates | X | | | 1 |
| | FB-573 | Battery Duncan | X | | | 1 |
| | FB-575 | Battery Cavallo | X | | X | 1 |
| | FB-600 | Parade ground | X | | | 1 |
| | FB-601 | Enlisted men's barracks | | X | | 1 |
| | FB-602 | Enlisted men's barracks | | X | | 1 |
| | FB-603 | Post headquarters | | X | | 1 |
| | FB-604 | Commanding officer's qtrs. | | X | | 1 |
| | FB-605 | Officers' qtrs. | | X | | 1 |
| | FB-606 | Officers' qtrs. | | X | | 1 |

| Area | Structure No. | Name | P | AR | R | National Register |
|---|---|---|---|---|---|---|
| Fort Baker | | | | | | |
| | FB-615 | Guardhouse | | X | | 1 |
| | FB-623 | Post exchange & gymnasium | | X | | 1 |
| | FB-629 | Officers' qtrs. | | X | | 1 |
| | FB-631 | Officers' qtrs. | | X | | 1 |
| | FB-636 | Enlisted men's barracks | | X | | 1 |
| | FB-637 | Commissary storehouse | | X | | 1 |
| | FB-644 | Blacksmith shop | | X | | 1 |
| | FB-645 | Carpenter & paint shop | | X | | 1 |
| | FB-648 | Flagstaff | X | | | 1 |
| | FB-666 | Ordnance storehouse | | X | | 1 |
| | FB-670 | Mine cable tank building | | X | | 1 |
| | FB-671 | Pumphouse | X | | | 1 |
| | FB-700* | Battery Kirby (incl. Gravelly Beach Battery) | X | | | 1 |
| | FB-701* | Battery Gravelly | X | | | 1 |
| | FB-702* | Battery Kirby Beach | X | | | 1 |
| | FB-703* | Battery Orlando Wagner | X | | | 1 |
| | FB-704* | Ridge Battery | X | | | 1 |
| | FB-705* | Battery Spencer | X | | | 1 |
| | FB-706* | Fire control station above Battery Wagner | X | | | 1 |
| | FB-707* | Fire control station above Battery Wagner | X | | | 1 |
| | FB-708* | East Road | X | | | 1 |
| | FB-709* | Murray Circle | X | | | 1 |
| | FB-710* | Conzelman Road | X | | | 1 |
| | FB-711* | Moore Road | X | | | 1 |
| | FB-770 | Casemate | X | | | 1 |
| Fort Barry | | | | | | |
| | FA-773 | Battery Construction #129 | | X | | 1 |
| | FA-830 | Departmental rifle range | | X | | 1 |
| | FA-831 | Departmental pistol range | | X | | 1 |
| | FA-905 | Balloon hangar | | X | | 1 |
| | FA-911 | Batteries Rathbone & McIndoe | X | | | 1 |
| | FA-934 | Officers' qtrs. | | X | | 1 |

| Area | Structure No. | Name | P | AR | R | National Register |
|---|---|---|---|---|---|---|
| Fort Barry | | | | | | |
| | FA-936 | Commanding officer's qtrs. | | X | | 1 |
| | FA-937 | Officers' qtrs. | | X | | 1 |
| | FA-939 | Officers' qtrs. | | X | | 1 |
| | FA-940 | Post headquarters | | X | | 1 |
| | FA-941 | Post hospital | | X | | 1 |
| | FA-942 | Hospital stewards' qtrs. | | X | | 1 |
| | FA-944 | Barracks | | X | | 1 |
| | FA-945 | Barracks | | X | | 1 |
| | FA-952 | Gymnasium & post exchange | | X | | 1 |
| | FA-955 | NCO qtrs. | | X | | 1 |
| | FA-956 | NCO qtrs. | | X | | 1 |
| | FA-960 | Quartermaster & subsistence storehouse | | X | | 1 |
| | FA-961 | Ordnance storehouse | | X | | 1 |
| | FA-962 | Bakery | | X | | 1 |
| | FA-963 | Air defense missile site, San Francisco 88L | | X | | 1 |
| | FA-966 | San Francisco 88L | X | | | 1 |
| | FA-967 | San Francisco 88L | X | | | 1 |
| | FA-969 | San Francisco 88L | X | | | 1 |
| | FA-971 | San Francisco 88L | X | | | 1 |
| | FA-976 | San Francisco 88L | X | | | 1 |
| | FA-985 | Fire Control Station Wallace | X | | | 1 |
| | FA-989 | Fire Control Station Wallace | X | | | 1 |
| | FA-991 | Magazine | X | | | 1 |
| | FA-993 | Storeroom | X | | | 1 |
| | FA-999 | Battery Wallace | X | | | 1 |
| | FA-1351 | Battery O'Rourke | X | | | 1 |
| | FA-1353 | Firing booth, Battery Alexander | X | | | 1 |
| | FA-1354 | Batteries Guthrie & Smith | X | | | 1 |
| | FA-1355 | Firing booth, Battery Alexander | X | | | 1 |
| | FA-1356 | Battery Alexander | X | | | 1 |
| | FA-1357 | Searchlight shelter | X | | | 1 |
| | FA-1362 | Fire control station | X | | | 1 |
| | FA-1363 | Fire control station | X | | | 1 |
| | FA-1364 | Battery Mendell | X | | | 1 |
| | FA-1365 | Mining casemate | X | | | 1 |

| Area | Structure No. | Name | P | AR | R | National Register |
|---|---|---|---|---|---|---|
| | FA-1375* | Fire control station | X | | | 1 |
| | FA-1376* | Fire control station | X | | | 1 |
| | FA-1377* | Fire control station | X | | | 1 |
| | FA-1378* | Fire control station | X | | | 1 |
| | FA-1379* | Double fire control station | X | | | 1 |
| | FA-1380* | Antiaircraft Battery #2 (ruins only) | X | | | 1 |
| | FA-1381* | Antiaircraft weapon emplacement | X | | | 1 |
| | FA-1382 | Searchlight shelter | X | | | 1 |

If and when the Coast Guard transfers the structures at the Point Bonita light station to the National Park Service, their historical value and potential for public use will be carefully evaluated.

Fort Cronkhite

| | | | | | | |
|---|---|---|---|---|---|---|
| | FC-1008 | Plotting room, Battery Townsley | X | | | 1 |
| | FC-1014 | Battery Townsley | X | | | 1 |
| | FC-1049 | Mess hall | | X | | 1 |
| | FC-1050 | Administration bldg. | | X | | 1 |
| | FC-1054 | Barracks | | X | | 1 |
| | FC-1055 | Barracks | | X | | 1 |
| | FC-1056 | Barracks | | X | | 1 |
| | FC-1057 | Barracks | | X | | 1 |
| | FC-1058 | Barracks | | X | | 1 |
| | FC-1059 | Barracks | | X | | 1 |
| | FC-1060 | Administration bldg. | | X | | 1 |
| | FC-1061 | Barracks | | X | | 1 |
| | FC-1062 | Barracks | | X | | 1 |
| | FC-1063 | Barracks | | X | | 1 |
| | FC-1064 | Barracks | | X | | 1 |
| | FC-1065 | Barracks | | X | | 1 |
| | FC-1066 | Recreation bldg. | | X | | 1 |
| | FC-1067 | Mess hall | | X | | 1 |
| | FC-1068 | Administration bldg. | | X | | 1 |
| | FC-1069 | Administration bldg. | | X | | 1 |
| | FC-1070 | Mess hall | | X | | 1 |
| | FC-1071 | Recreation bldg. | | X | | 1 |

| Area | Structure No. | Name | P | AR | R | National Register |
|---|---|---|---|---|---|---|
| | FC-1100 | Nike missile battery | | X | | 1 |
| | FC-1101 | Nike missile battery | | X | | 1 |
| | FC-1106 | Missile assembly shop | | X | | 1 |
| | FC-1107 | Missile assembly shop | | X | | 1 |
| | FC-1109 | Nike missile warhead bldg. | | X | | 1 |
| | FC-1130 | Townsley reserve magazine | X | | | 1 |
| | FC-1194 | Nike missile tracking tower | X | | | 1 |
| | FC-1197 | Nike missile tracking tower | X | | | 1 |
| | FC-1200* | Antiaircraft battery #1 | X | | | 1 |
| | FC-1201* | Fire control station | X | | | 1 |
| | FC-1202* | Fire control station | X | | | 1 |
| | FC-1203* | Fire control station | X | | | 1 |
| | FC-1204* | Fire control station | X | | | 1 |
| | FC-1205* | Fire control station | X | | | 1 |
| | FC-1206* | Fire control station | X | | | 1 |
| Mount Tamalpais | | | | | | |
| | MT-200* | Fire control station, Hill 640 | X | | | 2 |
| | MT-201* | Fire control station, Hill 640 | X | | | 2 |
| | MT-202* | Fire control station, Hill 640 | X | | | 2 |
| | MT-203* | Fire control station, Hill 640 | X | | | 2 |
| | MT-204* | Fire control station, Hill 640 | X | | | 2 |
| | MT-205* | Radar set SCR 296, Frank Valley | X | | | 2 |
| | MT-206* | Fire control station, Frank Valley | X | | | 2 |
| | MT-207* | Fire control station, Frank Valley | X | | | 2 |
| | MT-208* | Fire control station, Frank Valley | X | | | 2 |
| | MT-209* | Fire control station | X | | | 2 |

| Area | Structure No. | Name | P | AR | R | National Register |
|---|---|---|---|---|---|---|
| Olema Valley | | | | | | |
| | OV-1.1 | Rancho Bolinas house | | X | | 2 |
| | OV-1.4 | Rancho Bolinas creamery | | X | | 2 |
| | OV-1.5 | Rancho Bolinas barn | | X | | 2 |
| | OV-1.6 | Rancho Bolinas buggy shed | | X | | 2 |
| | OV-5.1 | Randall Ranch house | | X | | 2 |
| | OV-6.1 | Giacomini Ranch house | | X | | 2 |
| | OV-6.5 | Giacomini Ranch shed | | X | | 2 |
| | OV-6.6 | Giacomini Ranch loafing barn | | X | | 2 |
| | OV-6.7 | Giacomini Ranch main barn | | X | | 2 |
| | OV-6.8 | Giacomini Ranch bunkhouse | | X | | 2 |
| | OV-6.11 | Giacomini Ranch storage shed | | X | | 2 |
| | OV-9.1 | Old Lupton Ranch house | | X | | 2 |
| | OV-9.2 | Old Lupton Ranch barn | | X | | 2 |
| | OV-9.3 | Old Lupton Ranch creamery | | X | | 2 |
| | OV-9.4 | Old Lupton Ranch water tank | X | | | 2 |
| | OV-12.1 | Stewart Ranch house | | X | | 2 |
| | OV-12.12 | Stewart Ranch barn, west | | X | | 2 |
| | OV-15.5 | Truttman Ranch dairy shed | | X | | 2 |
| | OV-15.6 | Truttman Ranch calf shed | X | | | 2 |
| | OV-15.10 | Truttman Ranch dairy shed | | X | | 2 |
| | OV-15.11 | Truttman Ranch dairy shed | | X | | 2 |
| | OV-15.14 | Truttman Ranch dairy shed | | X | | 2 |
| | OV-15.16 | Truttman Ranch bunkhouse | | X | | 2 |
| | OV-15.19 | Truttman Ranch horse barn | | X | | 2 |
| | OV-15.20 | Truttman Ranch hay barn | | X | | 2 |
| | OV-16 | Copper mine | X | | | 3 |
| | OV-17 | Copper mine | X | | | 3 |

| Area | Structure No. | Name | P | AR | R | National Register |
|---|---|---|---|---|---|---|
| Point Reyes | | | | | | |
| | PR-12 | Lighthouse stairway & cable track | X | | | 2 |
| | PR-14 | Lighthouse lower water shed and cistern | X | | | 2 |
| | PR-16 | Lighthouse powerhouse | X | | | 2 |
| | PR-17 | Lighthouse multipurpose garage bldg. | X | | | 2 |
| | PR-19 | Lighthouse water shed & cistern | X | | | 2 |
| | PR-21 | Lighthouse original pumphouse | X | | | 2 |
| | PR-22 | Lighthouse pumphouse | X | | | 2 |
| | PR-25 | Lighthouse | | | X | 2 |
| | PR-110 | Olema lime kilns | X | | | 1 |
| | PR-116 | Lifeboat station water tank | X | | | 2 |
| | PR-117 | Lifeboat station water tank | X | | | 2 |
| | PR-118 | Lifeboat station garage | X | | | 3 |
| | PR-119 | Lifeboat station pumphouse | X | | | 2 |
| | PR-120 | Lifeboat station stone-faced wall | X | | | 2 |
| | PR-121 | Lifeboat station water tank | X | | | 2 |
| | PR-122 | Lifeboat station water tank | X | | | 2 |
| | PR-123 | Lifeboat station fire pumphouse | X | | | 2 |
| | PR-124 | Lifeboat station rock wall | X | | | 2 |
| | PR-125 | Lifeboat station & dock | | X | | 2 |
| | PR-126 | Three-stall garage | | X | | 2 |
| | PR-159 | Lifeboat station qtrs. | | X | | 2 |
| | PR-180 | Pierce Ranch house | | X | | 3 |
| | PR-181 | Pierce Ranch washroom | | X | | 3 |
| | PR-182 | Pierce Ranch north bunkhouse | | X | | 3 |
| | PR-183 | Pierce Ranch schoolhouse | | X | | 3 |
| | PR-184 | Pierce Ranch outhouse | X | | | 3 |
| | PR-185 | Pierce Ranch open-front shed | X | | | 3 |
| | PR-186 | Pierce Ranch west bunkhouse | | X | | 3 |
| | PR-187 | Pierce Ranch west garage | | X | | 3 |

| Area | Structure No. | Name | P | AR | R | National Register |
|---|---|---|---|---|---|---|
| Point Reyes | | | | | | |
| | PR-188 | Pierce Ranch calf shed | | X | | 3 |
| | PR-189 | Pierce Ranch hay barn | | X | | 3 |
| | PR-190 | Pierce Ranch new dairy house | | X | | 3 |
| | PR-191 | Pierce Ranch old horse barn | | X | | 3 |
| | PR-192 | Pierce Ranch old garage | | X | | 3 |
| | PR-193 | Pierce Ranch old wagon shed | | X | | 3 |
| | PR-194 | Pierce Ranch chicken house A | X | | | 3 |
| | PR-195 | Pierce Ranch chicken house B | X | | | 3 |
| | PR-196 | Pierce Ranch old creamery | X | | | 3 |
| | PR-197 | Pierce Ranch garage | | X | | 3 |
| | PR-198 | Pierce Ranch corral fences | X | | | 3 |
| | PR-199 | Pierce Ranch tank house | X | | | 3 |
| | PR-200 | Pierce Ranch lath house | X | | | 3 |
| | PR-201 | Pierce Ranch road to Tomales Bay | X | | | 3 |
| | PR-202 | Pierce Ranch road to Lower Ranch | X | | | 3 |
| | PR-203 | Pierce Ranch entrance road | X | | | 3 |
| | PR-204 | Pierce Ranch cattle guard | X | | | 3 |
| | PR-226 | Texeira Ranch house | | X | | 2 |
| | PR-227 | Texeira Ranch loafing barn | | X | | 2 |
| | PR-228 | Texeira Ranch barn | | X | | 2 |
| | PR-240 | Lifesaving station (Great Beach) compass station | X | | | 3 |
| | PR-241 | Lifesaving station lookout station | X | | | 3 |
| | PR-242 | Lifesaving station storage bldg. | X | | | 3 |
| | PR-243 | Lifesaving station old pumphouse | X | | | 3 |
| | PR-244 | Lifesaving station small shed | X | | | 3 |
| | PR-251 | Home Ranch house | | X | | 3 |
| | PR-252 | Home Ranch barn & silo | | X | | 3 |
| | PR-253 | Home Ranch storage shed | | X | | 3 |
| | PR-254 | Home Ranch pig shed | X | | | 3 |
| | PR-255 | Home Ranch freezer shed | X | | | 3 |
| | PR-256 | Home Ranch residence | | X | | 3 |

| Area | Structure No. | Name | P | AR | R | National Register |
|---|---|---|---|---|---|---|
| Point Reyes | | | | | | |
| | PR-257 | Home Ranch shop | | X | | 3 |
| | PR-258 | Home Ranch hospital barn | | X | | 3 |
| | PR-259 | Home Ranch heifer barn | | X | | 3 |
| | PR-260 | Home Ranch old hog shed & storage shed | X | | | 3 |
| | PR-261 | Home Ranch water tank | X | | | 3 |
| | PR-262 | Home Ranch storage shed | | X | | 3 |
| | PR-263 | Home Ranch garage | | X | | 3 |
| | PR-264 | Home Ranch pumphouse | X | | | 3 |
| | PR-265 | Home Ranch granary | X | | | 3 |
| | PR-266 | Home Ranch horse barn | | X | | 3 |
| | PR-267 | Home Ranch road | X | | | 3 |
| Fort Point | | | | | | |
| | FP-96 | DeRussy's & Elliot's seawalls | | | X | 1 |
| | FP-99 | Fort Point | | | X | 1 |
| | FP-941 | Battery East | X | | | 1 |
| | FP-979 | Mine storage | | X | | 1 |
| | FP-983 | Engineer storehouse | | X | | 1 |
| | FP-984 | Torpedo mine wharf | X | | | 1 |
| | FP-985 | Loading room | X | | | 1 |
| | FP-986 | Loading road | X | | | 1 |
| | FP-987 | Mine explosives room | | X | | 1 |
| | FP-989 | Engineer plumbing shop | | X | | 1 |
| | FP-991 | Lighthouse | X | | | 1 |
| | FP-1001 | Andrews road | X | | | 1 |

Summary

No known adverse impacts will result from the proposal based upon historical resource studies, archeologcial research studies, and an archeological overview completed for the area. No significant historic structures will be unavoidably adversely affected, and no known historic or prehistoric archeological sites will be disturbed. National Park Service clearance procedures will be implemented as appropriate to document no effect and monitor projects. Since some actions are not yet specific as to structure or location, such actions must be further defined before the extent of impacts can be fully determined. Procedures of the Advisory Council on Historic Preservation and National Park Service management policies will be used to analyze possible impacts of all proposed actions on cultural

resources. Since detailed plans for preservation, restoration, and adaptive use of resources are still being developed, any significant changes in the proposals could change the potential effects upon cultural resources. If significant changes in proposals occur, or if a proposal is deemed infeasible following further study, and an adverse effect results from another course of action, the state historic preservation officer and the Advisory Council on Historic Preservation will be consulted prior to undertaking the new action.

The National Park Service has consulted with the state historic preservation officer. The two agencies have formulated a proposal for a programmatic memorandum of agreement and are now waiting for approval of the proposal and a subsequent ratified agreement from the Advisory Council on Historic Preservation. This agreement will be appended to this document.

## IMPACTS ON VEGETATION AND SOILS

Impacts on vegetation and soils can be broadly grouped into several general categories: those caused by construction and demolition, increases in visitor use and changes in visitor activities, and changes in resource management programs. Soils and vegetation have been grouped for impact analysis because they are closely related resources and are affected by similar actions. Any disturbance or restoration of the surface--whether by construction, visitors, or changes in management--will affect both vegetation and soils.

### Construction and Demolition Disturbance

General. The adaptive use of existing structures will minimize the need to construct new facilities to serve visitors and therefore will also minimize surface disturbance of vegetation and soils. Most new disturbance will be on a small scale, primarily for walk-in or hike-in camps and picnic areas, or for facility expansion within an existing developed area. The following general impacts will result wherever construction and demolition take place.

General impacts on vegetation and soils as a result of construction include removal of all vegetation on the construction site and disturbance of surface soils. Grading, digging for foundations, and cutting and filling for road construction will alter soil profiles, increase the potential for erosion caused by surface runoff from exposed soils, and reduce soil fertility by burying productive top soils and exposing subsurface soils. Structures and other impermeable surfaces that cover soils will change the moisture conditions of soils and potentially alter the physical, chemical, and biological conditions by compacting the soils, decreasing oxygen content, and adding chemicals through leaching and runoff from paved surfaces. Sites that are covered by asphalt or structures

will not revegetate, but areas surrounding the facility will revegetate to varying degrees by natural succession or will be replanted with native or cultivated vegetation. Soils and vegetation in areas adjacent to construction sites may also be affected by heavy machinery movement and materials storage, which could compact soils and disturb any vegetation growing nearby.

Wherever soils and vegetation are disturbed, exotic and weedy species will have a competitive advantage over native and recreationally desirable species. Therefore, some effort will usually be needed to revegetate areas surrounding developments so that pest species, such as thistles, do not become established. Planting and sometimes irrigation will be required to establish a new vegetative cover.

Nonhistoric structures that have no planned visitor uses and paved surfaces that are no longer needed will be removed in several areas of the park. Demolition and removal of structures will initially have many of the same effects on vegetation and soils as construction. Surrounding soils will be compacted by heavy machinery, plants surrounding the structure will be removed, and exposed surfaces will have a high erosion potential from runoff. Following structure removal, most areas will be restored with native plants or cultivated landscaping, which will stabilize soils and increase the amount of native, naturalized, or manicured vegetation in the area.

Acreages of construction disturbances and restoration are summarized in table 18.

Alcatraz. There are no natural soils or vegetation on Alcatraz. All of the vegetation on the island is exotic, the remains of former military and prison gardens, and will not be significantly affected. Landscaping of approximately 15 acres of the island with a mixture of native coastal plants and cultivated species will enhance the historic scene and create a park atmosphere.

Aquatic Park. Restoration and landscaping of several segments of former roadways will increase the area of cultivated vegetation (grass and trees) by 2 acres.

Fort Mason. Grading for restoration of the Fort Mason grounds will temporarily disturb soils and some existing vegetation (primarily grass and weeds), but the site has already been extensively disturbed in the past and these effects will be minimal. Approximately 21 acres that were developed in the past will be landscaped to create a park atmosphere.

Crissy Field. There are no natural soils or vegetation at Crissy Field--it is composed of fill and has been intensively developed in the past. Therefore, while earth movement will be required to

create a new shoreline and for berming, landscaping, and possible creation of a lagoon, there will be no adverse effects on soils or vegetation. About 25 acres that were developed will be restored to a mixture of natural appearing coastal communities, manicured landscaping, and shoreline.

Cliff House. The only effects on soils and vegetation in this developed area will occur at Sutro Baths. The development of this new park will involve limited earth movement to provide for walkways and landscaping. The area has already been extensively trampled and eroded, so disturbance of natural vegetation and soils will be minimal. The construction of walkways will reduce vegetation trampling by encouraging visitors to stay on the paths and will allow recovery of the area by natural vegetation and landscaping. Approximately 11 acres will be restored, either by recovery of natural vegetation or through plantings.

Fort Baker. The proposals for Fort Baker will not affect existing vegetation. All modifications (building removal, provisions for new uses) will occur in existing facilities or disturbed areas. The provision of open picnic/play space along the waterfront will increase manicured landscaping by 6 acres.

Rodeo Valley. Vegetation and soils will be minimally affected by construction and demolition activities because most such activities will be confined to previously disturbed areas. Some disturbance of the native northern coastal scrub vegetation will occur in areas immediately surrounding developments. Where structures or parking are to be removed, a total of 20 acres will be restored by planting native and naturalized vegetation or by allowing natural succession to proceed. The spread of thistle and broom in the Marin Headlands, currently a resource management problem for the area, could be aggravated wherever the surface is disturbed by building demolition and grading.

Muir Woods. The relocation of administration offices and maintenance facilities and the creation of a new parking area will disturb approximately 4 acres of grassland and broad-leaved evergreen forest. However, by moving these facilities from the redwood grove into an area of more typical vegetation, pavement and buildings can be removed from an outstanding biological resource. The removal of facilities and impermeable surfaces will allow rehabilitation and extension of the grove by restoring natural soil moisture conditions and by replanting redwood and Douglas-fir in the areas now occupied by parking and structures.

Stinson Beach. Until the alignment of the new entrance road to Stinson Beach is determined, effects on vegetation and soils cannot adequately be assessed. Because the new alignment will generally follow a service road that is lined with exotic vegetation, little or no effect on native vegetation will result.

Bear Valley. Development of the Bear Valley information center and expansion of the picnic area will disturb a total of about 2 acres or less of grassland and broad-leaved evergreen forest. Vegetation loss will be minimal and confined to a previously developed area.

Other Areas. Development of new camps and picnic areas throughout the park will require some clearing of understory species. In most cases, trees and shrubs will remain to provide screening between sites, shade, and landscaping. It is estimated that vegetation will be disturbed on approximately one-half the area covered by the new campgrounds and picnic areas. Vegetation lost as a result of camp and picnic area construction will be relatively low because most sites are walk-in or hike-in areas that will not require access roads. Vehicle parking is either provided in existing developed areas at some distance from the site or along an existing roadside that will require widening for parking.

Some realignments in the existing trail system may result from more detailed studies and could require additional vegetation loss.

Special Status Species. Any disturbance, whether caused by construction, demolition, or change in use, has the potential to affect special status plant species (threatened, endangered, rare, or candidates for such status) if they are found in an area to be affected. A list of special status plant species known to occur in GGNRA/Point Reyes has been compiled by the U.S. Fish and Wildlife Service and is found in the Appendix. Based upon present knowledge of the general locations of these species, the plan proposals could disturb special status plants or their habitat. Therefore, all new construction or provisions for new activities will be preceded by a site-specific survey of special status plants to confirm that there will be no effect on special status species when such plants are known to occur in the vicinity of the project site. The U.S. Fish and Wildlife Service has provided a map of the distribution of these species to aid in that determination. If any overlap is found, activity and project locations will be adjusted to avoid these species and to prevent disruption of their habitat. Any impact from recreational activity to special status plants will be avoided by redirecting visitor use from known habitat areas. Site specific plant surveys will be required for at least the following plan projects or activities to make sure that there will be no impact on special status species:

park development of Crissy Field (Presidio clarkia)

expansion of picnic area and use at Baker Beach (San Francisco owlclover, Raven's manzanita, coast rockcress, Presidio clarkia)

landscaping at Sutro Baths and Cliff House (dune tansy)

additional visitor use of Fort Funston (Laural Hill manzanita, two-fork clover)

any development in Marin Headlands and Muir Woods (Tiburon buckwheat)

site rehabilitation of Fort Cronkhite (dune tansy)

relocation of Muir Woods facilities (San Francisco wallflower, Presidio clarkia)

environmental education center at Rancho Bolinas (coast dichondra)

increased use and improvements at Bear Valley (California bottlebrush grass)

increased interpretive use of Pierce Point Ranch (Point Reyes blennosperma, Point Reyes Indian paintbrush, swamp harebell)

increased use through lighthouse interpretive programs (San Francisco owlclover)

trail construction throughout GGNRA/Point Reyes

The National Park Service will consult with the U.S. Fish and Wildlife Service, both formally and informally, on a project-by-project basis in compliance with section 7 of the Endangered Species Act whenever a project could affect a species that is on or proposed for addition to the threatened or endangered species list.

TABLE 18. SUMMARY OF VEGETATION CHANGES CAUSED BY CONSTRUCTION AND DEMOLITION

| Area | Acreage Disturbed | Vegetation Type | Acreage Restored | Vegetation Type |
|---|---|---|---|---|
| Developed Area | | | | |
| Alcatraz | 0 | - | 15 | Gardens, native coastal species |
| Aquatic Park | 0 | - | 2 | Lawn and trees |
| Fort Mason | 0 | - | 21 | Lawn and trees |
| Crissy Field | 0 | - | 25 | Manicured and native landscaping |
| Cliff House | 0 | - | 11 | Manicured and native landscaping |
| Fort Baker | 0 | - | 6 | Lawn and trees |
| Rodeo Valley | 0 | - | 20 | Coastal scrub, lawn and trees |
| Muir Woods | 4 | Grassland, broad-leaved evergreen forest | 1 | Redwood, Douglas-fir forest |
| Stinson Beach | 1 | Exotic trees | 0 | - |
| Bear Valley | 3 | Grassland, broad-leaved evergreen forest | 0 | - |
| Dispersed Developments | | | | |
| Baker Beach (picnic, day camp) | 2 | Pine/cypress, shrub | 0 | - |
| East Fort Miley (picnic and play) | 0 | - | 2 | Lawn and trees |
| West Fort Miley (picnic, day camp) | 2 | Pine/cypress, shrub | 0 | - |

| Area | Acreage Disturbed | Vegetation Type | Acreage Restored | Vegetation Type |
|---|---|---|---|---|
| Fort Funston (picnic, environ. (ed.) | 3 | Grasses, ground covers | 0 | - |
| Oakwood Valley (picnic, children's farm) | 4 | Coastal scrub | 0 | - |
| Tennessee Valley (equestrian co-op) | 0 | - | 0 | - |
| Muir Beach (picnic) | 2 | Riparian | 0 | - |
| Point Bonita (camp) | 2 | Coastal scrub | 0 | - |
| Gerbode Preserve (camp) | 1 | Coastal scrub, exotic trees | 0 | - |
| Tennessee Valley (camp) | 2 | Coastal scrub, exotic trees | 0 | - |
| Morses Gulch (camp) | 2 | Redwood, broad-leaved evergreen forest, grassland | 0 | - |
| McKinnan Gulch Mine (camp) | 2 | Orchard, grassland | 0 | - |
| Five Brooks (camp) | 2 | Broad-leaved evergreen forest, grassland | 0 | - |
| Bolinas Ridge (camp) | 2 | Redwood, Douglas-fir forest | 0 | - |
| Truttman Ranch (camp) | 4 | Grassland, broad-leaved evergreen forest | 0 | - |
| Home Ranch Creek (camp) | 1 | Broad-leaved evergreen forest | 0 | - |
| Muddy Hollow Ranch (camp) | 1 | Grassland | 0 | - |
| Totals | 40 | | 103 | |

Increases in Visitor Use and Changes in Visitor Activities

Visitor use impacts on vegetation and soils, while more difficult to quantify than construction impacts, are important considerations since increasing visitor use levels and new activities are proposed. The distance visitors will wander from trails or developments, and therefore the radiating impacts on vegetation and soils, will vary with the attractiveness of views and features found off trails and the suitability of the terrain and vegetation for cross-country travel. The following general effects can be expected to varying degrees around camps, activity areas, and trails.

Trampling by people and horses will reduce plant mass and plant vigor by breaking plants at or below the surface. Visitors may eventually trample and remove vegetation between and around campsites and picnic areas. Vegetation reproduction will be reduced and possibly eliminated in some areas. Change in vegetation composition and a shift toward earlier successional stages, species more resistant to trampling, and weedy species may result. Areas disturbed by visitor use will constantly provide footholds for exotic or pest species such as thistles. The potential for man-caused fires, which are temporarily destructive to vegetation, will increase.

The loss of soil-binding plant cover will result in increased soil erosion by wind and water around camps and along trails. Approximately 145 miles of trails in GGNRA and 144 miles in Point Reyes National Seashore could experience increased erosion. These effects will be pronounced in dune areas where sandy soils are exposed and blowouts could result. Erosion, channeling, and trail width will increase as more people utilize trails. Soil compaction, which increases soil density, alters soil structure, and cuts off air and water to plant roots, will be increased by foot and horse traffic.

Soil compaction and potential damage to vegetation and soils will be most pronounced in wet areas, along streams and bodies of water, where soils are moist and pliable. For this reason, almost all visitor activities are planned for upland areas, while stream courses and water bodies will receive special protection as areas of biotic sensitivity in the management zoning plan.

The denuded soils of high visitor use areas will not have a vegetative cover that would otherwise contribute organic material to the soil. Soil development will be prevented or greatly slowed by the lack of vegetation and the interruption of the normal decomposition processes.

These effects of visitor use will be additive throughout the visitor season. Monitoring of the effects of visitor use on vegetation and soils is planned so that unacceptable resource degradation can be

detected and corrected by a number of management techniques. These could include modifying use levels, rotating use areas, adding patrols, signing, reseeding, or even installing physical barriers where fragile resources could be threatened. Facility designs will take into account possible effects on resources and the potential for erosion. Adverse impacts will be controlled through maintenance of appropriate gradients, surfaces, and drainage structures, and of course by locating new facilities in areas that have been previously disturbed or that are not sensitive to visitor use.

An increase in numbers of visitors to beach areas could hinder or reverse erosion-control efforts or could initiate dune erosion by disturbing dune vegetation. Additional study will be done in most beach areas to determine what management action should be taken to control erosion. Some loss of dune vegetation and a potential increase in erosion can be expected at heavily used beaches at Ocean Beach, Point Reyes, and Stinson Beach.

The continued and possibly increased use of horses in Rodeo, Tennessee, Frank, and Olema valleys has the potential to denude vegetation along 64 miles of riding trails, to compact soils, and to increase erosion. Accelerated loss of soils could result. To mitigate soil loss, trails that are steep or improperly drained will gradually be shifted to more suitable locations.

Large special events will be staged at Fort Mason, Aquatic Park, the Fort Baker parade grounds, and the rifle range in Rodeo Valley. Intensive use of these sites for special events will not affect vegetation or soils because they all have mowed lawn areas that can be irrigated to promote rapid recovery following events. Other more natural areas will be considered for special events, but the conditions of the site, possible impacts on vegetation and soils, and the merits of the event will be reviewed before events will be held in these more sensitive areas.

The potential for fire and short-term loss of vegetation will increase slightly during special events. While fire hazard on the mowed rifle range will be low, the surrounding area, depending on climatic conditions and the moisture content of the vegetation, could be susceptible to fire. The potential for fire danger will be considered when permits for special events are issued, and necessary precautions to reduce fire danger will be taken, such as educating all visitors of the hazard, enforcing smoking and fire restrictions, and stationing fire-fighting equipment and staff at the event site.

Known and suspected distributions of threatened and endangered species, both candidates and listed, have been mapped by the U.S. Fish and Wildlife Service. This map will aid the park in efforts to monitor and avoid impacts on special status plants as a result of increasing levels of visitor use.

Resource Management

The resource management objectives that affect vegetation and soils are very general and will require further definition of methods and site-specific actions in the resource management plan before actual impacts on vegetation and soils can be determined.

The plan protects fragile and unique vegetation types (such as dunal, riparian, and redwood communities) and special status species (rare, threatened, endangered, or candidates for such status) both by avoiding development and use of areas where valuable vegetation is found and by actively protecting such areas through the land management zoning plan. Because critical and unique vegetation areas were defined by the information base prior to the development of planning alternatives, sensitive areas were avoided.

A reevaluation of all grazing operations and the production of a grazing plan will eliminate overgrazing and the use of unsuitable range sites. As a result, erosion and the amount of exposed and erodible soils in the northern units will be reduced. Following the development of a grazing management plan, grazing will continue to be used as a vegetation management tool to maintain the pastoral quality of the landscape and to control shrub invasion. A mix of vegetation communities with increased species diversity and an expansion of kinds of habitat available for wildlife will result. Elimination of overgrazing will increase range grass cover in denuded areas as grazing pressure is decreased. The opportunity for thistle invasion, which is prompted by overgrazing and disturbances that expose soil, will be reduced.

The relocation of horse grazing operations in Frank Valley to a confined 50- to 75-acre irrigated pasture will allow recovery of the surrounding nonirrigated vegetation to a more natural, ungrazed condition. Shrubby species could increase as a result of discontinuation of grazing.

At present, fire is not used or proposed for use as a vegetation management tool in GGNRA, even though some of the objectives for resources management (maintenance of a pastoral scene, restoration of grasslands) could be achieved by the use of fire. Until more information allows preparation of a detailed fire management plan that could include use of prescribed burns to maintain desired vegetation communities, vegetation changes as a result of fire will be small.

Active research and implementation of management strategies aimed at elimination of undesirable exotic species, especially thistles, brooms, and pampas grass, will reduce the amount of nonnative vegetation, which is visually and ecologically incompatible with the surrounding natural vegetation of the Marin County areas. Methods

chosen for exotic species removal will not cause acceleration of erosion or loss of soil and will not chemically affect nontarget plants and animals in the area.

The health and continued existence of the redwood grove at Muir Woods will be assured by continuing to manage the forest. Thinning to encourage regeneration and planting when necessary will allow revegetation of previously disturbed areas.

### Summary

New disturbance as a result of construction will be greatly outweighed by the amount of land that will be restored to more natural or landscaped conditions following building and pavement removal. Visitors will have an effect on vegetation and soils, but careful management of use and temporary closure of areas that show signs of unacceptable damage by visitors will keep visitor use impacts under control. While resource management objectives are only developed in a very general way in the plan, the goal is to eventually restore much of the park to more natural vegetative conditions.

## IMPACTS ON WILDLIFE AND MARINE ORGANISMS

General effects on wildlife are directly associated with the loss or gain of habitat and the sensitivity and adaptability of wildlife to human use.

### Changes in the Amount of Wildlife Habitat

Removal or restoration of vegetation will change food and shelter availability and will affect both primary consumers and predators who inhabit the area. Changes in terrestrial habitat as a result of construction and restoration are summarized in table 18 in the section "Impacts on Vegetation and Soils." Habitat types to be lost by new construction activities are typical to coastal California, and no particularly valuable wildlife habitat is included in the 43 acres that will be disturbed. Restored areas, planted with a variety of woody and herbaceous species, will provide food and shelter for birds and small mammals. The value of this restored habitat, totaling 102 acres, will depend upon the species planted. Overall the acreage to be restored will exceed the amount of habitat to be disturbed by construction.

Marine habitat will be temporarily disturbed by proposed modification of piers at Aquatic Park and Fort Baker. While some additional study will be needed to refine proposals and to determine

specific impacts, any construction activity in a marine area will have the following general impacts to varying degrees of magnitude depending upon the size of the project. During construction activity, fish will migrate out of the area. Disturbance of bottom sediments will directly affect sessile benthic organisms by crushing them with machinery or by burying them with settling silt. Filter feeders will be affected by suspended sediments that could clog feeding mechanisms. Recolonization of disturbed marine areas will occur, but if conditions are also changed, a different assemblage of species will occupy the area after disturbance than before. Recolonization is usually rapid, so that characteristic fauna and flora are found in the area within a year after disturbance. Any additions of artificial underwater structures, such as pilings for piers, will provide additional habitat for sessile species such as barnacles and for game fish that often concentrate around artificial underwater structures.

The following specific proposals will affect marine fauna: lagoon modification to protect the historic ships, construction of a new Hyde Street pier and boat storage and maintenance facilities, and removal of the Sea Scout pilings and rowing club pier, all of which will occur at Aquatic Park; and removal of the bulkheading and repair of the pier at Fort Baker. Modifying the Aquatic Park lagoon and constructing a new Hyde Street pier will require additional study to determine methods and impacts. Modifications could include lagoon dredging and construction of a breakwater. Detailed impacts will be analyzed separately, after the lagoon study is complete.

A proposal to remove bulkheading at Horseshoe Cove in Fort Baker and replace it with a more natural sand beach also requires additional shoreline study to assure that the proposal is feasible. Removal of the bulkheading will remove an artificial, but rich, habitat for marine organisms such as barnacles and crabs. Replacement with a sand beach will change the kinds of organisms that will colonize the area.

Freshwater habitat could potentially be disturbed by construction activity to move the Muir Woods visitor parking and administrative and maintenance facilities. Unless erosion and runoff are carefully controlled, construction could potentially increase siltation into nearby Redwood Creek, which supports a significant migration of silver salmon and steelhead, and depending on the time of year, it could reduce the suitability of the Muir Woods area as an anadromous fish spawning area. Redwood Creek is the only coastal stream in the area that is used by silver salmon. To prevent damage to salmon and steelhead and their habitat, construction will be undertaken during periods of the year when the fish are in coastal offshore waters or in low numbers in coastal streams. Upstream migration and spawning occur from January 15 through

March 15 for steelhead and from December 15 through February 15 for silver salmon. Allowing 60 days for eggs to hatch, the construction period should be between May and October. Because this is also the season of heaviest visitor use, the proposal will result in disruption of normal park use for at least one summer season. Construction will either be completed by the spawning period or measures will be taken to stabilize any potentially erodible areas or to collect runoff before it reaches the creek.

Effects of Construction Activity and Noise

Noise and human activity associated with construction, demolition, and structure removal will disturb animals that would otherwise feed, rest, or nest near the activity area. Most animals will migrate out of the area while activities are ongoing, but they will probably return later unless increases in visitor use following construction activity force more timid species out of the area entirely. Noise and activity associated with demolition and rubbish removal on Alcatraz will temporarily disturb birds such as gulls, cormorants, ducks, and pelicans, and also harbor seals and sea lions that would normally haul out on the rocks around the island. Similarly, birds will be disturbed at Rodeo Lagoon during demolition and modification of structures at Fort Cronkhite.

Visitor Disturbance of Fauna

Many of the long-term impacts on wildlife and marine organisms are related to visitor use and the potential for disturbance by increased volumes of people and new recreational uses in an area. Species in remote areas that are not accustomed to people or that are attractive to collectors will be most affected.

Collection of shore and intertidal invertebrates and disturbance of shore habitats will increase with the number of visitors near the shore at Fort Mason, Crissy Field, Sutro Baths, and other beaches and rocky intertidal shores throughout the park.

Backcountry developments, such as hike-in camps at Gerbode, Tennessee Valley, Morses Gulch, McKinnan Gulch Mine, Bolinas Ridge, Home Ranch Creek, and Muddy Hollow Ranch may cause populations of some wildlife species to decline by increasing the presence of people and reducing quiet spots for wildlife to breed, feed, rest, and bear young. Species in these areas are not as accustomed to the presence of humans as are species in more commonly used areas, such as Rodeo Valley. Nocturnal species could be especially disturbed by overnight use of camp areas. The Marin County units, where this impact will be most important, supports a wide variety of wildlife, including terrestrial and marine

mammals, reptiles, amphibians, and birds, that could be disturbed by backcountry use.

Rodeo Lagoon contains important habitat for shorebirds, waterfowl, and migratory birds, and has been identified by the management zoning map as a biotically sensitive area. The overall increase in visitation in the vicinity will increase the amount of visitor activity on and around Rodeo Lagoon. While past uses of the lagoon included canoeing and fishing, and the adjacent area historically housed large numbers of military personnel, use of the area has been limited in recent years and wildlife may not now be accustomed to high use levels. Therefore, activities will be closely controlled and seasonally limited so that valuable wildlife habitat will not be disturbed.

A migratory population of up to 250 California brown pelicans, an endangered species, seasonally feeds in the lagoon and roosts on Bird Island and along the coast. They do not nest in GGNRA. The largest population of pelicans is found in the area during July and August, and almost all of the birds migrate out of the area by December. This seasonal use pattern will allow visitor use during certain periods when it will not be detrimental to the pelican population. Other birds found in the lagoon area are a variety of ducks, coots, egrets, herons, cormorants, and migratory land and shore birds. The potential exists for disturbance of feeding habits and resting and breeding habitat for a large number of species if increased visitor use proves to be detrimental.

Management actions will be undertaken to limit or relocate activity in the picnic/play area if ongoing monitoring by the park staff determines that wildlife is being affected by visitor use in that location. Therefore, there will be no effect on the lagoon's or lake's resident and migratory birds, including the endangered brown pelican, as a result of the proposal. The National Park Service will initiate formal consultation with the U.S. Fish and Wildlife Service in compliance with section 7 of the Endangered Species Act concerning the effect of the proposals on the brown pelican.

As visitation levels in coastal locations increase, the potential for increased harassment of marine mammals hauling out in park areas--particularly during sensitive pupping periods--will also increase. Sensitive harbor seal hauling and pupping areas are found at Double Point, Bird Rock, Point Reyes Headlands, Drakes Estero, Limantour Estero and Spit, and Bolinas Lagoon. To mitigate any potential threats posed by harassment of marine mammals by visitors, the National Park Service will monitor visitor impacts and take necessary actions to assure that these animals are not affected. These measures may include placement of warning signs at visitor access areas, increased patrol, or temporary closure of areas during particularly sensitive periods.

The provision of better fishing facilities at Aquatic Park and Fort Baker (fish-cleaning stations and piers) and continued access for fishing at Fort Mason will result in a small increase in the pressure on sport fish in the area. This increase in fishing is not expected to have any significant effect on sport fish populations in the San Francisco Bay.

Hiking and horseback riding along trails will continue to contribute to trail erosion in the Marin County areas of the park. Sediments from this source will increase the siltation load of streams and could potentially reduce spawning suitability for salmon and steelhead. Trail use near Redwood, Pine Gulch, and Olema creeks has the greatest potential to affect spawning areas since all of these creeks contain active spawning runs (only Redwood Creek is a spawning area for silver salmon). These important habitat areas are protected by designation as biotically sensitive areas in the management zoning plan. Therefore, trail use that is detrimental to fisheries will not be allowed. Use will be monitored to determine what, if any, changes visitors are causing so that management actions can be taken to modify trail locations or uses.

An environmental education center at Rancho Bolinas at the head of Bolinas Lagoon and a wayside exhibit on Highway 1 along the lagoon near McKinnan Gulch will bring people near the sensitive wildlife habitat area of the lagoon. Careful supervision of school groups will assure that increased use in this area with excellent educational opportunities will not disturb habitat used by shorebirds, seals, fish, shellfish, and other invertebrates.

Informal canoe launching at Johnson's Oyster Company will be allowed to continue, but no new facilities for launching will be constructed. While the continuation of canoeing at a low level will have some effect on the invertebrates, fish, and harbor seals found in the area, the impact will be minimal.

Wildlife will not be disturbed by special events at the rifle range in Rodeo Valley because the area has no significant wildlife habitat value. Noise at the special event site and an increase in the numbers of people visiting the area could, however, temporarily drive birds and small mammals away from Rodeo Valley and into quiet side canyons. Effects on wildlife of special events to be held at other locations will have to be evaluated on a case-by-case basis.

The known and suspected distributions of candidate, proposed, and listed endangered or threatened species that occur in the park area have been mapped by the U.S. Fish and Wildlife Service. A listing of these species is found in the Appendix. While there is a potential for developments and increased levels of visitors to jeopardize threatened and endangered species found within specific project areas, formal consultation with the U.S. Fish and Wildlife

Service indicates that jeopardy to these species can be avoided if concerted attention is given to these species and their sensitive habitat as more specific site plans are developed. The following potential areas of conflict will have to be resolved through more detailed planning and site specific surveys:

Construction areas in Rodeo Valley and other shoreline areas may temporarily displace California brown pelican individuals. This activity is not expected to pose a threat to the species.

Increases in visitor use of shoreline areas may affect California brown pelican roosting areas. Pelicans occur within the area in large numbers from August to November. Monitoring of visitor and pelican use will assure that this species is not affected by changes in visitor use.

Public use on the Point Reyes peninsula may adversely affect two invertebrate species and future monitoring of visitor use may be necessary.

Any increase in visitor use of the marshes of Tomales Bay and Bolinas Bay could affect the California clapper rail which now occasionally visits these areas.

The above potential conflicts and any other conflict areas will be resolved and avoided through additional investigation into the ecology, range, and occurrence of listed and candidate species and informal and formal consultation with the U.S. Fish and Wildlife Service as more specific plans are developed.

Summary

Construction activities will disturb some additional habitat, both terrestrial and marine, but more habitat will be restored than lost. Increased noise levels and activity during construction or demolition will temporarily discourage wildlife use of a much larger area than is directly disturbed by construction. Construction activity near Redwood Creek, which contains anadromous fish, will be carefully controlled and monitored to ensure that spawning fish are not disturbed by increased stream siltation. Any jeopardy to species listed as threatened or endangered will be avoided by considering these species as more specific site plans are developed.

Besides keeping use levels low in sensitive wildlife areas, a number of management techniques will be utilized to reduce impacts of visitors. The effects of visitor use will be monitored throughout the park so that unacceptable impacts can be detected early and corrective action can be taken. Monitoring of marine resources in the intertidal zone and of important bird habitat will provide

information upon which to base closure of certain shoreline sections or other use limitations necessary for protecting sensitive wildlife and marine organisms.

## IMPACTS ON VISUAL QUALITY

Changes in visual quality will result primarily from removal of existing structures, many of them temporary military structures or deteriorated buildings that are unsightly, and the creation of additional open space. A park appearance will be greatly enhanced in the southern units by expanding vistas and landscaping new open areas. A general cleanup, renovation of existing facilities, and compatible design for new facilities will increase the aesthetic appeal of the parks.

The plan provides for limited development in undisturbed areas, primarily campgrounds and picnic areas in Mount Tamalpais, Olema Valley, and Point Reyes. These developments will result in partial disturbance of the areas they cover, but the overall visual character will remain unchanged.

At Muir Woods, where the parking lot and other facilities will be relocated out of the redwood grove, the visual quality of the grove will be improved at the expense of creating a new visual intrusion in a previously undisturbed woodland and grassland area nearby.

Visual integrity will be an important factor in the placement and design of all new park facilities, including parking lots, campgrounds, and picnic areas.

## IMPACTS ON AIR QUALITY

### Effects of Park-Related Traffic

As more people visit almost all sections of the park there will be an increase in the total amount of park-related vehicle traffic--both on access roads to the park and on roads within the park. There is a potential for degradation of air quality because of this increase in vehicle use. Other sources of pollutants (new facilities unrelated to vehicular traffic) will not be created by the plan.

To determine the effects of increased park automobile and transit traffic on the air quality of the park and surrounding region, air quality analyses at two sites were undertaken using worst-case conditions. Sites were chosen that would illustrate the impacts of the plan on the air quality of two contrasting environments with different visitor use levels--the natural environment of Point Reyes and the urban environment of San Francisco. Possible changes in

air quality for other areas in the park can be surmised from these analyses.

One analysis site is a steep section of Limantour Road in Point Reyes National Seashore which passes through a corridor separating mandatory Class I wilderness areas, where no degradation of air quality values will be allowed. During existing peak traffic periods, when traffic density is 250 vehicles per hour, the worst-case concentrations for major automotive pollutants (carbon monoxide, hydrocarbons, nitrogen oxides, sulfur oxides, and total suspended particulates) are far below the applicable standards and much less than concentrations known or suspected to cause damage to any flora, fauna, or other air quality related values (see the air quality analysis in the Appendix). Even if automobile and transit traffic increases by 33 percent along the road during peak periods, to the maximum theoretical carrying capacity of the area, air quality related values will not be affected, and Class I air quality increments will not be approached for the Point Reyes area. Park automotive emissions are the primary pollution source and will not act cumulatively with other point or line sources to produce a significant effect on air quality. In addition, emission factors are expected to be lower in the future as more new cars meeting stringent emission standards are on the road and as a greater portion of visitors arrive and tour the park via transit systems. Therefore, no degradation of the Class I air quality will occur. The calculated values for the Point Reyes road section were so slight that air quality related values would not be affected even in similar situations where traffic volume was more than 10 times greater. Such intensive traffic volumes are not present now and are not anticipated in the Marin County park units.

The second analysis site is located within the city of San Francisco along heavily traveled Marina Boulevard. A section of Marina Boulevard between Laguna Street and Doyle Drive immediately adjacent to Golden Gate National Recreation Area was selected because it is the most heavily traveled road segment affecting the park and because it carries the greatest volume of park-related traffic. Visitation in the adjacent San Francisco Bay waterfront area is projected to increase 2½ times. Marina Boulevard also lies within a nonattainment area for carbon monoxide and oxidants (an area that does not meet the ambient air quality standards), requiring that any change in emissions of these pollutants be given special consideration.

Based upon present recreational and commuter traffic and the maximum projected traffic for 1986, carbon monoxide and hydrocarbon concentrations were calculated for peak traffic conditions (see the air quality analysis in the Appendix). Hydrocarbons were calculated to get an indication of ozone levels, which are difficult to calculate, since it is known that hydrocarbons and ozone levels are generally related. When compared with the

national ambient air quality standards, emissions of carbon monoxide on Marina Boulevard during peak traffic periods did not exceed the standards in 1976 and will not exceed them in 1986. In fact, while total traffic will increase, total emissions of carbon monoxide will be less in 1986 than at present. Emissions at peak 1-hour and 8-hour periods will total less than 20 percent of the total concentration allowed by the standards.

Park-related traffic in 1986 will not exceed the standards for hydrocarbons, but total use during weekday mornings, when commuter traffic is high but park-related traffic is low, will exceed the standard for hydrocarbons. (The peak 3-hour concentration will be 180 $\mu g/m^3$ (micrograms per cubic meter) while the standard is 160 $ug/m^3$.) The total hydrocarbon concentration will be lower in 1986 than it was in 1976.

Park-related emissions will contribute to air pollution outside the park by increasing the amount of recreational traffic on access roads. In the San Francisco units, park-related emissions are additive with other urban pollution sources, while in the northern units recreational traffic may contribute most of the emissions along an access road. Based upon the two reported air quality analyses, park-related emissions should not significantly affect air quality outside of the park as a result of the plan. Even without GGNRA/Point Reyes or the plan, recreational traffic would be expected to increase at a rate of 5.7 percent each year. The presence of parklands that are close to home and serviced by transit systems will ultimately reduce overall recreational traffic and related emissions.

Air quality will be affected in a minor way by several other components of the plan. By not providing sufficient parking to satisfy all of the potential demand in the San Francisco waterfront area, two counteracting effects on air quality could occur. On one hand, visitors arriving in the waterfront area in private cars may drive around in surrounding areas looking for parking. Emissions from stopping and starting vehicles circling the area will increase pollution levels. On the other hand, visitors will be encouraged to use transit systems to reach the park. Because of enthusiastic response to experimental transportation systems established in the past, general acceptance of transportation systems in the Bay Area, and the number of families in San Francisco that lack private vehicles, it is assumed that when funding is available and transportation systems are established, visitors will use them. As a result, lower levels of emissions will be generated by visitors arriving by transit vehicles than by visitors arriving by private vehicles.

Use of shuttle systems and closure of some areas, such as Rodeo Valley, to private automobiles during heavy use periods will greatly

reduce the potential for deterioration of air quality. Improvements in parking and circulation patterns in the Cliff House area will reduce congestion and reduce air pollution from automotive emissions.

Construction and demolition activities throughout the park will temporarily increase noise and dust levels, as well as emissions from construction machinery. These effects will be short lived and will affect a local area only.

### Summary

Automotive pollution, the only effect of the plan on air quality, will not significantly degrade air quality. Assuming successful implementation of transportation plans for making effective use of transit and shuttle systems to bring people to the park and connect the different park units, there will be little or no adverse effect on air quality and, in fact, there could be a beneficial effect in some areas. The contribution of park traffic to any deterioration in air quality will decrease between 1976 and 1986 because more stringent emission standards will decrease future emissions per car. Federal and state air quality standards will not be exceeded. The Class I airshed of the wilderness area of Point Reyes National Seashore will not be affected by the plan.

## IMPACTS ON WATER RESOURCES

### Water Quality

Almost any construction activity has the potential to decrease water quality in a local area as sediments are transported into surrounding waters by runoff. Suspended sediments will temporarily increase the sediment load, decrease clarity, increase turbidity, and lower the oxygen content of water. In most cases sedimentation increases will not significantly affect water quality because of the large size of the receiving water body and the small amount of sediment that will be contributed. Where large bodies of water are affected (the bay or ocean), the sediment contributions from small construction and demolition sites will be insignificant compared to the sediment load that is constantly present. The San Francisco Bay receives a total of 6 million cubic yards of sediment a year from large upland watersheds, and wave action causes coastal erosion and keeps turbidity high.

Bay and ocean water quality will be affected in a very minor way by sediment runoff from the following projects: demolition and rubble removal at Alcatraz, removal of structures and landscaping at Fort Mason, landform modification and shoreline stabilization at Crissy Field, earth movement to create a park at Sutro Baths, and

bulkhead removal and restoration of a sandy beach at Fort Baker. The effects on bay water quality of modifying the lagoon at Aquatic Park for the protection of historic ships cannot be determined until further study results in the definition of a feasible solution to the problem. However, the potential for temporary and long-term degradation of local water quality exists, depending on the extent of modification, the need for dredging, and the characteristics of the bottom sediments. These impacts of ship protection will be discussed in a separate analysis after feasible alternatives have been defined.

A temporary decrease in water quality of streams and other surface waters will also result from construction disturbance. Movement of the Muir Woods facilities and parking will increase erosion and siltation into Redwood Creek and therefore lower stream-water quality. Mitigating measures described in the section "Impacts on Wildlife" should minimize the effects on water quality and fisheries resources. A minor decrease in water quality of Rodeo Lagoon and Rodeo Lake will result from structure removal and landscaping at Fort Cronkhite. While siltation will temporarily increase, it will not decrease the life of the impoundment, significantly reduce water quality, or limit use of the area by wildlife or as a fisheries resource.

More serious than temporary construction disturbances to water quality will be the long-term disturbances resulting from continuous and often increasing levels of visitor use. Increased use of trails by hikers and horseback riders will increase erosion and sedimentation of surrounding waters.

During special events, the large influx of visitors into an area could temporarily affect local water quality. The combined use of portable sanitary facilities and the planned central sewer system facilities should provide for removal of human waste without affecting water quality at the rifle range in Rodeo Valley. However, if portions of the site are denuded by use, an increase in erosion and sedimentation could result. Plans for immediate revegetation of any denuded areas will decrease the likelihood of degradation of water quality.

An increase in backcountry hiking and camping will increase the potential for contamination of water resources by human wastes. A drinking water source will be affected if visitor use extends onto adjacent watersheds managed by the Marin Municipal Water District. If a problem occurs and any contamination results from hiker spillover into these lands or illegal camping, the boundary will be patrolled.

Horse use will not only increase sedimentation from erosion, but could also introduce fecal material into the waters of the Marin County areas of the park. Contaminated surface runoff from

stables in Rodeo, Tennessee, and Olema valleys will be intercepted and treated prior to entering tributary streams. However, horse waste along trails will contaminate surface water to some extent in the Marin Headlands, Mount Tamalpais, and Olema Valley. Watersheds providing municipal water for the towns of Stinson Beach and Muir Beach are within the park and will continue to be affected by horse use.

A reduction in livestock waste contamination of watersheds will occur in areas where grazing levels are lowered to prevent overgrazing. Contamination of runoff in important watersheds such as the Bolinas Lagoon, Stinson Beach, and Muir Beach watersheds, which are used as municipal water sources, and in other critical watersheds, such as Tomales Bay, Drakes Estero, and Limantour Estero, will probably be reduced if numbers of livestock are reduced. In addition, sediment introduction into watercourses will decrease as erosion problems are reduced and previously denuded areas near stock water supplies and trails are revegetated.

The continued and expanded use of ferry boats to transport visitors will cause some localized pollution of the bay from gasoline and oil discharge, especially at takeoff and landing sites. New ferry operations at Fort Baker and possibly at Fort Mason, the expanded ferry operations at Alcatraz, and potential expansion of ferry service to Larkspur ferry terminal could affect local bay and ocean water quality. When the size of the bay and the amount of other boat traffic is considered, however, the contribution to water pollution by park-related vessels will be insignificant.

Increased park-related private boater use of Fort Baker will have a similar minor effect on water quality of Horseshoe Bay, as petroleum by-products are introduced by boats berthed in the area. The potential for deterioration of water quality from human wastes will also exist when private boat use increases. To help ensure that boaters do not empty holding tanks containing human and chemical wastes into the bay, a dumping station will be provided at Fort Baker.

Nutrient levels in runoff may increase periodically near landscaped areas where fertilization and irrigation are necessary to establish a new plant cover or maintain manicured gardens and landscapes. Fertilization will be avoided in areas where open surface waters could receive an influx of nutrients that could affect aquatic organisms or decrease aesthetic values of open water by eutrophication. If it is created, the Crissy Field lagoon may experience eutrophication unless adequate flushing and water exchange are provided. This problem will be solved by appropriate design.

The water quality of all new water sources will comply with Environmental Protection Agency primary drinking water regulations that have been established pursuant to the Safe Drinking Water Act. Almost all new water sources are associated with new camping areas. If water sources cannot provide water of sufficient quality to comply with the maximum contamination standards allowable by the regulations and if treatment is not feasible, consideration will be given to either relocating the camp or designating the area as a dry camp where visitors must bring in water from surrounding areas. Wherever wells are to be used to supply water, groundwater supplies will be monitored for early detection of any saltwater intrusion. Should saltwater intrusion occur, immediate action will be taken to restrict water use or limit visitor numbers.

Bacterial contamination of water resources will not result from increased visitor use in developed areas because all new developments will contain adequate sewerage systems and comfort stations (see table 19 for proposed sewage disposal systems). Reconstruction of deteriorated sewerage systems will improve water quality in Rodeo Valley, where an existing sewage treatment problem resulting from an overflowing septic tank will be corrected by installation of a new central collection system and treatment outside the park. Overall, this action will greatly improve water quality of Rodeo Lagoon and Lake. Use limitations and other precautionary measures will minimize the occurence of overflows until the new system is constructed. The proposal to improve sewerage systems in Rodeo Valley has been covered in a separate environmental summary.

The resources management plan, to be developed subsequent to the general management plan, will contain a section on water resources management, which is required through a memorandum of understanding with the Environmental Protection Agency. An analysis of present water use and quality and a classification of water for future use will be included in the resource plan. Future monitoring to ensure nondegradation of the established water standards will be necessary.

## Water Demand

San Francisco. Water for all developments in the San Francisco mainland units is provided by existing municipal water sources that supply the city of San Francisco and the U.S. Army water system serving Baker Beach, Crissy Field, and Fort Point. These sources are adequate to meet present and projected water demands without significantly affecting either local or regional water supplies. No new development of water sources will be required.

## TABLE 19. WATER SUPPLY AND SEWAGE DISPOSAL

| Area | Water Source | Existing (E) Proposed (P) | Estimated Water Demand (peak use, gallons per day) | Sewage Disposal System | Existing (S) Proposed (P) |
|---|---|---|---|---|---|
| MARIN HEADLANDS | | | | | |
| Fort Baker, central Rodeo Valley (Forts Barry and Cronkhite) | Marin Municipal Water District (MMWD), from distribution system on interruptible basis; will seek noninterruptible service | E | 168,000 - visitor use<br>81,000 - irrigation | collection system and treatment by Sausalito-Marin City Sanitary District | E for Fort Baker, P for central valley (analyzed in environmental summary 6/78) |
| Kirby Cove camp | MMWD and low-flow well | E | 3,000 | vault toilets | E |
| Gerbode Preserve camp | well or diversion | P | 1,000 | composting or vault toilets | P |
| Tennessee Valley co-op stables and trailhead | low volume springs | E | 6,000 | vault toilets, septic tank/leach-field | E (expand) |
| Tennessee Valley camp | well or diversion | P | 1,000 | vault toilets | P |
| Oakwood Valley farm and picnic area | well or diversion | P | 10,000 | vault toilets, septic tank/leach-field | P |
| | | Total | 270,000 gpd (including irrigation) | | |
| MOUNT TAMALPAIS | | | | | |
| Muir Beach | Muir Beach Community Services District | E | 8,000 | chemical toilets | E |
| Muir Beach horse boarding | Muir Beach Community Services District | E | 6,000 | septic tank/leach-field | E |
| Muir Woods | North Marin County Water District, transferable to MMWD well | E | 50,000 | septic tank/leach-field | E |
| Stinson Beach | Stinson Beach Co. Water District, may develop additional source | E | 84,000 | septic tank/leach-field | E |

| Area | Water Source | Existing (E) Proposed (P) | Estimated Water Demand (peak use/ gallons per day | Sewage Disposal System | Existing (E) Proposed (P) |
|---|---|---|---|---|---|
| Morses Gulch camp | well or diversion | P | 1,000 | vault toilets | P |
| Old Mine camp | well or diversion | P | 1,000 | vault toilets | P |
| Mount Tamalpais State Park and Audubon Canyon Ranch | MMWD, various individual systems and diversions | E | 113,000 | septic tank/leach-field | E |
| | | Total | 263,000 gpd | | |
| OLEMA VALLEY | | | | | |
| Rancho Bolinas environ. ed. center | water diversion, well | E | 2,000 | septic tank/leach-field | E |
| Bolinas Ridge camp | diversion, well | P | 1,000 | vault toilets | P |
| Five Brooks camp, stables, trailhead | diversion, well | E (expand) | 28,000 | septic tank/leach-field | E (expand) |
| Truttman camp | diversion, well | E | 4,000 | vault toilets | P |
| Hostels (general location) | diversion, well | E | 6,000 | septic tank/leach-field | E |
| | | Total | 41,000 gpd | | |
| POINT REYES | | | | | |
| Bear Valley | North Marin Water District | E | 65,000 | vault toilets, septic tanks/leachfields | E (expand) |
| Wildcat camp | well | E | 1,000 | vault toilets | E |
| Glen camp | well | E | 5,000 | vault toilets | E |
| Coast camp | well | E | 1,000 | vault toilets | E |
| Sky camp | well | E | 1,000 | vault toilets | E |
| Marshall Beach camp | well, diversion, or bring your own | P | 1,000 | vault toilets | P |

| Area | Water Source | Existing (E) Proposed (P) | Estimated Water Demand (peak use/ gallons per day | Sewage Disposal System | Existing (E) Proposed (P) |
|---|---|---|---|---|---|
| Home Ranch Creek camp | well, diversion, or bring your own | P | 500 | vault toilets | P |
| Muddy Hollow Ranch camp | well, diversion, or bring your own | P | 500 | vault toilets | P |
| Laguna Ranch area environ. ed. center and hostel | Limantour water system | E | 6,000 | septic tank/leach-field | E |
| Limantour Beach | well | E | 10,000 | vault toilets, septic tank/leachfield | E |
| Drake Beach, North Beach, South Beach | well | E | 10,000 | evaporation lagoon, septic tanks/leach-fields | E |
| Lighthouse | well | E | 2,000 | vault toilets, septic tank/leachfield | E |
| Pierce Ranch | well | E | 2,000 | vault toilets, septic tank/leachfield | P |
| Lifesaving station | well | E | 2,000 | vault toilets, septic tank/leachfield | P |
| Palomarin trailhead | | -- | ------- | vault toilets | E |
| | | Total | 107,000 gpd | | |

| Area | Water Source | Existing (E) Proposed (P) | Estimated Water Demand (peak use/ gallons per day | Sewage Disposal System | Existing (E) Proposed (P) |
|---|---|---|---|---|---|
| Morses Gulch camp | well or diversion | P | 1,000 | vault toilets | P |
| Old Mine camp | well or diversion | P | 1,000 | vault toilets | P |
| Mount Tamalpais State Park and Audubon Canyon Ranch | MMWD, various individual systems and diversions | E | 113,000 | septic tank/leach-field | E |
| | | Total | 263,000 gpd | | |
| OLEMA VALLEY | | | | | |
| Rancho Bolinas environ. ed. center | water diversion, well | E | 2,000 | septic tank/leach-field | E |
| Bolinas Ridge camp | diversion, well | P | 1,000 | vault toilets | P |
| Five Brooks camp, stables, trailhead | diversion, well | E (expand) | 28,000 | septic tank/leach-field | E (expand) |
| Truttman camp | diversion, well | E | 4,000 | vault toilets | P |
| Hostels (general location) | diversion, well | E | 6,000 | septic tank/leach-field | E |
| | | Total | 41,000 gpd | | |
| POINT REYES | | | | | |
| Bear Valley | North Marin Water District | E | 65,000 | vault toilets, septic tanks/leachfields | E (expand) |
| Wildcat camp | well | E | 1,000 | vault toilets | E |
| Glen camp | well | E | 5,000 | vault toilets | E |
| Coast camp | well | E | 1,000 | vault toilets | E |
| Sky camp | well | E | 1,000 | vault toilets | E |
| Marshall Beach camp | well, diversion, or bring your own | P | 1,000 | vault toilets | P |

The island of Alcatraz has no local freshwater, and all water is imported by ferry from San Francisco and stored on the island. As a result, only drinking water will be available to visitors to encourage water conservation. Continued use of chemical toilets will limit water demand. The water requirements of proposed plantings will be taken into account in landscaping plans so that irrigation, water transport, and water storage capacity can be kept at a minimum.

Marin County. Park areas in Marin County are presently supplied by municipal systems and local water developments. Water consumption from existing sources will increase as a result of the plan, and several new local water developments will be required for new facilities where new hookups to municipal water sources are not available. Peak use water demand at full plan implementation for park areas in Marin County is indicated in table 19. (The methodology used in determining water demand is included in the Appendix).

Marin Headlands. In the Marin Headlands, peak daily water demand will total 270,000 gallons per day (gpd) when all requirements for visitors, irrigation, and administration are totaled. If irrigation needs are not considered, peak daily water demand for visitor use will total 189,000 gpd, with about 171,000 gallons supplied by Marin Municipal Water District (MMWD) to Fort Baker and central Rodeo Valley, and 18,000 gallons provided by existing or proposed development of groundwater sources.

Increases in water consumption as a result of special events attendance were not taken into account in peak water demand calculations because onsite water will not be needed. Portable chemical toilets will be brought in and drinks will generally be sold at the special event site.

Water service is provided to the park on an interruptible basis. In times of water shortage and drought the park will face the prospect of having this source cut off. If irrigation water is provided by MMWD, its use will be cut off first, but if sufficient water is still not available, visitor services will have to be drastically curtailed, with the possibility that portions of the headlands will be temporarily closed or some activities will be suspended.

Very few local water sources have been developed in the Marin Headlands area with the exception of low-flow springs. Groundwater use has been limited, but extensive testing has been undertaken. From test hole information it appears that sufficient groundwater is available to meet the visitor needs in this area.

Approximately 42 acres will be irrigated at the Fort Baker and Fort Barry parade grounds, rifle range, Fort Cronkhite playfield, and

Capehart picnic area. Peak water demand for irrigation will be 81,000 gpd, assuming one-half inch of water a week is applied on the 42 acres. Irrigation will be needed for about six months each year. The source of irrigation water will be either the MMWD, if sufficient water is available, or the Sausalito-Marin City Sanitary District, if its wastewater treatment plant is upgraded to provide recycled water. If recycled water becomes available, the park will consider recycled water for uses other than irrigation, such as toilet flushing, to reduce consumption of water supplied by other local and municipal sources.

Total water consumption will be reduced somewhat, in Marin Headlands and throughout the park, by the installation of water-saving devices, through the use of drought-tolerant native plant species, and encouragement of water conservation practices. Water-saving faucets, reduced flush-volume toilets, and chemical toilets and demonstration alternative sewage systems that do not require water, such as composting toilets, will be installed whenever possible.

When turf areas are restored, species will be chosen that have low water requirements and that are capable of withstanding drought periods. Landscaping that is adapted to coastal precipitation patterns and will not require irrigation after establishment will be used to revegetate all other areas.

Mount Tamalpais. Because use levels are anticipated to decrease, peak daily water demand will also decrease. Total water demand is anticipated to be approximately 263,000 gpd, while present demand may be as high as 312,000 gpd. Most of the water for the area will be provided by existing municipal water systems, with the exception of two new local water systems that will be required to serve new camps.

Park areas serviced by municipal sources may be subject to water service interruption during periods of low rainfall so that sufficient water can be reserved for the communities of Stinson Beach and Muir Beach. Beach use facilities may need to be closed if supply becomes limited, but water resources themselves will not be affected.

The new camps requiring water development will have low water demand. If water is present in the area, a groundwater well or a diversion should not affect local water sources. However, as is the case in Marin Headlands, until an attempt is made to develop a local water source, the potential to supply water to these camps will remain unknown.

Olema Valley. The existing water supply in Olema Valley comes from local wells and diversions. Water demand in the valley

will be greatly increased as a result of the plan. Although the potential yield of existing wells is not known, test wells in the area yield up to 85,000 gpd, more than twice the required peak water demand of 41,000 gpd. Thus, it appears that local sources in the valley will be able to meet this water demand. Most of the water demand will be generated in the Five Brooks area, the initiation point of most of the activity in the valley.

Point Reyes. Water demand at Point Reyes will increase as a result of the plan to a total peak demand of 107,000 gpd, in comparison with an existing peak demand of 92,000 gpd. The only new water developments that will result from the plan will be to provide water to the proposed camps. Consumption at new camps will be low, and if water is developed it will not affect local water sources. Most of the increased water consumption will occur at Bear Valley, which is supplied by the North Marin Water District. Sufficient water capacity is available within the seashore to meet the projected demand.

## Floodplain and Wetlands Management

There will be no adverse impacts on water resources associated with the occupancy or modification of a floodplain or wetland. The only structures in the park that are subject to flooding are in coastal areas subject to tsunami flooding. The presence and continued use of these buildings in the floodplain will pose a limited threat to the structures and the people using them (see "Impacts on Visitors, Visitor Safety"). No new structures will be constructed in wetland areas.

## Summary

An insignificant deterioration of water quality will result from the introduction of sediments from construction area runoff and trail erosion. Increases in visitation and horse use could introduce both fecal material and sediments to surface and ground waters. Improvements in water quality will result when existing sewage collection and treatment problems are corrected and when livestock numbers are reduced to eliminate overgrazing.

Water consumption will increase with increases in visitor use levels. During drought periods, demand may exceed the ability of municipal water sources to provide water, resulting in the temporary closure of some park facilities. However, both local and municipal water supplies should be sufficient to meet visitor demand most of the time, except during time of severe drought. New water development, primarily to serve camps, appears to be feasible based upon small water demand at these facilities, past water production, and hydrogeologic features.

Water conservation, phased development, and plan modification if needed will assure that development and use levels will not exceed the potential of the area and surrounding communities to provide water.

## ENERGY EFFICIENCY

Making adaptive use of existing structures to accommodate park functions and activities, rather than building new structures, will reduce construction-related energy requirements. While refurbishment and some modification of structures will be required to make them suitable for visitors, the requirements will be less than for new construction. On the other hand, the operation of historic structures that are adapted for new uses may not be as energy efficient as the operation of new structures that could be designed with a consideration for cool and foggy coastal climatic conditions.

As historic buildings are refurbished, energy saving materials and features (insulation, efficient heating systems) will be incorporated into the structures. Individual meters for each facility will be installed to measure incoming fuel, water, and electricity to aid in monitoring and regulating use of these commodities. Wasteful use can be pinpointed and corrected if energy use measurements are made for each facility.

A Bay Area center for environmental awareness and alternative energy technology is being considered as an appropriate use for some of the historic structures at Fort Barry. Interested groups will be invited to carry on research, demonstrate, and explain alternative energy technology and conservation measures. Methods will be tested and demonstrated in hostels and at other facilities throughout the park to decrease energy consumption within the park. As an educational tool, the alternative energy center will also encourage investigation of new energy-saving measures by the general public.

The implementation of a transportation system will allow visitors to reach the park and travel from one area to another within the park with a lower expenditure of gasoline per visitor.

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# FUTURE STUDIES

The impacts of a number of actions discussed in the plan cannot be adequately analyzed at this time for a number of reasons including (1) information is unavailable because studies have not been completed; (2) site-specific proposals have not been defined; (3) additional coordination with other agencies or individuals is needed; or (4) a final decision has not been made because it seems desirable to leave options open for the future. Some of these actions have the potential for causing significant environmental impacts, but only further study will reveal the actual extent of impact and the feasible alternatives that may be available. Impact analysis at this time, in other than a very general way, would result in an incomplete, and possibly inaccurate, picture of the future environment. The plan does not commit the National Park Service to any of these actions if impacts are considered significant, and the development of a range of alternatives including no action will precede final decisions on these issues. A separate environmental analysis and additional public involvement may be needed for the following actions. By going ahead with the plan even when several issues are not completely resolved, the entire general management plan will not be delayed while waiting for future studies and final resolution of these issues.

## PRESERVATION OF THE ALCATRAZ CELL HOUSE/CITADEL COMPLEX

The cell house and military citadel upon which the cell house rests are rapidly deteriorating. The feasibility of their preservation will depend upon the extent of structural problems, the extent of necessary modifications, and projected costs. A structural analysis of the complex will be necessary before a decision of how to preserve the resources can be reached. Depending upon the outcome of this study, a number of options for the preservation of the cell house and citadel may result. These options could even include the removal of the cell house if repair work would substantially alter its historic fabric or appearance.

Following the study, an impact analysis of the various options will be prepared to aid in making the final decision. Any future action will comply with the procedures established by the Advisory Council on Historic Preservation.

If preservation efforts would result in substantial alteration of one or the other of the citadel or cell house, or if preservation is impossible and the cell house has to be removed, significant impacts on cultural resources would result. Because the results of the structural analysis are not known at this time, the evaluation of the

significance of the impacts on these structures will be deferred until later. It is possible that additional documentation of environmental impacts will be required, as well as compliance with the procedures established by the Advisory Council on Historic Preservation.

## AQUATIC PARK LAGOON MODIFICATION

The historic ships now moored at the Hyde Street pier in Aquatic Park lagoon are subject to constant deterioration brought about by wind and tidal surge. Various methods for protecting the ships need to be investigated to determine their feasibility and impacts. Options for protection could include construction of a breakwater, physical modification of the lagoon, construction of a new Hyde Street pier, alternative mooring methods, or a combination of these. A study is needed that will gather physical and biological data including wind, wave action, tidal current, and bottom conditions; composition of bottom sediments; the amount of dredging that could be required; disposal sites for dredged material; maintenance requirements and their costs; and the anticipated effects on marine organisms and water quality. This information will also be needed to determine the feasibility of a floating stage at Aquatic Park.

The Port of San Francisco now owns the Hyde Street pier, which would be altered or replaced during lagoon changes. Modification of the pier would require its transfer to the National Park Service or an agreement as to design and operation of the structure. This problem is yet to be resolved.

Without the benefit of necessary data or the resolution of ownership, a valid impact analysis cannot be made. An impact analysis of the possible options for protecting the ships, based upon the study results, will be completed before a final decision is made.

## FERRY SERVICE FROM FORT MASON

The final decision to implement ferry service from Fort Mason to Alcatraz will be delayed in order to allow time to first monitor the use of the park, observe the traffic situation, and establish mass transit service to the area. By keeping the option for ferry service open, the final decision can later be based upon observations of the operating park over a longer period.

If monitoring of traffic and parking conditions indicates that surrounding areas would not be adversely affected, ferry service to Alcatraz from Fort Mason will be proposed. An impact analysis will be prepared before any action is taken to initiate service.

## POSSIBLE REMOVAL OF HISTORIC STRUCTURES AT FORT MASON OR FORT CRONKHITE

During site-specific design planning, it may be desirable to remove a small number of historic structures for aesthetic purposes or because the buildings are not needed for park activities and are costly to maintain. However, before any historic structure is removed, the environmental impacts will be analyzed, and removal will be in compliance with the procedures established by the Advisory Council on Historic Preservation.

## ACCESS INTO CRISSY FIELD

The best access into Crissy Field and the relationship of access to facilities is yet to be determined. The National Park Service will cooperate with the army, San Francisco Department of City Planning, MUNI, San Francisco Department of Public Works, and the Golden Gate Bridge District to work to resolve the access problem.

## SHORELINE EROSION AND LAGOON FEASIBILITY STUDY FOR CRISSY FIELD

A study will be undertaken to determine the present causes of instability of the shoreline, methods for stabilizing the beach and restoring a natural appearance to the area, and costs and maintenance requirements. Results of this study may affect the site design for the beach area. Following engineering studies and development of feasible alternatives, additional environmental analysis will be required. The feasibility of creating a lagoon for water play will also require additional study. The size and flushing characteristics to prevent eutrophication will have to be considered.

## CLIFF HOUSE HISTORIC STRUCTURE ANALYSIS

The proposal for restoration of the 1909 Cliff House assumes that restoration is feasible and that the restored structure will accommodate existing uses. A structural analysis will be required to determine the condition of the structure, what modifications have taken place, the amount of remaining historical fabric, the feasibility of restoration, the capability of the historic structure to accommodate the proposed uses, and the cost of restoration. If the study determines that either structural deterioration or destruction of historic fabric has advanced to a point of making the historic restoration of the building infeasible, the possibility of constructing a new Cliff House will be considered. An impact analysis will precede any decision to change the proposal to restore the 1909 Cliff House.

## EROSION OF OCEAN BEACH

Control of shoreline erosion at Ocean Beach and future opportunities for recreation will directly relate to a proposal by the city of San Francisco to construct a major wastewater storage and transport facility along Ocean Beach just east of the park boundary and to replace the Great Highway. In order to prepare a response to the city's plans, the National Park Service hosted a conference on Ocean Beach erosion control which brought together a panel of experts in the fields of coastal processes, ecology, and engineering. The panel made several recommendations concerning location of the facility, structural requirements of the walls, disposal and stabilization of excavated material, maintenance of the facility, and monitoring of shoreline processes. The National Park Service will continue to work with the city to arrive at the best solution of the problem.

The National Park Service will need to issue a permit to the city for disposal of sand on the beach in the national recreation area. Because a decision on the city's proposal has not yet been made and because the storage facility is to be built outside of the park, decisions on the management of Ocean Beach cannot be made at this time. Before a National Park Service permit is issued to dispose of sand on the beach, a thorough analysis will be prepared to determine the effect of the proposal.

## MODIFICATION OF FORT BAKER BEACH

The changes in the shoreline that will result when the seawall is removed and replaced with a sandy beach will be subject to additional study and impact analysis before construction proceeds. The difficulty of maintaining the new beach (which existed before bulkheading was installed) will be evaluated as well as what site-specific impacts on coastal dynamics and marine organisms will result from construction activity.

## INCREASED VISITOR ACTIVITY AT RODEO LAGOON

The effects of increased visitor use on the wildlife of Rodeo Lagoon and Lake will be monitored as visitor use levels increase. Baseline information on the kinds of birds present now and their numbers will be compared with future observations so that changes in seasonal use or management techniques can be made if necessary to prevent visitor impacts.

## NEW SOUTHERN ENTRANCE TO STINSON BEACH

A new road alignment will be constructed to provide a southern entrance for park visitors to Stinson Beach so that they no longer drive through the village of Stinson Beach. At present, traffic must proceed through the town in order to enter the beach parking area. A feasibility study is being planned by the Federal Highway Administration for 1980 to determine options for the alignment of this new road section. At that time, the site-specific environmental impacts of the new road will be analyzed.

## ZONE CAMPING

A feasibility study to determine the potential impacts (increased fire potential, water pollution, impacts on vegetation and soils) will be undertaken prior to making a decision to allow primitive zone camping at Point Reyes.

## CONSTRUCTION PROJECTS

All construction projects included in the plan will be preceded by an additional review and site-specific analysis of their impacts in an environmental assessment. This review will assure either that impacts were adequately covered in this environmental analysis or that additional impacts based on new information or changing conditions or publics are taken into account and documented before the site is finally committed to development. Detailed surveys required for compliance with NPS policies and federal laws will be undertaken at that time. These surveys will include site-specific archeological surveys and surveys to verify endangered species occurrences. The U.S. Fish and Wildlife Service will be consulted whenever conflicts with endangered or threatened species are encountered necessitating reinitiation of procedures under section 7 of the Endangered Species Act. Locations of facilities may be slightly altered or appropriate mitigating measures adopted to reduce impacts as a result of these site-specific analyses.

## VEGETATION MANAGEMENT

A vegetation management plan is needed to guide programs for maintaining vegetative diversity, controlling exotics, protecting fragile environments, and other resource management goals. Additional studies will be necessary before specific proposals can be made.

## GRAZING

As part of the vegetation management studies, additional study of the effects of grazing will be required to determine where this activity can be used as a resource management technique for maintaining grasslands. Based on results of this study, a plan will be developed for the issuance of grazing permits.

# CONCLUSIONS

Major changes in human activity and land use occurred when Point Reyes National Seashore and Golden Gate National Recreation Area were established as units of the National Park System by congressional action. Recreational use patterns that have now become established on former military, state, city, and private lands are going to continue at a higher use level with no new significant environmental impacts. The planned uses of the resources are primarily for recreational activity, consistent with the reasons for establishment of the areas.

Relevant environmental factors have been considered in evaluating the significance of the environmental impacts of the plan. The magnitude of change to the natural environment is expected to be small. The emphasis on utilizing existing structures and limiting new development to areas that have already been physically altered in the past will reduce the amount of new disturbance to a very small portion of the 100,000-acre area. Urbanization, along with its attendant development and pollution has already affected the quality of natural resources to some extent, making the changes proposed by the plan relatively insignificant.

The maintained environment and structures of the San Francisco units have a greater ability to absorb impacts than the more northern areas, and consequently most development and use is proposed for these units. In the northern units, where environmental sensitivity is often high, few actions that could affect natural resources are proposed. Exclusive protection of areas where natural values are high, little or no modification of remaining resources in areas that have been stressed by past uses, restoration to more natural conditions when possible, and use of already disturbed sites will allow long-term preservation of natural resource values. No significant adverse effects on habitat or endangered or threatened species will result. Unique areas or areas of special designation such as wilderness areas, ecologically critical areas, or Class I airsheds, will not be affected.

Energy consumption will be as low as possible with the provisions for transit systems and adaptive use of existing structures. The plan will not violate any laws or standards that have been imposed to protect the environment.

A large number of historic structures are going to be affected in a minor way by the plan. Changes in historic structures are necessary in order to adaptively use and preserve them over the long term. Modifications of historic structures to allow adaptive uses will usually be interior changes and will be reversible in

structures that have interior significance. Significant impacts on the area's cultural environment will not result. No significant adverse impacts will affect areas listed on or eligible for listing on the National Register of Historic Places.

The tourist-oriented and urban character of the area surrounding the park will not be significantly affected. Heavy vehicular and pedestrian traffic is already present, and large numbers of businesses are already established to provide visitor services. The plan will not promote growth or change growth patterns in any adjacent community. Public health and safety will not be adversely affected.

The cumulative direct and indirect impacts of the proposal that can be determined at this time are not significant to either the locales of site-specific actions or to the region. A number of unresolved actions requiring more study may or may not be significant, but without further study and definition of the proposal, no determination can be made. The proposal does not commit the National Park Service to future actions which could be significant. There are no known other proposed actions, either inside the park or in the area, which considered along with the proposal will be significant. The controversial impacts have been resolved by compromise or plan alteration.

NATIONAL PARK SERVICE
GOLDEN GATE NATIONAL RECREATION AREA, CALIFORNIA
AND POINT REYES NATIONAL SEASHORE, CALIFORNIA
GENERAL MANAGEMENT PLAN

## FINDING OF NO SIGNIFICANT IMPACT

In accordance with the provisions of the National Environmental Policy Act and The regulations of the Council on Environmental Quality (Federal Register, Volume 43, Number 230, November 29, 1978) an Environmental Assessment was prepared for the General Management Plan for Golden Gate National Recreation Area and Point Reyes National Seashore.

The Environmental Assessment was released in August, 1979 and received extensive public and agency review. Proposals cover development and restructured use in the San Francisco and Marin County units of the recreation area; concepts for natural and cultural resources management; and proposals for transportation to and within the areas. Plan emphasis is to place urban recreational development in areas where natural landscapes have been modified and have low density use with minimal impact in areas retaining substantial material integrity. Cultural resources are considered in the plan which proposes that historic structures be stabilized and used adaptively rather than being demolished or extensively restored and that non-historic building be removed and setting relandscaped to increase outdoor recreational opportunities and improve the scene Agreement has been reached with the State Historic Preservation Officer and Advisory Council on Historic Preservation concerning proposals with effect on cultural resources. Overall responses have been in support of the plan and no recommendations for substantial revisions were made.

As a result of the assessment and review of comments received, it is believed tha no substantial controversies exist and that the plan does not have the potential to cause significant adverse impacts on the quality of the human environment. Therefore, based on these reviews an Environmental Impact Statement will not be prepared.

The Environmental Assessment is on file and may be viewed at the following offices: General Superintendent, Golden Gate National Recreation Area, San Francisco, California; Superintendent, Point Reyes National Seashore California; and National Park Service, Western Regional Office, San Francisco, California.

Approved Howard H. Chapman — 9-24-80
Regional Director, Western Region — Date

ENVIRONMENTAL REVIEW

FOR THE

GENERAL MANAGEMENT PLAN
AND
ENVIRONMENTAL ANALYSIS

Golden Gate National Recreation Area
Point Reyes National Seashore

May 1, 1980

Recommended: _____ 5/1/80
John H. Davis
Acting General Superintendent
Date

Approved: _____ 6/9/80
For Howard H. Chapman
Regional Director
Western Regional Office
National Park Service
Date

The planning process and the alternatives considered throughout its course for which this environmental review signifies a milestone of completion can be described best by an excerpt from the draft General Management Plan itself:

> Planning has involved extensive discussions with public agencies and conservation organizations and also more than one hundred workshops in Bay Area communities. About 10,000 people of all ages, incomes, and lifestyles have directly participated in this process through these public workshops, letters, and meetings with the planning staff over the past four years.
>
> In conjunction with this extensive public dialogue, the planning team has carefully compiled and analyzed information about the wildlife, vegetation, soils, history, socioeconomic setting, and other subjects that are key factors in making decisions about the parks' future (Preliminary Information Base, four volumes, October 1975.) Public preferences and feelings were carefully filtered through this collection of knowledge. An important intermediate product of this process was the Assessment of Alternatives for the General Management Plan (May 1977), supplemented by a popular summary, A People's Guide to the Future of the National Parks Next Door. These publications presented up to four alternative scenarios for the future of fourteen goegraphic units of the park. Each alternative related to one of the four basic park philosophies expressed by the public (1) minimum visible change--things are O.K. the way they are today; (2) maximum natural appearance--wherever possible restore natural qualities and hold development to a minimum; (3) education/history--the park is an ideal learning environment and visitors need a lot of help to get maximum enjoyment and benefit from it; (4) recreation--the park is a place that offers many opportunities for leisure activities. All of the alternatives protected ecologically sensitive natural areas, retained significant historic structures, and proposed facilities only in areas suitable for development. Each alternative was accompanied by a thorough environmental analysis describing the potential results of each proposal.
>
> During the public review of the Assessment of Alternatives, people were encouraged to interchange the individual proposals to design the park system they preferred. Public responses to the alternatives were gathered in five hearings held by the GGNRA Citizens' Advisory Commission (CAC) and through individual's and group's letters and worksheets. These responses were analyzed to determine areas where people were in general agreement and areas where issues were still to be resolved. These determinations and the recommendations of the planning staff were submitted in a series of position papers to the public and CAC, which voted approval of the recommendations and resolved the few remaining conflicts through additional meetings and committee work.
>
> The analysis of public responses to the planning alternatives revealed that a surprising number of proposals received nearly unanimous support from reviewers. These were generally recommended, and proposals that

received little or no endorsement were rejected. There was one critical exception of this decision-by-vote process. Many key participants, such as the elderly, who were contacted early in the planning process through aggressive efforts to reach into the community, did not return to comment on the alternatives. Nevertheless, to fullfill their commitment to serve a variety of constituents, the planning team carefully considered the needs of these groups in the formulation of the plan.

When public preference for the future of a particular area was split, some basic valuations seemed to prevail in the decision-making process. On the one hand, emphasis was placed on urban recreational development in areas where the natural landscape has already been significantly disturbed. On the other hand, the proposals lean toward low-intensity use and minimal facilities in areas that retain substantial natural integrity.

Decisions were also tempered by a preference for stabilization and adaptive use of historic structures rather than alternatives for extensive demolition or authentic restoration of buildings and settings. At the same time, the plan favors tearing down nonhistoric buildings to increase outdoor recreational opportunities and enhance the natural scene.

As much as possible, the plan attempts to sustain park uses that are occurring now. However, some activities will be shifted to new locations where they will be more compatible with park resources and other uses.

The draft plan (both full text and summary) was distributed to the public in June of 1979. The following hearings were then conducted by the Golden Gate National Recreation Area Advisory Commission to receive comments from the public:

September 25, 7:30 PM, Fort Mason
September 29, 9:30 AM, Fort Mason
October 4, 7:30 PM, Berkeley
October 9, 7:30 PM, Mill Valley
October 13, 9:30 AM, Point Reyes Station

Generally, comments and suggestions offered by agencies, organizations, the Advisory Commission, and the public were supportive and primarily oriented toward clarifying the intent of plan proposals. There were no controversies or recommendations for substantial plan revisions apparent in any of the hearings or in any of the letters and position papers submitted in response to the plan.

Specific suggestions for numerous minor modifications are contained in the text of the following Advisory Commission committee reports:

Education/Recreation - 3 reports - September 25, October 21, and November 13
Land's End/Fort Funston - September 25
Marin Headlands - September 25
Northeast Waterfront - September 25
Olema Valley/Mt. Tamalpais - September 25
Point Reyes - September 25
Trails - September 25
Transportation - September 25

These reports, which were approved by the full commission on November 15, 1979, resulted from an exhaustive page-by-page review and analysis of the draft plan by the committees prior to the public hearings. Subsequent to the hearings, two staff reports were submitted to the full commission responding to relevant issues and questions raised by the public in both written and verbal testimony.

At their December 8, 1979 meeting, the Commission unanimously voted final approval of the General Management Plan subject to recommended modifications contained in the ten committee reports and the two staff reports.

Of all the constructive suggestions contained in the committee reports, only a few appear to be of sufficient magnitude to warrant mention in this review. The serious concern of the Marin Headlands Committee for protection of the natural resources of Rodeo Lagoon and Lake (particularly bird populations) motivated them to ask that the proposals for canoe rentals, a fishing dock and a stocking program be dropped from the plan. Noting the widespread opinion that it would be impractical, the Point Reyes Committee asked that the proposal to operate an ocean-going ferry to the seashore be deleted from the transportation section of the plan. As is the case with all of the Advisory Commission recommendations, we propose that the above suggestions be accepted in full.

Written comments from the Marine Mammal Commission and the Point Reyes Bird Observatory included an objection to a proposed walk-in campground due to its proximity to important harbor seal habitat in Bolinas Lagoon. Because the campground is proposed in a canyon, the mouth of which is separated from the lagoon by a busy highway, we recommend that the proposal be retained in the plan with the condition that final siting and implementation will be contingent upon resolution of these concerns directly with appropriate staff of the Point Reyes Bird Observatory.

With respect to National Environmental Policy Act compliance, the following statement was contained in two prominent locations within the text of the draft plan:

> As in the past, public review of the plan and its environmental analysis and consideration of all comments will precede the commitment to a final plan of action and a decision as to the significance of its environmental consequences. These decisions will be recorded in an environmental review. If this review of public and agency comments and the environmental analysis reveals that the environmental consequences of the plan will not cause a significant adverse impact on the quality of the human environment and are not substantially controversial, then a finding of no significant impact will be part of the environmental review and the plan will be approved. If this is not the case, then a decision will be made to prepare an environmental impact statement on the proposed action and approval of the plan will await its evaluation.

None of the plan's reviewers either advocated preparation of a full environmental impact statement or stated in their review comments that the consequences of the document would be substantially controversial or would result in significant adverse impacts. Therefore, it is recommended that a finding of no significant impact should be determined at this time and that the plan should be approved by the Regional Director subject to modifications recommended by the Advisory Commission.

# CONSULTATION AND COORDINATION WITH OTHERS

The plans and policies of other public agencies in the San Francisco Bay region influence management and planning decisions for GGNRA/Point Reyes, and vice versa. The National Park Service has worked with all the following agencies in development of this plan, and their review of the plan is requested. The agencies that have been and continue to be most closely associated with park planning can be separated into the following categories.

## CO-MANAGERS

Currently, not all land within the park's boundary is managed by the National Park Service. Co-managers include the United States Army and Coast Guard, state and local park agencies, and two nonprofit groups.

Major portions of the recreation area are former United States Army lands, which were immediately transferred to the National Park Service upon establishment of the park. The act provides that the military can retain certain rights on portions of these lands, including areas within Fort Mason, the Presidio, and the Marin Headlands. The Presidio of San Francisco in its entirety and the eastern half of Fort Baker are included within the boundary of the park; however, they will remain under the jurisdiction of the Department of Defense until such time as that department determines that any substantial portion is excess to its needs. Two areas within the Presidio have been irrevocably permitted to the National Park Service for recreational use--45 acres of bayfront land at Crissy Field and 100 acres of land at Baker Beach. The act also provides that "reasonable public access" will be granted to the Secretary of the Interior at Horseshoe Bay in East Fort Baker "together with the right to construct and maintain such public service facilities as are necessary for the purposes of this act."

Many plan proposals, especially those related to transportation and access routes, will require coordination with the army. Also, many National Park Service proposals are dependent on gradual phaseout of various army operations in the Marin Headlands.

The act also specifies continued military use of the following facilities operated by the U.S. Coast Guard on lands within the national recreation area: Fort Point Coast Guard Station (by permit), Point Bonita, Point Diablo, Lime Point, and two areas of Point Reyes National Seashore.

Seven park units owned by the city and managed by the San Francisco Department of Recreation and Parks were included within the boundary of the southern portion of the recreation area, and were intended by the Congress for donation to the federal government. Six of these units (Fort Funston, Ocean Beach, Sutro Heights, Lands End, Fort Miley, and Aquatic Park) have already been transferred to the National Park Service, leaving only the Marina Green area still under city jurisdiction.

Nine units of the California State Park System totaling approximately 7,700 acres were also included in the recreation area boundary, and also intended for donation to the federal government. In July 1976, an act providing for the transfer of five of these units to the National Park Service was passed by the state legislature and signed by the governor. This act also allowed for the transfer of three additional units at the discretion of the governor, who has subsequently agreed to transfer two. This leaves Angel Island State Park, which can be transferred at the governor's discretion, and Mount Tamalpais State Park, which was completely excluded from the current act. Regardless of the status of the various state park units, it is clear that these parklands are an integral part of a cohesive coastal resource and should be managed and developed in close coordination with the lands now in federal ownership.

Although they are not specifically cited in the enabling legislation, hearing records show that two properties within the recreation area boundary were clearly intended by the Congress to be exempt from purchase as long as their use remains compatible with the purposes of the park. The Zen Center, a 106-acre tract along Route 1 immediately south of the community of Muir Beach, serves as headquarters for a religious organization, providing central living accommodations for about 25 people. In addition to their religious activities, truck farming constitutes the group's primary activity. Trails lead through the area, and visitors are welcomed. The Audubon Canyon Ranch is a 1,014-acre nature preserve owned and operated by a private nonprofit conservation organization. The purpose of the ranch is the protection and interpretation of important egret and heron rookeries located in the canyon.

## BAY AREA PARK AND RECREATION AGENCIES

As the primary regional source of recreational opportunities, GGNRA/Point Reyes will be planned and managed as one element of a Bay Area park system. Therefore, regional supply and demand factors must be considered. This defines the second category of agencies exerting an influence on decisionmaking--other park planners and managers in the region, including not only San Francisco and Marin County Departments of Parks and Recreation

and the East Bay Regional Park District, but also the park departments of seven additional counties in the Bay Area as well as the California Department of Parks and Recreation.

Particular interrelationships occur where other public park areas are adjacent to the national parkland, as are the zoo and Golden Gate Park in San Francisco. The Marin Municipal Water District lands are also contiguous with GGNRA/Point Reyes and share common access roads and trail systems. The cross-Marin trail proposed by the county will pass through both county and national parklands.

Review by these agencies of national park proposals will define the role of GGNRA/Point Reyes in lcoal, regional, and state park systems.

## REGIONAL PLANNING AGENCIES

The third category of organizations whose plans and policies exert an important influence on GGNRA are the several regional planning agencies of the Bay Area. The California Coastal Zone Commission and the Bay Conservation and Development Commission have both produced policies and guidelines for the proper use and development of the shoreline. These policies will be regarded as important constraints that will help guide all future considerations affecting the waters of the bay and ocean and the lands bordering them. Generally, policies of both commissions support recreational use as a priority for shoreline areas and do not appear to be in conflict with National Park Service policies. Similarly, the plans and recommendations of the Association of Bay Area Governments must be taken into account as a valuable consolidated regional attitude and articulation of needs toward such subjects as transportation systems, open space, and recreation facilities. Initial consultation with these agencies indicates general conformance of plans and policies; review of this plan will continue this coordination.

Additional consultation with the regional offices of the Environmental Protection Agency, U.S. Fish and Wildlife Service, California Regional Water Quality Control Board, Bay Area Pollution Control District, and the California Department of Fish and Game may be necessary to ensure compliance with environmental quality regulations and laws.

## LOCAL PLANNING AGENCIES

Two important local planning agencies are concerned with the park--the Marin County and San Francisco Planning Departments.

Parklands within GGNRA/Point Reyes comprise more than a third of the total land area and most of the coastline in Marin County, and all of San Francisco's oceanfront and most of its northern bay waterfront are part of GGNRA--which is especially significant in light of the city's peninsular nature and the aesthetic influence of the water. Also, two of the city's most well-known landmarks occur within the park--Alcatraz and (although it is owned and managed by others) the Golden Gate Bridge.

The master plan of the city of San Francisco is recognized for its influence on planning and management decisions. Additional projects of the city of San Francisco related to the park include a wastewater management plan and proposals to modify the Great Highway and establish connections between Golden Gate Park and Ocean Beach. A memorandum of understanding between the city and the National Park Service ensures their review of park proposals, particularly those related to transit systems, proposed construction, and sand incursion upon roadways adjacent to the park.

The General Plan for Marin County is a basic guide for coordination. In addition to this county plan, many communities adjacent to the park have articulated their needs and concerns in community plans that will affect decisions about park proposals. Major plan elements requiring coordination include transportation, trails, and visitor services. A memorandum of understanding between the National Park Service and Marin County specifies that both parties will consult with the other on all planning and management issues of mutual concern.

## TRANSPORTATION AGENCIES

Perhaps the most critical park planning issue is transportation. Initial park legislation recognized this fact and specially funded a 2-year study, the Golden Gate Recreational Travel Study (GGRTS), to coordinate the ideas of numerous Bay Area and state transportation agencies. The proposals of this study have been incorporated into the transportation approach outlined in this plan.

The Metropolitan Transportation Commission is a regional planning agency that develops Bay Area transportation policies and reviews funding requests. Proposals related to park transportation will require their assistance as well as review by the local transportation departments of San Francisco and Marin Counties.

Roads within the park are maintained by numerous agencies. Proposals affecting these roadways could require assistance from the California State Department of Transportation (CALTRANS), and the Marin or San Francisco Department of Public Works.

The major Bay Area transit systems with park-serving potential are Golden Gate Transit for Marin, Municipal Railway (MUNI) for San Francisco, and Alameda-Contra Costa (AC) Transit for Alameda/Contra Costa Counties. Although Bay Area Rapid Transit and Southern Pacific Railway do not connect to the park, their scheduling may increase transit possibilities for East Bay and peninsula residents.

## THE PUBLIC

Numerous groups and individuals have shaped this plan. Workshops with both organized groups and the general public were held from October 1974 to November 1975 to identify planning issues and citizens' feelings as to what topics the plan should address. Workshops recorded the preferences and feelings of about 10,000 people. All of the information gathered was considered in the development of the Assessment of Alternatives for the General Management Plan, which was distributed to the public in 1977.

The public was again asked to express their preferences in 1977; this time on the four alternatives expressed in the assessment and its summary, which received wide public distribution. Comments were gathered through hearings, letters, and worksheets from interested citizens. Some issues still remained to be resolved following analysis of responses to the assessment. The public and the GGNRA Citizens' Advisory Commission resolved these conflicts through additional discussions.

This plan, the final result of a planning effort that has relied heavily on public response, is also available for public review.

## DISTRIBUTION OF THE PLAN

Copies of the General Management Plan/Environmental Analysis will be available for review at National Park Service offices in the Bay Area as well as in the main public libraries. In addition, copies have been sent to the following government agencies (federal, state, regional, and local) and groups for their review and comments. These agencies and groups also received copies of the Assessment of Alternatives.

### FEDERAL AGENCIES

Advisory Council on Historic Preservation
Environmental Protection Agency, Region IX
Department of the Army
- Corps of Engineers, San Francisco District
- Corps of Engineers, South Pacific Division
- Sixth Army Headquarters
- Presidio of San Francisco
- Oakland Army Base

Department of Commerce
- National Oceanic and Atmospheric Administration

Department of the Interior
- Heritage Conservation and Recreation Service
- Fish and Wildlife Service, Regional Office

Department of Transportation
- Coast Guard, 12th Coast Guard District
- Federal Highway Administration, Region Nine
- Urban Mass Transportation Administration, Region Nine

### STATE AGENCIES

California State Clearinghouse
San Francisco Bay Conservation and Development Commission
California Coastal Zone Conservation Commission
- North Central Coast Region

Fish and Game Department
Department of Parks and Recreation
- Office of the Director
- San Francisco Area Manager

State Historic Preservation Officer
Department of Navigation and Ocean Development

### REGIONAL, COUNTY, AND MUNICIPAL AGENCIES

Association of Bay Area Governments
Bolinas Public Utilities District

City of San Francisco
- Board of Supervisors
- Planning Commission
- Planning Department
- Northeastern Waterfront Planning Advisory Committee
- Recreation and Park Department
- Recreation and Park Commission
- Department of Public Works

East Bay Regional Park District
Larkspur Planning Department
Marin County
- Board of Supervisors
- Comprehensive Planning Department
- Planning Commission
- Park and Recreation Department
- Park and Recreation Commission
- Department of Public Works

Marin Municipal Water District
Mill Valley Planning Department
Sausalito Planning Department
Stinson Beach County Water District
Transportation Agencies
- Metropolitan Transportation Commission
- Golden Gate Recreational Travel Study
- Golden Gate Bridge and Transportation District
- Golden Gate Transit
- San Francisco Municipal Railway

ORGANIZATIONS

Audubon Canyon Ranch
Audubon Society
Bolinas Planning Group
California State Historical Society
Citizens Ad Hoc Trails Committee
Coalition of San Francisco Neighborhoods
Coastal Parks Association
Environmental Action Committee of West Marin
Foundation for San Francisco's Architectural Heritage
Friends of the Earth
Inverness Planing Group
League of Women Voters
Marin Conservation League
Marina Civic Improvement and Property Owners Assocation
Muir Beach Improvement Assocition
People for a Golden Gate National Recreation Area
Planning Association for Richmond
Point Reyes Bird Observatory

Point Reyes Station Planning Group
Save San Francisco Bay Association
San Francisco Maritime Museum
San Francisco Planning and Urban Research Association
San Francisco Tomorrow Club
Sierra Club
S.P.E.A.K
Stinson Beach Village Association
Tam Valley Improvement Association
Tamalpais Conservation Club

# APPENDIXES

A: MAJOR DEVELOPMENT PRIORITIES AND COST SUMMARY

B: SUMMARY OF ALTERNATIVES CONSIDERED IN THE DEVELOPMENT OF THE PLAN

C: APPLICABLE FEDERAL LAWS AFFECTING PLANNING

D: RARE, THREATENED, OR ENDANGERED PLANTS AND ANIMALS OF GGNRA AND POINT REYES NATIONAL SEASHORE

E: AIR QUALITY DATA

F: WATER DEMAND DATA

G: MEMORANDUM OF AGREEMENT WITH STATE HISTORIC PRESERVATION OFFICER AND ADVISORY COUNCIL ON HISTORIC PRESERVATION

# APPENDIX A: MAJOR DEVELOPMENT PRIORITIES AND COST SUMMARY

The following list represents the major development priorities for the parks. The numerical ranking of the projects is based on a number of considerations including legislative mandates to preserve cultural and natural resources as well as the responsibility to deliver safe recreation opportunities to the public.

## FORT POINT NATIONAL HISTORIC SITE

| | | |
|---|---|---|
| 1. | seawall rehabilitation | $500,000 |
| 2. | historic restoration of fort | $2,000,000 |

## MUIR WOODS NATIONAL MONUMENT

| | | |
|---|---|---|
| 1. | relocate maintenance and administrative facilities | $300,000 |
| 2. | relocate 100-car parking area, construct new restrooms | $400,000 |

## POINT REYES NATIONAL SEASHORE

| | | |
|---|---|---|
| 1. | BEAR VALLEY<br>new visitor information center | $1,500,000 |
| 2. | LIMANTOUR<br>repair/rehabilitation of utilities, roads, parking area, and visitor facilities | $2,700,000 |
| 3. | LIGHTHOUSE<br>historic preservation and rehabilitation of visitor facilities | $401,000 |
| 4. | PARK ROAD SYSTEMS<br>repair and rehabilitation of roadways and improved trailhead facilities | $6,580,000 |
| 5. | MISC. INTERPRETIVE IMPROVEMENTS | $270,000 |
| 6. | LIFEBOAT STATION<br>historic preservation and adaptation for public use | $1,137,000 |
| 7. | PIERCE POINT RANCH<br>historic preservation and adaptation for public use | $1,460,000 |

| | | |
|---|---|---|
| 8. | BACKCOUNTRY CAMPGROUNDS<br>construct three new camps and rehabilitate existing facilities | $505,000 |
| 9. | TOMALES BAY<br>boat dock and ranger station | $235,000 |
| 10. | BEAR VALLEY<br>administrative and maintenance facilities | $3,270,000 |

GOLDEN GATE NATIONAL RECREATION AREA

| | | |
|---|---|---|
| 1. | FORT MASON<br>adaptation of historic buildings for public use, landscaping, and site improvement | $5,000,000 |
| 2. | AQUATIC PARK<br>repair and rehabilitation of historic ships | $5,000,000 |
| 3. | AQUATIC PARK<br>ship protection, mooring, and repair facilities | $3,000,000 |
| 4. | ALCATRAZ<br>historic structure preservation | $4,000,000 |
| 5. | MARIN HEADLANDS<br>sewage system | $1,700,000 |
| 6. | FORTS BARRY AND CRONKHITE<br>historic structure preservation | $1,000,000 |
| 7. | STINSON BEACH<br>new entrance to beach parking area | $500,000 |
| 8. | ALCATRAZ<br>building demolition, rubble disposal, and hazard abatement | $2,500,000 |
| 9. | FORT BAKER<br>waterfront improvements | $2,000,000 |
| 10. | AQUATIC PARK<br>new maritime museum--Haslett Warehouse | $15,000,000 |
| 11. | ALCATRAZ<br>landscaping and site improvements | $3,000,000 |
| 12. | SUTRO BATHS<br>park development | $6,000,000 |

| | | |
|---|---|---|
| 13. | CRISSY FIELD<br>landscaping and site improvements | $2,000,000 |
| 14. | CLIFF HOUSE AREA<br>esplanade rehabilitation | $1,000,000 |
| 15. | AQUATIC PARK<br>site improvements | $2,000,000 |
| 16. | CLIFF HOUSE<br>historic restoration | $3,500,000 |

Of the congressional acts that established Point Reyes, Fort Point, and Golden Gate, only those for Fort Point and Golden Gate specified an amount not to be exceeded in the development of each park. Those amounts were $5,250,000 (February 1970 prices) for Fort Point and $58,000,000 (May 1971 prices) for Golden Gate. As of 1980 these figures were approximately doubled through adjustments for inflation. Based on current plan proposals, total development costs will easily remain within the ceilings.

## ALCATRAZ

| A | B | C |
|---|---|---|
| Museum (50 people) | Museum (50 people) | *Museum (250 people) |
| Ranger tour area (12 acres/300 people) | *Ranger tour area (6 acres/150 people) | Ranger tour area (12 acres/300 people) |
| *Informal recreation space (3.5 acres) | *Informal recreation space (6 acres) | *Informal recreation space (2 acres) |
| *Open space (6 acres) | *Open space (9 acres) | *Open space (6 acres) |
| Ferry terminal (400 people/0.2 acre) | Ferry terminal (400 people/0.2 acre) | *Ferry terminal (800 people/0.3 acre) |
| | *Wayside exhibits and interpretive area (30 people/1 acre) | *Wayside exhibits |
| | | *Self-guiding trails and interpretive areas (60 people/2 acres) |

*New facility or condition

Capacity figures indicate number of people at one time.

## AQUATIC PARK

| A | B | C | D |
|---|---|---|---|
| Hyde Street Pier and historic ships (4 ships/450 people) | Hyde Street Pier and historic ships (4 ships/450 people) | *Historic ships (12 ships/850 people) | Hyde Street Pier and historic ships (4 ships/450 people) |
| | | **Environmental living program | |
| Maritime Museum (250 people) | Maritime Museum (250 people) | Maritime Museum (500 people) | **Maritime Museum relocated to Haslett Warehouse (1,000 people) |
| | | *Wayside exhibits | |
| Senior center (200 people) | Senior center (200 people) | | |
| Private office space in Haslett Warehouse | | | **Indoor senior center in old Maritime Museum building (450 people) |
| Rowing and swimming clubs | **Rowing and swimming clubs relocated to Haslett Warehouse | Rowing and swimming clubs | *Public rowing, swimming, and sailing facilities |
| Sea Scout facility | Sea Scout facility | Sea Scout facility | |
| Beach comfort facility | Beach comfort facility | Beach comfort facility | *New beach comfort facility |
| Food service | Food service | Food service | Food service |
| Municipal fishing pier (250 people) | Municipal fishing pier (250 people) | *Municipal fishing pier with cleaning stations (250 people) | *Municipal fishing pier with cleaning stations (250 people) |

| A | B | C | D |
|---|---|---|---|
| | | *Bait and tackle sales and rental | *Bait and tackle sales and rental |
| Recreation space — includes lawn, beach, bleachers, bocce ball courts (5-6 acres) | Recreation space — includes lawn, beach, bleachers, bocce ball courts (6-8 acres) | Recreation space — includes plaza, lawn, beach, bleachers, bocce ball courts (5-7 acres) | Recreation space — includes plaza, lawn, beach, bleachers, bocce ball courts (5-7 acres) |
| Other open space (3 acres) | Other open space (3 acres) | Other open space (3 acres) | Other open space (3 acres) |
| Waterfront promenade | Waterfront promenade | Waterfront promenade | Waterfront promenade |
| | | | *Bike path |
| Parking (85 spaces/0.8 acre) | *Transportation juncture | *Transportation juncture | *Transportation juncture |
| Cable car turnaround (240 people) | Cable car turnaround (240 people) | Cable car turnaround (240 people) | Cable car turnaround (240 people) |

*New facility or condition

** New adaptive use of historic structure

Capacity figures indicate number of people at one time

## FORT MASON

| A | B | C | D |
|---|---|---|---|
| Visitor center in Bldg. 201 (90 people) | **Visitor center (150 people) | **Visitor center/Bay Area history center (460 people) | **Visitor center (200 people) |
| | | **Senior center (200 people) | |
| Historic residential district retained by Army (7.3 acres) | **Historic residential district – adaptive uses determined when buildings become available (7.3 acres/140 people) | **Historic residential district-restoration/exhibits/adaptive use considered (7.3 acres/1,100 people) | **Historic residential district – adaptive uses determined when buildings become available (7.3 acres/140 people) |
| *Wayside exhibits | *Wayside exhibits | *Wayside exhibits | |
| | **Environmental education center (250 people) | **Marine museum/environmental education center (500 people) | |
| | | *Historic ships at piers | *Visiting ships (500 people) |
| **Art facilities by permit in piers and warehouses (200 people) | *Landscaped pier (500 people) | **Performing arts facilities/outdoor program space (3,300 people) | *Performing arts facilities/outdoor amphitheater (2,400 people) |
| | | **Arts and crafts facilities (1,300 people) | **Arts and crafts facilities (1,300 people) |
| | **Community educational and cultural programs (500 people) | | **Day camp/community educational and cultural programs (500 people) |
| | | | **Indoor recreation space (1,000 people) |

| A | B | C | D |
|---|---|---|---|
| **Hostel in warehouse (180 people) | | **Hostel and group retreat (230 people) | **Hostel (330 people) |
| | | **Food service — 2 (400 people) | **Food service (200 people) |
| | | | **Recreational equipment rental |
| Fishing piers (100 people) | *Fishing piers (170 people) | Fishing piers (100 people) | *Fishing piers with fish-cleaning stations (100 people) |
| *Lawn area (23 acres) | *Lawn area (27 acres) | *Lawn area (15-20 acres) | *Lawn area (10-15 acres) |
| Picnic area (2 acres) | *Picnic area (5 acres) | *Picnic area (3 acres) | *Picnic area (5 acres) |
| | | | *Plaza (5 acres) |
| *Other open space (25 acres) | *Other open space (25 acres) | *Other open space (25 acres) | *Other open space (25 acres) |
| Waterfront promenade (0.4 mile) | Waterfront promenade (0.4 mile) | Waterfront promenade (0.4 mile) | Waterfront promenade (0.4 mile) |
| *Bike path (0.4 mile) | *Bike path (0.4 mile) | *Bike path (0.4 mile) | *Bike path (0.4 mile) |
| *Parking lot (514 spaces/5 acres) | *Parking lot (350 spaces/3.5 acres) | *Parking structure (1,000 spaces/2-3 acres) | *Parking structure (1,000 spaces/2-3 acres) |
| | | *Parking lot (350 spaces/3.5 acres) | *Parking lot (350 spaces/3.5 acres) |
| *Ferry landing (1,000 people) | *Ferry landing (920 people) | *Ferry landing (1,400 people) | *Ferry landing (1,400 people) |

*New facility or condition

**New adaptive use of a historic structure

Capacity figures indicate number of people at one time

## CRISSY FIELD

| A | B | C | D |
|---|---|---|---|
| Environmental education center (15 people) | **Environmental education facility (25 people) | **Educational facilities (80 people) | **Educational facilities (80 people) |
| Wayside exhibits | Wayside exhibits | Wayside exhibits | Wayside exhibits |
| | *Interpretive area (5-10 acres) | **Aviation museum (320 people/1 acre) | |
| Beach (7 acres) | *Natural appearing shoreline — beach/dunes/marsh (30-35 acres) | Beach (7 acres) | *Beach (5 acres) |
| | | *Beach comfort facility | *Beach comfort facility |
| Picnic area (2 acres) | | *Picnic area (3-5 acres) | *Picnic area (5 acres) |
| | | *Lawn (10-15 acres) | *Lawn (5-10 acres) |
| Use of runway for game courts (1 acre) | | | *Hard-surfaced sports area (3 acres) |
| | | | *Swimming lagoon (5 acres) |
| | | | *Children's play area (0.25 acre) |
| Other open space (29 acres) | | *Other open space (10 acres) | *Other open space (10 acres) |
| | | *Food service (25 people) | *Food service (25 people) |
| | | | *Recreation equipment rental |

| A | B | C | D |
|---|---|---|---|
| *Waterfront promenade (1.25 miles/1.5 acres) | *Trail or boardwalk (2 miles/2 acres) | *Waterfront promenade/wind shelters, benches (1.25 miles/3 acres) | *Waterfront promenade (1.25 miles/3 acres) |
| | | | *Plaza along promenade |
| *Bike path (1.25 miles) | *Bike path (1.25 miles) | *Bike path (1.25 miles) | *Bike path (1.25 miles) |
| Parking lot (50 spaces/0.3 acre) | *Parking lot (150 spaces/2 acres) | *Parking lot (300 spaces/3 acres) | *Parking lot (300 spaces/3 acres) |
| *Pedestrian and equestrian connection with Presidio | *Pedestrian and equestrian connection with Presidio | *Pedestrian and equestrian connection with Presidio | *Pedestrian and equestrian connection with Presidio |

*New facility or condition

**New adaptive use of a historic structure

Capacity figures indicate number of people at one time

## SAN FRANCISCO HEADLANDS

| | A | C | D |
|---|---|---|---|
| General | Informal recreation space (38 acres) | *Informal recreation space (41 acres) | *Informal recreation space (41 acres) |
| | Other open space – hillsides, cliffs, vegetated areas (195 acres) | Other open space (195 acres) | Other open space (195 acres) |
| | *Trails (3 miles) | *Trails (3-5 miles) | *Trails (3-5 miles) |
| | Parking (680 spaces/7 acres) | *Parking (865 spaces/9 acres) | *Parking (865 spaces/9 acres) |
| Baker Beach | *Wayside exhibits | *Wayside exhibits | *Wayside exhibits |
| | | *Beach comfort facility | *Beach comfort facility |
| | Picnic area (5 acres) | Picnic area (5 acres) | Picnic area (5 acres) |
| | | | **Food service facility |
| Lands End | *Wayside exhibits | *Wayside exhibits | Wayside exhibits |
| | | *Self-guiding trail (5 miles) | |
| Phelan Beach | Beach comfort facility | | Beach comfort facility |
| West Fort Miley | | **Interpretive facilities (200 people) | **Interpretive facilities (100 people) |
| | | *Campfire circle/campground (200 people) | *Amphitheater (400 people) |

| | A | C | D |
|---|---|---|---|
| West Fort Miley (cont.) | *Wayside exhibits<br>*Picnic area (3 acres) | *Picnic area (3 acres) | *Wayside exhibits<br>*Picnic area (3 acres) |
| East Fort Miley | | | *Structured recreation space (includes game courts and jogging areas) (3-5 acres) |

*New facility or condition

**New adaptive use of a historic structure

Capacity figures indicate number of people at one time

## CLIFF HOUSE

| A | B | C | D |
|---|---|---|---|
| *Wayside exhibits at Cliff House, Sutro Baths, and Sutro Heights | *Wayside exhibits at Cliff House, Sutro Baths, and Sutro Heights | *Wayside exhibits at Sutro Heights | *Wayside exhibits at Cliff House, Sutro Baths, and Sutro Heights |
| Cliff House complex (770 people):<br>– Food and beverage service<br>– Gift sales<br>– Amusements | Cliff House complex (770 people):<br>– Food and beverage service<br>– Gift sales<br>– Amusements | *1890s Cliff House (1,500 people):<br>– Food and beverage service<br>– Overnight accommodations | **Cliff House complex (850 people):<br>– Food and beverage service<br>– Gift sales<br>– Amusements<br>– Information kiosk<br>– Wind shelter, viewing area, cafe<br>– Bicycle rental |
| Informal recreation space (15.5 acres):<br>– Sutro Heights Park (10.5 acres)<br>– Sutro Baths ruins (5 acres) | Informal recreation space (15.5 acres):<br>– Sutro Heights Park (10.5 acres)<br>*– Restored ocean shoreline (5 acres) | *Informal recreation space at Sutro Heights (10.5 acres) | *Informal recreation space (20-25 acres):<br>– Sutro Heights Park (10.5 acres)<br>– Lawn, picnic area, plaza, viewing station at Sutro Baths ruins (10-15 acres) |
| Other open space (14.5 acres) | Other open space (14.5 acres) | Other open space (14.5 acres) | *Other open space (5-10 acres) |
| Parking at Merrie Way (100 spaces/1.4 acres) | *Parking at Merrie Way (50 spaces/0.7 acre) | *Parking in Merrie Way/Sutro area (250 spaces) | Parking at Merrie Way (100 spaces/1.4 acres) |

| A | B | C | D |
|---|---|---|---|
| *Transportation juncture in Merrie Way area | *Transportation juncture in Merrie Way area | *Transportation juncture in Merrie Way area | *Transportation juncture in Merrie Way area |
| Parking at Sutro Heights (85 spaces/1.7 acres) | Parking at Sutro Heights (85 spaces/1.7 acres) | Parking at Sutro Heights (85 spaces/1.7 acres) | Parking at Sutro Heights (85 spaces/1.7 acres) |
| Parking outside park near Cliff House (146 spaces) | | | *Parking outside park near Cliff House (75 spaces) |
| Waterfront promenade (½ mile) | Waterfront promenade (½ mile) | | *Improved waterfront promenade (½ mile) |
| | | *Sutro Baths reconstruction (24,000 people) | |
| | | *Sutro-era museum at Sutro Baths | |
| | | | *Pedestrian overpass from Cliff House to Sutro Heights |

*New facility or condition

**New adaptive use of a historic structure

Capacity figures indicate number of people at one time

## OCEAN BEACH

| A | B | C | D |
|---|---|---|---|
| *Wayside exhibits throughout the area | *Wayside exhibits throughout the area | *Wayside exhibits throughout the area | |
| Informal recreation space including beach, dunes (150 acres) | Informal recreation space including beach, dunes (150 acres) | *Informal recreation space including beach, dunes (137 acres) | *Informal recreation space including beach, dunes, plaza space along promenade, landscape connection to Golden Gate Park (132 acres) |
| Other open space (180 acres) | Other open space (180 acres) | Other open space (180 acres) | Other open space (180 acres) |
| Waterfront promenade (1 mile) | Waterfront promenade (1 mile) | *Improved waterfront promenade (1 mile) | *Improved waterfront promenade (1 mile) |
| | **Interpretive programs | | |
| | | *Beach comfort facilities at north Ocean Beach | *Beach comfort facilities at north Ocean Beach |
| | | *Group picnic area at Funston (3 acres) | *Group picnic area at Funston (3 acres) |
| | | *Group campground at Funston (50 people) | *Group campground at Funston (50 people) |
| | | **Overnight education facilities at Funston (100 people) | |
| | | *Bicycle path (1 mile) | *Bicycle path (1 mile) |

| A | B | C | D |
|---|---|---|---|
| | | *Pedestrian and bicycle overpasses to Golden Gate Park | |
| | | *Information kiosk near zoo | *Information kiosk near zoo |
| Parking (265 spaces/2.6 acres) | Parking (265 spaces/2.6 acres) | *Parking (370 spaces/3.7 acres) | *Parking (520 spaces/5.2 acres), includes equestrian trailer parking |

*New facility or condition

**New adaptive use of a historic structure

Capacity figures indicate number of people at one time

## MARIN HEADLANDS

| | A | B | C | D |
|---|---|---|---|---|
| General | Hiking trails (33 miles) | *Hiking trails (37 miles) | *Hiking trails (37 miles) | *Hiking trails (37 miles) |
| | Riding trails (17 miles) | Riding trails (17 miles) | Riding trails (17 miles) | Riding trails (17 miles) |
| | Parking (1,480 total spaces) | Parking (1,480 total spaces) | Parking (1,480 total spaces) | Parking (1,480 total spaces) |
| | Campground (1) | Campgrounds (3) | Campgrounds (3) | Campgrounds (5) |
| | | | Picnic areas (2) | Picnic areas (6) |
| Conzelman Road | Hill 129 viewing area with *wayside exhibits | Hill 129 viewing area with *wayside exhibits | Hill 129 viewing area with *wayside exhibits | Hill 129 viewing area with *wayside exhibits |
| | | | *Food service (25 people) | *Food service (25 people) |
| | | | | *Self-guiding trail along Headlands Ridge |
| Kirby Cove | Walk-in group campground (3 sites/120 people) | *Hike-in campground (15 sites/60 people) | Walk-in group campground (3 sites/120 people) | Walk-in group campground (3 sites/120 people) |
| Point Bonita | | | *Wayside exhibit at lighthouse | *Walk-in campground (20 sites/80 people) |
| East Fort Baker | | **Information center (100 people) | **Visitor center (200 people) | **Information center (150-200 people) |
| | | | **Educational conference center (300 people) | |
| | | | | **Hostel (30 people) |

| | A | B | C | D |
|---|---|---|---|---|
| East Fort Baker (cont.) | Lawn area (5 acres) | Lawn area (5 acres) | *Lawn and picnic area/outdoor program space (5 acres) | *Lawn and picnic area/outdoor program space (5 acres) |
| | Fishing pier (40 people) | *Fishing pier with rest rooms, cleaning stations, etc. (40 people) | *Fishing pier with rest rooms, cleaning stations, etc. (40 people) | *Fishing pier with rest rooms, cleaning stations, etc. (40 people) |
| | | | *Bicycle rental | *Sports and fishing equipment rental |
| | | | | Food service (25 people) |
| | Private boat mooring slips (65 boats) | *Public boat mooring slips (50-75 boats) | *Public boat mooring slips (50-75 boats) | *Public boat mooring and berthing slips (50-75 boats) |
| | *Ferry landing (600 people) | *Ferry landing (600 people) | *Ferry landing (600 people) | *Ferry landing (600 people) |
| Rodeo Valley | **Environmental education facility (50 people) | **Environmental education and research facilities (200 people) | **Environmental education facilities (100 people) | |
| | Lawn area at Fort Barry parade ground (5 acres) | *Walk-in group camp at Fort Barry parade ground (2 sites/80 people) | **Artists-in-residence program at Fort Barry parade ground (7 structures, 5 acres) | **Group retreat at Fort Barry parade ground (75 people) and lawn and picnic area (5 acres) |
| | | *Road terminus and parking at abandoned housing area across from stables (650 cars) | *Picnic area at abandoned housing area across from stables (3 acres) | *Picnic area at abandoned housing area across from stables (3 acres) |
| | Private stables (25 horses) | *Public boarding and rental stables (50 horses) | *Public boarding and rental stables (50 horses) | |
| | | | *Riding courses at old rifle range site | *Remove private stables |

| | A | B | C | D |
|---|---|---|---|---|
| Rodeo Valley (cont.) | | | | *Auto campground at old Capehart housing site (60 sites/240 people) |
| Rodeo Lagoon/Lake/ Beach | Interpretive facility (15 people) | Interpretive facility (15 people) | Interpretive facility (15 people) | Interpretive facility (15 people) |
| | | | | *Beach comfort facility |
| | | | **Hostel (30 people) | **Hostel (30 people) |
| | | | **Food service (25 people) | **Food service at beach (25 people) |
| | | | | **Environmental education facilities (100-200 people) |
| | Access road | | Access road | Access road |
| | Parking area | | Parking area | *Lawn and picnic area at old parking site (8 acres) |
| | | | | *Parking area at abandoned building site upslope from lagoon |
| | | *Self-guiding trail | *Self-guiding trail | *Self-guiding trail |
| | | | *Boardwalk at Rodeo Lake | |
| | | | | *Fish stocking in lake |
| | | | | *Equipment rental |

| | A | B | C | D |
|---|---|---|---|---|
| Rodeo Lagoon/Lake/ Beach (cont.) | | | *Wayside exhibit at Bird Island overlook | *Wayside exhibit at Bird Island overlook |
| Tennessee Valley | Private stables (80-100 horses) | | *Children's farm at old stables site (50-75 people) | *New horse boarding and rental stables (80 horses) |
| | | | | *Fish stocking in stock ponds |
| | | | *Hike-in campground (15 sites/60 people) | *Hike-in campground (15 sites/60 people) |
| Oakwood Valley | | | | *Picnic area (3 acres) |
| Gerbode Preserve | | *Primitive camping zone (10 sites/40 people) | *Hike-in campground (15 sites/60 people) | *Hike-in campground (15 sites/60 people) |
| | | *Self-guiding trail | | *Self-guiding trail |
| | | | | *picnic area (3 acres) |
| Hill 88 | | | *Wayside exhibit | |

*New facility or condition

**New adaptive use of historic structure

Capacity figures indicate number of people at one time

## MOUNT TAMALPAIS

| | A | B | C | D |
|---|---|---|---|---|
| General | Hiking trails (61 miles) | Hiking trails (less than 61 miles) | Hiking trails (61 miles) | Hiking trails (61 miles) |
| | Riding trails (17 miles) | Riding trails (17 miles) | Riding trails (17 miles) | Riding trails (17 miles) |
| Bolinas Ridge Area | Environmental education center at Audubon Canyon Ranch (50-60 people) | Environmental education center at Audubon Canyon Ranch (50-60 people) | Environmental education center at Audubon Canyon Ranch (50-60 people) | Environmental education center at Audubon Canyon Ranch (50-60 people) |
| | | | *Wayside exhibit at McKinnan Gulch at Route 1 with board-walk and overlook | |
| | | | *Wayside exhibits at pullouts along Shoreline Highway | |
| | | *Hike-in campground at McKinnan Gulch Mine (15 sites) | *Hike-in campground at McKinnan Gulch Mine (15 sites) | *Hike-in campground at McKinnan Gulch Mine (15 sites) |
| | | | *Hike-in campground at Morse's Gulch (15 sites) | *Walk-in campground at Morse's Gulch (15 sites) |
| | | | *Hostel at McKinnan Gulch (30 people) | |
| | | | *Parking for picnicking and viewing along Ridgecrest Boulevard | *Parking for picnicking and viewing along Ridgecrest Boulevard |
| Mount Tamalpais Area | Walk-in campground at Pan Toll (18 sites) | | *Picnic area at old campground site (2-3 acres) | *Picnic area at old campground site (2-3 acres) |

| | A | B | C | D |
|---|---|---|---|---|
| Mount Tamalpais Area (cont.) | Alice Eastwood group campground (40 people) | | | Alice Eastwood group campground (40 people) |
| | Bootjack picnic area (3 acres) | | Bootjack picnic area (3 acres) | Bootjack picnic area (3 acres) |
| | Mountain Theater for outdoor performances (5,000 people) | Mountain Theater for outdoor performances (5,000 people) | Mountain Theater for outdoor performances (5,000 people) | Mountain Theater for outdoor performances (5,000 people) |
| | | | *Wayside exhibits at East Peak | |
| | Parking (435 spaces) | Parking (435 spaces) | Parking (435 spaces) | Parking (435 spaces) |
| | | | *Parking for picnicking and viewing along Panoramic Highway | *Parking for picnicking and viewing along Panoramic Highway |
| | Ranger office at Pan Toll | | | |
| | Maintenance substation at Pan Toll | | | |
| Stinson Beach | Lawn and picnic area (5 acres) | Lawn and picnic area (5 acres) | Lawn and picnic area (5 acres) | Lawn and picnic area (5 acres) |
| | Beach comfort facility | Beach comfort facility | Beach comfort facility | Beach comfort facility |
| | Snack food service | Snack food service | Snack food service | Snack food service |
| | | | | *Beach equipment rentals |
| | *Southern entrance to parking area | *Southern entrance to parking area | *Southern entrance to parking area | *Southern entrance to parking area |

## OLEMA VALLEY

| A | B | C | D |
|---|---|---|---|
| Hiking trails (30 miles) | Hiking trails (30 miles) | Hiking trails (30 miles) | Hiking trails (30 miles) |
| Riding trails (20 miles) | *Riding trails (25 miles) | *Riding trails (25 miles) | *Riding trails (25 miles) |
| *Parking at Five Brooks (75-100 spaces/1 acre) | *Parking at Five Brooks (75-100 spaces, to be expanded when needed) | *Parking at Five Brooks (75-100 spaces, to be expanded when needed) | *Parking at Five Brooks (75-100 spaces, to be expanded when needed) |
| Horse rental facility at Five Brooks (30 horses) | Horse rental facility at Five Brooks (30 horses) | Horse rental facility at Five Brooks (30 horses) | *Horse rental and boarding facility at Five Brooks (30 horses) |
| | **Hostel at north end of valley (30 people) | | |
| | **Hostel at Five Brooks (30 people) | **Hostel at Five Brooks (30 people) | **Hostel at old Lupton Ranch (30 people) |
| | | **Hostel at Rancho Bolinas (30 people) | **Hostel at Rancho Bolinas (30 people) |
| | | | **Hostel at Truttman Ranch (30 people) |
| | *Two walk-in campgrounds behind Truttman Ranch (20 sites each) | *Two walk-in campgrounds behind Truttman Ranch (20 sites each) | *Two walk-in campgrounds behind Truttman Ranch (20 sites each) |
| | | *Walk-in campground at Five Brooks (20 sites) | *Walk-in campground at Five Brooks (20 sites) |
| | | *Hike-in camp near Hagmaier Ranch (15 sites) | *Hike-in camp near Hagmaier Ranch (15 sites) |

| A | B | C | D |
|---|---|---|---|
| | *Hike-in camp on Bolinas Ridge (15 sites) | *Hike-in camp on Bolinas Ridge (15 sites) | *Hike-in camp on Bolinas Ridge (15 sites) |
| | | | *Tent cabins south of Olema Cemetery (20 units) |
| | | | *Fish stocking in ponds near Hagmaier Ranch |
| | | | **Food service facility at Five Brooks (25-50 people) |
| | *Environmental education center at Rancho Bolinas (30-50 people) | | |
| | *Information kiosk at Five Brooks | *Information kiosk at Five Brooks | *Information kiosk at Five Brooks |
| | | *Information kiosk at Rancho Bolinas | *Information kiosk at Rancho Bolinas |
| | | **Interpretive facility at restored historic structure (80 people) | |
| | | *Wayside exhibits at roadside pullouts | |

*New facility or condition

**New adaptive use of a historic structure

Capacity figures indicate number of people at one time.

## POINT REYES

| | A | B | C | D |
|---|---|---|---|---|
| General | Hiking trails (100 miles) | Hiking trails (100 miles) | Hiking trails (100 miles) | Hiking trails (100 miles) |
| | Riding trails (46 miles) | Riding trails (46 miles) | Riding trails (46 miles) | Riding trails (46 miles) |
| | Parking (1,594 spaces) | Parking (1,594 spaces) | Parking (1,594 spaces) | Parking (1,594 spaces) |
| | Hostel (1-40 people) | Hostels (2-30 people each) | Hostels (2-30 people each) | Hostels (3-30 people each) |
| | Hike-in campgrounds (3-15 sites each) | | *Hike-in campgrounds (4-15 sites each) | *Hike-in campgrounds (10-15 sites each) |
| | Group campground (1-120 people) | *Group campground (1-80 people) | *Group campgrounds (2-40 people each) | *Group campgrounds (2-40 people each) |
| | | *Primitive camping zones (5-150 max. sites) | *Primitive camping zones (2-55 max. sites) | |
| North Point Reyes | Snack food service at Drakes Beach (20 people) | Snack food service at Drakes Beach (20 people) | Snack food service at Drakes Beach (20 people) | Snack food service at Drakes Beach (20 people) |
| | Food service at Johnson's Oyster Farm | Food service at Johnson's Oyster Farm | Food service at Johnson's Oyster Farm | Food service at Johnson's Oyster Farm |
| | | | *Food service at the fish docks (25 people) | *Food service at the fish docks (25 people) |
| | Beach comfort facility at Drakes Beach | Beach comfort facility at Drakes Beach | Beach comfort facility at Drakes Beach | Beach comfort facility at Drakes Beach |
| | Beach comfort facility at North Beach | Beach comfort facility at North Beach | Beach comfort facility at North Beach | Beach comfort facility at North Beach |

| | A | B | C | D |
|---|---|---|---|---|
| North Point Reyes (cont.) | Beach comfort facility at South Beach | Beach comfort facility at South Beach | Beach comfort facility at South Beach | Beach comfort facility at South Beach |
| | | | | *Beach comfort facility at Limantour |
| | Information center at Drakes Beach (10 people) | Information center at Drakes Beach (10 people) | Information center at Drakes Beach (10 people) | Information center at Drakes Beach (10 people) |
| | | *Information kiosk at Ottinger Hill | *Information kiosk at Ottinger Hill | *Information kiosk at Ottinger Hill |
| | | | **Interpretive facility at the lighthouse (10-20 people) | **Interpretive facility at the lighthouse (10-20 people) |
| | | | **Interpretive facility at the lifesaving station (50 people) | |
| | | **Living history ranch at Upper Pierce Point Ranch (100 people) | | |
| | | *Wayside exhibits at Limantour | *Wayside exhibits at Limantour | *Wayside exhibits at Limantour |
| | | *Wayside exhibits at Tomales Point | *Wayside exhibits at Tomales Point | *Wayside exhibits at Tomales Point |
| | | *Wayside exhibits at the lighthouse | | |

| | A | B | C | D |
|---|---|---|---|---|
| North Point Reyes (cont.) | | *Wayside exhibits at the lifesaving station | *Wayside exhibits at Upper Pierce Point Ranch | |
| | | | *Wayside exhibits at North Beach | *Wayside exhibits at North Beach |
| | | | *Wayside exhibits at Mount Vision | |
| | | | *Wayside exhibit at Point Reyes Headlands | *Wayside exhibit at Point Reyes Headlands |
| | | **Hostel at undetermined location (30 people) | **Hostel at Upper Pierce Point Ranch (30 people) | **Hostel at Upper Pierce Point Ranch (30 people) |
| | | | | **Hostel at lifesaving station (30 people) |
| | | | | *Hike-in campground at Lairds Landing (15 sites) |
| | | | | *Hike-in campground at Home Ranch Creek (15 sites) |
| | | | | *Hike-in campground at Drakes Estero (15 sites) |
| | | | | *Boat moorings (day-use) at fish docks (20 boats) |

| | A | B | C | D |
|---|---|---|---|---|
| | | | | *Canoe launching facility at Drakes Estero |
| | | *Primitive camping zone – Tomales Bay (30 sites) | *Primitive camping zone – Tomales Bay (30 sites) | |
| | | *Primitive camping zone – Mount Vision (25 sites) | *Primitive camping zone – Mount Vision (25 sites) | |
| South Point Reyes | Blacksmith shop at Bear Valley | Blacksmith shop at Bear Valley | Blacksmith shop at Bear Valley | Blacksmith shop at Bear Valley |
| | Environmental education camp (90 people) | Environmental education camp (90 people) | Environmental education camp (90 people) | Environmental education camp (90 people) |
| | Horse farm at Bear Valley | Horse farm at Bear Valley | Horse farm at Bear Valley | Horse farm at Bear Valley |
| | Coast Miwok village at Bear Valley | Coast Miwok village at Bear Valley | Coast Miwok village at Bear Valley | Coast Miwok Village at Bear Valley |
| | Information center at Bear Valley (15 people) | Information center at Bear Valley (15 people) | *Visitor center at Bear Valley (200 people) | Information center at Bear Valley (15 people) |
| | Self-guiding trails at Bear Valley (2 miles) | Self-guiding trails at Bear Valley (2 miles) | *Self-guiding trails and wayside exhibits at Bear Valley (5 miles) | *Self-guiding trails at Bear Valley (3 miles) |
| | | *Wayside exhibits at Double Point | *Wayside exhibits at Double Point | *Wayside exhibits at Double Point |

| | A | B | C | D |
|---|---|---|---|---|
| South Point Reyes (cont.) | Picnic area at Bear Valley (3 acres) | Picnic area at Bear Valley (3 acres) | Picnic area at Bear Valley (3 acres) | *Picnic area at Bear Valley (5 acres) |
| | Hostel at Laguna Ranch (40 people) | Hostel at Laguna Ranch (30 people) | Hostel at Laguna Ranch (30 people) | Hostel at Laguna Ranch (30 people) |
| | Group campground at Glen Camp (120 people) | Group campground at Glen Camp (80 people) | *Hike-in campground at Glen Camp (15 sites) | *Hike-in campground at Glen Camp (15 sites) |
| | Hike-in campground at Coast Camp (15 sites) | | *Group campground at Coast Camp (40 people) | *Group campground at Coast Camp (40 people) |
| | Hike-in campground at Sky Camp (15 sites) | | Hike-in campground at Sky Camp (15 sites) | Hike-in campground at Sky Camp (15 sites) |
| | Hike-in campground at Wildcat Camp (15 sites) | | *Group campground at Wildcat Camp (40 people) | *Group campground at Wildcat Camp (40 people) |
| | | | *Hike-in campground at Fir-Top (15 sites) | *Hike-in campground at Fir-Top (15 sites) |
| | | | | *Hike-in campground at Kelham Beach (15 sites) |
| | | | | *Hike-in campground at Mud Lake (15 sites) |
| | | | | *Hike-in campground at Lake Ranch (15 sites) |

| | A | B | C | D |
|---|---|---|---|---|
| South Point Reyes (cont.) | | | | *Food service (camper store) at Bear Valley<br><br>*Backpacking equipment and bicycle rental at Bear Valley |
| | | *Primitive camping zone – Coast Trail (25 sites)<br><br>*Primitive camping zone – Sky Trail (35 sites)<br><br>*Primitive camping zone – Lake Ranch (35 sites) | | |

*New facility or condition

** New adaptive use of a historic structure

Capacity figures indicate number of people at one time

# APPENDIX C: APPLICABLE FEDERAL LAWS AFFECTING PLANNING

The general management plan must legally comply with a number of acts and executive orders. The following laws are applicable to planning at GGNRA/Point Reyes.

## NATIONAL HISTORIC PRESERVATION ACT OF 1966 AND EXECUTIVE ORDER 11593

The Advisory Council on Historic Preservation has the opportunity to comment on all actions undertaken by federal agencies that might affect a property on the National Register of Historic Places. Agencies are also required to determine which historic resources are eligible for nomination to the national register so that the council can comment on undertakings that might affect them as well. Regulations for compliance with these laws have been adhered to.

## PUBLIC LAW 95-341--THE AMERICAN INDIAN RELIGIOUS FREEDOM ACT OF 1979

This law requires NPS to identify any residual rights or trust obligations to Native American groups with traditional ties to the area. Future study will determine any uses of GGNRA and Point Reyes National Seashore by contemporary Native Americans.

## ENDANGERED SPECIES ACT OF 1973

The National Park Service is required to consult with the U.S. Fish and Wildlife Service on projects that have the potential to affect endangered or threatened species. No action can be undertaken that would have an adverse impact on a listed species. The environmental analysis indicates potential conflicts between plan actions and listed species and their habitats. The National Park Service will initiate formal consultation with the U.S. Fish and Wildlife Service regional office in Portland concerning potential effects of the plan on threatened and endangered species and informal consultation with the Sacramento Area Office on listed or candidate species that could be affected by the plan.

## EXECUTIVE ORDER 11752--PREVENTION, CONTROL, AND ABATEMENT OF ENVIRONMENTAL POLLUTION AT FEDERAL FACILITIES

The National Park Service will comply with federal, state, interstate, and local standards and limitations relating to the quality of air, water, and land resources.

## CONCESSIONS POLICY ACT OF 1965

The act establishes a contractual framework for encouraging and enabling private persons and corporations to provide and operate commercial facilities and services for the accommodation of visitors. Such development must be limited to that which is necessary and appropriate for public use and enjoyment of the national park in which it is located and consistent to the highest practicable degree with the preservation and conservation of the area.

## SAFE DRINKING WATER ACT

The water quality of all drinking water sources must meet standards that have been established by the Environmental Protection Agency in response to this act. Water quality of new water supply systems proposed in the plan will meet the established standards.

## COASTAL ZONE MANAGEMENT ACT OF 1972

Federal agencies conducting projects or activities affecting the coastal zone must carry them out in a manner consistent with the state's coastal zone management program. The California Coastal Zone Conservation Plan and the management policies found in the California Coastal Act of 1976 have been reviewed. This plan is consistent to the maximum extent practicable with California coastal zone management programs.

## EXECUTIVE ORDER 11988--FLOODPLAIN MANAGEMENT

The National Park Service must act to reduce the risk of flood loss; minimize the impact of floods on human safety, health, and welfare; and restore and preserve natural values of floodplains. While new structures will not be constructed in any area subject to flooding, vsitor uses are planned for several existing historic structures subject to 100-year tsunami run-up. Use of these existing structures, even in the event of a tsunami, is not considered to be hazardous to visitors, will not affect structural integrity of the buildings, and will not decrease natural values. However, the decision to use these structures will be subject to review by the

following agencies: Environmental Protection Agency, Federal Insurance Administration, U.S. Fish and Wildlife Service, U.S. Geological Survey, Bureau of Reclamation, U.S. Army Corps of Engineers, and U.S. Soil Conservation Service.

## CLEAN AIR ACT OF 1963 AND AMENDMENTS

The 1977 amendments to the Clean Air Act classified the entire country into three classes based upon the amount of allowable air quality deterioration that can take place. Under this classification, Point Reyes National Seashore was designated Class I, where almost no deterioration of air quality is allowable. Other areas in GGNRA are Class II, where allowable increment increases of pollutants are slightly larger. To assure that plan proposals will not detrimentally affect air quality, air quality analyses were completed and are reported in the environmental analysis.

Public Law 92-589
92nd Congress, H. R. 16444
October 27, 1972

# An Act

86 STAT. 1299

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

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

Golden Gate National Recreation Area, Calif.

ESTABLISHMENT

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

COMPOSITION AND BOUNDARIES

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

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

Boundary revisions, notification of congressional committees. Publication in Federal Register.

ACQUISITION POLICY

SEC. 3. (a) Within the boundaries of the recreation area, the Secretary may acquire lands, improvements, waters, or interests therein, by donation, purchase, exchange or transfer. Any lands, or interests therein, owned by the State of California or any political subdivision thereof, may be acquired only by donation. When any tract of land is only partly within such boundaries, the Secretary may acquire all or any portion of the land outside of such boundaries in order to minimize the payment of severance costs. Land so acquired outside of the boundaries may be exchanged by the Secretary for non-Federal lands within the boundaries. Any portion of land acquired outside the boundaries and not utilized for exchange shall be reported to the General Services Administration for disposal under the Federal Property and Administrative Services Act of 1949 (63 Stat. 377), as amended: *Provided*, That no disposal shall be for less than fair market value. Except as hereinafter provided, Federal property within

Ante, p. 503.
40 USC 471 note.

the boundaries of the recreation area is hereby transferred without consideration to the administrative jurisdiction of the Secretary for the purposes of this Act, subject to the continuation of such existing uses as may be agreed upon between the Secretary and the head of the agency formerly having jurisdiction over the property. Notwithstanding any other provision of law, the Secretary may develop and administer for the purposes of this Act structures or other improvements and facilities on lands for which he receives a permit of use and occupancy from the Secretary of the Army.

Facilities and improvements.

Forts Cronkhite, Barry, and Baker, transfer of jurisdiction.

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

Horseshoe Bay, access via Fort Baker.

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

Baker Beach, right of occupancy.

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

Crissy Army Airfield, right of occupancy.

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

Fort Point Coast Guard Station, continued-use permit.

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

Point Bonita, Point Diablo, and Lime Point, transfer of jurisdiction.

Navigation aids, access.

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

statutes dealing with establishment, maintenance, and operation of navigational aids.

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

Fort Miley, transfer of jurisdiction.

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

New construction, limitation.

Exceptions.

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

Property owners, retention rights.

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

"Improved property."

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

42 USC 4623-4626.

42 USC 4601.

(m) Notwithstanding any other provision of law, the Secretary shall have the same authority with respect to contracts for the acquisition of land and interests in land for the purposes of this Act as was

Contract authority.

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

40 USC 261. Installment payments; interest rate.

70 Stat. 694; 84 Stat. 782. 31 USC 724a. 75 Stat. 415; 62 Stat. 979.

ADMINISTRATION

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

Police and fire protection, cooperative agreements.

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

Water resource developments.

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

Transportation system, study.

(d) The Secretary, in cooperation with the State of California and affected political subdivisions thereof, local and regional transit agencies, and the Secretaries of Transportation and of the Army, shall make a study for a coordinated public and private transportation system to and within the recreation area and other units of the national park system in Marin and San Francisco Counties.

ADVISORY COMMISSION

Establishment; membership.

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

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

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

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

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

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

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

APPROPRIATION LIMITATION

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

Approved October 27, 1972.

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LEGISLATIVE HISTORY:

HOUSE REPORT No. 92-1391 (Comm. on Interior and Insular Affairs).
SENATE REPORT No. 92-1271 accompanying S. 3174 (Comm. on Interior and Insular Affairs).
CONGRESSIONAL RECORD, Vol. 118 (1972):
Oct. 11, considered and passed House.
Oct. 12, considered and passed Senate, in lieu of S. 3174.
WEEKLY COMPILATION OF PRESIDENTIAL DOCUMENTS, Vol. 8, No. 44:
Oct. 28, Presidential statement.

GPO 63-139

of 1978, the Secretary of the Interior is authorized to acquire for purposes of the recreation area established under this Act all lands and interests therein within the exterior boundaries of the area depicted on the drawing referred to in this subsection (including any lands within such exterior boundaries designated for acquisition by the Secretary of the Army in connection with the project referred to in this subsection). In exercising such authority, the Secretary of the Interior may permit the retention of rights of use and occupancy in the same manner as provided in the case of acquisitions by the Secretary of the Army under subsection (d). On the date of enactment of the National Parks and Recreation Act of 1978, the acquisition authorities of any other Federal agency contained in this subsection shall terminate and the head of any other Federal agency shall transfer to the Secretary of the Interior jurisdiction over all lands and interests therein acquired by said agency under the authority of this Act, or any other authority of law which lands are within the exterior boundaries of the area depicted on the drawing referred to in this subsection. On the date of enactment of the National Parks and Recreation Act of 1978, all unexpended balances available to any other Federal agency for acquisition of land within the exterior boundaries referred to in the preceding sentence shall be transferred to the Secretary of the Interior to be used for such purposes. In carrying out his acquisition authority under this section the Secretary shall give priority to the following:

**Use and occupancy rights, retention.**

**Authority, termination and transfer.**

**Funds, transfer.**

**Acquisition priorities.**

"(1) completion of acquisition of lands for which condemnation proceedings have been started pursuant to the authorization of the project referred to in this subsection;

"(2) acquisition of lands of beneficial owners, not being a corporation, who in the judgment of the Secretary would suffer hardship if acquisition of their lands were delayed;

"(3) acquisition of lands on which, in the judgment of the Secretary, there is an imminent danger of development that would be incompatible with the purposes of the recreation area;

"(4) acquisition of lands of beneficial owners, not being a corportion, who are willing to sell their lands provided they are able to continue to use it for noncommercial residential purposes for a limited period of time which will not, in the judgment of the Secretary, unduly interfere with the development of public use facilities for such national recreation area, pursuant to the authorization for such area;

"(5) acquisition of scenic easements when, in the judgment of the Secretary, such easements are sufficient to carry out the purposes for which such national recreation area was authorized; and

"(6) acquisition of lands necessary to preserve the integrity of the recreation area.".

GOLDEN GATE NATIONAL RECREATION AREA

**Composition and boundaries. 16 USC 460bb-1.**

SEC. 317. (a) Subsection 2(a) of the Act of October 27, 1972 (86 Stat. 1299), as amended (16 U.S.C. 459), is further amended to read as follows: "(a) The recreation area shall comprise the lands, waters, and submerged lands generally depicted on the map entitled: 'Revised Boundary Map, Golden Gate National Recreation Area', numbered NRA-GG-80,003-K and dated October 1978. The authority of the Secretary to acquire lands in the tract known as San Francisco Assessor's Block number 1592 shall be limited to an area of not more

than one and nine-tenths acres. Notwithstanding any other provision of this Act, the Secretary shall not acquire the Marin County Assessor's parcels numbered 199-181-01, 199-181-06, 199-181-08, 199-181-13, and 199-181-14, located in the Muir Beach portion of the recreation area.".

(b) Section 3(i) of such Act is amended to read as follows:

New construction, limitation. 16 USC 460bb-2. *Ante*, p. 3484.

"(i) New construction and development within the boundaries described in section 2(a) on lands under the administrative jurisdiction of a department other than that of the Secretary is prohibited, except that improvements on lands which have not been transferred to his administrative jurisdiction may be reconstructed or demolished. Any such structure which is demolished may be replaced with an improvement of similar size, following consultation with the Secretary or his designated representative, who shall conduct a public hearing at a location in the general vicinity of the area, notice of which shall be given at least one week prior to the date thereof. The foregoing limitation on construction and development shall not apply to expansion of those facilities known as Letterman General Hospital or the Western Medical Institute of Research.".

Notice and public hearing.

Exception.

(c) Subsection 3(j) of such Act is amended to read as follows:

Use and occupancy right, retention.

"(j) The owner of improved residential property or of agricultural property on the date of its acquisition by the Secretary under this Act may, as a condition of such acquisition, retain for himself and his or her heirs and assigns a right of use and occupancy for a definite term of not more than twenty-five years, or, in lieu thereof, for a term ending at the death of the owner or the death of his or her spouse, whichever is later. The owner shall elect the term to be reserved. Unless the property is wholly or partly donated to the United States, the Secretary shall pay to the owner the fair market value of the property on the date of acquisition minus the fair market value on that date of the right retained by the owner. A right retained pursuant to this section shall be subject to termination by the Secretary upon his or her determination that it is being exercised in a manner inconsistent with the purposes of this Act, and it shall terminate by operation of law upon the Secretary's notifying the holder of the right of such determination and tendering to him or her an amount equal to the fair market value of that portion of the right which remains unexpired. Where appropriate in the discretion of the Secretary, he or she may lease federally owned land (or any interest therein) which has been acquired by the Secretary under this Act, and which was agricultural land prior to its acquisition. Such lease shall be subject to such restrictive covenants as may be necessary to carry out the purposes of this Act. Any land to be leased by the Secretary under this section shall be offered first for such lease to the person who owned such land or who was a leaseholder thereon immediately before its acquisition by the United States.".

Payment.

Termination and notification.

Federally-owned land, lease.

(d) In subsection 3(k) of such Act, following "June 1, 1971," insert "or, in the case of areas added by action of the Ninety-fifth Congress, October 1, 1978,"; and at the end of the subsection, add the following new sentence: "The term 'agricultural property' as used in this Act means lands which are in regular use for agricultural, ranching, or dairying purposes as of January 1, 1978, together with residential and other structures related to the above uses of the property as such structures exist on said date."

"Agricultural property."

(e) Section 3 of such Act is amended by adding the following at the end thereof:

Management.

"(n) The Secretary shall accept and shall manage in accordance with this Act, any land and improvements adjacent to the recreation area which are donated by the State of California or its political subdivisions. The boundaries of the recreation area shall be changed to include such donated lands.

Payment deferral, scheduling, and interest rate.

"(o) In acquiring those lands authorized by the Ninety-fifth Congress for the purposes of this Act, the Secretary may, when agreed upon by the landowner involved, defer payment or schedule payments over a period of ten years and pay interest on the unpaid balance at a rate not exceeding that paid by the Treasury of the United States for borrowing purposes.".

Administration. 16 USC 460bb-3.

(f) Section 4 of such Act is amended by adding the following at the end thereof:

Fees or admission charges.

"(e) No fees or admission charges shall be levied for admission of the general public to the recreation area except to portions under lease or permit for a particular and limited purpose authorized by the Secretary. The Secretary may authorize reasonable charges for public transportation and, for a period not exceeding five years from the date of enactment of this legislation, for admission to the sailing vessel Balclutha.

Certain rental proceeds, crediting.

"(f) Notwithstanding any other provisions of law, in the administration of those parcels of property known as Haslett Warehouse, Cliff House Properties and Louis' Restaurant, the Secretary shall credit any proceeds from the rental of space in the aforementioned properties to the appropriation, if any, bearing the cost of their administration, maintenance, repair and related expenses and also for the maintenance, repair and related expenses of the vessels and the adjacent piers comprising the National Maritime Museum, for major renovation and park rehabilitation of those buildings included in the Fort Mason Foundation Cooperative Agreement, and for a coordinated public and private access system to and within the recreation area and other units of the national park system in Marin and San Francisco Counties: *Provided*, That surplus funds, if any, will be deposited into the Treasury of the United States: *Provided further*, That notwithstanding any other provision of law, in the administration of said parcels the Secretary may, if he deems appropriate, enter into a contract for the management of said parcels of property with such terms and conditions as will protect the Government's interest, with excess funds being used as set forth above.".

Management contract.

16 USC 460bb-4.

(g) Section 5(b) of such Act is amended by changing the word "fifteen" to "seventeen".

POINT REYES NATIONAL SEASHORE

Area description. 16 USC 459c-1.

SEC. 318. (a) Section 2(a) of the Act of September 13, 1962 (76 Stat. 538) as amended (16 U.S.C. 459) is further amended as follows:

"SEC. 2. (a) The Point Reyes National Seashore shall consist of the lands, waters, and submerged lands generally depicted on the map entitled 'Boundary Map, Point Reyes National Seashore', numbered 612-80,008-E and dated May 1978.

Map, availability.

"The map referred to in this section shall be on file and available for public inspection in the Offices of the National Park Service, Department of the Interior, Washington, District of Columbia. After advising the Committee on Interior and Insular Affairs of the United States House of Representatives and the Committee on Energy and

Public Law 87-657
87th Congress, S. 476
September 13, 1962

# An Act

76 STAT. 538.

To establish the Point Reyes National Seashore in the State of California, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That in order to save and preserve, for purposes of public recreation, benefit, and inspiration, a portion of the diminishing seashore of the United States that remains undeveloped, the Secretary of the Interior (hereinafter referred to as the "Secretary") is hereby authorized to take appropriate action in the public interest toward the establishment of the national seashore set forth in section 2 of this Act.

California. Point Reyes National Seashore. Establishment.

SEC. 2. (a) The area comprising that portion of the land and waters located on Point Reyes Peninsula, Marin County, California, which shall be known as the Point Reyes National Seashore, is described as follows by reference to that certain boundary map, designated NS-PR-7001, dated June 1, 1960, on file with the Director, National Park Service, Washington, District of Columbia.

Beginning at a point, not monumented, where the boundary line common to Rancho Punta de los Reyes (Sobrante) and Rancho Las Baulines meets the average high tide line of the Pacific Ocean as shown on said boundary map;

Thence southwesterly from said point 1,320 feet offshore on a prolongation of said boundary line common to Rancho Punta de los Reyes (Sobrante) and Rancho Las Baulines;

Thence in a northerly and westerly direction paralleling the average high tide line of the shore of the Pacific Ocean; along Drakes Bay, and around Point Reyes;

Thence generally northerly and around Tomales Point, offshore a distance of 1,320 feet from average high tide line;

Thence southeasterly along a line 1,320 feet offshore and parallel to the average high tide line along the west shore of Bodega Bay and Tomales Bay to the intersection of this line with a prolongation of the most northerly tangent of the boundary of Tomales Bay State Park;

Thence south 54 degrees 32 minutes west 1,320 feet along the prolongation of said tangent of Tomales Bay State Park boundary to the average high tide line on the shore of Tomales Bay;

Thence following the boundary of Tomales Bay State Park in a southerly direction to a point lying 105.4 feet north 41 degrees east of an unimproved road heading westerly and northerly from Pierce Point Road;

Thence south 41 degrees west 105.4 feet to a point on the north right-of-way of said unimproved road;

Thence southeasterly along the north right-of-way of said unimproved road and Pierce Point Road to a point at the southwest corner of Tomales Bay State Park at the junction of the Pierce Point Road and Sir Francis Drake Boulevard;

Thence due south to a point on the south right-of-way of said Sir Francis Drake Boulevard;

Thence southeasterly along said south right-of-way approximately 3,100 feet to a point;

Thence approximately south 19 degrees west approximately 300 feet;

Thence south approximately 400 feet;

Thence southwest to the most northerly corner of the Inverness watershed area;

Thence southerly and easterly along the west property line of the Inverness watershed area approximately 9,040 feet to a point near the

intersection of this property line with an unimproved road as shown on said boundary map;

Thence southerly along existing property lines that roughly follow said unimproved road to its intersection with Drakes Summit Road and to a point on the north right-of-way of Drakes Summit Road;

Thence easterly approximately 1,000 feet along the north right-of-way of said Drakes Summit Road to a point which is a property line corner at the intersection with an unimproved road to the south;

Thence southerly and easterly and then northerly, as shown approximately on said boundary map, along existing property lines to a point on the south right-of-way of the Bear Valley Road, approximately 1,500 feet southeast of its intersection with Sir Francis Drake Boulevard;

Thence easterly and southerly along said south right-of-way of Bear Valley Road to a point on a property line approximately 1,000 feet west of the intersection of Bear Valley Road and Sir Francis Drake Boulevard in the village of Olema;

Thence south approximately 1,700 feet to the northwest corner of property now owned by Helen U. and Mary S. Shafter;

Thence southwest and southeast along the west boundary of said Shafter property to the southwest corner of said Shafter property:

Thence approximately south 30 degrees east on a course approximately 1,700 feet to a point;

Thence approximately south 10 degrees east on a course to the centerline of Olema Creek;

Thence generally southeasterly up the centerline of Olema Creek to a point on the west right-of-way line of State Route Numbered 1;

Thence southeasterly along westerly right-of-way line to State Highway Numbered 1 to a point where a prolongation of the boundary line common to Rancho Punta de los Reyes (Sobrante) and Rancho Las Baulines would intersect right-of-way line of State Highway Numbered 1;

Thence southwesterly to and along said south boundary line of Rancho Punta de los Reyes (Sobrante) approximately 2,900 feet to a property corner;

Thence approximately south 38 degrees east approximately 1,500 feet to the centerline of Pine Gulch Creek;

Thence down the centerline of Pine Gulch Creek approximately 400 feet to the intersection with a side creek flowing from the west;

Thence up said side creek to its intersection with said south boundary line of Rancho Punta de los Reyes (Sobrante);

Thence southwest along said south boundary line of Rancho Punta de los Reyes to the point of beginning, containing approximately 53,000 acres. Notwithstanding the foregoing description, the Secretary is authorized to include within the Point Reyes National Seashore the entire tract of land owned by the Vedanta Society of Northern California west of the centerline of Olema Creek, in order to avoid a severance of said tract.

(b) The area referred to in subsection (a) shall include also a right-of-way, to be selected by the Secretary, of not more than 400 feet in width to the aforesaid tract from the intersection of Sir Francis Drake Boulevard and Haggerty Gulch.

SEC. 3. (a) Except as provided in section 4, the Secretary is authorized to acquire, and it is the intent of Congress that he shall acquire as rapidly as appropriated funds become available for this purpose or as such acquisition can be accomplished by donation or with donated funds or by transfer, exchange, or otherwise the lands, waters, and other property, and improvements thereon and any interest therein, within the areas described in section 2 of this Act or which lie within

the boundaries of the seashore as established under section 5 of this Act (hereinafter referred to as "such area"). Any property, or interest therein, owned by a State or political subdivision thereof may be acquired only with the concurrence of such owner. Notwithstanding any other provision of law, any Federal property located within such area may, with the concurrence of the agency having custody thereof, be transferred without consideration to the administrative jurisdiction of the Secretary for use by him in carrying out the provisions of this Act. In exercising his authority to acquire property in accordance with the provisions of this subsection, the Secretary may enter into contracts requiring the expenditure, when appropriated, of funds authorized by section 8 of this Act, but the liability of the United States under any such contract shall be contingent on the appropriation of funds sufficient to fulfill the obligations thereby incurred.

(b) The Secretary is authorized to pay for any acquisitions which he makes by purchase under this Act their fair market value, as determined by the Secretary, who may in his discretion base his determination on an independent appraisal obtained by him.

(c) In exercising his authority to acquire property by exchange, the Secretary may accept title to any non-Federal property located within such area and convey to the grantor of such property any federally owned property under the jurisdiction of the Secretary within California and adjacent States, notwithstanding any other provision of law. The properties so exchanged shall be approximately equal in fair market value, provided that the Secretary may accept cash from or pay cash to the grantor in such an exchange in order to equalize the values of the properties exchanged.

SEC. 4. No parcel of more than five hundred acres within the zone of approximately twenty-six thousand acres depicted on map numbered NS-PR-7002, dated August 15, 1961, on file with the director, National Park Service, Washington, District of Columbia, exclusive of that land required to provide access for purposes of the national seashore, shall be acquired without the consent of the owner so long as it remains in its natural state, or is used exclusively for ranching and dairying purposes including housing directly incident thereto. The term "ranching and dairying purposes", as used herein, means such ranching and dairying, primarily for the production of food, as is presently practiced in the area.

"Ranching and dairying purposes."

In acquiring access roads within the pastoral zone, the Secretary shall give due consideration to existing ranching and dairying uses and shall not unnecessarily interfere with or damage such use.

SEC. 5. (a) As soon as practicable after the date of enactment of this Act and following the acquisition by the Secretary of an acreage in the area described in section 2 of this Act, that is in the opinion of the Secretary efficiently administrable to carry out the purposes of this Act, the Secretary shall establish Point Reyes National Seashore by the publication of notice thereof in the Federal Register.

Publication in F. R.

(b) Such notice referred to in subsection (a) of this section shall contain a detailed description of the boundaries of the seashore which shall encompass an area as nearly as practicable identical to the area described in section 2 of this Act. The Secretary shall forthwith after the date of publication of such notice in the Federal Register (1) send a copy of such notice, together with a map showing such boundaries, by registered or certified mail to the Governor of the State and to the governing body of each of the political subdivisions involved; (2) cause a copy of such notice and map to be published in one or more newspapers which circulate in each of the localities; and (3) cause a certified copy of such notice, a copy of such map, and a copy of this Act to be recorded at the registry of deeds for the county involved.

Notification of Governor, etc.

SEC. 6. (a) Any owner or owners (hereinafter in this subsection referred to as "owner") of improved property on the date of its acquisition by the Secretary may, as a condition to such acquisition, retain the right of use and occupancy of the improved property for noncommercial residential purposes for a term of fifty years. The Secretary shall pay to the owner the fair market value of the property on the date of such acquisition less the fair market value on such date of the right retained by the owner.

"Improved property."

(b) As used in this Act, the term "improved property" shall mean a private noncommercial dwelling, including the land on which it is situated, whose construction was begun before September 1, 1959, and structures accessory thereto (hereinafter in this subsection referred to as "dwelling"), together with such amount and locus of the property adjoining and in the same ownership as such dwelling as the Secretary designates to be reasonably necessary for the enjoyment of such dwelling for the sole purpose of noncommercial residential use and occupancy. In making such designation the Secretary shall take into account the manner of noncommercial residential use and occupancy in which the dwelling and such adjoining property has usually been enjoyed by its owner or occupant.

SEC. 7. (a) Except as otherwise provided in this Act, the property acquired by the Secretary under this Act shall be administered by the Secretary, subject to the provisions of the Act entitled "An Act to establish a National Park Service, and for other purposes", approved August 25, 1916 (39 Stat. 535), as amended and supplemented, and in accordance with other laws of general application relating to the national park system as defined by the Act of August 8, 1953 (67 Stat. 496), except that authority otherwise available to the Secretary for the conservation and management of natural resources may be utilized to the extent he finds such authority will further the purposes of this Act.

16 USC 1.

16 USC 1c.

(b) The Secretary may permit hunting and fishing on lands and waters under his jurisdiction within the seashore in such areas and under such regulations as he may prescribe during open seasons prescribed by applicable local, State, and Federal law. The Secretary shall consult with officials of the State of California and any political subdivision thereof who have jurisdiction of hunting and fishing prior to the issuance of any such regulations, and the Secretary is authorized to enter into cooperative agreements with such officials regarding such hunting and fishing as he may deem desirable.

Appropriation.

SEC. 8. There are authorized to be appropriated such sums as may be necessary to carry out the provisions of this Act, except that no more than $14,000,000 shall be appropriated for the acquisition of land and waters and improvements thereon, and interests therein, and incidental costs relating thereto, in accordance with the provisions of this Act.

Approved September 13, 1962.

# APPENDIX D: RARE, THREATENED, OR ENDANGERED PLANTS AND ANIMALS OF GGNRA AND POINT REYES NATIONAL SEASHORE

Table D-1: Candidate Plants Within the Area of GGNRA and Point Reyes National Seashore

| Scientific Name | Common Name |
|---|---|
| GGNRA | |
| Arabis biepharophylla | Coast rockcress |
| Arctostaphylos hookeri ssp. franciscana | *Laural Hill manzanita |
| Arctostaphylos hookeri ssp. montana | Mt. Tamalpais manzanita |
| Arctostaphylos hookeri ssp. ravenii | Raven's manzanita (listed as endangered 10/26/79) |
| Arctostaphylos virgata | Bolinas manzanita |
| Ceanothus masonii | *Mason's California lilac |
| Cicuta bolandari | Suisun water hemlock |
| Cirsium hydrophilum var. vaseyi | Mt. Tamalpais thistle |
| Clarkia franciscana | *Presidio clarkia |
| Dichondra donnelliana | Coast dichondra |
| Eriogonum caninum | *Tiburon buckwheat |
| Erysimum franciscanum var. franciscanum | *San Francisco wallflower |
| Gutierrezia californica | San Joaquin matchweed |
| Hesperolinon congestum | *Marin dwarf flax |
| Hystrix californica | California bottlebrush grass |
| Microseris decipiens | *Santa Cruz microseris |
| Orthocarpus floribundus | San Francisco owlclover |
| Pityopus californicus | Pityopus |
| Plagiobothrys diffusus | San Francisco popcorn-flower |
| Pleuropogon hooverianus | *Hoover's semaphore grass |
| Sidalcea hickmanii ssp. viridus | Marin mallow |
| Streptanthus batrachopus | Tamalpais jewelflower |
| Streptanthus glandulosus var. pulchellus | Marin jewelflower |
| Tanacetum camphoratum | Dune tansy |
| Trifolium amoenum | *Two-fork clover |

| Scientific Name | Common Name |
|---|---|
| Point Reyes | |
| Agrostis aristiglumis | Awned bent-grass |
| Agrostis blasdalei var. marinensis | *Marin bent-grass |
| Alopecurus aequalis var. sonomensis | Sonoma foxtail |
| Arabis biepharophylla | Coast rockcress |
| Arctostaphylos pacifica | *Pacific manzanita |
| Arctostaphylos virgata | Bolinas manzanita |
| Blennosperma nanum var. robustum | *Point Reyes blennosperma |
| Campanula californica | *Swamp harebell |
| Castilleja leschkeana | *Point Reyes Indian paintbrush |
| Ceanothus gloriosus var. porrectus | Mount Vision ceanothus |
| Chorizanthe valida | *Sonoma spineflower |
| Cicuta bolandari | Suisun water hemlock |
| Cordylanthus maritimus ssp. palustris | Point Reyes bird's-beak |
| Delphinium bakeri | *Baker's larkspur |
| Hystrix californica | California bottlebrush grass |
| Limnanthes douglasii var. sulphurea | Yellow meadowfoam |
| Orthocarpus floribundus | San Francisco owlclover |
| Polygonum marinense | Marin knotweed |
| Rhynchospora californica | *California beaked-rush |
| Tanacetum camphoratum | Dune tansy |
| Trifolium amoenum | *Two-fork clover |

*Formerly proposed for endangered status.

Table D-2: List of Endangered, Threatened, and Candidate Wildlife Species Within GGNRA and Point Reyes National Seashore

| Scientific Name | Common Name | Status |
|---|---|---|
| GGNRA | | |
| Falco peregrinus anatum | American peregrine falcon | E |
| Grapholitha edwardsiana | San Francisco true lupine moth | PT |
| Laterallus jamaicensis coturnilus | California black rail | C |
| Pelecanus occidentalis californicus | California brown pelican | E |
| Rallus longirostris obsoletus | California clapper rail | E |
| Syncaris pacifica | California freshwater shrimp | C** |
| Point Reyes | | |
| Coclus globosus | Globose dune beetle | PT |
| Falco peregrinus anatum | American peregrine falcon | E |
| Helminthoglypta arrosa miwoka | Dented peninsula snail | C* |
| Helminthoglypta nickliniana awania | Nicklin's peninsula snail | C** |
| Laterallus jamaicensis coturnilus | California black rail | C |
| Pelecanus occidentalis californicus | California brown pelican | E |
| Rallus longirostris obsoletus | California clapper rail | E |

E = Endangered
PT = Proposed Threatened
C = Candidate

* Formerly proposed for endangered status
** Formerly proposed for threatened status

where:

$\bar{c}$ = acreage concentration at distance x ( $\mu g\ m^{-3}$ )

$q$ = emission rate ( $\mu g\ m^{-1} sec^{-1}$ )

$\bar{u}$ = wind velocity ( $m\ sec^{-1}$ )

$\sigma_z$ = vertical dispersion parameter (m)

$x$ = horizontal distance from highway to receptor (m)

$z$ = height of receptor above surrounding terrain (m)

$h$ = height of highway above surrounding terrain (m)

Equation (1) applies to the case where wind direction is perpendicular to the highway. Other things being equal, the calculated concentrations for a case where winds blow at approximately 45 degrees to the road centerline will be approximately one half those for a perpendicular wind situation. This applies to the case under investigation.

Emission rate, q, is a function of traffic volume ($V_t$, veh $hr^{-1}$) and the average emission factor ($\bar{E}$, g veh $^{-1}$mi $^{-1}$),

$$q = 1.726 \times 10^{-1} \bar{E}\ V_t \qquad (2)$$

The constant is for conversion to metric units.

Emission factors for carbon monoxide (CO), hydrocarbons (HC), nitrogen oxides ($NO_x$), particulates (TSP), and sulfur oxides ($SO_x$) have been derived from Table D.71 in EPA suppl. No. 5., 2nd edition for 1978 and 1990. They are tabulated below.

Table I

| Year | CO | HC | $NO_x$ | $SO_x$ | TSP (all g/mi) |
|---|---|---|---|---|---|
| 1978 | 42.7 | 6.6 | 4.3 | 0.21 | 0.51 |
| 1990 | 11.3 | 1.9 | 2.0 | 0.19 | 0.40 |

The above conclusion is based on the assumption that current (and future) air quality is not degraded by other sources to the extent that the input from vehicular emissions might be significant from an additive standpoint. Baseline data are essential to answer this important question.

Should you have further questions or require additional assistance, refer them to Dr. Wayne Hamilton on extension 6070.

Alex Carter
for Larry A. May

cc:
WR-RD, Mr. Chapman
WR-PS, Mr. Kilgore
WASO-492, Ms. Brown

Table I: Carbon Monoxide

| day/year | Traffic (vehicles) peak day (12-hr.) | peak hour | peak 8-hour | Emission factor (g/mi) average speed | 10 mph | Peak hour CO($\mu g/m^3$) total use | rec. use | peak rec. use | Peak 8-hour CO ($\mu g/m^3$) total use | rec. use |
|---|---|---|---|---|---|---|---|---|---|---|
| weekday 1976 | 17,500 | 2,150 | 11,000 | 22* | 50 | 9700 | 900 | 2700 | 1400 | 407 |
| weekend 1976 | 17,500 | 2,125 | 13,000 | 22* | 50 | 9600 | 8400 | 8400 | 1600 | 1200 |
| weekday 1986 | 30,700 | 3,165 | 21,680 | 7.6** | 16.6 | 4730 | 3600 | 3600 | 940 | 560 |
| weekend 1986 | 37,900 | 5,135 | 29,220 | 7.6** | 16.6 | 7600 | 7200 | 7200 | 1270 | 1130 |

* - For 29 m.p.h. median measured
** - For 28 m.p.h. estimate

Table II: Hydrocarbons

| day/year | Peak 3-hr. 6-9 a.m. HC ($\mu g/m^3$)* total use | rec. use |
|---|---|---|
| weekday 1976 | 390 | 40 |
| weekend 1976 | 250 | 120 |
| weekday 1986 | 180 | 50 |
| weekend 1986 | 150 | 100 |

*Emissions are 2.3 x 1-hour values, 1.5 m/sec. wind

The pertinent national ambient air quality standards for CO and HC are as follows:

Table III: NAAQS Standards

| Pollutant | Interval | Concentration ($\mu g/m^3$) |
|---|---|---|
| CO | 1-hour | 40,000 |
| CO | 8-hour | 10,000 |
| HC | 3-hour (6-9 a.m.) | 160 |

Examination of the tables shows that CO and HC standards were not exceeded in 1976 by emissions from Recreation Area-related traffic, and no exceedences are indicated for 1986 traffic due to recreation traffic.

Total vehicle use (which includes commuter traffic over which GGNRA has no control) led to calculated excessive concentrations of HC on peak weekends and weekdays in 1976 and on peak weekdays in 1986. The Recreation Area-related contribution in these cases is 10 percent, 48 percent and 28 percent respectively.

The Bay Area Air Pollution Control District Air Quality Maintenance Plan, Tech. Memo 3, discussion of past and present air quality (March, 1977) states that ozone and carbon monoxide concentrations have decreased since the mid-to-late 1960s. Highest concentrations and incidents of exceedence are more common in the south-bay area, near San Jose. Thus contributions from recreation traffic along Marina Boulevard near GGNRA are not seen as a major current nor future air quality factor in the Bay Area.

If you have questions on this analysis, please contact Wayne L. Hamilton at x6070.

Howard J. Haiges

# APPENDIX F:
# WATER DEMAND DATA

In order to determine whether the available water supply is adequate for the drinking and sanitary requirements of visitors, water demand was estimated for the following facilities and uses. The figures represent the amounts of water in gallons that one person will use during a day or overnight visit to the park. These amounts per person when multiplied by the peak project visitation levels of the facilities equal the total amount of water that will be necessary.

| | |
|---|---|
| Hostel | 60 gallons per person |
| Group camping | 20 gallons per person |
| Hike-in camping | 10 gallons per person |
| Walk-in camping | 20 gallons per person |
| Day use (Marin Headlands, Angel Island, Mount Tamalpais) | 10 gallons per person |
| Day use (Olema Valley, Point Reyes | 5 gallons per person |

Irrigation water demand was estimated by assuming that up to one-half inch of water per week will be required for 6 months each year with rain and fog decreasing or eliminating the need for irrigation much of the rest of the year.

**Advisory Council On Historic Preservation**

1522 K Street, NW
Washington, DC 20005

MEMORANDUM OF AGREEMENT

WHEREAS, the National Park Service (NPS), Western Region, proposes to approve and implement a General Management Plan and Environmental Analysis for the Golden Gate National Recreation Area, Point Reyes National Seashore, Fort Point National Historic Site and Muir Woods National Monument; and,

WHEREAS, NPS, in consultation with the California State Historic Preservation Officer (SHPO), has determined that this undertaking, as proposed, may have an adverse effect on the cultural properties located within the Recreation Area, Seashore, Historic Site and National Monument which are included in and eligible for the National Register of Historic Places; and,

WHEREAS, pursuant to Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. Sec. 470f, as amended, 90 Stat. 1320) and Section 2(b) of Executive Order 11593, "Protection and Enhancement of the Cultural Environment," and Section I.A. of the Programmatic Memorandum of Agreement between NPS, the Advisory Council on Historic Preservation (Council) and the National Conference of State Historic Preservation Officers, ratified by the Chairman December 19, 1979, NPS has requested the comments of the Council; and,

NOW, THEREFORE it is mutually agreed that the undertaking will be carried out in accordance with attached proposal.

Robert Barrey Sept 9 (date) 1980
Executive Director
Advisory Council on Historic Preservation

Richard H. Smith (date) 9-15-80
Chairman
Advisory Council on Historic Preservation

PROPOSAL
for
MEMORANDUM OF AGREEMENT

PARK GOLDEN GATE NATIONAL RECREATION AREA

PLAN GENERAL MANAGEMENT PLAN/ENVIRONMENTAL ANALYSIS

JULY 7, 1980

CONSULTATION HISTORY

Letters to the State Historic Preservation Officer: May 23, 1979; September 20, 1979; March 26, 1980 and July 2, 1980.

Letters from the State Historic Preservation Officer: November 30, 1979 and June 19, 1980.

Letters to the Advisory Council on Historic Preservation: August 24, 1979; June 6, 1980.

Letters from the Advisory Council on Historic Preservation: September 18, 1979; June 26, 1980.

On June 9, 1980, the Western Region, National Park Service received approval to implement the Programmatic Memorandum of Agreement for basic planning documents. The Agreement between the Advisory Council on Historic Preservation, National Conference of State Historic Preservation Officers and the National Park Service is in accordance with the Procedures of the Advisory Council, 36 CFR 800.

PROPOSAL

The National Park Service proposes to approve and implement a General Management Plan and Environmental Analysis for the Golden Gate National Recreation Area, Point Reyes National Seashore and Fort Point National Historic Site, Muir Woods National Monument the later areas which are also administered by Golden Gate.

It was determined during the consultation process, described above, that the following appropriate actions will be taken to avoid or satisfactorily mitigate any adverse effects which may occur arising from the implementation of undertakings in the Plan. These conditions are:

CONDITIONS

1. Implementing actions involving historic structures and lands involving preservation, maintenance, rehabilitation, restoration, adaptive use, and stabilization of cultural resources shall meet appropriate Standards, Guidlines, Policies and Procedures including:

   a. Secretary of the Interior, for the Rehabilitation of Historic Buildings and Historic Preservation Projects.

   b. National Park Service, Management Policies for Historic Preservation, Cultural Resource Management Guidelines, and the Western Regions Procedures for Archeological Clearances.

c. For undertakings involving a complex of historic structures, Design Criteria considering the specific elements of significance of the complex and items a & b, will be prepared.

2. To assure that the use of historic structures, facilities and grounds by public organizations, non-profit organizations, foundations and commercial firms/utility companies is in accordance with Item One, the groups will be advised well in advance that conformance is required. All permits, leases, agreements issued by the Service will reflect this responsibility.

3. The National Park Service shall review and maintain adequate documentation evidencing the individual implementation actions are consistent with the approved Plan and Cultural Resource Standards, Guidelines, Policies and Procedures.

   An Assessment of Actions Having An Effect on Cultural Resources will be used to document the review. The Assessment will be reviewed by professional cultural resource personnel in the Western Regional Office. When a proposed action is questionable or not in concurrence with appropriate standards, Section One above, and the proposal is not altered to conformance, the assessment form with all documentation of the review and proposed undertaking will be provided the State Historic Preservation Officer for review and comment.

4. Should new undertakings be advance which are not encompassed by the General Management Plan, should major revisions occur, or if proposed actions by the Plan prove not to be feasible, the State Historic Preservation Officer will be afforded an opportunity to comment in accordance with the Procedures of the Advisory Council on Historic Preservation, 36 CFR 800.

5. The State Historic Preservation Officer or the Advisory Council on Historic Preservation independently or upon notification reserve the right to object in a timely manner to any implementing action that may be adverse to cultural resources.

If you concur with the above conditions for the proposed Memorandum of Agreement, please sign in the space provided below and return the letter to this Office. A copy of the letter is enclosed for your files.

Sincerely yours,

Howard H. Chapman

Howard H. Chapman,
Regional Director,
Western Region

In Duplicate

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U.S. DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE

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1979 "Historic Resource Study, The Bay Area Community: A Civil History of Golden Gate National Recreation Area and Point Reyes National Seashore," by Anna Coxe Toogood. Golden Gate National Recreation Area, Fort Mason, California.

# PLANNING TEAM

## PRINCIPALS

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| The SWA Group | Sausalito |

The following individuals contributed significantly to the development of this plan as members of the Golden Gate National Recreation Area Citizen's Advisory Commission

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## GEOGRAPHIC INDEX


Alcatraz
- activities, 114
- barriers to use, 23
- cultural resources, 87, 89, 92, 96, 136, 138, 139-40, 183-84
- development proposals, 35, 36 (map), 37, 104, 132, 133-34
- ferry service, 73-74, 130, 131, 184
- hazards, 126
- information center, 30
- management facilities, 62, 63-65
- management zoning, 20
- natural resources, 154, 158, 165, 172, 174
- utilities, 66, 179
- visitation levels, 25, 113-14

Angel Island, 21, 61, 79, 87, 92

Aquatic Park. See also Haslett Warehouse; Historic ships; Hyde Street pier; Maritime Museum; Victorian Park
- activities, 114-16
- cultural resources, 87, 92, 136, 140
- development proposals, 35, 37-41, 38 (map), 104-5, 132, 133
- ferry service, 73
- hazards, 126
- information center, 30
- management facilities, 62, 63
- management zoning, 20
- natural resources, 96, 158, 161, 164, 167, 173
- parking, 76, 116-17, 129, 130
- shoreline management, 99, 163-64, 184
- special events, 32
- transit, 71, 74, 80, 130, 131
- visitation levels, 24-25, 116

Baker Beach, 17, 59, 76, 87, 92, 95, 130, 156, 158, 175

Bear Valley, 30, 35, 55-56, 62, 65, 71, 74, 111, 125, 131, 134, 156, 157, 158, 177

Bolinas Lagoon, 59, 97, 99, 109, 124, 166, 167, 174

Cliff House
- activities, 119-20
- cultural resources, 89, 137, 138, 142-43, 185
- development proposals, 35, 46 (map), 45-47, 49, 60, 106
- information center, 30
- management zoning, 20
- natural resources, 158
- parking, 76, 120, 130, 172
- special status species, 157
- transit, 80
- visitation levels, 24-25, 120

Crissy Field
activities, 118-19
cultural resources, 92
development proposals, 35, 44-45, 106, 132, 133
ferry service, 79
hazards, 126
management zoning, 17
natural resources, 96, 154-55, 158, 165, 172, 174
parking, 76, 119, 130, 131
shoreline management, 99, 165, 185
special status species, 156
transit, 73, 130, 185
utilities, 175
visitation levels, 24-25, 119
Drakes Beach, 55, 60, 62, 63, 65, 71, 111, 178
Five Brooks, 71, 110, 124, 131, 159, 177
Fort Baker
activities, 121-22
cultural resources, 87, 92, 144-45
development proposals, 35, 48 (map), 49-50, 106-7, 132, 133
ferry service, 73, 79, 131
hazards, 126, 127
information center, 30, 121
management facilities, 44, 62, 63
management zoning, 17
natural resources, 155, 158, 161, 164, 167, 173, 174
parking, 76
shoreline management, 99, 163-64, 186
special events, 32
transit, 74, 76, 83, 121
utilities, 176
visitation levels, 122
Fort Barry, 17, 32, 50, 51, 87, 89, 107-8, 132, 133, 145-47, 176, 182
Fort Cronkhite, 30, 51, 62, 65, 87, 127, 132, 133, 147-48, 157, 165, 176, 185
Fort Funston, 17, 59, 63, 76, 95, 130, 143-44, 157, 159
Fort Mason
activities, 117-18
barriers to use, 23
cultural resources, 87, 89, 92, 138, 140-42, 185
development proposals, 35, 41-44, 42 (map), 105, 132, 133, 185
ferry service, 73-74, 79, 131, 184
hazards, 126
information center, 30
management facilities, 44, 62, 63
management zoning, 17, 20
natural resources, 96, 154, 158, 161, 165, 167, 172, 174
parking, 76, 118, 129, 130, 131
shoreline management, 165
special events, 32
transit, 73, 130
visitation levels, 24-25, 118

Fort Miley, East, 20, 59, 62, 63, 65, 87, 95, 143, 158
Fort Miley, West, 59, 60, 87, 95, 143, 158
Fort Point
    cultural resources, 87, 89, 90, 92, 152
    development proposals, 35
    establishment, 7
    management facilities, 62, 63, 65
    management zoning, 20
    parking, 76, 130
    transit, 71, 73, 74, 83, 130
    utilities, 175
    visitation levels, 25
Gerbode Preserve, 92, 159, 165, 176
Haslett Warehouse, 20, 39, 87, 89, 104, 115, 127, 131, 137, 140
Historic ships, 20, 39, 43, 87, 89, 104, 116, 136, 140, 164, 173, 184
Hyde Street pier, 39, 40, 104, 126, 164, 184
Lands End, 17, 76, 95, 130
Limantour, 19, 55, 60, 71, 111, 166, 170, 174, 178
Marin Headlands. See also Fort Baker; Fort Barry; Fort Cronkhite; Gerbode Preserve; Oakwood Valley; Point Bonita; Rodeo Lagoon; Rodeo Valley; Tennessee Valley
    activities, 120-23
    bike trail, 59
    cultural resources, 138
    development proposals, 50-53, 52 (map)
    ferry service, 73, 79-80
    management zoning, 18, 20
    natural resources, 96, 155, 174
    parking, 76, 121, 130
    special status species, 157
    transit, 71, 76-77
    utilities, 67, 133, 176, 179-80
    vegetation management plan, 97
    visitation levels, 24-25, 120
Marina Green, 21, 25, 76, 92, 130
Maritime Museum, 39, 40, 86, 91, 104, 115, 116, 126
Mount Tamalpais. See also Bolinas Lagoon
    cultural resources, 92, 148
    development recommendations, 61, 109
    establishment, 5
    management zoning, 21
    natural resources, 169, 174
    parking, 76
    transit, 71, 73, 79, 80, 81, 130
    utilities, 67, 133, 177, 180
    visitation levels, 24-25, 113
Muir Beach, 18, 59, 110, 127, 133, 159, 174, 176
Muir Woods
    activities, 123
    cultural resources, 92
    development proposals, 35, 53, 54 (map), 55, 109-10, 132, 133, 164-65

establishment, 5
information center, 30
management facilities, 62, 63, 65
management zoning, 19
natural resources, 96, 155, 158, 163, 164-65, 167, 169, 173
special status species, 157
utilities, 176
Ocean Beach, 17, 25, 71, 76, 95, 99, 120, 130, 131, 143, 161, 186
Oakwood Valley, 59, 159, 176
Olema Valley. See also Bolinas Lagoon; Five Brooks; Rancho Bolinas
activities, 124
cultural resources, 87, 89, 92, 136, 149
development proposals, 57-59, 110-11
management facilities, 62
management zoning, 18
natural resources, 96, 99, 161, 169, 174
parking, 75-76, 130
transit, 71, 73, 130
utilities, 67, 177, 180-81
visitation levels, 24-25, 124
Palomarin, 71, 112, 178
Pierce Point Ranch, 60, 89, 111, 157, 178
Point Bonita, 60, 87, 89, 109, 147, 157, 159
Point Reyes. See also Bear Valley; Drakes Beach; Limantour; Palomarin; Pierce Point Ranch; Point Reyes livesaving station; Point Reyes lighthouse
activities, 124-25, 187
cultural resources, 87, 89, 92, 136, 150-51
development proposals, 57-58, 60, 111-12
establishment, 5
management facilities, 62, 63
management zoning, 18, 19
natural resources, 96, 161, 166, 168, 169, 170, 172
parking, 76, 130
significance, 8
transit, 71, 73, 79, 130
utilities, 67, 177, 181
visitation levels, 24-25, 124-25
Point Reyes lifesaving station, 60, 89, 111, 178
Point Reyes lighthouse, 20, 62, 63, 65, 71, 87, 90, 111, 157, 178
Presidio, 21, 43, 44, 63, 73, 79, 87, 142
Rancho Bolinas, 59, 110, 157, 167, 177
Rodeo Lagoon, 17, 51, 92, 108, 165, 166, 173, 175, 186
Rodeo Valley
activities, 121, 122-23
cultural resources, 92
development proposals, 35, 50-53, 52 (map), 107-8
hazards, 126
natural resources, 155, 158, 161, 165, 167, 168, 171, 173, 174
transit, 77, 83
utilities, 179

San Francisco Headlands, 25, 92, 126
Stinson Beach
    access road, 76, 129, 187
    activities, 124
    cultural resources, 92
    development proposals, 35, 55, 110
    hazards, 127
    management facilities, 62, 63, 65
    management zoning, 17, 18
    natural resources, 155, 158, 161, 174
    shoreline management, 99
    transit, 71
    utilities, 133, 176
Sutro Baths, 20, 47, 76, 87, 106, 120, 137, 155, 157, 165, 172
Sutro Heights, 20, 49, 62, 87, 90, 96, 106, 120
Tennessee Valley, 59, 62, 65, 81, 92, 99, 109, 123, 159, 161, 165, 174, 176
Victorian Park, 40

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