# general management plan

august 1979

# GATEWAY

NATIONAL RECREATION AREA - NEW YORK / NEW JERSEY

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general management plan

# GATEWAY

national recreation area — new york / new jersey

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# PREFACE

Gateway is not another federal park situated in a secluded, static environmental setting. Nor should it be regarded as a glorified state or city park, or a place that might be partially developed and left to fend for itself. The two congressional committees that held hearings and wrote the legislation knew that they were making conservation history--and creating a very unusual national park--when Gateway was authorized. In its report to the House, the Interior Committee referred to Gateway as "a major breakthrough in recreation planning" and stated that it would be the "first federal recreation area in the heart of an urban complex and it will bring the National Park program closer to the people than ever before." The House members also called Gateway a "unique opportunity" and said it would offer to millions of Americans "the only real hope that they might ever have to visit a unit of the National Park System." In a similar vein, the Senate report expressed wonder that "a number of natural areas of outstanding quality are still available adjacent to the most heavily populated urban center in the entire country."

To appreciate the significance of the Gateway decision, one needs to realize that Gateway was established in 1972 as part of a logical evolution of the national park concept. The national park idea originated in this country a hundred years earlier, and for several decades it exemplified the notion that every country should have a system of national parks that preserved its natural wonders and scenic masterpieces. This was a yeasty idea, and it gained wider acceptance when a professional National Park Service was created in 1916 to administer and manage the parks.

However, the concept did not realize its full potential because congressional leaders adopted an unwritten rule that no federal funds would be appropriated to purchase national parklands. This policy meant that new parks could only be carved out of public domain lands already in government ownership or donated. This axiom made the eastern two-thirds of the country largely ineligible for this great program, as nearly all of the remaining public lands were in the West.

As a result, as recently as four decades ago, the national parks were overwhelmingly concentrated in the mountain states and the far West. Almost all of the units were located in inland areas, and the finest shoreline sections of the nation were effectively beyond the pale of national park conservation. Because of the great distances involved, only a small percentage of the citizens who lived in the eastern part of the United States actually had opportunities to visit a national park.

As awareness grew that the National Park System was lopsided, eastern conservationists argued for new policies that would give it balance. The pressures generated by this movement were effective, and in time they produced the changes that led to the establishment of Gateway and the other national recreation areas, and the purchase of coastal land for national seashores.

Congress broke new ground when it adopted a policy of appropriating federal monies to acquire prime shoreline areas and establish them as national seashores. The seashore policy added a new dimension to park protection. There was no insistence that the seashore acquired had to be pristine: Some shorelines were unsullied wild beaches, but others included segments that had been abused and impaired. In any event, this policy generated strong support in the country, and in a decade over ten shoreline areas were added to the National Park System.

The national recreation areas also broke new ground. Initially, most of the NRA parks were located around large federal reservoirs. These parks were different, but they too provided millions of Americans with park experiences of high quality in attractive environments.

This success emboldened Congress to authorize Gateway and two additional urban-edge parks near San Francisco and Cleveland, and later parks in such cities as Atlanta and Los Angeles. This was an even more radical departure: It aspired to serve the needs of inner-city millions, and it unequivocally took the Park Service and the national park idea out of the countryside and into the environmental crisis of big-city America.

This history explains why Gateway is a singular project. Gateway is special because it is in the coastal zone of one of the most highly developed commercial and industrial regions in the world. It is special because it is adjacent to the most densely populated metropolis in the United States. It is special because it offers an opportunity to demonstrate that abused resources can be renewed. And, finally, it is very special because it offers millions of Americans a chance to have national park adventures and experiences virtually at their own doorsteps.

These unusual conditions mean that the process of planning for Gateway must be a dynamic process. A master plan for a very rural park, where any future environmental impacts will be limited and the parklands themselves are protected by buffers of open space, deals with a situation that has a fairly clear definition. Gateway has few natural buffer zones and exists in an unstable environment, and its future will depend in part on the outcome of an unresolved struggle against congestion, pollution, and blight.

It is this uncertainty, as well as the imperatives of the energy crisis, that makes the long-term planning environment for Gateway difficult and challenging. There is increasing evidence that over the next two to three decades new forces may produce profound changes in individual lifestyles and in the total environments of whole regions.

Some of these possible changes could drastically alter the outlook--and the potentials--for a park such as Gateway. They also suggest that the basic planning assumptions for Gateway should take into account the likelihood that some of these alterations will occur. Such assumptions should be tentative, of course, but they should encompass the potential for such things as

- the possibility that increased energy costs and shortages will soon compel the nation to invest heavily in public transportation

- the possibility that the energy imperatives will slow urban sprawl and cause the nation to concentrate its energies and investments on improving the livability of its cities and their environs

- the possibility that, as the American people are forced to be less mobile, they will once again attach paramount importance to the quality of their own neighborhoods and the availability of a wide variety of nearby recreational resources

- the possibility that changes in the work week will allow more free time for recreation and consequently increase the need for park facilities of all kinds

- the possibility that the advent of systematic resource recycling will revive the conservation ethic, inculcate national thrift, and permanently alter attitudes and values in this country

Of course, some of the possibilities may not materialize, and others may exert influence in unexpected directions. But in any event, it would plainly be a mistake to make a static plan, a confining plan, for Gateway. Because of the very complexity of its geography and structure, this multiple-purpose park will need additional management techniques and a more complex administrative philosophy than is commonly found in other parks.

If such considerations create a distinct bias for the long view and long-range plans, this will be a propitious development. The national parks, by law, place limits on the claims of the living: All parks must be managed so they are kept unimpaired "for the use and enjoyment of future generations," so everyone should understand why this plan envisions Gateway's future through a long-view lens.

Some areas of importance to the Gateway plan, however, are not fully within the National Park Service's control. The Park Service can exercise a leadership role in the protection of the entire New York/New Jersey coastal zone of which Gateway is a part, but it will need support from other federal agencies, the Gateway Advisory Commission, and other interested public and private organizations to advocate policies that can enhance the total environment of the region--to protest when pollution control programs fail, to give strong support to new transportation alternatives which are energy-efficient and provide better service for the general public, to dramatize for the public the gains which can accrue if swimming, shellfishing, and other activities are enlarged, and to take the lead in devising programs to expand public understanding and respect for the environment.

In addition, Gateway can become a national project to demonstrate the potentials of ecological reclamation in an urban setting. Dr. Rene Dubos, a noted scientist, has envisioned the ecological restoration of Jamaica Bay and other Gateway areas as proof that modern man can work with nature and reclaim what has been impaired. Such an effort could help accelerate the abatement of pollution and blight and make Gateway the prototype of a new kind of "urban renewal." The Gateway plan includes reclamation of impacted areas, but much more reclamation is needed beyond Gateway's borders.

The historical significance of Gateway can be enhanced. As its name signifies, this harbor served as the great doorway of American immigration. In addition to preserving and interpreting those historical sites already within the park, the presence of other notable historic places such as the Statue of Liberty and Ellis Island near Gateway can give interpretive programs added coherence and unity.

Finally, Gateway can become the focus of innovative transportation planning on land and water and can serve as a national laboratory in which to explore the feasibility of old or new modes of waterborne transportation. The Gateway plan includes a substantial provision for waterborne access, and recent legislation has authorized the expenditure of funds for ferry service or other new forms of public transit to the park.

# INTRODUCTION

Legislation establishing Gateway National Recreation Area was passed by Congress in October of 1972 (P.L. 92-592; 85 Stat. 1308). The creation of the park was the culmination of years of effort by local governments, citizens groups, the National Park Service, and members of Congress. Notable participants in the events leading to Gateway's establishment included the Regional Plan Association, the Gateway Citizens Committee, the New York City administration, the late Governor Driscoll of New Jersey, and the late Congressman William Fitts Ryan.

Gateway was created from land that was the property of the state of New Jersey, New York City, various Army and Navy installations, and private owners. It includes landscapes and historic buildings of exceptional quality: Two of the finest beaches on the East Coast are at Sandy Hook and Breezy Point, the holly forest at Sandy Hook and the wildlife refuge in Jamaica Bay are of great ecological importance, and Fort Wadsworth and Fort Hancock are representative of significant periods in military history. The fact that these areas--plus such large open spaces as Floyd Bennett Field and Great Kills Park--are in the most populous metropolitan region of the country makes them even more valuable.

The enabling legislation for Gateway National Recreation Area stated that the purpose of the park is to "preserve and protect for the use and enjoyment of present and future generations an area possessing outstanding natural and recreational features." In addition, more specific objectives have been established to guide Gateway's management and development:

> To develop and manage Gateway National Recreation Area for recreational use, and to appropriately care for the park's natural and historic resources
>
> To make Gateway a great park for all the people where innovation and experimentation in park and recreation management, design, and programming may tap the large reservoir of talent, including volunteers, in the region
>
> To forge an effective link between the urban value systems that characterize the New York/New Jersey community and the natural systems at Gateway, which can enrich and give powerful support to human personality, growth, and understanding of self and society
>
> To manage and use existing facilities and resources at the park to realize maximum recreational and educational benefits without causing adverse impacts on area resources or

jeopardizing the development and implementation of long-range plans for Gateway

To involve the public in planning for Gateway, and to work closely with adjacent neighborhood and governmental entities, the states of New Jersey and New York, and federal agencies in planning for the park and its surrounding region and in addressing mutual problems of land use, pollution, and transportation

To work with others to ensure the provision of external and internal public transportation that complements proposed uses, recognizing that access to and circulation within the park are major factors in the success of Gateway

To provide high-quality affordable facilities and services for visitor use

To develop and carry out, in cooperation with others, diverse and innovative recreational, interpretive, and educational programs on a year-round basis

To program for and otherwise accommodate the rich cultural and ethnic diversity of the region and take sensitive account of the varying lifestyles of the people

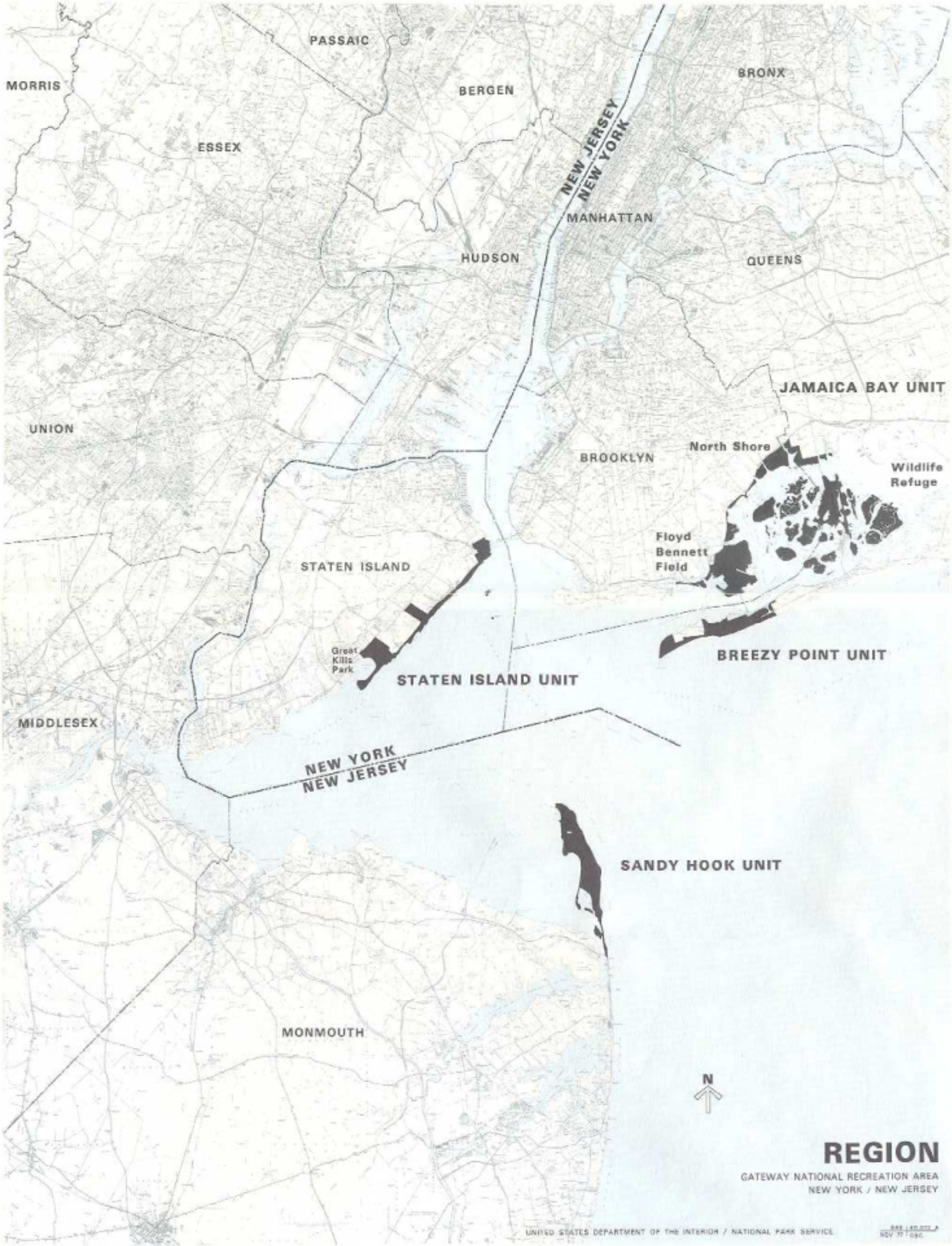
To provide access, facilities, and programs for the entire visiting public, including the physically handicapped, older citizens, and people lacking average mobility and financial resources

To identify, preserve, and provide for visitor appreciation of the important fish, wildlife, and other natural resources of Gateway (with particular emphasis on the Jamaica Bay Unit)

To identify, evaluate, and appropriately preserve and/or use the significant historic structures and other resources of Gateway

To provide for the systematic acquisition of all authorized lands and waters within the Gateway boundary in order to permit unified management of the park, phased implementation of planning and development, and adequate protection of area resources

To secure boundary adjustments, as authorized by law, when desirable for the development and effective management of the area


PASSAIC
MORRIS
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NEW JERSEY
NEW YORK
MANHATTAN
HUDSON
QUEENS
JAMAICA BAY UNIT
UNION
North Shore
BROOKLYN
Wildlife
Refuge
Floyd
Bennett
Field
STATEN ISLAND
Great
Kills
Park
BREEZY POINT UNIT
STATEN ISLAND UNIT
MIDDLESEX
NEW YORK
NEW JERSEY
SANDY HOOK UNIT
MONMOUTH
N
REGION
GATEWAY NATIONAL RECREATION AREA
NEW YORK / NEW JERSEY
UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

To seek agreements with property owners in the Breezy Point Unit for the continued maintenance of a residential community of single-family dwellings, as provided by Public Law 92-592, Section 2(c)

These goals and objectives for Gateway National Recreation Area have served to direct planning and decision making in a manner that will fulfill the park's full potential.

The National Park Service planning process for Gateway, an on-going process whereby public comment can be reflected in final decisions about the park, has been underway since 1974 and will continue after this General Management Plan is approved. The process to date has included collection and evaluation of data on the park's resources; analysis of regional planning factors--with emphasis on understanding the present and potential Gateway users and the transportation and access constraints on public use of the park; development of conceptual alternative plans for Gateway; selection of recommended proposals from these alternatives; preparation of both general and site-specific plans and designs; and assessment of those plans and designs. At all stages of the process, the public has been consulted and advised of evolving proposals to ensure that the activities and facilities planned for Gateway reflect the interests of the local and regional people who will primarily be using the park.

Seven documents have preceded this General Management Plan as part of the Gateway planning process: Basic Information, released in September 1975, which provided a brief description of the park and region and an outline of the concerns, influences, and goals that were identified in the early stages of planning; Draft Statement for Management, published in April 1976, which included a detailed explanation of the park purpose, significance, objectives, and influences; Environmental Assessment, published together with the Draft Statement for Management, which described the park and its regional setting and presented three alternative planning approaches; Discussion Draft General Management Plan, released in September 1976, which was the first-draft conceptual plan for the park; Here's What We Heard, an April 1977 publication that summarized the comments made by the public in response to the discussion draft plan; and finally the Decisions Paper and accompanying Draft Environmental Statement, made available in April 1978, which documented and assessed the updated plan proposals. These documents together reflect the ideas, opinions, and decisions that went into developing a comprehensive plan for Gateway, and they represent the best efforts of the National Park Service to design a park that will be responsive to the needs of all the people who will be using it.

This General Management Plan and the accompanying Final Environmental Statement are the last documents to be produced as part of this phase of Gateway planning. Together, they will serve as a guide and a reference for all subsequent design, development, and management of the park. The plan is intended to direct management in fulfilling the purpose and objectives of the park as defined in the enabling legislation and in previous planning efforts. It is designed to provide for the balanced preservation and development of parklands within Gateway so that significant natural and cultural features are adequately protected and at the same time the numerous recreational resources are developed and made available for a variety of uses. The plan proposes a mix of outdoor and indoor recreation, conservation and environmental protection, and year-round educational, cultural, and recreational programs to expand the spectrum of opportunities throughout the park. Through a system of management zones, lands within Gateway will be allocated and administered to encourage specific types of activities in appropriate areas and to provide for special protection of natural and cultural resources. "Outreach" programming will be used to make Gateway accessible to people who might not otherwise be served, such as the handicapped, the poor, and the elderly.

The plan proposes design and development of the park in three stages, based largely on pending land transfers and projections of improved water quality, access modifications, and changing visitor needs. The estimated life of the plan is 20 years, depending on the timing of funds made available by Congress. Based on this, each stage will be approximately 7 years. The actions expected to take place in Stages II and III of Gateway development are described briefly in the introduction to "The Plan" section. Stage I actions, which have been further subdivided into two phases in order to minimize disturbances to existing use patterns, monitor access improvements, and reduce impacts on neighboring community residents, are discussed in detail in the body of that section. Each phase will be about 3½ years.

Following completion of the general management plan/environmental statement stage of the planning process, planning will be undertaken at more detailed levels. This will involve site-specific design of required facilities and landscapes in areas of the park where development concept planning has not yet been accomplished (see the introduction to "The Plan"). Proposed development concept planning will include determinations of functional relationships, types and capacities of facilities, modes and routes of access and circulation, and ranges of activities for specific sites. Additional resource information will be gathered as necessary to complete this detailed level of planning for all areas of Gateway; such information may include data on social and economic systems, recreation management, transportation systems, cultural features (documentation including a historic studies plan, a historic resource

study, historic structure reports, and a cultural resources management plan), archaeology, natural resources and systems, and soils.

The final planning and design stage, called comprehensive design, will involve schematic design, landscape and site planning, and engineering, architectural, and construction procedures for the entire park, in preparation for construction and related proposal implementation. The actual implementation schedule will depend on the timing and availability of funding from Congress. Those sections of the park for which development concept plans have already been prepared, including all of Sandy Hook except the Fort Hancock Gateway Village, Great Kills, Miller Field, Breezy Point, and Spring Creek Park, are ready for comprehensive design as soon as funds are budgeted.

# park environment and planning influences

Gateway National Recreation Area was the first site selected as part of a proposed nationwide program intended to bring the National Park System closer to the cities of the United States. Proposals to create a national park in this region originated in 1968, when plans were formulated for the establishment of a national seashore at the entrance to New York Harbor, stretching from Riis Park on the Rockaway peninsula to Sandy Hook in New Jersey. Initial proposals called for the creation of a park to be named New York Harbor National Seashore and to encompass a minimum of 3,000 acres. Four years later, when Gateway was authorized, the size of the park had been increased to 26,645 acres, including large expanses of ocean beach, dune, wetland, forest, and wildlife preserves. The lands and waters now included in Gateway--although many of them have been degraded, overused, and altered--are virtually priceless because they represent the last remnants of the original shoreline and a recreational resource that, when fully developed, may serve more visitors than any other park in the nation.

The following discussions summarize the important environmental components and factors that were used in formulating the present management plan for Gateway. The first section describes the park environment--its significant natural, cultural, and recreational resources and its existing development and current use patterns. The second section identifies specific legal, environmental, socioeconomic, and public opinion factors that affected park planning. Detailed information on these subjects is included in the several documents that preceded this final General Management Plan and also in the Final Environmental Statement accompanying it. The information contained here synthesizes and highlights only the most relevant components and factors. Together, these elements constituted the main body of material that was researched, evaluated, developed, and incorporated in final determinations about the future of the park.

# GATEWAY TODAY

The National Park Service has been administering Gateway National Recreation Area since 1974. At present it manages some 89 percent of the 8,373 acres of land that will be open for public use when all lands to be donated, acquired, or transferred as part of the ongoing land acquisition program have been placed under its jurisdiction. Another 1,241 land acres will remain under other jurisdiction, either as enclave properties or as city rights-of-way. Gateway also includes approximately 17,031 acres in offshore ocean and bay waters and in two inland ponds, for a total of 26,645 acres within the park boundary.

Four management units have been designated within the national recreation area boundary, which correspond to the geographically separated land areas joined by New York Bay and peripheral waters. These units are administered by managers who are under the line authority of the superintendent of the park. Overall responsibility for Gateway management lies with the park superintendent.

## SANDY HOOK

The Sandy Hook Unit is located on a peninsula at the northern end of New Jersey's Atlantic shoreline just north of the town of Atlantic Highlands. It covers approximately 1,665 land acres, including 7½ miles of ocean beaches and sheltered bayside coves, hundreds of acres of ecologically significant barrier-beach vegetation, and at the northern end the lands, facilities, and fortifications of the Fort Hancock complex. The U.S. Coast Guard and U.S. Army Corps of Engineers maintain properties at the Sandy Hook tip that are excluded from the park. The Coast Guard also holds two small properties within Fort Hancock, one of which contains the historic Sandy Hook Lighthouse. Total acreage of the enclave lands is 180 acres.

The previous land uses at Sandy Hook--a New Jersey state park on the lower portion of the peninsula and the U.S. Army's Fort Hancock covering most of the rest--have left much of the land area in a natural state. In addition to the beaches, it includes tidal areas, dunes, back-dune areas, "heathlands," and holly forests--the last being of particular ecological interest. Development is focused at the South Beach developed area near the neck of the peninsula, within the Fort Hancock complex, and in a few other areas, leaving large stretches of undisturbed land in between. These spacious coastal landscapes and natural features are an important part of the Sandy Hook resource and are deserving of protective management and uses that will allow their perpetuation.

Shoreline changes at Sandy Hook during the past century and a quarter indicate a definite trend toward enlargement at the tip and a tendency for the base of the land mass to separate periodically from the mainland. A seawall now protects the narrowest portion of the neck connecting Sandy Hook to the mainland, but a tendency toward breakthrough still exists in the South Beach area north of the wall, and this tendency was particularly pronounced in the winter of 1977-78. Emergency beach nourishment programs have already been initiated to preserve the beach and protect against breakthroughs.

The state park facilities adjacent to the eroded section of Sandy Hook's beach, including two large bathhouses and attendant parking facilities at what are called Ocean Bathing Areas 1 and 2, were damaged beyond repair during the winter storms of 1977-78. Only two-thirds of the original 1,900 parking spaces remain, and temporary facilities have been installed to support summer beach use in the area until new development plans are completed. Detailed analysis of the effects of beach nourishment programs and of the resulting land configurations at South Beach will be necessary before facilities are designed, sited, and constructed.

The northern portion of Sandy Hook contains some 1 million square feet of building space in the main Fort Hancock complex. Fort Hancock served as an important component of the national defense system from before the Spanish-American War through the early Cold War period, when a Nike missile base was installed. Although all but one of the missiles have been removed, the installation remains. The buildings in the main part of Fort Hancock--over 200 major and minor military-support structures, many dating from the turn of the century--and the gun batteries located throughout the Sandy Hook peninsula are of considerable historical and visual interest. In addition, the fort contains many structures that will lend themselves to adaptive reuse. A comprehensive historic structure report on all the buildings and features of Fort Hancock has been completed and is available for review at park headquarters.

Southeast of Fort Hancock on the ocean side is the North Beach area, which includes--in addition to several historic military structures--a bathhouse complex and two unpaved parking areas. The structures of the beach facility have been built on the primary dune system, and surrounding natural communities have been widely disturbed. The beaches in the immediate vicinity are in equilibrium or are gradually accreting.

Other developments, many unused at the present time, are scattered throughout the large open land area between the southern neck of the peninsula and the Fort Hancock complex. The Spermaceti Cove Visitor Center, a historic U.S. Coast Guard

lifesaving station, lies between the parking lots at OBAs 1 and 2. At present, this facility serves as a visitor-contact station for the unit. North of OBA 2 is the now-abandoned Nike battery, or missile site, which contains the historic military structures, an unpaved entrance road and parking area, and a small maintenance facility. The once-extensive freshwater marsh adjacent to this area has been bisected by the entrance road. Developing "heathland" communities are also in the vicinity of the site. The dune system in front of the Nike structures is no longer apparent.

West of the Nike battery is a five-site camping area with portable toilets and picnic facilities. Also in this general area are two roofed-over batteries in reinforced concrete casemates and two ammunition-storage bunkers.

Once a rail/water transportation interface for the region, Horseshoe Cove on the central bay side of Sandy Hook is now used as a mooring place for pleasure craft. In addition, the area contains an assortment of batteries, the Nike radar site, the Halyburton monument, and related support structures.

The Mid Beach area on the ocean side between South and North Beaches is relatively undeveloped and includes only small gun batteries and a sewage treatment plant.

A wide variety of recreational uses currently take place in the Sandy Hook Unit. The South Beach area continues to be used in traditional fashion--for all types of beach activities--and the North Beach bathing area is now available for limited public use. Picnicking and fishing are popular on the bay side of the Sandy Hook neck. Environmental education programs and casual nature study occur in the marsh/grassland communities near Spermaceti Cove. Several historic batteries are visited on a reservation basis. The holly forest just north of Spermaceti Cove and the shorebird-nesting sites at Mid and North Beaches are under protected status.

Perhaps the most significant new use (in the last three years) is at Fort Hancock, where a variety of programming, special-permit uses, events, and administrative support functions originate or take place. A few structures have been renovated for use by private groups (under permit) and for National Park Service, National Oceanic and Atmospheric Administration, Coast Guard, Army, and Navy personnel. National Park Service unit headquarters for Sandy Hook are located in the Fort Hancock complex.

Primary access to Sandy Hook is along Route 36, a local east-west highway connecting with the Garden State Parkway to the west. Circulation within the unit is along the main north-south road, which connects with Route 36 at the Atlantic Highlands bridge just

south of Sandy Hook and runs the full length of the unit into the Fort Hancock/North Beach area. Secondary roads permit access to developed areas east and west of the main road. A Park Service shuttle bus provides limited service to the park facilities along the length of the peninsula.

Automobile traffic in and near Sandy Hook has already reached saturation levels on several heavy-use summer weekend days; backups occur at the entrances to the South Beach parking areas, on the single-lane access ramp leading from the Highlands bridge to Sandy Hook, at the bridge itself (a drawbridge for boat access and egress), and along heavily signalized Route 36, which is also a main access road for local residents. Substantial increases over the present number of park visitors (an estimated 30,000 on peak days; 2 million total for FY 1976) will require improved public-transit service and Outreach programming designed to increase use at other than peak times and the introduction of waterborne transit to service the unit.

## STATEN ISLAND

The Staten Island Unit, extending along the southeastern shore of Staten Island, includes (from south to north) Great Kills Park, Oakwood and New Dorp Beaches, Miller Field, Midland and South Beaches, historic Fort Wadsworth, and two small man-made islands, Hoffman and Swinburne, lying just offshore--for a total of some 1,210 acres of land. Great Kills Park and Hoffman and Swinburne Islands, formerly city-owned lands, have been transferred to the National Park Service, and Great Kills is currently open for public park use. Miller Field, a former air base transferred to the Park Service from the Army, is also an operating part of Gateway. Transfer of other lands within the Staten Island Unit boundary is still pending; these include the lands and structures of Fort Wadsworth, currently an Army property used primarily as a chaplain's school, and the three city-owned beaches at South, Midland, and Oakwood/New Dorp Beaches, which were excluded from the 1973 New York State legislation concerning Gateway. After all of these areas have been transferred to the Park Service, there will be no excluded lands within the unit. The Verrazano Expressway right-of-way occupies air space over 35 acres at Fort Wadsworth.

The timing of land conveyance is a major factor to be considered in planning and managing the Staten Island Unit. So is the flood protection system being proposed by the Corps of Engineers for the eastern shore of Staten Island north of Great Kills Park. Details of the Corps' revised proposal are not currently available, so no systematic evaluation of the scheme has been attempted in this plan. General descriptions of the project indicate that portions of it may

be incompatible with park uses; therefore, designs for Gateway and for this facility will need to be coordinated, and conflicts resolved.

A third influence on planning and management in the Staten Island Unit is the extremely poor water quality in adjacent bay waters, which precludes swimming on the beaches north of Great Kills. The opening of the water pollution control plant at 14th Street in Manhattan has apparently improved water quality faster than expected. When the North River water pollution control plant opens, there may be further improvement. Health authorities cannot make firm predictions at this time, however, and at this writing only Great Kills Park has swimmable beaches.

In addition to the opening and upgrading of water pollution control plants, comprehensive planning for the improvement of water quality is currently being accomplished as part of regional 208 studies. New York City has recently published a 208 study proposal (New York City Department of Environmental Protection 1978a), which recommends the implementation of actions that will make all of Gateway's waters swimmable. This study is discussed in more detail in the section called "Factors That Influenced Planning."

The shoreline on Staten Island was developed by erosion of the headlands at New Dorp and South Beach/Fort Wadsworth and by subsequent littoral drift that transported these materials along the shoreline to create a beach barrier. More recently, beach nourishment projects have supplemented this natural activity. Most of the tidal marshes behind the barrier have been filled in modern times, and piers, groins, and jetties have slowed rates of littoral drift on the beach. The Crookes Point peninsula at Great Kills Park was created in part by bulkheading. Much of this bulkhead is in poor condition and needs replacement.

A small portion of salt marsh at Great Kills Harbor is all that is left of the extensive salt marsh system that once extended all the way north to Fort Wadsworth. Most of the open area of Great Kills Park is dominated by phragmites, with scattered thickets of shrubs and trees, particularly at Crookes Point. There is a small, disturbed forested area in the northwestern uplands near the park boundary. An unusual peat deposit occurs just offshore northeast of the Great Kills bathhouse.

Great Kills Park has several major areas that are good places to observe migrating birds and monarch butterflies. Crookes Point in particular provides cover and habitat for migrating as well as resident species. Miller Field contains a small swamp white-oak forest that is locally unique and valuable for environmental education. Back-beach areas at Oakwood/New Dorp and points along the beach north of Miller Field are also important habitats. These and other remaining natural features are a valuable component of the Staten Island environment.

Most portions of the Staten Island Unit have been previously developed, either as city parklands or as military sites. Great Kills, initially a salt marsh and later a landfill, was developed as a city park over 20 years ago and today offers a wide spectrum of recreational facilities along its beach, interior, and harbor. Fronting the beach are a concession stand and bathhouse complex with a full range of support facilities, including two paved parking lots. Access to this complex is along a main entrance road from Hylan Boulevard. The beach at Great Kills, particularly the portion directly in front of the bathhouse is quite narrow, largely as a result of the numerous groins and other man-made structures which slow sand movement from the north. No dune line is present in front of the facility. The area is also considered a potential overwash site during severe storms.

The harbor side of Great Kills/Crookes Point contains a small, concessioner-run boat marina with boat-launching and storage facilities, fuel stations, and a parking lot accessible from the Great Kills bathhouse facility. The Crookes Point interior east of this development has been heavily disturbed by random use, and unplanned dirt roads and trails crisscross the area. Rock jetties and groins extend along the inlet to the harbor, and the interior edge is bulkheaded.

Most of the upland area of Great Kills Park is also disturbed. Development in the interior consists of a minor road system, which provides secondary access from Hylan Boulevard to several interpretive trails, a model airplane area, and an athletic field and running track.

New Dorp and Oakwood Beaches, still owned by New York City, connect Great Kills and Miller Field. Together they contain over 1¼ miles of ocean beach and back-beach areas. Development consists of several dozen cottages and a church on lands leased from the city in the Cedar Grove section.

Miller Field, a former Army air base, is now the site of the Staten Island Unit headquarters and the recreational hub of the surrounding communities. Development occurs roughly in three areas. On a contiguous tract of land in the northwest corner of the field is the partially completed New Dorp High School, excluded from Gateway in the initial legislation. The southern portion of the field contains the large, old, recently stabilized airplane hangar and a concrete apron used as a parking lot. An intensively developed and extremely popular area of playing fields and courts lies between the hangar and the partially completed school. On the eastern edge, several single-family dwellings and a four-family apartment building provide housing for National Park Service personnel. A recently renovated military infirmary serves as offices for the unit's administrative and maintenance staffs.

The hangar at Miller Field, although heavily vandalized, is a prime example of a post-World War I military aircraft support facility and therefore a significant cultural resource. Work on the hangar this past spring has corrected many unsafe conditions and stabilized the structure.

The 2½-mile stretch of beach called South and Midland Beaches lies between Miller Field and Fort Wadsworth. Although not yet officially within the purview of the National Park Service, its development is important to overall recreational planning at this unit. Existing development is dominated by a wooden elevated structure (the Franklin D. Roosevelt Boardwalk) and an at-grade asphalt promenade, which together separate beach and back-beach areas. The boardwalk, a portion of which is deteriorating, begins at Fort Wadsworth and winds its way for a distance of 2,000 feet before meeting the 4,000-foot-long promenade. Along this spine are two major development nodes providing a variety of facilities, including comfort stations, bathhouses, and concession stands. The back area has parking lots, a variety of ball courts, field areas, and bus shelters.

The history of Fort Wadsworth as a strategic military site goes back before the revolutionary war, and the site contains several interesting examples of late 19th century military architecture. Development on the oceanfront of Fort Wadsworth consists of several old structures of major historic significance, including Battery Weed and a number of heavy gun emplacements. Battery Weed and Fort Tompkins, another important military structure in the complex, are listed on the National Register of Historic Places. Other facilities within the area are an ill-maintained dock and large open shed. In the main fort area (the section of Fort Wadsworth retained by the Army) numerous roads provide a well-established circulation system. Determinations about the significance and appropriate preservation of the historic structures and other features within Fort Wadsworth will await transfer of those lands and facilities from the Army. In recent meetings with representatives of the Army, the possibility of deactivation and turnover of the fort to the National Park Service in the near future was discussed. Fort Wadsworth remains closed to public use at present.

Hoffman and Swinburne Islands were constructed in the 1870s for use as quarantine stations, but their buildings are now disused and abandoned.

Present park uses in those portions of the Staten Island Unit that are open to the public follow patterns already well established when the National Park Service assumed management. The areas that are now administered by the Park Service--Great Kills and Miller Field--have witnessed increasing numbers of visitors in the years since 1972, but use patterns and activities have remained largely

the same. Because Great Kills is the only area along this segment of the Staten Island shore where the offshore waters are suitable for swimming, this and other water activities represent the primary use of the park. Areas surrounding and northwest of the Great Kills bathhouse are used for unstructured recreational pursuits like picnicking and exploring, and the portion of the park northeast of the bathhouse complex (adjacent to the peat outcrop) is visited by environmental education classes and groups. The community meeting room at the Great Kills bathhouse is very popular for meetings and other activities of local groups and for environmental education programs.

Beach use extends from the Great Kills bathhouse area down Crookes Neck, where a small concession facility has been established; densities are much lower on this portion of the beach. Crookes Point is a highly valued area for bird and butterfly observation and nature study. Fishing is also a popular pursuit. Boating takes place throughout the waters of Great Kills Harbor and the surrounding bay.

The small developed area in the upland core of Great Kills Park is used primarily for organized activities like model airplane flying and field games. A large portion of this core remains unused at the present time. Some nature study takes place.

The Oakwood/New Dorp portion of the Staten Island Unit, which is difficult to reach except by local residents, remains for the most part unused. Nearby residents go to the Oakwood/New Dorp beaches to sunbathe and enjoy other beach activities. Polluted waters in the vicinity prevent swimming.

Miller Field is heavily used by local residents for a variety of outdoor sports and other active recreational pursuits. The swamp white-oak forest is frequently visited by environmental education groups. Most visitors enter the field from New Dorp Lane, a residential street that connects with Hylan Boulevard west of the park boundary. Motorists generally park at the lot adjacent to the airplane hangar and walk to their destinations; many nearby residents come to the field on foot.

The majority of shore frontage at Midland and South Beaches is protected by New York City lifeguards, and a variety of activities take place there, although swimming, surfing, and other water-contact sports are not allowed because of pollution. A small central area of beach is not guarded at present. Both structured and unstructured activities occur in back-beach areas of Midland/South Beaches, including court and field games, surfing, strolling, and picnicking.

Most Staten Island areas are accessible along nearby community streets (Hylan and Father Capodanno Boulevards and connecting streets), and small parking lots are provided adjacent to these streets on the periphery of the park. Because of the linear nature of this Gateway unit and the proximity of the beach and related facilities, most visitors walk from these lots or from adjacent neighborhoods to their destinations within the park. Circulation within the unit, except for the Great Kills area, is largely by foot.

Use of the NPS-operated areas at Great Kills and Miller Field is currently limited by the fact that it is necessary to go through the frequently congested local street system to reach them. The total number of visitors at these two places in FY 1976 was 1.2 million. When all designated lands have been transferred and new access routes opened or established, visits to the unit should increase substantially.

## BREEZY POINT

The Breezy Point Unit of Gateway, which lies south of Jamaica Bay on the western end of the Rockaway peninsula, contains approximately 1,059 acres and 4½ miles of ocean beaches. Included in this unit are the popular Jacob Riis Park, transferred to Gateway from New York City, other lands in the central portion and at the tip of the peninsula that were previously acquired by the city and donated to the park, and most of the lands and facilities within the Fort Tilden military complex. (The parking lot at Riis Park, which currently belongs to the Triborough Bridge and Tunnel Authority, may be transferred to Gateway after the bonds associated with it have been repaid.) Two communities will remain as enclaves of single-family houses within the unit boundary--the Breezy Point Cooperative and the community of Roxbury (both represented by the administration of the Cooperative). The Army will retain a small property on the Fort Tilden grounds, and the Coast Guard an area on the bay side east of Roxbury. Total enclave and city right-of-way acreage is approximately 474 acres.

In accordance with the Gateway legislation, the National Park Service is to purchase an interest in the beach to the south of the Breezy Point Cooperative. This beach is currently used exclusively by community residents. Successful negotiation of the purchase will result in termination of the Department of the Interior's right to acquire any additional interest in the Cooperative's lands. Prior to negotiation, ownership of the accreted portion of the beach will be determined by the courts. Development controls may be established in a separate agreement between the Park Service and the Cooperative.

Making all or most of the Breezy Point peninsula into public parkland is an idea that goes back more than 50 years. The struggle of the tenants at Breezy Point to acquire their homes and of various public and private organizations to preserve the peninsula for public outdoor use is a long and complex story. One souvenir of that struggle--and its resolution--was the half-finished complex of high-rise buildings that stood abandoned just to the east of the Breezy Point Cooperative when Gateway was authorized. The complex, acquired by the city and transferred to the park, has been demolished by the Park Service in the last year.

Stanley B. Tankel, a leader in regional planning in the New York area, led the movement to halt construction of the high-rise complex on Breezy Point and to return the land to designated park use, although his untimely death prevented his seeing public use of the resource become a reality. In memory of his efforts, the Park Service will rename this portion of Breezy Point as Stanley B. Tankel Beach.

The vegetation of the undisturbed areas within the Breezy Point Unit is typical of barrier beaches in this region. At the western end--the Tip area--are some 200 acres of sand dunes, salt marshes, brackish marshes, and grasslands that are in a relatively undisturbed condition. The Fort Tilden area contains beachgrass dunes, grasslands, phragmites, high and low thickets, and coniferous and deciduous forests at higher elevations where the sand dunes have stabilized. Particularly fragile and/or significant natural features include the remaining primary dune systems at the Tip, Tankel Beach, and in front of Fort Tilden, the productive high and low salt marshes on the bay side of the Tip and north of the Tilden property, and the important forest complex within Fort Tilden, which contains a large percentage of conifer.

The sand has a tendency to move westward along the Rockaway peninsula, despite the groins and jetties that have been built to retard this process. This littoral drift is causing erosion of the beaches east and in front of the Tankel Beach area and accretion of the beaches in front of the Coop and at the Tip. Because of the peninsula's configuration and the location of major access routes, these wide beach areas are also in the least accessible locations.

There are four development nodes and a well-established road system in the Breezy Point Unit. Rockaway Beach Boulevard, the primary east-west circulation route, connects with the Marine Parkway Bridge which provides access to Brooklyn, and with Beach Channel Drive which serves the Rockaways and Queens. The major park attraction at the present time is Jacob Riis Park, located in the eastern part of the unit just south of the Marine Parkway Bridge. Riis Park was initially established by the city of New York in the 1930s. It features a mile of ocean beach and a

highly developed back-beach area. The beach, divided by wooden pilings and rock jetties into 14 bays, is equipped with 15 lifeguard stations. In the back-beach area is a concrete boardwalk extending the full length of the beach, with several conveniently placed concession stands. Centrally located is a prominent bathhouse, which provides shower and locker facilities and related support services. The bathhouse is flanked on both sides by paddle-tennis and handball courts, ballfields, and tot lots; the entry mall area houses a variety of food concessions, recreational open spaces, and shuffleboard facilities. Completing this intensely developed area is an 18-hole pitch-and-putt golf course. The entire Jacob Riis facility is considered a significant historic resource representative of public park development in this county.

The Fort Tilden site, a long-established Army post adjacent to Jacob Riis Park, possesses a mixture of quasi-natural areas and assorted military structures from several historic periods. A narrow, 1-mile-long beach stretches in front of the fort complex, backed by a narrow primary dune system. The western portion of the Fort Tilden area contains the best developed and least disturbed natural areas, as well as the majority of the deserted and deteriorating bunkers, missile sites, radar installations, and Army support structures; the latter features constitute a valuable historic resource for interpreting the nation's coastal defense system. The narrow eroding beach and the steep offshore slope in this area create hazardous conditions in adjacent waters, making them unsuitable for swimming and most other water-based activities. The eastern core contains few natural areas (a small deciduous forest community is located on the boundary with Riis Park) but has a large collection of structurally unsound facilities, including barracks, recreation buildings, a theater, and storage structures. Several brick residences, a duplex, two tennis courts, a basketball court, and a parade ground are also on the site. Existing beach facilities south of this core area were all previously abandoned and are now in varying stages of disrepair or temporary rehabilitation. A small developed 10-acre parcel on the bay side near the Marine Parkway Bridge is also part of Fort Tilden.

Two private beach clubs, one on either side of the Breezy Point Cooperative, were inherited by the Park Service when Gateway was established. They are now operating under a year-to-year renewable permit--until the plan is implemented--and must advertise for members and admit anyone who wishes to join. The Silver Gull Beach Club, which occupies a portion of the shorefront lands at Tankel beach, offers a variety of recreational facilities for its members. Development consists of a core structure (restaurant and bar, two cabana units, three swimming pools, and an assortment of tennis, basketball, paddle tennis, and volleyball courts) and a large parking lot. A secondary road provides access from Rockaway Beach Boulevard. Before this year's demolition, the nearby

high-rise area consisted of several abandoned structures, including two 16-story, four 8-story, three 2-story, and shopping center skeletons.

The Tankel Beach area is widely disturbed, although a small primary dune system and some grasslands remain to the west of the developed sites. The shoreline is severely eroded (virtually no beach is left directly in front of the Silver Gull facility), and there is continuing undercutting of that shoreline by tides and littoral currents. The site has high potential for overwash.

A site near the beach at the Breezy Point Tip is now occupied by the Breezy Point Surf Club, the second private complex operating under permit from the National Park Service. The club provides various recreational services for members. Its development consists of a core area with a cafeteria, restaurant, bar, two swimming pools, field and court areas, and a surrounding trail system, which extends to the beach and jetty to provide access for fishing and surfing. A parking lot is just north of the development.

Natural features in the vicinity of the club complex include the well-developed primary dune system to the west and the important high/low salt marsh association on the bay side north of the site. The beach in front of the primary dunes provides important habitat for nesting terns. No dunes remain directly in front of the development. The beach in this area is gradually accreting.

The lands and facilities at Breezy Point Tip are accessible only along Rockaway Beach Boulevard through the Cooperative. An off-road vehicle path extends from the surf club to the jetty area at the Tip.

Most lands at Breezy Point still remain in other than public park uses, generally under permit from the National Park Service. Only the popular Jacob Riis Park and adjacent areas of Fort Tilden are now heavily used by the public for recreation. Riis Park is primarily a beach facility, although structured recreational activities such as court and field games take place. Picnicking is also popular at sites more distant from the beach. Fort Tilden receives much less public use at present. The beach and back-beach areas adjacent to the Jacob Riis facility, which were recently opened to the public (lifeguards and support facilities provided), have the largest number of visitors. The core area of Fort Tilden is the site of the Breezy Point Unit headquarters, and the brick residences and duplex there provide housing for National Park Service personnel. A maintenance facility is located farther west. The tennis courts, basketball court, and parade ground that partially encircle the residential complex are now available as an open-space facility, but receive only minimal use. Almost half of the western portion of the Fort Tilden site is currently retained for use by the

Army. The remainder of the upland area receives some use by environmental education groups. The beach in this western segment is a very popular spot for surf-fishing.

A small area of beach west of the Silver Gull was opened to the public in the summer of 1976, with access from Rockaway Beach Boulevard along an unpaved road to a small parking area. This beach has to date received few visits.

Little activity takes place in the rest of the unit. Environmental education programs are provided on the bay side east of the Cooperative, but other lands north of Rockaway Beach Boulevard are unused. Public access to the western portion of the Breezy Point Tip is difficult at present, and few people visit this area. A limited number of individuals obtain permits to use the beach at the Tip for surf-fishing and nature study.

Circulation within Breezy Point is along Rockaway Beach Boulevard and several pedestrian access routes. Because Riis Park receives by far the heaviest use at the present time, most automobile and bus traffic is directed from the Marine Parkway Bridge and residential streets in the Rockaways to the TBTA parking facility there. Buses also discharge passengers just west of the bridge, and these people walk to their destinations along a paved access road that dead-ends at the beach.

There were 3.4 million visitors to the Breezy Point Unit in FY 1976. On the most heavily used day, use reached 90,000 people, or about 36,000 people on the beach at one time. The Breezy Point beaches could accommodate twice these numbers in an environmentally acceptable manner if a suitable transportation system could be created. Something like 15 percent of the beach users at Riis Park today arrive by public transportation, the highest percentage of mass transit users in any part of Gateway. Neverthless, automobile traffic is very close to saturation levels on heavy-use summer weekend days, and any increases in total annual use will have to come from measures that permit additional summer weekday and year-round visits or from improvements in transportation access, such as the provision of ferry boats.

## JAMAICA BAY

The Jamaica Bay Unit encompasses about 4,450 acres of land and marshland in and near Jamaica Bay. For the purposes of planning, this unit has been further subdivided as follows.

Floyd Bennett Field/Plumb Beach/Bergen Beach

This area contains some 1,448 acres of open space and facilities at the former naval air base on Floyd Bennett Field (the present park headquarters site), as well as the nearby shorelands at Dead Horse Bay, Plumb Beach, and Bergen Beach. The Coast Guard, Navy Reserve, NARDET, and Triborough Bridge and Tunnel Authority maintain excluded properties at Floyd Bennett Field. Total acreage of these lands is about 82 acres. In addition, an avigational easement for the Coast Guard base landing strip extends across the central section of the field.

Few significant natural features have been identified at Floyd Bennett Field. Most of it was created by landfill, and the open portions that have not been cleared and flattened are dominated by stands of phragmites. Mixed grasslands and low shrub thickets are also present and provide habitat for several kinds of game birds. Most of the periphery is bulkheaded, although there is a narrow strip of low salt marsh connecting to the waters of Jamaica Bay. In a few areas, wetlands are developing on the outboard side of the bulkhead because of the accretion of sand.

The Dead Horse Bay area west of Flatbush Avenue and Floyd Bennett Field contains vegetation similar to that at Floyd Bennett (it too was created by landfill); however, the area is in a more natural state, the growth is more luxuriant, and the peripheral area is "soft," not bulkheaded. Plumb Beach, west of Dead Horse Bay, contains an extensive tidal mud flat, a low salt-marsh area, a narrow sand beach, a dune complex stabilized by beach grass, a small tidal lagoon, and several scattered woodland thickets. Bergen Beach, on the other side of Floyd Bennett Field, exhibits similar vegetation. The developing low salt marshes in all these areas are considered significant natural resources.

Development at Floyd Bennett Field is extensive. Historically a civil aviation facility, it is dominated by construction and man-altered landscapes. The extensive fill activities in the past century have connected Barren Island and smaller tidelands in Jamaica Bay to the main portion of the field, and years of development and use have drastically modified its character.

The portion of Floyd Bennett that has been transferred to the National Park Service features a concrete runway grid, six large hangar complexes, and numerous administrative and air-base support facilities. Included in the building inventory of this area are brick and wood-frame dormitory structures; recreation buildings; steam, sewage, and cold-storage plants; gasoline and jet fuel tanks; power generators; water towers; and garages and maintenance shops. Major development, situated to support the air base, consists of the partially abandoned military structures and

the grid of massive concrete runways that dominate three loosely related clusters of facilities around the periphery.

Fronting Flatbush Avenue, the primary access route, is cluster 1--the city-built hangar complex called Hangar Row. An abandoned administration building and control tower are part of this cluster. Directly across the field lies cluster 2, another hangar complex with outlying buildings. This area houses the Coast Guard helicopter base, ancillary housing units, recreation fields, gasoline storage, and one runway that extends to the center of the field. In the same general area is the Naval Reserve center, which includes another hangar. A third complex here includes a concrete warehouse, maintenance shops, the remaining hangar, and the unit's largest concrete aprons. The portion of the field encompassing Hangar Row and extending to the facilities on the eastern periphery is considered a significant historic area for interpretation of Floyd Bennett Field's importance in civil aviation.

Cluster 3 is situated along the eastern edge of the field fronting Jamaica Bay. Included here are World War II base facilities, all of which are in varying stages of decay. Three trailer villages, an Armed Forces Reserve center, and three renovated structures are the extent of new development in this area.

Strategically fronting on Flatbush Avenue midway between the Belt Parkway and the Marine Parkway Bridge, Dead Horse Bay includes two facilities providing recreational services. Developed by private interests under New York City concession permits prior to Gateway establishment, the facilities are a marina, tennis courts, and a golf driving range. Plumb Beach includes a small building which houses maintenance/storage functions and public toilets, and an adjacent parking lot. Bergen Beach has one riding academy built under concession permit during the city's ownership, including an inside ring, stables, training corral, and parking lot.

Although open to the public on a limited basis, Floyd Bennett Field receives little recreational use at present. Special events, activities on permit, and environmental education programs comprise the majority of use. Hangar Row and the old administration building and control tower are deteriorated and rarely used, except for one hangar complex that is under temporary permit to the New York Police Department Aviation and Emergency Service unit and another that is available for special park programs in the summer. The large concrete warehouse, maintenance shops, hangar, and concrete aprons in cluster 2 (including a seaplane ramp) are used by the Park Service and the General Services Administration as a vehicle storage area and by the Department of Labor as a Job Corps center. One of the trailer villages in cluster 3 houses Park Service employees, the majority of whom are a contingent of U.S. Park Police on rotating assignments. Renovated structures in this area

serve as headquarters for Gateway National Recreation Area, the Jamaica Bay Unit, and the U.S. Park Police. The Youth Conservation Corps and Young Adult Conservation Corps also have facilities there. A gym in the vicinity is available for recreational use by the general public on permit.

The previously established golf, tennis, and marina facilities at Dead Horse Bay remain popular attractions. The tidal wetlands along the southern periphery of this bay are visited by environmental education classes and groups. The lands at Plumb Beach receive a good deal of unstructured use (picnicking, strolling, sunbathing) by nearby residents and by motorists who exit the Belt Parkway at small pullouts and walk into the site. The bay beach here is popular, although swimming is not permitted because of polluted conditions in the waters of Rockaway Inlet. The Bergen Beach riding academy is a heavily used facility. Other unstructured use occurs on lands near the Belt Parkway, in a similar pattern to that at Plumb Beach.

There are no roads within the Dead Horse Bay, Plumb Beach, and Bergen Beach segments of the Floyd Bennett Field area. Access to Dead Horse Bay is directly from Flatbush Avenue, to Plumb and Bergen Beaches directly from the Belt Parkway. Access to Floyd Bennett Field is also from Flatbush Avenue via an entrance at the southern end of the field. An established roadway runs from here past the headquarters site and then turns north, paralleling the eastern edge of the field and continuing into the northernmost portion.

The access route for Floyd Bennett Field also services the great majority of visitors to Breezy Point. Use at the field is currently negligible, but future development must be planned to avoid drawing large numbers of people during periods of heavy beach use and hence higher traffic volumes on Flatbush Avenue. Parking places at Floyd Bennett Field, and National Park Service shuttle vehicles running between the field and Breezy Point, would relieve some of the traffic congestion on the Marine Parkway Bridge and reduce the need for weekend parking on Breezy Point itself.

North Shore

Gateway lands along the north shore of Jamaica Bay, totaling 702 acres, include the existing developed parks at Canarsie Pier and Frank Charles and Hamilton Beach Parks, the undeveloped lands at Spring Creek Park, and the active landfill sites at Pennsylvania and Fountain Avenues. With the exception of the landfills, whose transfer carried a deed restriction designating their continued exclusive use for fill operations until the mid-1980s, all these lands, previously owned by New York City, have been turned over to the National Park Service.

Most lands on the northern border of Jamaica Bay were historically well-developed marsh areas. Seven inlets, which are the remains of this marsh system, have been narrowed by fill activity, and the bay is now bordered by mud flats backed by narrow bands of salt marsh. These salt marshes are considered significant natural resources deserving of protection. Much of the rest of the "natural" portion of the north shore is covered with extensive stands of phragmites and grasslands with scattered thickets of shrubs and trees.

Development at Canarsie Pier includes the pier itself, a large parking lot, a promenade, a structure housing maintenance and storage functions, a concession stand, and public toilets. The area surrounding the pier is maintained in grass, with salt marshes extending along the bay fringe on both sides. In addition, a bicycle path--in a state of disrepair and often used as a parking strip--runs parallel to the Belt Parkway between Canarsie Pier and Flatbush Avenue just outside the Gateway boundary on New York City land.

Frank Charles and Hamilton Beach Parks include maintained areas bordered by fringe salt marshes. Facilities include playgrounds, ballfields, tennis courts, and picnic grounds.

The Spring Creek Park area has no significant development at the present time. The site contains an extensive marsh system dominated almost exclusively by phragmites. The two active city-run landfills, situated between the Belt Parkway and the waters of Jamaica Bay, also have little development beyond temporary roads and a small pier. The landfills are generally made up of large barren fill areas surrounded by patches of phragmites, grassland, and emerging low salt marshes.

Only the developed parklands at Canarsie Pier and Frank Charles and Hamilton Beach Parks are now open for public park use. To date, these areas primarily serve the recreational needs of nearby community residents. Canarsie is a very popular facility for a wide variety of unstructured recreational pursuits. Cardplaying, barbecuing, impromptu music by amateur musicians, frisbee games, fishing, biking, wading, kite flying, and ball games such as volleyball all take place on a warm summer Sunday. Over the years, users of Canarsie Pier have clearly defined their space and activity needs. Frank Charles and Hamilton Beach are less intensively used for tennis, other court and field games, picnicking, and sunbathing.

Present circulation within the north shore sites is limited to short-distance access roads, most unpaved. Access to Canarsie and the landfills is from the Belt Parkway, to Spring Creek from Cross Bay Boulevard, and to Frank Charles and Hamilton Beach from Cross Bay Boulevard and connecting residential streets.

An estimated 1 million people visited the north shore facilities that were open for public park use in FY 1976.

Wildlife Refuge

This Gateway area includes the lands, marshlands, and other habitats of the Jamaica Bay Wildlife Refuge as well as some of the other islands in Jamaica Bay. Total acreage is 2,474 acres, of which 174 are in two inland ponds in the wildlife refuge. All these lands are currently administered by the National Park Service. Another 361 acres include the city rights-of-way along Cross Bay Boulevard and the enclave community of Broad Channel, which lies just south of the wildlife refuge.

The wildlife refuge includes uplands and low-lying islands surrounded by saltwater, freshwater, and brackish impoundments. The two artificially created ponds, the brackish East Pond and the freshwater West Pond, increase the variety of habitats available to the over 300 bird species residing in or migrating through the refuge. Because the area is on the Atlantic Flyway, a geographic course birds customarily follow between breeding and wintering sites, its management as a wildlife refuge has proved beneficial to a great variety of waterfowl and shorebirds.

The coastal shoals, bars, and mud flats in Jamaica Bay provide habitat for a number of invertebrates and birds. Extensive Spartina salt marshes surround most of the islands and land masses in and around the bay. Among the hundreds of bird species utilizing the salt marshes are the glossy ibis, great blue heron, snowy egret, marsh hawk, clapper rail, eastern kingbird, and a variety of gulls.

Grassland and woodland/thicket communities are found at higher elevations that are not affected by the tide. The refuge management has selectively introduced a number of upland trees and shrubs to improve food and cover for birds.

Nesting sites for common terns, herring gulls, snowy and cattle egrets, and great black-backed gulls are commonly observed at Jamaica Bay. A large population of cottontail rabbits has become established at the refuge, possibly threatening some of the planted trees and shrub species.

The core of the Jamaica Bay Wildlife Refuge development, and its operational headquarters, is situated in the approximate center of the bay and is accessible only from Cross Bay Boulevard. East and West Ponds are the focal points of the refuge. Development consists of a single structure serving a myriad of functions (administration, maintenance, interpretation, visitor center), a

parking lot fronting the structure, and one primary 2-mile-long loop trail encircling West Pond. A few lesser trails provide access to East Pond and to landscaped open spaces along the east side of the boulevard.

A small concession area just south of North Channel Bridge services fishermen who use the bridge.

Present recreational uses of the wildlife refuge are limited to the visitor center/West Pond vicinity and the larger islands (Canarsie Pol, Ruffle Bar, and Little Egg Marsh), which are visited by fishermen and picnickers in boats. Fishing is also popular along and at the south end of North Channel Bridge. The remainder of the wildlife refuge core is under protected status or is available for nature study on a permit basis. Most of the other Jamaica Bay islands are used for fishing, clamming, and baiting.

Cross Bay Boulevard provides circulation through this segment of the park. There is a small entrance road into the visitor center at the wildlife refuge.

Approximately 50,000 people visited the wildlife refuge in FY 1976. Numbers of people using the outer islands, the waters, and the North Channel Bridge area for recreational fishing and other activities cannot be accurately determined.

# FACTORS THAT INFLUENCED PLANNING

The Gateway plan has been shaped by a number of critical factors. The original federal enabling legislation and the New York State legislation concerning Gateway have established the basic framework for planning, as have other relevant laws and policies and the park's management objectives. Data gathered during early inventories and research efforts has permitted identification and analysis of the significant regional and within-park influences, all of which have been reflected in plan development. Finally, the extensive public involvement process, a process still ongoing as part of Gateway planning, has contributed valuable ideas, opinions, and viewpoints about what the park should be.

## LAWS AND POLICIES

Gateway's enabling legislation (Public Law 92-592; 85 Stat. 1308) includes several provisions that have influenced park planning. A copy of the law is appended, and only the most pertinent sections are outlined here:

> The law states that public lands within Gateway's boundary may be acquired by donation only. Some of these lands have yet to be donated.
>
> The Secretary of the Interior is required to obtain interest in lands within the Breezy Point Unit, in order to ensure public access to and recreational use of the entire beach there. The Secretary and representatives of the Breezy Point Cooperative may reach an agreement that will provide for the preservation and proper maintenance of the single-family homes in the Cooperative. When an agreement is reached, the land where the homes stand will no longer be subject to acquisition.
>
> As stipulated by the law, the Secretary has accepted title (on March 1, 1974) to the New York City landfills on the north shore of Jamaica Bay, but the city retains the right to continue landfill operations. The deed states that New York City operations at the Fountain Avenue site will cease on December 31, 1980, and at the Pennsylvania Avenue site on December 31, 1985.
>
> The primary management objective for the Jamaica Bay Wildlife Refuge must be the preservation of its natural values, and all uses of the refuge must reflect this objective.

All navigational projects carried out within the park boundaries by the Corps of Engineers must be mutually acceptable to the Secretary of the Interior and the Secretary of the Army and must be consistent with existing laws concerning resource development.

The operation and maintenance of existing airway facilities in and near the park must be accomplished in ways acceptable to the Secreatry of the Interior and the Secretary of Transportation and must be consistent with existing laws concerning airway facilities. The Gateway law does not authorize the expansion of airport runways into Jamaica Bay or air facilities at Floyd Bennett Field.

Hunting and fishing may be allowed in accordance with regulations established by the Secretary of the Interior, who is also authorized to forbid these activities where or when they might conflict with other legitimate park uses or purposes.

The Secretary is required to inventory all cultural resources within the park, including prehistoric and historic archaeological sites and historic structures and other features, and to provide appropriate treatment and interpretation.

In recognition of the contributions of Congressman William Fitts Ryan in the establishment of Gateway National Recreation Area, the legislation states that the main visitor center is to be named after him.

Other relevant federal laws include the National Park Service Organic Act, which established the National Park Service in 1916; the National Historic Preservation Act of 1966, which requires that every federal agency--before it authorizes expenditure of funds for a project--"take into account the effect of the undertaking of any district, site, building, structure, or object that is included in the National Register [of Historic Places]"; the National Environmental Policy Act of 1969, which establishes the policies, general procedures, and goals for objective consideration of the environment in federal agency decision making, including the preparation of environmental statements on all major federal actions having a significant impact on that environment; the Coastal Zone Management Act of 1972 and the Estuarine Areas Act, which affirm that it is national policy to preserve, protect, develop, and--where possible--restore and enhance the coastal zone of the United States and the estuaries within this zone; the Endangered Species Act, Marine Mammals Protection Act, and Migratory Bird Treaty Act, which provide policy guidelines for the development of wildlife management programs; the Marine Protection, Research, and Sanctuaries Act of 1972 (also known as the Ocean Dumping Act), which mandates cessation of ocean dumping of sewage by December 13, 1981; the Airports Act, which states that airports situated in

parks can be established, enlarged, or improved only "when such airports are determined by the Secretary of the Interior to be necessary to the proper performance of the functions of the Department . . ."; and the Concessions Policy Act of 1965, which governs policy and acceptable procedure for park concessions.

In addition to these previously established federal laws, the recently enacted Chattahoochee River National Recreation Area Act has affected Gateway's transportation policy concerning off-park improvements--at least in the short run. Under Title III of this act (Public Law 95-344), the National Park Service has been granted legal authority to provide for off-park public access to units of the National Park System. The act authorizes a three-year pilot program for access improvements, with increasing allotments of $1 million, $2 million, and $3 million per year for the program's duration. This authority extends for only three years, at the end of which Congress will determine whether the program should be extended or terminated. Gateway proposals under this authority will be based on the policies discussed in the "Transportation" subsection of the plan's "Parkwide Policies and Proposals" and may include extensions or other improvements to existing public-transit systems and establishment of small pilot systems, such as limited ferry service, to permit additional access. The exact nature of those proposals will be the subject of a planning effort--separate from the proposed parkwide transportation study--which will involve public review and comment. Preliminary public meetings on transportation proposals for the first year of the three-year program were held this past spring.

Several provisions of the New York State legislation concerning Gateway (Chapter 759 of Laws of 1973, as amended) have served as influences on Gateway planning. The first section, which authorizes the city to transfer lands to Gateway, excludes from that authorization the areas on Staten Island's shoreline known as South, Midland, and Oakwood Beaches. The fact that the Park Service does not yet have jurisdiction or control over a continuous strip of parkland there has affected short-term recreation plans for this area.

The New York law prohibits the construction of airports, jetports, and related facilities on the lands conveyed to Gateway, thus reinforcing federal legislation on this subject.

## REGIONAL INFLUENCES

The primary external factors influencing the Gateway plan include regional socioeconomics and population distribution, existing transportation systems, pollution and ecosystem stress, and interagency coordination. These and related influences have been

assessed and reflected in the development of management and use proposals for the park.

The region that Gateway serves--the most compressed and heterogeneous urban landscape in the nation--exerts powerful demographic, political, and psychological forces on the national recreation area. Stretching across three states, encompassing 22 counties and at least 550 municipalities, this region ranks among the world's foremost business and cultural centers. However, in spite of the grandeur and magnetism of New York City and its surrounding region, local governments must deal with serious social and financial problems, including the need for recreation.

Public recreational facilities in this region--which according to Bureau of Outdoor Recreation (now the Heritage Conservation and Recreation Service) acreage standards have never been adequate to meet the requirements of the citizenry--have suffered additional losses in recent decades. Since 1970 all county and municipal governments in the region have been forced to reduce their operating budgets for public recreation, and today most counties fall well below the standard of 18 acres of recreational open space per 100 people.

These facts alone indicate the region's obvious need for a recreational resource such as Gateway--a need that is perhaps the single most important influence on management and planning. However, in planning for a park that will truly serve the public--including the 22 million residents of this region--other concerns surface that must be resolved to ensure long-term success.

## Population Distribution and Transportation Problems

The communities near Gateway tend to be made up of lower density, single-family homes and apartments, which house more affluent residents. The more densely settled communities, whose blue-collar, poor, and ethnic and racial minority residents have perhaps the greatest need for open space and recreational facilities, are clustered some distance from the park in and around Manhattan, Queens, the Bronx, Brooklyn, Newark, Elizabeth, and Bayonne. At present, the residents of these inner-city communities must spend the better part of a day, as well as significant amounts of money, to reach Gateway. For example, a resident of New Jersey's Atlantic Highlands, where the mean 1970 income was over $12,000, can walk to the beach at Sandy Hook at no cost; a resident of central Newark, where the mean 1970 income was less than $7,000, must spend a minimum of $4.00 for round-trip transportation to Sandy Hook.

Studies indicate that less affluent citizens from the core communities do come to Gateway to swim, to picnic, or to fish along its beaches. The implications of these studies have a definite bearing on immediate planning for Gateway: Transportation and Outreach programs must be an integral part of the plan.

The Jamaica Bay Wildlife Refuge and Hamilton Beach are the only areas of Gateway served by direct mass transit. There are no direct rail lines or connections to Floyd Bennett Field, Breezy Point, Great Kills, or Sandy Hook. Buses do serve Gateway's units, but--with the possible exception of local lines on Staten Island--the routes and schedules are so poor that this service does not begin to provide an alternative to the private automobile.

Private autos account for slightly over 90 percent of the trips to Gateway. Although this pattern is common throughout the National Park System, it is not a viable planning solution at Gateway, because fully one-third of the households (over 1.6 million in the region) do not include automobiles.

Access to Gateway almost exclusively by private automobile does more than promote unequal opportunities for use. Severe congestion, particularly at the entrance to Sandy Hook, on the Belt Parkway, on Flatbush Avenue, and on the Marine Parkway Bridge, raises other critical problems: decreases in the quality of visitor experiences, increases in local levels of air pollution, discouragement of other forms of access and circulation (bus, bicycle, pedestrian), and crowding in adjacent communities caused by automobiles destined for Gateway's beaches.

Much can be done to alleviate this congestion and to facilitate use at Gateway's beach areas on summer weekdays and in the off-season, as well as on heavy-use summer weekends, by expanding public-transit service from nearby mass-transit stops and providing special express buses and trains. Additional existing-fare bus routes, programmed bus outings from core neighborhoods, and institutional bus transit will also be supported and encouraged wherever possible.

## Pollution and Ecosystem Stress

Although the New York/New Jersey metropolitan area still ranks among the nation's most polluted air corridors, atmospheric pollution levels in the region have significantly decreased since bans on general waste incineration and uncontrolled emission of air pollutants were established. Nonetheless, air pollution must be considered an influence on management and planning at Gateway.

Water pollution caused by sewage effluent discharge is a serious constraint on the immediate development of water-based facilities at the park. Only the ocean sides of Sandy Hook and Breezy Point and the beaches south of Great Kills on Staten Island are currently safe for swimming. The major sewage effluent treatment plant that is planned for 150th Steet in Manhattan will improve water quality in the entire lower harbor, but even this facility will not eliminate unsafe pollution levels near Gateway's beaches.

The New York and New Jersey communities near Gateway at present have combined sewers--that is, sewers with no separation of sanitary waste and storm water. Heavy rains activate automatic bypasses in these sewers that rechannel raw sewage directly into the harbor. However, the Interstate Sanitation Commission reports that innovative holding systems are scheduled for the sewers of Jamaica Bay and other areas in the region, which will result in significant improvements in the quality of water surrounding Gateway.

Another possible source of water pollution within Gateway is the leachate from the Fountain Avenue landfill. The park is currently studying the problem and will work with New York City to resolve it if studies show that significant levels of pollutants are entering the bay from this source.

The recent water pollution control proposals developed as part of coastal zone management planning and section 208 studies are extremely important to the success of Gateway. The New York City 208 study proposes to upgrade all Gateway waters, including those in Jamaica Bay, to a level suitable for swimming, and in many areas for shellfishing, by the end of the century. This will be accomplished through the expansion and improvement of numerous sewage treatment facilities and the establishment of policies that will more fully protect the region's waters from other sources of contaminants. The National Park Service will continue to review proposals set forth in regional coastal zone management and 208 programs, evaluating their relationship to Gateway plans, assessing possible impacts, and helping to ensure coordinated water quality management in the region.

The ocean dumping of sewage effluent and solid waste has also contributed to lowered regional water quality up to the present time. The cessation of this activity by 1981, as mandated in the Ocean Dumping Act of 1972, should aid in substantially improving water quality in the future.

## Agency Coordination

In addition to the more than 550 municipal governments in the region, there are at least 900 separate operating and planning agencies. Unfortunately, nowhere does there exist a single agency with full authority to coordinate programs affecting the entire region. Several prominent organizations and agencies have indicated a real interest in Gateway's growth and development and in coordinating efforts for future planning in the region. Clearly, managers at Gateway must continue to open channels for communications with these and other agencies, universities, volunteer organizations, and community groups, and with all individuals who can provide the foresight and energy that will result in administrative innovations and, hence, in the future success of the park.

Numerous projects involving other agencies but requiring coordination with Gateway planning are either underway, in the planning stages, or being proposed. These include hurricane protection projects by the Corps of Engineers on Staten Island and within Jamaica Bay; air quality improvements by the U.S. Environmental Protection Agency; water quality improvements involving the New York City Department of Environmental Protection and New Jersey Department of Environmental Protection; regional recreation improvements involving New York and New Jersey recreation and parks departments, the Tri-State Regional Planning Commission, and various municipal parks departments; and access improvements, which involve a host of agencies on the municipal, state, and federal levels. Every effort will be made to review and coordinate these projects with Gateway plans.

# WITHIN-PARK INFLUENCES

The most critical within-park influences affecting planning are the existing environment, including the particularly valuable or sensitive natural resources that have been identified and the many historic structures and features on site, and the established patterns of visitor use in the various parts of Gateway.

## Natural Resources

The land and water areas of Gateway have been studied in detail by a team of environmental analysts, and maps have been prepared describing all the park's natural resources as well as any critical ecological systems and natural processes that have been identified. The results of these studies are summarized in the Final Environmental Statement accompanying this plan. The analysis process has permitted the zoning of Gateway's lands according to

their sensitivity to public use and development. Areas where public access will create adverse environmental impacts have been identified and appropriately zoned, as have areas where intensive public use is not a problem and other areas that fall along a gradient between these two extremes. The management zoning scheme for the park and its application in specific park areas is described in the "Management Zoning" and unit plan sections of "The Plan." In addition, the techniques recommended to manage specific aspects of the natural environment are discussed in the "Natural Resources Management" section.

## Historic Resources

All plans developed for Gateway must be compatible with preservation of significant cultural resources as well as sensitive natural environments. To this end, known structures and other historic features within the park have been fully inventoried, and their physical soundness and historical importance assessed. Based on this assessment, certain areas and buildings have been designated as deserving of special attention in planning, have been designated as historic districts (reflected in the overall management zoning scheme), and have been nominated to the National Register of Historic Places. These sites and the management techniques to be applied to them are discussed in the various sections of "The Plan" that pertain to cultural resources management.

## Present Park Use

One of the primary influences on Gateway management is the use the park already receives. Even at their present level of development, the beaches and parklands within the boundary constitute some of the most heavily used recreational facilities in the nation. The number of visitors to Gateway during its first two years of operation is an impressive indicator of the park's potential as a recreational resource. In FY 1974-75 approximately 5.1 million people came to the park; in FY 1975-76 an estimated 7.8 million visitors came to Gateway. Since the state park lands at Sandy Hook were transferred, attendance has increased by almost 200 percent, and now exceeds 2 million annually--a fact partially attributable to the removal of the admission fee there. The beaches at Great Kills/Crookes Neck are the only safe swimming areas on the Staten Island shoreline at present and therefore play an important role in water-based recreation for residents of Staten Island. Riis Park annually hosts more than 2 million visitors--on less than 1½ miles of beach; on peak weekend days as many as 90,000 visitors crowd the shore there. Jamaica Bay, a prime birding and fishing area, includes several extremely popular recreational sites--Plumb Beach, Bergen Beach, Canarsie Pier, and North Channel

Bridge--which are heavily used by residents of the densely populated neighborhoods of Canarsie, Flatbush, East New York, and Ozone Park.

Visitor-use patterns in those areas of Gateway previously operated by the New York City parks department and the New Jersey state park system are based on well-established spatial relationships which indicate mutual respect for differing lifestyles, ethnic preferences, racial mixing, and social grouping. These relationships are particularly apparent in high-density use areas such as Riis Park and Canarsie Pier. Such traditional recreational patterns exert a powerful influence on management and planning at Gateway, and any required expansion or relocation of facilities and activities must be sensitively dealt with to ensure that harmony continues.

Other Within-Park Influences

The several landowners who continue nonrecreational uses and/or retain exclusive jurisdiction on lands within the Gateway boundary are a major influence on park planning and management. These include the military and Coast Guard at Fort Tilden, Floyd Bennett Field, Fort Hancock, and Fort Wadsworth, the residents of enclave communities on Breezy Point and at Broad Channel, and the city of New York at Staten Island and along the north shore of Jamaica Bay. Some of the lands retained by other owners are due for transfer to the Park Service in the near future, which will effectively eliminate the current restrictions on recreational use; however, the timing of conveyance will be critical in the phasing of plan development and implementation and the opening of areas for public use. The areas to remain as enclaves within the park will require careful park management and coordination in order to reduce the potential for conflicts between the public and other landowners. The possibility for cooperative programs and management activities will also be explored.

A geographical factor affecting park management is the wide separation of Gateway's units, which makes both internal circulation and effective operation and maintenance more difficult to achieve.

The most complex long-range resource management issue at Gateway is how to maintain the beaches, many of which are currently starved for sand because of the groins, jetties, and other barriers constructed on nearby shorelands. Sand nourishment--necessary to maintain the beaches at Sandy Hook and the integrity of the peninsula itself--is a method that must be repeated almost yearly.

## PUBLIC INVOLVEMENT

The Gateway planning process has included a substantial public involvement mechanism that has made an important contribution to the plan. The official advisory body, established by the enabling legislation, is the eleven-member Gateway Advisory Commission comprising two members nominated by the governor of New Jersey, two by the governor of New York, two by the mayor of New York City, two by the mayor of Newark, and three at-large appointees by the Secretary of the Interior. The advisory commission has held regularly scheduled public meetings during the preparation of the plan and associated review and evaluation periods. These meetings have all been open to the public.

A primary objective of National Park Service planning at Gateway has been to involve the public as individuals as well as through public interest groups and organizations at the earliest possible stage in the planning process and, in all cases, before planning decisions have been made. From September 1975 to February 1976, the Gateway planning team conducted the first phase of its public involvement program, which was to acquaint the region's population with the planning issues at Gateway. Community opinion leaders were initially identified by contacting the offices of borough presidents, mayor's offices of community planning in New York, and city, county, and municipal agencies in New Jersey. Telephone calls and mail-back response cards, which led to a master mailing list, were used to enlist group and organization leaders in setting up more than 500 informal interviews and meetings. Brochures and slide shows were used to show the park's existing facilities and recreational possibilities. These personal contacts led to additional interviews with people who might be interested in Gateway planning issues.

The first phase of Gateway public involvement included six public workshops held in October 1975, one at each Gateway unit, one in Manhattan, and one in Newark. About 400 people attended the meetings; a greater turnout had been hoped for, but the number was sufficient to give the Park Service a representative sample of opinion and comment. The most commonly voiced requests and opinions tended to cluster around desires for 1) environmental preservation, 2) large-scale recreational developments, and 3) the types of facilities and programs that would encourage local use by meeting local recreation needs. The total distribution of opinion is shown in the following table.

Categories of Opinion Expressed at Gateway Workshops, October 1975

| Category of Concern | Frequency | % of Total |
|---|---|---|
| Environmental Preservation | 37 | 20 |
| Recreational Development | 41 | 22 |
| Local Uses | 49 | 26 |
| Improved Transit | 24 | 13 |
| Cultural and Historical Programs | 10 | 5 |
| Other | 27 | 14 |
| Totals | 188 | 100 |

This distribution reveals the general strength of values and diversity of ideas the public holds for Gateway, although the sample is not adequate to permit extrapolation to the entire population that the park is intended to serve. The speakers whose views were reported generally represented large constituencies and expressed general expectations for the park. These expectations were incorporated into planning alternatives, as were many of the specific suggestions voiced to the team after January 1975. In April 1976 an Environmental Assessment presenting three planning alternatives that reflected the major values and opinions expressed during the public involvement process was released for public review.

The second phase of public involvement at Gateway began in February 1976 and extended to May 15. Informal public meetings were held to present the planning alternatives to citizens and community leaders with expertise in planning as well as valuable knowledge of the needs and expectations of their constituencies. These meetings provided essential information for the assessment of alternatives. Public reaction to the document primarily concerned the concept of "alternative" policies (whose presentation is mandated by Park Service policy). The public's reactions clearly illustrated that a balanced combination of the alternative proposals was desired as a conceptual framework for the park. It was felt that intensifying public use throughout the park (alternative A) would be unnecessarily destructive to the natural environment and unrealistic because the transportation network could not support it. A plan that put its major emphasis on conservation alone (alternative B) would not adequately serve regional residents who have the greatest need for additional outdoor recreational opportunities. Finally, a plan that emphasized local determination (alternative C) represented a "cop-out" on the part of the Park Service and would result in Gateway not being developed to its full potential. This public opinion guided the development of a plan that synthesized the alternatives, providing for intensive use,

conservation, and predominantly local use where each was most approprate.

Following full public review of the planning alternatives in the Environmental Assessment, comments were evaluated and plan proposals selected. A Discussion Draft General Management Plan was prepared and released for public review in September 1976.

Analysis of the comments on the Discussion Draft Plan offered in writing or at public meetings showed that a rather representative cross section of the region's communities and organizations became involved in the planning process. Out of a total of 374 citizens who responded to the Discussion Draft Plan, 70 percent (262) did so in the form of written communications and letters, while 30 percent (112) were taken from the taped commentary of people who spoke at public meetings. Of all those who commented on the Discussion Draft Plan, 41 percent (152) spoke of themselves as private citizens. Another 44 percent (163) spoke or wrote on behalf of a specific city, community, government agency, or environmental group. A small group, 15 percent (59), whose comments were taped at public meetings, did not identify themselves either as private citizens or representatives of groups.

The most controversial proposals in the Discussion Draft Plan were those pertaining to transportation, land use, and the park's economic development. Representatives of communities near the edges of the park expressed concern over possible adverse effects of increased bus and auto congestion due to projected levels of public use. Organizations and agencies representing a more regional perspective also noted that the transportation proposals were not specified in sufficient detail. Environmental groups and planning agencies, which represent thousands of citizens, sought assurances that Sandy Hook, Breezy Point, and other areas with significant natural habitats would not be "overdeveloped." A number of important community service organizations, representing the opinions of thousands of the region's minority citizens, sought more specific details in the area of Outreach, minority employment and contracting, and continued community involvement in Gateway planning and management. Recreation planning agencies and governmental agencies in general also tended to request that the recreation plans for Gateway's future be made detailed. A great many citizens and a smaller number of organizations addressed themselves to specific issues such as the preservation of a certain Gateway tract or the future of an existing land use. It was strongly recommended by a variety of groups and private citizens that public participation in park planning and operations should continue.

The public comments on the Discussion Draft Plan were summarized in the Here's What We Heard paper issued in April 1977. During

1977 the plan was revised. At the same time certain subsections of the park--North and South Beaches, Sandy Hook; Great Kills and Miller Field, Staten Island; Tip Beach, Tankel Beach, and Fort Tilden, Breezy Point; and Spring Creek Park, Jamaica Bay--were given additional detailed planning (called development concept planning) to ready them for comprehensive design and construction during the early phases of plan implementation. A Draft Environmental Statement was then prepared, which described and assessed all proposals, whether at a policy or generalized planning level or at a more detailed development concept plan level. The Draft Environmental Statement was released in April 1978, along with a Decisions Paper explaining the reasoning behind any revisions to the draft plan proposals.

During early 1978 the Decisions Paper and the Draft Environmental Statement were the subject of a series of public meetings. They were also extensively distributed through the press, library systems, local governmental offices, and concerned citizen organizations. A Gateway telephone "hotline" was established to receive comments, to answer questions concerning the proposals, and to distribute copies of the documents to all who called to request them. Individuals were encouraged to respond either in writing or by phone to the proposals in the documents.

Over 700 total comments were received. About 70 written comments were from organizations, including federal, state, and local agencies, community planning boards, national conservation and recreation organizations, professional associations, and civic and community organizations. Some 400 issues were raised by these agencies and organizations. Approximately 30 percent related to transportation, 20 percent to zoning or other park land-use concerns, and 15 percent to programming and operations. The remaining 35 percent of the issues concerned area or facility capacities, several resources management concerns (primarily air and water quality and protection of fragile natural resources), and a number of desired recreational activities. The letters received from the 70 agencies and organizations, along with the Park Service responses to the issues raised, are included in section IX of the Final Environment Statement.

Of the issues raised by individual respondents, about 80 percent had organizational support and are therefore discussed in the letters included in the Final Environmental Statement. Most of the remainder of the individual comments (those not supported or mentioned by any agency or organization) concerned detailed design, programming, or operational issues not addressed in this plan (e.g., keeping food prices down at beach concessions, using solar panels on specific structures, reserving Tankel Beach primarily for use by the elderly). We regret that, because of the volume of public response, we were unable to reprint each

individual letter and postcard received. The complete file of responses is available for review at Gateway headquarters.

This General Management Plan, the end result of the public involvement process for this phase of Gateway planning, reflects both the emerging public sentiment and the National Park Service's best judgment in resolving the many complex and controversial issues that have surfaced during the past four years. After its approval, more detailed planning and design of individual projects will proceed based on plan proposals and funding from Congress.

# the plan

The Gateway plan calls for spending approximately $300 million in three stages to provide for resource upgrading and maintenance, development, and public use of the park. Staging is based on probable land transfers, access and environmental improvements, and visitor needs. Stage I will involve design and development proposals for all lands that are now under National Park Service jurisdicton, plus the beach in front of the Breezy Point Cooperative, which, it is anticipated, will be purchased within three years. (Lands now under Park Service jurisdiction--excluding properties to remain as enclaves--include all of Sandy Hook; Great Kills Park and Miller Field on Staten Island; Jacob Riis Park, the developed area and oceanfront of Fort Tilden, the Tankel Beach area, and the Tip of Breezy Point; and Floyd Bennett Field, Plumb Beach, Bergen Beach, Canarise Park, Spring Creek Park, Frank Charles Park, Hamilton Beach Park, and the Jamaica Bay Wildlife Refuge in the Jamaica Bay Unit.) In addition, all resources management, interpretation, and visitor-services proposals described in the plan will be implemented in Stage I.

For development phasing purposes, Stage I has been further subdivided into two phases. This subdivision is intended to minimize disturbances to existing visitor-use patterns and to provide for rational development of facilities. Access improvements will be monitored and adjusted to reduce impacts on neighboring communities while the number of park visitors is being increased. Facility development within the park will also be phased to coincide with access improvements to minimize the possibility of attracting more visitors than the access corridors can accommodate.

In most areas of the park, Phase I will involve increasing the beach area available to visitors for summer use. Where significant numbers of automobile parking spaces are proposed for removal, such as at Tankel Beach on Breezy Point and in the South Beach area of Sandy Hook, development of alternate parking spaces will be phased to precede the closing of existing parking facilities so that visitors will not be inconvenienced.

Two of the major year-round use centers within the park--the Gateway Villages at Floyd Bennett Field and Sandy Hook--are planned for development in Phase II of Stage I; Fort Wadsworth village development will occur after transfer of this property to the Park Service, which is expected to take place in late 1979 or 1980.

Actions proposed for Stage II or III implementation include the following:

At Staten Island - the development of Midland and South Beaches after conveyance of these properties from New York City, projected to take place in Stage II (development will be based on the zoning and design concepts embodied in the

plan); development concept planning for the Fort Wadsworth Gateway Village after transfer of this property from the Department of Defense; development concept planning for Hoffman and Swinburne Islands after completion of a proposed feasibility study of increasing the size of the islands, projected to take place in Stage III

At Breezy Point - the restoration and/or development of the upland forested areas of Fort Tilden and the construction of a ferry dock on the bay side after the U.S. Army permit on this land expires

At the north shore of Jamaica Bay - development concept planning for the two landfill sites after expiration of the deed restrictions on these properties, projected to take place in Stage II

Gateway already attracts more than 8 million visitors a year. When fully operational, the facilities at the park are expected to serve an estimated 14.5 million visitors per year at the end of Stage I, some 17.4 million when Stage II has been completed, and approximately 18 million with the completion of Stage III. The operating budget will probably reach a little over $18.2 million annually at the end of Stage I and $21.8 million when Stage II is complete. These figures are contingent on the implementation of an environmentally acceptable transportation system that can deliver the projected numbers of people to the park and on the appropriation of development funds by Congress.

The implementation of the General Management Plan will vastly increase the opportunities for indoor and outdoor recreation available at Gateway as well as providing educational programs, conservation areas--many of great ecological significance--Outreach programs, and waterborne transportation that will add a new dimension to the Gateway experience.

The plan encourages substantially increased use of Gateway on summer weekdays and during the off-season so that park visits will be spread more evenly throughout the year. The nonsummer months, in particular, will see significant increases because of the new opportunities at the Gateway Villages and other recreational facilities. Projected visitor-use increases on average summer weekends will be accommodated by ferry and shuttle service to Gateway's major beach facilities. Anticipated improvements in ferry service will be accomplished by other governmental agencies or the private sector and through the limited authority granted the National Park Service in P.L. 95-344, the national parks access act.

The Annual Visitor Use table indicates the visitor-use levels for FY 1976 and the projections for the four management units during

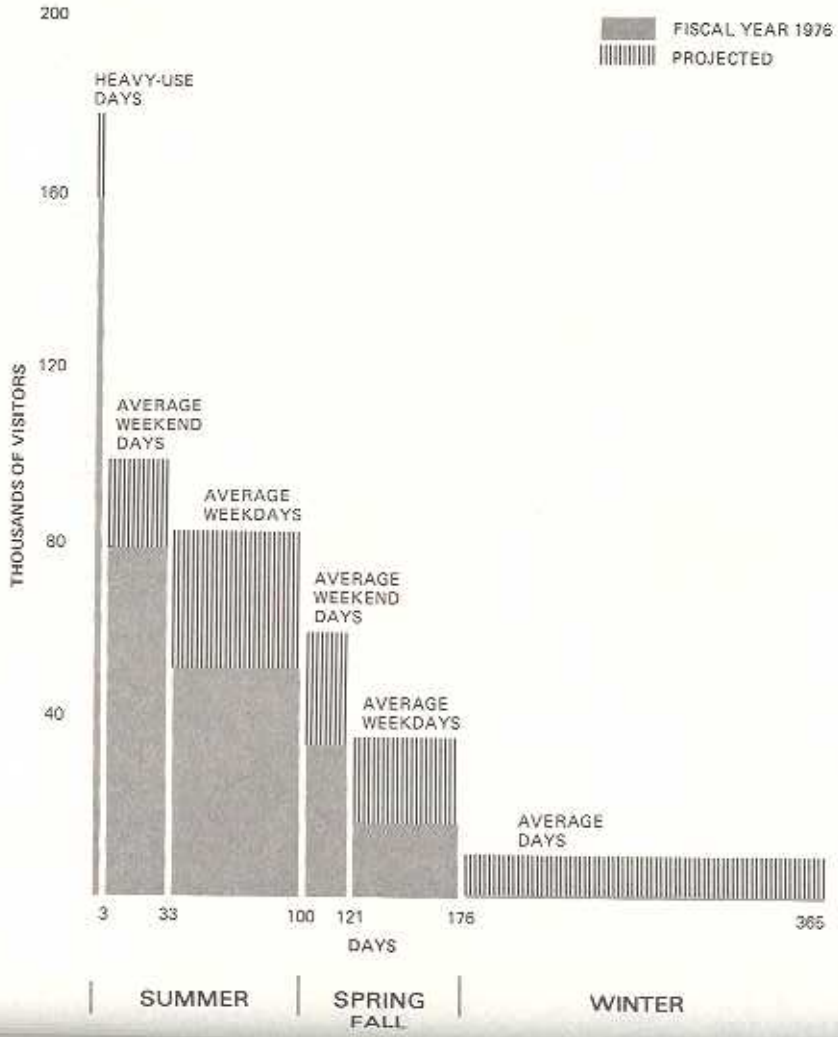
ANNUAL VISITOR USE--FY 1976 (7/75-6/76) AND PROJECTED FOR STAGE I
(Based upon existing use patterns)

| | SANDY HOOK | | | STATEN ISLAND[1] | | BREEZY POINT | | JAMAICA BAY[2] | | | PARKWIDE TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Daily | Gateway Village[5] | Total | Daily | Total | Daily | Total | Daily | Gateway Village | Total | |
| SUMMER (43% increase) | | | | | | | | | | | |
| Avg. Weekend Day[3] (occurs 33 times) | | | | | | | | | | | |
| FY 1976 | 15,000 | 1,000 | 540,000 | 10,000 | 360,000 | 45,000 | 1,620,000 | 10,000 | nominal | 360,000 | 2,880,000 |
| Projected[6] | 25,000 | 1,000 | 870,000 | 10,000 | 360,000 | 55,000 | 1,950,000 | 10,000 | 4 | 360,000 | 3,540,000 |
| Avg. Weekday (occurs 67 times) | | | | | | | | | | | |
| FY 1976 | 12,000 | 1,000 | 804,000 | 8,000 | 536,000 | 25,000 | 1,675,000 | 8,000 | nominal | 536,000 | 3,551,000 |
| Projected[7] | 19,000 | 2,000 | 1,273,000 | 10,000 | 670,000 | 40,000 | 2,680,000 | 8,000 | 7,500 | 1,039,000 | 5,662,000 |
| SPRING AND FALL (89% increase) | | | | | | | | | | | |
| Avg. Weekend Day (occurs 21 times) | | | | | | | | | | | |
| FY 1976 | 9,000 | 1,000 | 189,000 | 6,000 | 126,000 | 13,500 | 284,000 | 6,000 | nominal | 126,000 | 725,000 |
| Projected[7] | 17,000 | 5,000 | 357,000 | 7,500 | 157,000 | 23,000 | 483,000 | 6,000 | 7,500 | 284,000 | 1,281,000 |
| Avg. Weekday (occurs 55 times) | | | | | | | | | | | |
| FY 1976 | 6,000 | nominal | 330,000 | 4,000 | 220,000 | 4,500 | 248,000 | 4,000 | nominal | 220,000 | 1,018,000 |
| Projected[8] | 12,000 | 2,000 | 660,000 | 5,000 | 275,000 | 8,000 | 440,000 | 4,000 | 7,500 | 633,000 | 2,008,000 |
| WINTER (975% increase) | | | | | | | | | | | |
| Avg. Day (occurs 189 times) | | | | | | | | | | | |
| FY 1976 | 800 | nominal | 151,000 | nominal | nominal | nominal | nominal | 200 | nominal | 38,000 | 189,000 |
| Projected | 2,800 | 2,000 | 529,000 | nominal | nominal | 100 | 19,000 | 300 | 7,500 | 1,484,000 | 2,032,000 |
| TOTAL ANNUAL (75% increase) | | | | | | | | | | | |
| FY 1976 | | | 2,014,000 | | 1,242,000 | | 3,827,000 | | | 1,280,000 | 8,363,000 |
| Projected | | | 3,689,000 | | 1,462,000 | | 5,572,000 | | | 3,800,000 | 14,523,000 |

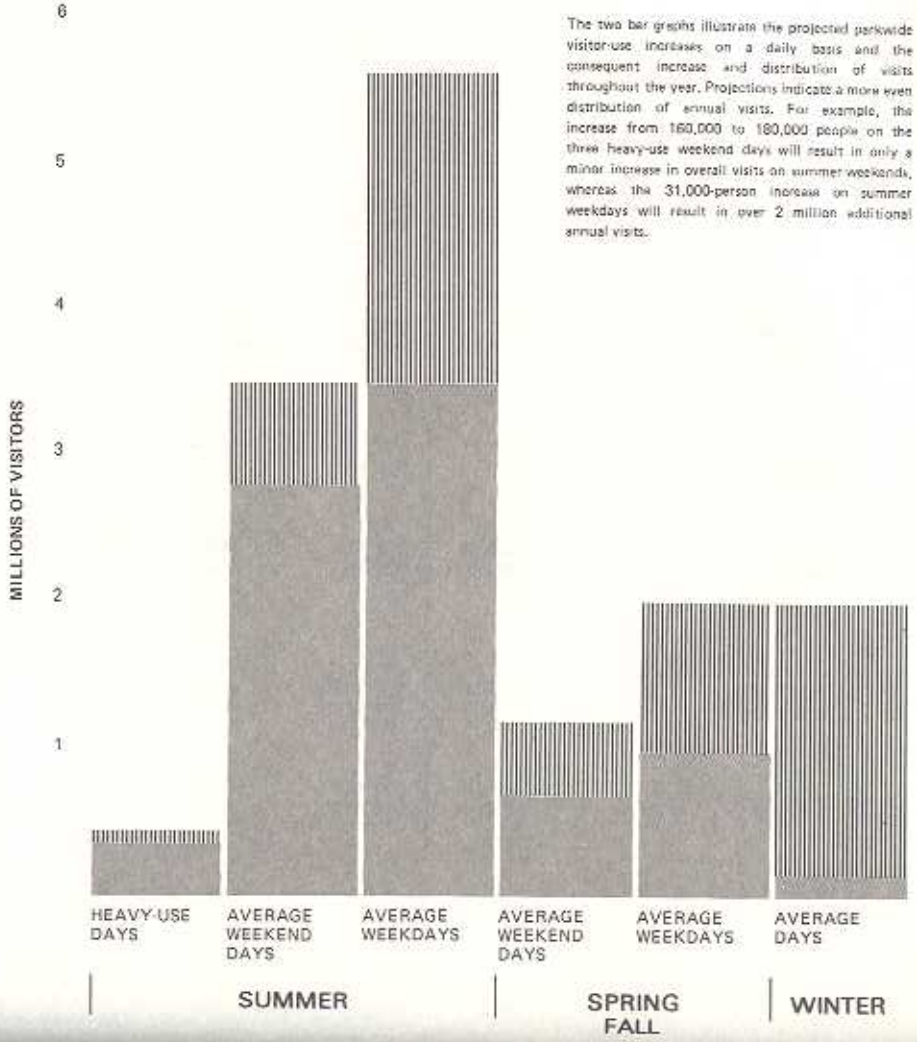
1. Does not include Oakwood Beach, South and Midland Beaches, Hoffman and Swinburne Islands, and the Fort Wadsworth Gateway Village
2. Does not include the Pennsylvania and Fountain Avenue landfills
3. Includes an average of 1 peak day and 2 other heavy-use days
4. The Floyd Bennett Field Gateway Village, administratively within the Jamaica Bay Unit, shares the same access corridor as the Breezy Point Unit. Summer Weekend projections are therefore included in the "Daily" and "Total" columns for the Breezy Point Unit.
5. Included in "Total" and "Daily" columns
6. Includes ferry arrivals at Breezy Point and Sandy Hook - 10,000 each
7. Includes ferry arrivals at Breezy Point and Sandy Hook - 5,000 each
8. Includes ferry arrivals at Breezy Point and Sandy Hook - 2,000 each

# PARKWIDE

## DAILY USE

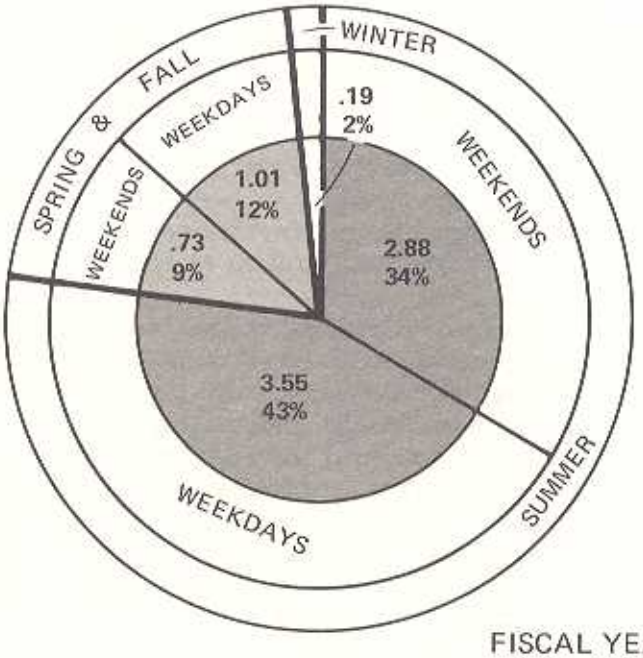



## ANNUAL USE

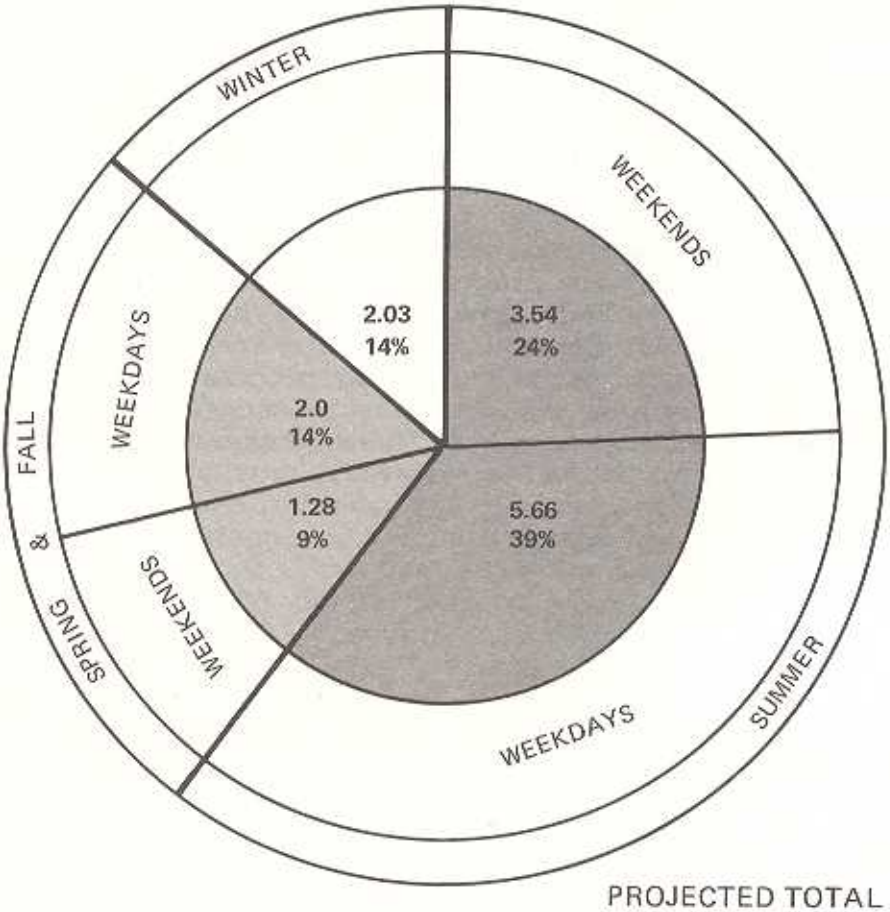



The two bar graphs illustrate the projected parkwide visitor-use increases on a daily basis and the consequent increase and distribution of visits throughout the year. Projections indicate a more even distribution of annual visits. For example, the increase from 160,000 to 180,000 people on the three heavy-use weekend days will result in only a minor increase in overall visits on summer weekends, whereas the 31,000-person increase on summer weekdays will result in over 2 million additional annual visits.

# EXISTING AND PROJECTED STAGE I USE




FISCAL YEAR 1976
TOTAL VISITOR
USE – 8,363,000




PROJECTED TOTAL
VISITOR USE –
14,523,000

ALL NUMBERS IN MILLIONS

Stage I, including the two Gateway Villages that are to be developed at Fort Hancock and Floyd Bennett Field. A graph and an illustration have also been included, which show the existing and projected distribution of visits throughout the year. The projections of visitor use at the Fort Hancock and Floyd Bennett Field Gateway Villages are tentative because detailed development concept planning and programming for these areas are scheduled for completion after approval of the General Management Plan.

Future visitors will find a Gateway that is substantially different from the park today. At Sandy Hook and Breezy Point large new beach and picnic areas will be added to those already open to the public. At Floyd Bennett Field more than a thousand acres of newly landscaped open space and recreational areas will be opened, plus extensive space indoors for community groups, recreation, educational programs, and cultural events. Another 500 acres along the north shore of Jamaica Bay will be opened in Stage II, along with extensive beach development at Staten Island--once the waters along the northern part of the shore are swimmable.

The Gateway Village concept will concentrate year-round educational, recreational, and cultural programs at Fort Hancock at Sandy Hook, Fort Wadsworth on Staten Island, and along Hangar Row at Floyd Bennett Field. All of Gateway will become an object lesson in the relation of man and the environment--from the holly forest at Sandy Hook and the wildlife refuge at Jamaica Bay to the nurseries at the Gateway Villages devoted to experiments in urban plant ecology, just one example of programs that will illustrate the interdependence of natural and urban systems.

To ensure that Gateway will serve the largest number of people possible, the plan calls for programs to serve those whose ability to get to Gateway is limited: the poor, the handicapped, and the elderly. The plan also seeks to ensure that community participation will be an integral part of the planning process--and of Gateway's daily operation. Gateway will also have an important positive impact on the economy of the New York/New Jersey metropolitan region and on the quality of life of its residents.

# PARKWIDE POLICIES AND PROPOSALS

## MANAGEMENT ZONING

Gateway's total land and landlocked water acreage of 8,656 acres (excluding projected enclave properties and including the two inland ponds, the new beach to be added through sand nourishment programs, and the Coast Guard/NARDET property at Floyd Bennett Field) will be allocated to six management zones, each of which has specific management strategies and types of allowable use and development. Offshore waters, including those of Jamaica Bay, have not been zoned. The six zones are Protection, Use-by-Reservation, Beach, Unstructured Recreation, Structured Recreation, and Development; the Development zone includes two subzones: Support and Gateway Village.

### Protection Zone (approximately 2,480 acres; 29 percent of park)

The Protection zone includes natural areas (existing and proposed for restoration) so sensitive to human activity that they will be available for use only under special conditions. Areas in this category include high and low salt marshes, primary dunes, freshwater marshes, and any identified critical areas or habitats, such as waterbird-nesting sites and beach heather communities. Buffer areas, because of their special protective function, also fall within this management zone. Known but unevaluated archaeological sites will be placed in Protection or Use-by-Reservation zones wherever accurate locations of such sites are known.

In managing Protection zone resources, natural processes will be encouraged: dunes will be allowed to shift with the seasons, marshes to grow or shrink according to normal environmental cycles. Wildlife species, particularly any identified as rare or endangered, will be protected through appropriate management strategies. Historic and archaeological resources will be managed according to approved policies and will receive similar protection. Policies will be established to discourage random access onto protected lands. Where Protection zones are traversed by stabilized paths, these paths will be designed to minimize possible deviations from prescribed routes. The only vehicles allowed on these paths will be park-approved vehicles. Primary dune systems and dune vegetation will be protected from trampling by means of raised walkways, boardwalks, or other appropriate devices. Protection zones in areas where natural resources have been destroyed or substantially modified will be managed to encourage restoration of a more natural regime; for example, the dunes behind the beach at Sandy Hook and Breezy Point will be encouraged to restore

themselves through protection and sand fencing, and some marsh areas on the periphery of Floyd Bennett Field will be replanted. Major new landscaping will not take place except in areas that are being restored or where buffers are established.

Uses of lands in the Protection zone will be strictly regulated and confined to research and maintenance. Development will be limited to stabilized paths, low-impact trails, raised boardwalks or other pedestrian crossings, and fencing in buffer areas to provide effective separation. No roads or large permanent structures will be permitted. Research-related structures such as photo blinds will be allowed.

Use-by-Reservation Zone (about 3,345 acres; 38 percent of park)

Areas of Gateway that are sensitive to overuse will be zoned for use-by-reservation so that management can control access by scheduling groups and issuing permits to individuals. Included in this zone are most forests, some upland marsh areas and secondary dunes, and spacious grasslands with significant natural values. Areas planned for special uses, such as nurseries and horticultural experiment sites, will be placed in this zone, as will certain historic and archaeological sites, structures, and features.

Landscapes that are in a relatively undisturbed natural state within this zone will be managed to protect and preserve existing resources, including resident and seasonal wildlife species, and to allow natural processes to continue with minimum interruption; manipulations such as establishing firebreaks and controlling mosquito populations will be carried out where necessary for visitor health or safety. Use-by-Reservation lands that have been previously altered through landfilling, bulkheading, or other action will be reclaimed and restored or brought to a new, more suitable ecological balance through landscaping, planting, and wildlife management techniques. If required, landscape screening will be incorporated to ensure that such areas are adequately protected from surrounding uses. Historic and archaeological resources will be managed in accordance with approved policies and will be protected through appropriate maintenance and security measures (e.g., fencing, patrols, onsite personnel).

Low-impact uses allowed in Use-by-Reservation zones will include nature study, environmental education, historical interpretation, and--where designated--hiking, jogging, gardening, and planting. Bicycling will be permitted only on designated trails and paths, and camping only at specified sites in supervised groups. Only small unobtrusive new structures (e.g., shelters and field classrooms), wayside exhibits, educational signs, and similar facilities will be permitted in natural areas; roads and trails will be allowed, but

they will be designed and managed to discourage people from leaving their vehicles and striking out on their own. Gardens may include greenhouse structures, maintenance sheds, or similar facilities. Historic structures may incorporate modern appurtenances required for interpretation, security, or visitor safety.

Beach Zone (about 588 acres; 7 percent of park)

The Beach zone includes both ocean and bay shores having the capacity to accommodate moderate to substantial recreational use.

Management strategies in Beach zones will, to the extent possible, reflect natural processes affecting specific beach areas. Natural shoreline dynamics will be interrupted only as necessary to reduce erosion and maintain beach use in major public use areas. Techniques may include maintenance or establishment of dune systems, plantings, and windbreaks, and sand nourishment where necessary on eroding shorelines. Beaches will be maintained or expanded to provide for planned levels of recreational use. Shoreline maintenance and cleanup will continue.

The primary uses of the Beach zone will be swimming and surfing (where offshore currents and water quality permit), sunbathing, beachcombing, and similar activities. Surf-fishing will be an important activity in a few locations identified by park management where such use will not conflict with other activities, primarily during the off-season and in the summer at times when few people are swimming. With the exception of existing seawalls and groins, only mobile structures to support recreational use, such as sun shades, lifeguard stands, ramps for the handicapped, and other minor, temporary structures required for seasonal use, will be allowed on the beach itself. No roads or established trails will be permitted in the Beach zone.

Unstructured Recreation Zone (about 1,053 acres; 12 percent of park)

This zone contains predominantly natural areas, other than beaches, that can accommodate substantial recreational use. Included are open grassland/thicket areas with no particularly sensitive natural or historic resources.

Areas zoned for unstructured recreation will be managed to preserve natural vegetation and scenery while establishing sites that can support casual outdoor uses. Wildlife species that can coexist in such areas will be protected through appropriate management techniques. Land uses may be periodically rotated to

permit regrowth of natural vegetation. Historic resources will be managed according to the policies described for the Use-by-Reservation zone.

All outdoor activities that require little supervision and few support facilities will be allowed in this zone, e.g., picnicking, walking, birding, kite flying, bike riding, and informal athletics. Developments will be provided as necessary to support these and similar uses; facilities may include paths, bicycle trails, walks, campsites for supervised group camping, comfort stations, picnic sites/shelters, grassy amphitheaters, arboretums, gardens, and historical, horticultural, and other exhibits. Roads are an acceptable development in this zone, and some field space may be designated for overflow parking on peak days.

Structured Recreation Zone (about 498 acres; 6 percent of park)

This zone encompasses outdoor areas that can be developed and landscaped to support active organized sports and recreation. They include lands already developed for these purposes and selected open or disturbed uplands where there are no sensitive or significant natural resources and where active use will not conflict with preservation of historic resources.

The Structured Recreation zone will be managed by using techniques that ensure the preservation of heavily used public spaces. Landscaping will be designed to support the recreational uses intended for this zone. Natural vegetation and cover will be incorporated wherever possible. Approved policies will be followed in managing historic resources, as described for the Use-by-Reservation zone.

Structured Recreation lands will accommodate all athletic activities requiring hard surfaces, structured grounds, playing fields, and so forth. More casual uses will also be permitted. Roads will be provided as necessary, and all facilities and support systems that aid in fulfilling the intent of this zone will be allowed, including baseball diamonds, cricket pitches, soccer and football fields, basketball, handball, bocce, and tennis courts, benches, shade structures, comfort facilities, information booths, portable bleachers, bandshells, and grassy amphitheaters. Other related facilities may be included, such as bicycle trails, lighting for nighttime events and activities, underground sprinklers or other artificial irrigation systems, and the like.

Development Zone

The Development zone includes those parts of Gateway where buildings or hard-surfaced parking lots predominate, or where the land is suitable for construction of beach or recreation centers and support facilities. Areas assigned to this zone include existing developed areas and accessible disturbed uplands with no sensitive or significant natural and historic resources.

Two subzones have been designated to aid in distinguishing the character of developed areas within the park. The Development Support subzone includes those facilities that support or make possible recreational use of the park; the Village subzone contains the three Gateway Villages. Historic resources lying in either of these subzones will be properly managed and protected according to approved policies.

Development Support Subzone (about 438 acres; 5 percent of park). In managing this subzone, existing structures will be adaptively restored and reused wherever appropriate. Any buildings or structures classified as unsafe or unsuitable for public or administrative use--and not required by long-range plans--will be demolished. Landscaping such as windbreaks and shaded areas for picnicking will be designed to aid public use and enjoyment of facilities. Waste disposal systems will be in compliance with the latest state and federal standards for environmental protection.

This subzone will be designed to support active use by large numbers of visitors, aiding people in conducting recreational or educational activities in nearby Beach, Structured Recreation, or Unstructured Recreation zones. Such uses may include parking, getting basic information about the park, changing clothes, showering, eating, beginning/ending field studies, and so forth. Some direct participation in activities will take place in this subzone, such as pool swimming, hosteling, classroom/laboratory work in environmental education, community and special-interest group events, and similar activities. Permanent facilities will be provided as appropriate, including roads, parking surfaces, pedestrian and vehicle overpasses, boardwalks, bathhouses, comfort stations, guest marinas, marinas with seasonal rental spaces, restaurants and other food service establishments, shops providing rental equipment, administration and maintenance facilities (including limited housing for park staff required to remain on site), and all related structures for participatory activities, such as swimming pools, campsites, hostels, shelters, cabanas, playing courts, educational centers, community meeting halls, and the like. In areas where primary dune systems in Protection zones parallel the beach,

facilities to support beach use will be located in Support subzones directly behind the dune system. Access to the beach will be along boardwalks or other controlled-access routes to avoid damage to the foredune.

Village Subzone (about 255 acres; 3 percent of park). Areas at Fort Hancock on Sandy Hook, Fort Wadsworth on Staten Island, and Floyd Bennett Field will be developed and managed as Gateway Villages--the major activity centers of the park. These villages will fulfill all the functions of traditional Park Service visitor center complexes, providing necessary orientation and other services for first-time visitors as well as day-to-day information about programs and events throughout the park. However, they are also planned to take on a much larger role, as major educational centers and as object lessons in the relationship of man and the environment. The term "village" has been used deliberately to signal a concentration of intensive uses, but without the adverse connotations associated with urbanization. Year-round environmental education programs, cultural events, exhibits, and research will take place in the Gateway Villages, as well as outdoor and indoor recreational activities and programs.

Lands and facilities within the Gateway Villages will be managed using techniques similar to those described in the Support subzone section above. Emphasis will be placed on the preservation and adaptive reuse of historic resources and, where appropriate, the introduction of natural plant materials into an urban environment. Limited new facilities may be constructed and maintained to complement this setting.

Recreational uses appropriate to a "village" setting will be accommodated in this zone. These may include staying in a hostel, attending or participating in cultural and educational events, playing indoor sports, eating, gardening, studying, doing research, and so on. Certain intensive or resource-consumptive activities will not be considered acceptable; these include large-scale spectator and professional sports, commercial movies, trade fairs and exhibits, and conventions. All development required for the support of appropriate activities will be acceptable in the villages; examples are restaurants and cafes, stores, classrooms, laboratories, theaters, studios, gymnasiums, day camps, hostel units, playgrounds, day-care centers, visitor centers, interpretive centers, plazas, open-air markets, promenades, administration and maintenance facilities, apartments and other residences for essential park staff (those required to stay on site), sites for recreational vehicles, and parking areas.

## NATURAL RESOURCES MANAGEMENT

Gateway's natural environment will be managed to ensure the preservation and improvement of the coastal environment and to provide for compatible recreational activities. Beyond the protection of critical resources and habitats, specific projects are recommended to expand the wetlands, improve water quality, and generally upgrade the park environment. However, it should be noted that many factors involved in the implementation of these proposals, such as improvement of air and water quality, are beyond the direct control of the National Park Service and will therefore require cooperative undertakings with appropriate federal, state, and local agencies. Management policies at the park will also be designed to reflect specific recreational requirements. Certain beaches will be nourished periodically as part of a coordinated shore improvement program, and landscaping projects will be undertaken to provide natural settings for outdoor activities.

### Ocean Shorelines

Gateway's 19 miles of beaches will be maintained or expanded, by sand nourishment where necessary, for recreational bathing purposes. Prior to initiation of any nourishment projects, the Park Service will study and assess alternatives for shoreline management and erosion control within the designated areas. These studies will specify the methods, sources and quantities of materials, comparative costs, and associated impacts of the alternatives. Measures designed to minimize the adverse effects of alternative actions will be identified and incorporated as necessary.

No new permanent structures will be built or allowed on the beach in front of the dune line, and no projects will be undertaken that would interfere with the active processes occurring in this zone. Natural shoreline dynamics will be interrupted only as necessary to reduce erosion and maintain beach use in major public-use areas.

Primary dune systems will be protected from excessive use by placing them in Protection zones and by providing pedestrian crossings and boardwalks for access to beaches.

### Marshes and Wetlands

Approximately 95 percent of the marshes and wetlands, extremely valuable resources totaling 3,075 acres, will be included in Protection zones and managed to minimize disturbance. Specific projects for marsh reclamation will be undertaken in areas of the park as appropriate. The remainder of the wetlands will be placed in the Use-by-Reservation zone, and low-intensity uses will be

permitted on a reservation basis. Prior to initiation of any dredging or construction for ferry docks or marinas proposed in estuarine areas, the Park Service will study and assess the potential impacts of the projects and will incorporate mitigating measures as necessary to minimize adverse effects on wetland resources.

## Vegetation and Wildlife

Rare and endangered species will be identified and protected through appropriate vegetation and wildlife management programs. Habitat management techniques will be employed within the Jamaica Bay Wildlife Refuge and other selected areas of the park to protect existing wildlife species, including the important migratory bird and butterfly populations. Tern-nesting sites will be protected from random access by installing signs and/or snow fences or by other management techniques.

Plantings to provide food and cover for indigenous species will be incorporated into landscape designs wherever possible. Native species will have preferred status over exotics, and exotics will not be introduced except where it can be shown that native species will not meet the needs of the management program.

A study of the role of phragmites in the marsh ecosystem will be undertaken in Stage I. If feasible and desirable, this monoculture will be removed from selected areas to encourage succession by a broader range of species.

Plant nurseries, fisheries, and areas for mariculture and tertiary wastewater treatment will be established in all three stages of the plan.

Wherever possible, biological methods will be employed for controlling ticks, mosquitoes, green flies, etc. Well-researched chemical methods may be used in order to preserve public health and safety and to permit recreational use and enjoyment in major public-use areas.

All wildfires will be extinguished, except where prescribed burning is identified through management assessment as an acceptable alternative for achieving the park's resources management objectives.

## Pollution Abatement

In accordance with the requirements of Executive Order 11752 relating to prevention, control, and abatement of environmental pollution at federal facilities, the National Park Service will actively seek assistance from state and federal environmental protection agencies in minimizing air and water pollution and in monitoring air and water quality. Specific projects will be directed toward pollution reduction in Jamaica Bay to reach a water quality that is suitable for swimming. The Park Service will also continue to work with New York City and New Jersey agencies involved in coastal zone management planning and section 208 studies to ensure coordinated implementation of proposals to upgrade water quality in adjacent ocean and bay waters. Given available scientific evidence as well as recent 208 study proposals, it appears that all waters within the park will be suitable for swimming and fishing sometime in the foreseeable future. Thus, planning for Gateway will proceed under the assumption that regional water quality will continue to improve rather than decline.

Several alternatives to ocean dumping of sewage effluents and solid waste are currently being developed and reviewed by New York City. The National Park Service will participate in the interagency review of these alternatives. Ocean water quality will continue to be monitored by the Park Service and other agencies on a regular basis.

Biodegradable and recyclable products, such as returnable bottles, will be used within the park to the extent feasible. The use of styrofoam cups or plastic-coated plates will be discouraged. Park shuttles and staff vehicles will be of the least polluting types available.

## Energy Conservation

As part of a National Park Service commitment to energy conservation and in accordance with the requirements of Executive Orders 11912 and 12003, energy consumption will be minimized at all Gateway facilities. Environmental technology (wind energy, solar heating and cooling) will be employed in new buildings to the extent feasible, and retrofitting of existing buildings will be undertaken to minimize fossil fuel consumption in these facilities, wherever such action is cost-effective.

The Gateway goal will be to reduce the average energy use per gross square foot of existing building floor area in 1985 by 20 percent from the energy use data base of 1975. Additionally, all newly designed buildings to be constructed will be expected to reduce the energy use per gross square foot of floor area by 45 percent of the 1975 data base.

A comprehensive plan for energy conservation is to be developed by the Department of the Interior to carry out the Executive Order 12003 requirements. This plan will be implemented by the National Park Service at Gateway when approved. Specific areas to be addressed in the plan are motor vehicle fleets, existing buildings, new facility design criteria, specific demonstration projects, budget formulation, and monitoring and evaluation. Energy impacts will be assessed for all proposed new facilities, new programs, modifications to existing facilities, and significant expansion of existing programs.

Each building or group of buildings to be reactivated will be analyzed individually from an energy use standpoint, and alternative solutions studied for their impact on energy use. The needs and functions of each building with regard to its method of energy utilization for heating, cooling, and lighting will be considered. The goal of conserving the most energy possible will be followed when rehabilitating or restoring the older buildings, within limits of funding available and while still providing the necessary services.

Many energy-saving techniques are available to reduce energy consumption at Gateway, and these will be implemented where feasible. They will be tied to an employee and public education program to increase awareness of the need to decrease fossil fuel consumption. Some of the techniques that can be put into practice are reduction of peak load demand for electricity, use of deposits on reusable beverage containers, proper weather stripping around doors and windows, repair of leaky faucets, double glazing on windows, night setback of heating thermostats, insulation, heating zonation (no heating or cooling of unoccupied spaces), proper maintenance of equipment to maintain design efficiency, use of natural cooling when possible, maintenance of lighting at reduced maximum levels, scheduling of operations so that spaces are used during periods when minimum energy is required to operate the building, and use of alternate energy when feasible. Water-saving plumbing fixtures will be incorporated into all new and rehabilitated facilities.

Although the potential does not seem great for wind-powered electrical generators to provide large amounts of electricity in the next few years, the potential for solar heating is increasingly high. Possible applications are solar-heated water for the planned bathhouses, concession facilities, recreation centers, and offices; solar heat for occupied spaces in almost any nonhistoric building where it is shown to be economically and technically feasible; and solar installations for historic buildings if an acceptable location, in terms of engineering requirements and the impact on the cultural resource, can be determined for the collectors and heat storage equipment.

All energy planning will be accomplished in consultation with the two state energy agencies and in accordance with state energy plans, including New Jersey's energy master plan.

## Groundwater Resources

Continuing checks will be made to detect saltwater intrusion into groundwater resources at Sandy Hook. Bacteriological analysis will be regularly performed by the Park Service on all surface and groundwater resources.

## Visitor-Use Regulations

Hunting will be prohibited in Gateway under the Secretary's authority to restrict this use if it might conflict with other legitimate park purposes. Other appropriate recreational uses will be allowed in specific management zones, with the following stipulations:

> Boating, fishing, and baiting will be permitted year-round in all park waters, except for East and West Ponds in the Jamaica Bay Wildlife Refuge and other specifically designated marshes and wetlands where these activities may be controlled or not permitted according to specific management zoning. In addition, park managers will monitor motorboat use in bay waters, and if results show that such use is causing significant damage to or loss of wetland resources, motorboating will be restricted in designated areas in cooperation with the U.S. Coast Guard and other responsible agencies.
>
> No off-road vehicle use will be allowed, except on special permit by park management.
>
> Boat launching on ocean beaches will be permitted at areas designated by park managers; however, no permanent structures will be built on the beach to accommodate this activity.
>
> Surf-fishing will be permitted on all Gateway beaches as long as it does not conflict with use of established swimming areas or with tern-nesting sites.

### Additional Studies

Additional studies will be undertaken as necessary to maintain an accurate natural resources inventory and to complete and keep up-to-date a parkwide natural resources management plan.

## CULTURAL RESOURCES MANAGEMENT

The National Park Service is committed to the effective management of cultural resources at Gateway. In accordance with this commitment, historic districts are to be established at Fort Hancock, Floyd Bennett Field, Jacob Riis Park, Miller Field, and Fort Tilden, where management will provide for preservation, partial restoration, and/or adaptive use, depending on the character of the district, the cultural value of individual resources within it, and its designated management zone(s). Total reconstruction as a cultural resources management strategy is not being considered at this time, but preservation of significant structures, sites, settings, and areas is an important goal. Adaptive uses of cultural resources may include interpretive, educational, arts, and recreational programming, or administrative/housing functions.

The five designated historic districts are being nominated to the National Register of Historic Places. (When the National Park Service acquires Fort Wadsworth, nominations to the National Register will be made for significant cultural features there.) According to the Federal Register (February 7, 1978), other National Register properties within Gateway are the Sandy Hook Lighthouse (a national landmark under the jurisdiction of the U.S. Coast Guard) and the Coast Guard lifesaving station at Sandy Hook (nomination pending). The New York and New Jersey state historic preservation officers indicate that there are no other currently known National Register properties within the park.

National Register listing does not preclude actions that will "affect" those properties. However, under the regulations established pursuant to the National Historic Preservation Act of 1966, such potential effects (which could range from beneficial action to visual impact to demolition) are subject to review and comment by the Advisory Council on Historic Preservation.

Other nationally, regionally, or locally significant historic structures, sites, settings, and areas, both within and outside the boundaries of the historic districts, will be so designated and will be protected through appropriate management zoning and policies. Structures not possessing sufficient historic or architectural significance to justify any type of restoration/preservation treatment will be stabilized and/or modified to support appropriate administrative or public uses. Unsuitable structures, or those

whose restoration/preservation costs would be prohibitive relative to their historic value, will be recommended for removal subject to the regulations in "Protection of Historic and Cultural Properties" (36 CFR Part 800) of the Advisory Council on Historic Preservation and National Park Service preservation policies.

The policies that will guide immediate and long-range management of Gateway's cultural resources are as follows:

> The National Park Service will faithfully preserve significant historic, architectural, and (currently unevaluated) archaeological resources and will provide for their interpretation, use, and/or protection through adequate professional research, appropriate zoning, and programming.
>
> All actions proposed for the preservation, modification, use, or removal of cultural resources will comply with the regulations of the Advisory Council on Historic Preservation and with other appropriate National Park Service guidelines and directives. In accordance with Executive Order 11593, all project areas will be physically surveyed for archaeological, historical, and architectural remains by appropriate professionals.

In accordance with the above-mentioned policies and with National Park Service procedures, additional studies will be conducted as necessary to complete historic and prehistoric resources inventories and research for the park and to formulate a comprehensive cultural resources management plan. The results of a recently completed preliminary archaeological survey will be reflected in the cultural resources management plan, as will historical and architectural survey findings from studies completed in 1975 and 1976.

The cultural resources management plan, when completed, will be periodically reviewed, and updated where necessary, to allow park managers to effectively program personnel, funds, and recommended actions.

## TRANSPORTATION

The following policies will guide transportation planning and management at Gateway National Recreation Area.

### Policies Relating to Access

Central to all policy decisions and proposals for access to Gateway is the fact that the National Park Service to date has only limited authority to cause changes in off-park transportation serving the

national recreation area (as granted under the recently enacted P.L. 95-344). Under this authority the Park Service will provide improved transit for as many and as wide a range of people from the New York/New Jersey metropolitan region and from other parts of the country as is technically, economically, and environmentally feasible. In addition, it will support all efforts by other agencies and organizations to provide additional environmentally acceptable means of public access to the park.

Specific policies concerning park access are as follows:

No proposals will be implemented that would seek to increase automobile use at Sandy Hook, Great Kills, Miller Field, and Breezy Point areas on summer weekends.

Gateway managers will cooperate with local and regional transportation agencies to ameliorate traffic congestion wherever possible among vehicles bound for Gateway.

The National Park Service will work toward and encourage efforts by other public agencies or the private sector to initiate ferry service to Gateway from other parts of the region. Ferry piers will be planned and developed within the park to accommodate substantial numbers of visitors using such service.

The National Park Service will work with other federal, state, local, and private transportation agencies and organizations and local and state energy management agencies to improve public transportation to Gateway and to reduce private automobile use.

To avoid compounding traffic congestion problems on heavy-use summer weekend days, while providing for greater use of Gateway's beaches and other attractions, strategies will be pursued to increase use of Gateway on a year-round basis and to increase weekday use during the summer. The latter policy is based on the knowledge that currently visited park areas are generally 25 percent as crowded on average summer weekdays as they are on the one "peak" summer weekend day, and about 35-50 percent as crowded on summer weekdays as they are on most other summer weekend days. Coordinated planning with appropriate agencies will be directed toward establishing transportation capabilities that will significantly increase levels of use on summer weekdays and during the off-season. Marketing techniques and programming of park activities will also be designed to encourage year-round use.

Policies Relating to Internal Circulation

Policies concerning transportation within the Gateway units are as follows:

Because there are wide variations in levels of use at Gateway from day to day and season to season, park management will have the latitude to adapt internal transportation services to changing needs and use levels. For example, a parking area may be opened to automobiles on weekdays and reserved for buses during times of heavy use. Alternate auto parking spaces will be provided in such an event.

Within the boundaries of certain Gateway units, the National Park Service will establish and maintain internal shuttle systems as a prime means of circulation during periods of heavy use. These shuttle systems will also be used to link park areas where conventional means are inappropriate or infeasible, for example, to bring ferry passengers to the beach or other destinations and to provide access to the beach center at the Breezy Point Tip. The systems will use the least polluting types of vehicles possible.

No off-road use of motorized vehicles will be allowed at Gateway, except by Park Service staff for official purposes or by visitors on special permit from park management.

Bicycle paths will be established in all Gateway units and will provide access to most major areas of the park that are not zoned as Protection or Use-by-Reservation areas.

Historic and traditional uses of Jamaica Bay and other Gateway waters for recreational boating, fishing (including certain commercial fishing), and bait gathering will continue to be allowed under appropriate regulations.

In accordance with the access policies above, there will be no overall increase in the numbers of parking places provided at the developed operating areas of Gateway at Sandy Hook, Great Kills, Miller Field, and Breezy Point.

New hard-surfaced parking lots that replace removed parking spaces will be designed to be as unobtrusive as possible and will be located to minimize potential damage to environmentally sensitive areas and to have the least possible environmental impact; permeable pavements will be used wherever feasible. In some cases, existing hard-surfaced lots will be removed, and the land returned to a natural state.

Parking for numbers of automobiles expected only on days of exceptionally heavy use will be provided on fields which can be used for recreational purposes at other times.

Existing roads or pathways will be used for circulation wherever possible. Those not required for circulation will be returned to a natural state.

### Transportation Study

In accordance with the above policies, a detailed transportation study will be completed, which will include recommendations for short- and long-range improvements in the public-transit system to permit increased use of Gateway year-round with minimal impacts on surrounding communities and park resources. During this study, the Park Service will complete a full assessment of the impacts of transportation proposals and will provide for public and agency review of such plans and assessments. The study will consider ways to improve existing public-transit services, to initiate new services, especially on water, and to adjust access and circulation patterns so as to ease congestion and improve traffic flow.

## THE GATEWAY VILLAGE CONCEPT

A frequently repeated comment during Gateway's public involvement meetings was the desire for a "man and environment center" that would fulfill the functions of a Park Service visitor center but would go beyond such service to create richer and more lasting relationships between the public and Gateway. The center would offer ongoing cultural, research, and educational programs. There would be opportunities for public participation and activities that could be carried back to local communities.

In response to this often expressed need, the plan proposes that "Gateway Villages" be established at Floyd Bennett Field, at Fort Hancock on Sandy Hook, and at Fort Wadsworth on Staten Island. In some respects, what is already happening at Fort Hancock is the prototype for the Gateway Villages. The fort is used for educational programs, theatrical productions, research by the National Oceanic and Atmospheric Administration, community events, day camping, formal and informal athletics, staff housing, historical interpretation, and organized group outings.

The Gateway Village concept derives from the following observations:

The natural environment and its complex life systems are a significant resource.

The impulse to protect this resource, reflected in the mission of the National Park Service, is a de facto recognition of the threat posed to the natural environment by the growing impact of urbanization.

These incursions have now reached a level where they constitute a threat not only to the integrity of the countryside and individual national parks but more generally to the natural systems of the planet as a whole.

The environmental movement, which had its origins in the appreciation of our natural environment as a recreational and spiritual resource, has broadened to include a wide range of issues related to the impact of urbanization on natural systems.

Several conclusions follow from these observations:

A concern for the natural environment must also increasingly be a concern for the impact and implications of urbanization.

It is no longer constructive for those who consider themselves environmentalists to separate their concern for nature from their concern for the man-made environment, since the fate of the two are now seen as inseparably related.

Ecological principles have demonstrated the interdependence which binds natural and urban systems together, and we have begun to evaluate the performance of our built environments with concepts and values derived from the study of nature.

It follows from these conclusions that the mission of the National Park Service, if it is to mature in line with the growing awareness of these relationships, must reflect a concern for the environmental impact of urbanization and seek to promote relationships between our works and nature's which are harmonious and mutually supportive.

A primary justification for national parks in urban areas should be the demonstration that such harmonious and mutually supportive relationships between people and nature are possible, even under conditions of intensive use, where the primary environmental dilemma of development versus nature is more acute because of population pressure.

The environmental lessons learned in dense population areas will build a public constituency for the national parks which will strengthen and broaden public concern for environmental issues.

A major theme for the Gateway Villages will be the relationship between natural and urban systems. The villages will be designed as a working exhibit and testing ground of the efforts of people to live in harmony with nature. Energy supplies will be augmented by the latest solar and wind systems, and waste systems will employ new technologies of resource recovery. Adapted historic structures, new facilities, access corridors--all will reflect the best new thinking in urban design, including an emphasis on historic preservation and the introduction of natural plant materials into urban environments.

The villages will be surrounded by restored and replanted natural areas. Research will take place into types of landscaping that are most appropriate and into reclaiming environments that have been damaged. There will be regional nurseries to provide plants for the park as well as urban and suburban neighborhoods, and greenhouses for winter gardening. Programs will make it possible for inner-city residents to participate in "greening" projects, growing trees and plants in the park and then transplanting them in their communities.

Inside the villages the environment will be dynamic and exciting. Compatible support services and facilities will be provided to generate a wide range of activities consistent with the overall village theme. There will be events, exhibits, and shows to involve people in the Gateway Village life. Shopping and eating facilities, open-air markets and sites for street festivals, classrooms, and places for games, cultural events, or simply strolling and relaxing will combine to provide a lively atmosphere. Training centers for urban park rangers, residences for park staff, hostels, and sites for mobile campers will stimulate evening and overnight uses--a full complement of activities found in an urban village setting. The villages will also be active throughout the year. In the winter months especially, they will be a vital part of the park environment. Using available indoor space, areas for research and study, athletics, music, and many other cultural and community programs can be provided.

In developing the Gateway Villages, every effort will be made to avoid simply duplicating or supplementing recreational opportunities already available in the region. Rather, the villages will be designed as important educational, cultural, and recreational centers, as sources of new energy and talent. Experiences gained there will enable regional and national visitors to take back to their own communities a new and constructive view of the environment and an appreciation of how natural and urban systems can nourish one another.

Although all three sites will be major year-round activity centers for the park and will focus their programs and facilities around the

theme of people and their environment, each village will have a distinct character based on the nature of its site and resources. The villages will retain a noncommercial atmosphere, although there will be a variety of services available. They will neither serve as nor look like amusement parks or modern theme parks. They will have stong educational and interpretive programs tied to the park's location in a large metropolitan region. They will also seek to draw from the rich array of talent, services, and programs available in the region through high levels of both structured and spontaneous participation by individuals and groups.

Detailed planning for the Gateway Villages will begin after approval of this plan. At that time decisions will be made about individual buildings, uses, any new construction, and so forth. The general design principles that have been developed to guide this planning are discussed in the park unit planning sections later in this document.

## PROGRAMMING

Programming at Gateway will be designed to enhance all aspects of the recreational experience--organized outdoor and indoor activities, special events, community and special-interest uses, cultural and educational pursuits, and traditional national park uses such as camping and nature study, to name a few. Some program recommendations are implicit in plan proposals for Gateway unit development. However, because specific park areas, in particular the Gateway Villages, are proposed for such diverse uses, more detailed program planning will be necessary as part of the development concept plans that are to be prepared for these sites and the parkwide recreation management plan discussed below. Further, because of the complexity, variety, and changeability of visitor needs and desires, flexibility in programming will be critical to accommodate evolving use patterns and to learn from operational experiences. Park managers, within the framework of planning objectives and goals, will establish and/or continue cooperative relationships with public and private agencies involved in recreation programming to increase program flexibility and responsiveness at the park. Managers will also retain the final responsibility and authority in the development and implementation of visitor programs to ensure that day-to-day and year-to-year needs are met.

Proposals for activities, programs, and facilities to be offered at Gateway will be compiled into a parkwide recreation management plan. During the development of the plan, the Park Service will inventory the recreational services and facilities in the region--public, private, and community-based--and will identify, expand, and coordinate proposals for areas within Gateway. This information, together with the policies and proposals contained in

the General Management Plan and development concept plans, will guide implementation and administration of recreational programs and services at the park.

The following subsections discuss concepts and policies in three program areas deemed particularly critical to the overall goals of the park--environmental education and interpretation, programs for special populations, and Outreach programming.

## Environmental Education and Interpretation

Environmental education and interpretation at the park will be directed toward helping visitors, in particular the urban residents of the vast New York/New Jersey metropolis, to have a better understanding of the values of the conservation ethic that has characterized National Park Service stewardship of national and historic areas. The National Park Service at Gateway can represent a kind of conscience for conservation--an ethic that must be adopted for our cities just as it must for our rural and natural lands.

The focal point for environmental education and interpretation at Gateway will be the man and environment center at the William Fitts Ryan Visitor Center to be located at the Gateway Village on Floyd Bennett Field. Smaller man and environment centers will be located at the Gateway Villages at Fort Hancock and Fort Wadsworth. These centers will contain exhibits, designed using the most advanced multimedia techniques, which illuminate man's relationship to his environmental and cultural heritage and prepare visitors for interpretive experiences throughout the park. In addition, natural and cultural resources management at Gateway will provide examples of what can be done in urban areas to reach a sound environmental balance. The Gateway Villages, in particular, will exemplify, through appropriate design and technology, balanced man/nature relationships that can be interpreted and exhibited to the public.

Some of the major interpretive themes at the park, to be developed in Stage I and continued in Stages II and III, will include the following:

- An urban conservation ethic
- Controlling and directing environmental changes
- Environmental costs and benefits of development
- Stewardship of the land and its natural and cultural resources
- Resources - which are renewable and which must be used according to a plan that ensures their conservation for use by future generations
- Citizen participation and responsibility in parks
- Technology: science and the balance of nature

Appreciation of the beauty of natural and man-made environments

Gateway will also have a series of environmental education and interpretation programs for schoolchildren and for other visitors. Three of the major themes for these programs are as follows:

Gateway's coastal environments - the creatures of its ocean and estuarine waters and its barrier beaches, dunes, and marshes

The role of Gateway's lands in the evolving system of defense that has protected the metropolitan area since before the revolutionary war, and the factors of technological change that, among other things, caused cannon to be replaced by missiles and missiles to be replaced by parks

The history of man's impact upon the lands and waters of Gateway - the filling of wetlands with waste, the pollution of the waters, and the attempts that are being made to repair such damage to our environment

Gateway's history will not be presented merely as a series of interesting happenings, but rather as a record of the benchmarks in man's continuing struggle with environmental and social problems. This approach will provide a framework for the inclusion of scientific research and technological experiments as part of an interdisciplinary interpretive program.

Students at all grade levels will be a primary focus of environmental education programming, based on the concept that children need first-hand experiences with the environment to augment textbook education. The park staff will actively seek the cooperation of educational institutions, school districts, and boards of education in expanding the professional expertise at Gateway and in broadening the public served. A major emphasis in this coordination will be to develop cooperative education programs for the handicapped, bilingual students, and other special-need groups. More generalized programs will be planned for first-time visitors who are less familiar with the park and regional environment. Gateway's environmental education programs will be interdisciplinary, including the arts as well as the sciences as means to understanding the environment and involving such activities as nature sketches or plays in which the food chain is described. Park managers will continue to encourage educational programs and tours that illustrate the importance of sewage treatment facilities in pollution control--both within the park and in the surrounding region. Park facilities like the systems at Sandy Hook and the protected stream at Floyd Bennett Field as well as regional systems like the 26th Ward plant in Brooklyn, can be used in educating the public about

the value of new, innovative treatment systems in improving environmental quality.

As waterborne transportation to the park is established, ferries will offer great opportunities to serve interpretive needs. Properly equipped, such ferries can provide a wide range of historical and cultural programs as people travel to the park.

## Programs and Services for Special Populations

Gateway was established as a federal urban park in part to provide open-space experiences for urban dwellers within the New York/New Jersey region who are unable to visit other sites within the National Park System, including the elderly and both physically and mentally handicapped persons. Barrier-free design of facilities at the park (buildings, sidewalks, transportation collection areas, interpretive trails, outdoor amphitheaters, ramps), whether rehabilitated or newly constructed, will be a major goal in providing handicapped and senior-citizen visitors with an attractive, accessible recreational environment.

The park staff will continue to work with organizations, homes, hospitals, and therapy centers in designing day-visit programs for the elderly and the handicapped. Special programming will also be introduced to provide recreational, educational, and cultural experiences such as theater productions for the deaf, braille exhibits and interpretive signs, and wheelchair basketball. Gateway will include a special playground area for handicapped people at Fort Tilden. This facility will be designed in coordination with recognized organizations for the handicapped. Access to the special facilities at Gateway will be partly contingent upon cooperation with organizations that can provide vehicles for the handicapped to come to the park.

To serve the large Hispanic community in the region, the National Park Service will make every effort to ensure that publications, interpretive literature, and signs will be presented in Spanish as well as English. In accordance with Affirmative Action goals which apply at the park, park management will increase the number bilingual staff members who serve in public-contact positions.

## Outreach Programs

Outreach programs at Gateway will be developed to ensure that citizens who are disadvantaged due to economic, physical, or other limitations will be able to visit the park and have quality recreational experiences. Such programs will be specially adapted to the cultural and physical needs of various disadvantaged publics

and will be designed in close coordination with representatives of the communities and populations to be served, as well as with other agencies and community organizations.

Outreach programming at Gateway will be spearheaded by specially trained and organized National Park Service ranger and interpretive staffs. Training, carried out at a park-based urban ranger training center to be developed at the Floyd Bennett Field Gateway Village in Phase II, will focus on recreational and interpretive skills to serve special populations and will include background in interpersonal relations, demographic analysis, community study, and cooperative planning and public involvement. To maintain maximum flexibility, Outreach rangers will be stationed at various units within the park, but will also be available for temporary assignment at designated community locations. The staff will serve Outreach visitors at existing facilities through ongoing and newly designed recreational and interpretive programs.

Central to the success of the program will be the provision of high-quality park experiences for all participating groups and individuals. For the first two to four years (Phase I), the Outreach effort will be of an experimental nature, serving modest numbers of people. Consideration of the numbers served will be balanced against identified standards of quality. However, as trained staff and funding to increase the size of the program become available, it is anticipated that Outreach programming will account for about 500,000 annual Gateway visits within ten years. Further, Outreach programming should produce a multiplier effect whereby community residents having direct contact with the park through Outreach will make regular and more numerous trips to the park in succeeding years.

The National Park Service cannot function alone in the Outreach effort; cooperative programming will be an essential ingredient. The success of Gateway's program will depend on effective cooperation with communities, state and city recreation departments, and any other governmental agencies or private organizations that can supply transportation for Outreach populations. It will also depend on integration with existing public and private programs.

## VISITOR SAFETY AND PROTECTION

In accordance with National Park Service policy to provide for the safety and health of visitors, Gateway management will continue to implement a comprehensive and aggressive safety management program to minimize accidents and property losses and to provide a safe and healthful environment. In addition, design standards established for existing and proposed visitor facilities will reflect the following policies:

All facilities will be designed in compliance with applicable Occupational Safety and Health Administration (OSHA) standards. Structural fire prevention and protection devices in all visitor facilities will be designed in accordance with the requirements and standards set forth in the Code of Federal Regulations and in cooperation with the National Fire Protection Association (NFPA).

Recreational activities that may be incompatible with other activities because of safety considerations will be effectively separated through programming at different times and the use of signs and/or barriers (e.g., fencing, ropes).

All paved roads within the boundary of Gateway will be designed and constructed to provide for and safely accommodate planned levels of motor vehicle traffic. All regulatory and directional signing will be designed and installed in accordance with the National Park Service Sign System Specifications and, where required, with the U.S. Department of Transportation's Manual on Uniform Traffic Control Devices for Streets and Highways.

The protection of park visitors, although officially the duty of law enforcement personnel, is seen by the National Park Service as the responsibility of each park employee. Through informational media such as signs, brochures, and exhibits and through personal contacts with park employees, Gateway visitors will be alerted to potential safety and security hazards, preventive measures, and laws, rules, and regulations.

The present detachment of United States Park Police in the three New York units of Gateway and the National Park Service rangers in the Sandy Hook Unit will continue to provide law enforcement services. Cooperative law enforcement and public safety agreements with state and local authorities--in effect at the Sandy Hook Unit and in the developmental stages for the three New York units--will cover police, fire, and emergency ambulance services.

Existing action plans to govern procedures in the event of plane crash, natural disaster, bomb threat, motor vehicle or boating accident, or other related emergencies will be reviewed periodically and revised as necessary. An evacuation plan for Sandy Hook is currently in effect; plans for other units of the park will be operational by 1980.

## ADVISORY BODIES

The National Park Service has a strong commitment to a continuing process of citizen participation in the planning and operations of Gateway National Recreation Area and will continue to work closely with and seek creation of informal groups to work with park management in resolving controversial issues. The city of New York has established a task force to provide a forum for public comment on Gateway planning issues. All concerned citizens are welcome to participate in this task force. The Park Service will work with this group, as well as any additional organizations, to assure a more complete understanding of the reactions of the public to National Park Service plans.

The enabling legislation for the park provides for a citizens' advisory commission mandated to provide advice and counsel to the management of Gateway National Recreation Area for the first critical ten years of park growth and development.

## CONCESSIONS MANAGEMENT

Essential visitor services provided by concessioners within Gateway will be allowed only at locations designated as Development zones. Moreover, where there exists a choice between placement of a concession within the park or reliance on adequate service provided in nearby communities and business centers, the Park Service will choose the latter course.

New concessions will be designed and managed according to policies that limit the commercial aspects of development. No billboards will be permitted on Gateway property, and all concessions advertisements and signs will follow specified design standards and be approved by park management.

Another major goal of concessions management at Gateway will be to take steps to ensure that the cultural and ethnic diversity of the region's population is reflected in the concession outlets available to the park--in employment by them, ownership and management of them, and the products and services they offer. Procedures for realizing this goal will be worked out according to the general approaches stated in this document and the Task Force Report on Gateway Economic Development, completed in 1977. An institutional format for selecting entrepreneurs from the region will be established to provide equitable minority representation in the Gateway economy. The format is partially spelled out in the procedures of the Small Business Administration and the Office of Minority Business Enterprise, which will be augmented by recommendations from community organizations. New prospectuses will offer the minority business community an opportunity to participate in the economic development and growth of Gateway.

## DESIGN STANDARDS

An overall design concept will be established for Gateway that will unify environmental conservation and management, landscaping, and architecture. Some of this concept is implicit in the planning for the recreation centers and the Gateway Villages, but it will be carried out in more detail as specific designs are developed. Elements such as lighting, kiosks, and signing will all be designed or selected to reinforce the overall design concept.

Design standards will be established that support the National Park Service commitment to energy conservation and the objective of making Gateway an example of sound environmental practice. All energy planning at Gateway will be accomplished in consultation with the two state energy agencies in accordance with state energy plans. Gateway's design will conform to Park Service policies of

> planning and designing to maximize the use of energies inherent in natural systems
>
> following operations and maintenance practices which minimize costs and reliance on fossil fuels
>
> building only those structures needed to provide a quality park experience and reusing existing buildings wherever appropriate

Appropriate measures will be taken to minimize potential impacts on any facilities sited within the 100-year floodplain; these may include dune building, beach nourishment, and requirements for design and construction that reflect site constraints. Floodproofing will be incorporated into the designs of all subject developments in accordance with Executive Order 11988. All concrete piping and other underground structures subject to corrosion by acidic conditions will be protected by a coating of acid-resistant material or will be replaced by acid-resistant features such as coated cast-iron pipe.

A major criterion for all designs will be to make Gateway accessible to the handicapped. Barrier-free designs will be required for new buildings. Rehabilitated and adapted structures will be made as accessible as possible by such means as adding ramps to exterior stairs, providing interior ramps or elevators, eliminating awkward level changes and doorways, remodeling toilets, and so on. Handrails will be provided in all situations that could be threatening to the physically handicapped. Braille signs and recorded messages will be made available at interpretive exhibits.

Special facilities at Gateway available to the more fortunate public will also be designed to meet the needs of the handicapped. These may include herb gardens of scents for the blind, boardwalk accesses down to the ocean for those restricted to wheelchairs or crutches, and specially designed playgrounds that maximize the use of soft surfaces. Visits to such facilities will be programmed through Outreach efforts to ensure best use of these developments.

In general, the barrier-free and accessibility requirements established for the handicapped will also make Gateway accessible for the elderly. Areas programmed specifically for the elderly--or the handicapped--will be located as conveniently as possible in relation to parking and mass-transit access.

All beach centers will be designed with adequate restrooms, shelters, and emergency facilities to accommodate the numbers of visitors on the most heavily used summer weekend days; other beach-use-related functions will be planned to support average weekend day-use levels, with capabilities for expanded services on heavy-use days. Beach centers will also be designed to allow for multiple uses in the off-season, for instance, as field classrooms for environmental education in the spring and fall and for special programs in the winter; the centers will also provide shelter for fishermen during inclement weather.

Indoor recreation space and sports fields will, to the extent possible, also be designed for multipurpose use. New utilities systems in indoor facilities will be adequate to allow for a variety of activities, and lighting will be provided at many of the outdoor courts and fields to extend playing time into the evening.

As part of the policy to minimize visitor-related disturbances to neighboring community residents, while at the same time providing improved recreational experiences for park visitors, buffers will be established between all active-use park areas and residential communities or nonpark enclaves that adjoin them. The design of buffer strips will depend on the issues and special problems involved at each site. They will generally consist of shrubbery, berms, or other natural and nonintrusive materials.

## SANDY HOOK

Proposals for Sandy Hook aim to protect and enhance the natural environment and the area's historic character, while increasing the opportunities for public use and enjoyment. There should be no conflict--even on the most heavily used summer weekend days--between these two objectives, because existing and projected access systems will not deliver more people to Sandy Hook than the carrying capacity of this unit will accept.

The plan proposes to restore and preserve approximately three-fourths of Sandy Hook's land and landlocked water areas by managing them under the strategies defined for Protection and Use-by-Reservation zones. Preserved areas, encompassing all the significant natural resources of the Hook, will be used by relatively few people primarily for educational purposes. The more intense recreational uses will be concentrated at the northern and southern ends of the peninsula on the beaches and in previously disturbed areas that represent about one-fourth of the land acreage.

Some 1¾ miles of protected swimming beach will be added to the existing 1½ miles of public beach; 4½ miles of unprotected low-use beach will be maintained in a more natural, undeveloped condition.

Cultural resources, including the hundreds of structures at Fort Hancock, the Nike missile site, and other scattered locations, will be either restored and interpreted or adaptively reused for recreational programming.

Heaviest visitor use will occur near developments containing beach centers, playing fields, parking, picnic areas, and campsites. These recreation zones will occupy the previous state park lands near the neck of the peninsula and the North Beach area of Fort Hancock, where considerable man-made impact on the natural environment has already taken place. A small beach center is also proposed just north of the Nike missile site and South Beach. The missile site itself will be restored, opened to visitors, and interpreted. The large, undisturbed Mid Beach expanse between the two beach development areas will generally be managed so that the natural systems become even more dominant and the roads and rights-of-way that are no longer needed gradually disappear.

The third major developed area will be the Fort Hancock Gateway Village. The fort complex, currently nominated to the National Register of Historic Places, will be given historic district status, and many of the buildings will be adapted and reused to form the core of the village. The batteries, firing range, and other significant historical features will be stabilized and treated so that representative portions of them can be opened to the public.

All development, use, and management proposals for the unit will be implemented in Stage I.

Land access and circulation for Sandy Hook will continue to be along Route 36 and the main road running north-south through the unit, which will link the three developed areas and provide access to parking there. Ferry service, when implemented, will provide an additional means of access to the north end of Sandy Hook.

Total annual visitor use of the unit will increase by almost 85 percent in Stage I, with most increases occurring on summer weekdays and during the spring, fall, and winter. For planning purposes, peak-day usage for Stage I has been estimated at 40,000 people--the present numbers of visitors on such days, plus another 10,000 arriving by ferry.

## ZONING AND RESOURCES MANAGEMENT

All areas west of the main road and the entire central portion of Sandy Hook are zoned either for protection or use-by-reservation; nearly 75 percent of the land area at the Hook will be managed in these two categories. The Protection zone, some 19 percent of the total, will contain the existing and proposed primary dune systems along the entire ocean shoreline and the extensive beachgrass dune area adjacent to the Coast Guard boundary at the northern tip, the freshwater marshes near the Nike missile site and south of Fort Hancock, the fragile "heathland" communities in the Mid Beach area, and most of the low salt marshes on the bay side, including the beach/dune/marsh area surrounding Spermaceti Cove and Skeleton Hill Island. Disturbed lands proposed for dune restoration and any identified waterbird nesting or feeding sites will also be protected under the strategies for this zone. All these lands will be managed to ensure perpetuation of natural communities and protection of fragile or significant features. Uses will be limited to maintenance and ecological research; no recreational uses will be allowed. A total of nine pedestrian crossings--raised boardwalks or similar structures--will be built over the primary dunes to safeguard natural systems there from random use.

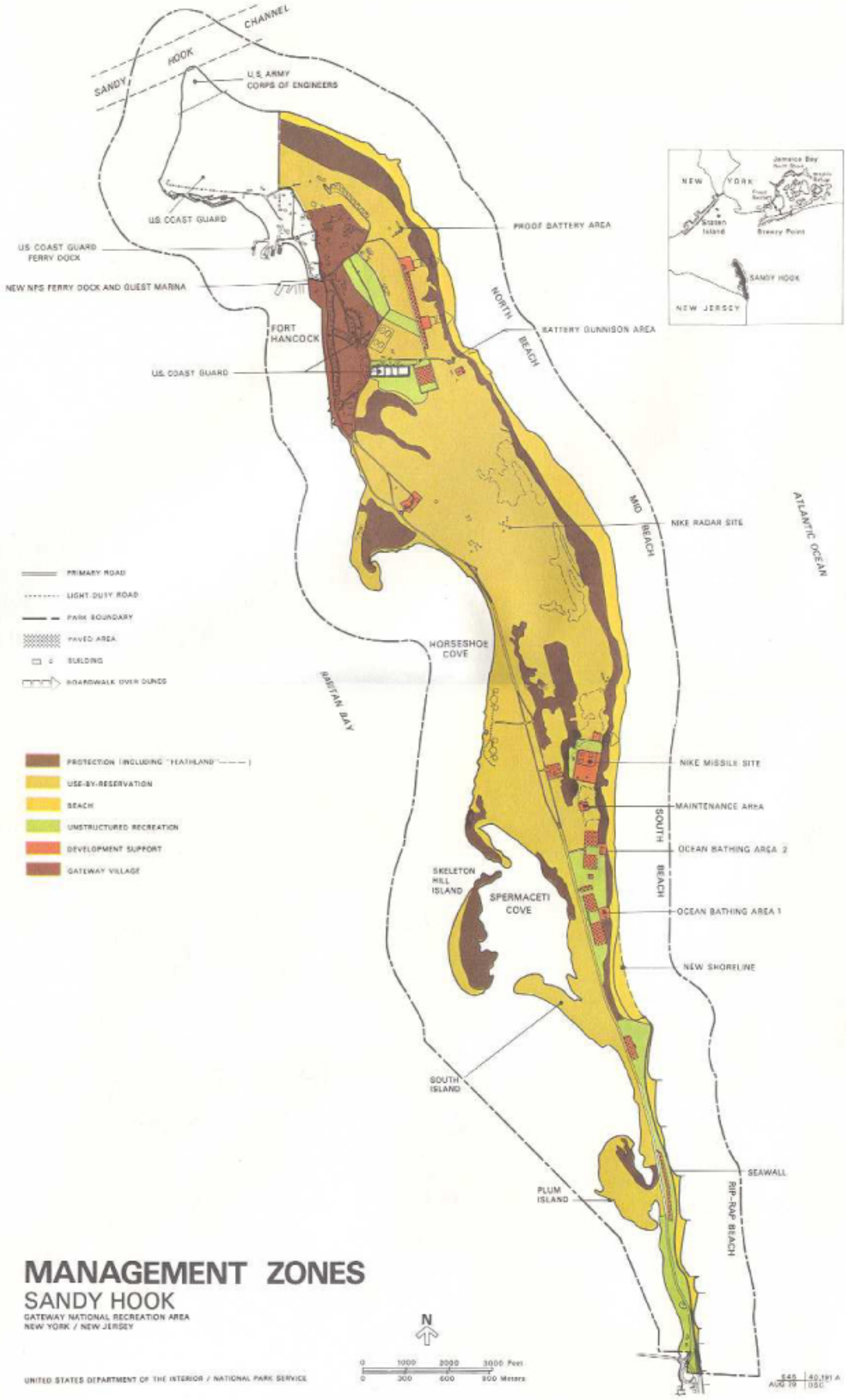
The Use-by-Reservation zone, which encompasses about 55 percent of the total land area, will include almost all of the forested uplands--both holly and deciduous--the remaining freshwater and high and low salt marshes, most of the low thicket/open shrub land areas, and some associated grasslands. Primitive trails will allow limited use of these lands. Park managers will regulate the numbers of people in the Use-by-Reservation zone at any one time by issuing group and individual permits. Although roads and trails are a permitted development on these lands, areas removed from access routes will generally be managed to encourage restoration and natural succession.

Significant historic features in the Fort Hancock vicinity and at isolated sites throughout the unit will be managed under the strategies for protection or use-by-reservation (as determined during subsequent study), although the fort complex as a whole will be designated and administered as a Gateway Village subzone. If any unknown historic or prehistoric resources are discovered during future planning and development, their significance will be assessed and appropriate management techniques will be developed. Some 55 acres of built lands, many containing important historic structures, are currently included in the Use-by-Reservation zone.

Although the entire beach on the ocean side of the peninsula is designated as Beach (some 10 percent of the land acreage), only those areas immediately adjoining the two proposed beach center complexes will be managed to support relatively high concentrations of visitors. The intermediate Mid Beach shoreline (approximately 1-3/4 miles in length) and the northernmost ocean beach adjacent to the Coast Guard enclave will be subject to far less intensive use. Swimming will be permitted along the entire shoreline, except north of Proof Battery Beach where hazardous conditions exist in offshore waters. The severely eroded beach area just north of the seawall on the neck of the peninsula will be nourished with approximately 2 million cubic yards of sand to stabilize natural conditions and prevent additional losses and to make a larger beach area available near the proposed South Beach complex. (An assessment of alternative solutions to the beach erosion problem here was completed and reviewed in 1978; see bibliography, United States Department of the Interior, National Park Service 1978b. After review, the alternative of beach nourishment was selected.) The seawall, which is maintained by the Corps of Engineers, will be retained.

Designated open grasslands and disturbed or developed lands adjacent to the two beach center complexes, the Fort Hancock Gateway Village, and the southernmost portion of the main access road will be managed as part of the Unstructured Recreation zone. These lands, totaling about 8 percent of the unit, will be maintained, landscaped, or developed as necessary to provide settings for specific outdoor uses. Activities that do not require permanent structures will be promoted.

Development Support subzone lands at Sandy Hook include the fishermen parking areas on the neck, the five beach centers (in two complexes) with their associated parking and support facilities, and the small water treatment plant near the Nike radar site. Lands and structures in this zone (only 3 percent of the total) will be developed and managed to provide all the necessary support services and facilities for active beach use, picnicking, and fishing.




# MANAGEMENT ZONES

## SANDY HOOK

GATEWAY NATIONAL RECREATION AREA
NEW YORK / NEW JERSEY

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

No Structured Recreation zones have been designated at Sandy Hook.

## VISITOR USE AND DEVELOPMENT

### Design and Use Concepts

Development and use at Sandy Hook will be focused at the Fort Hancock Gateway Village and the proposed beach centers. The majority of visitors will concentrate in or near these developed sites, and other lands, although available for designated uses, will have only minimal facilities to support low-density dispersed activities.

The Fort Hancock Gateway Village will be developed in Stage I, Phase II, after the development concept plan is completed. The village will be designed to preserve the significant aspects of the fort's historic character. The proof battery, Officers' Club, and other important resources will be restored and interpreted. Most other historic features will be adaptively restored as the core facilities of the village. A full range of year-round activities will be programmed for visitors, including environmental and historical programs, cultural events, workshops in various crafts, art shows, and athletic events and programs. A visitor center, a ferry dock with guest marina, classrooms, study spaces, a theater, an amphitheater, and a gymnasium will be among the facilities provided. Except for the ferry dock and its support facilities, all major structures in the village will be rehabilitated or restored existing buildings. The campuslike character of the parade grounds and Officers' Row will set the theme for designs.

Unstructured Recreation lands associated with the Fort Hancock Gateway Village will be landscaped to provide scenic vistas and pleasant settings for casual outdoor recreation. Sites and facilities will be developed for picnicking, supervised group camping, and field games. The proposed earthen amphitheater will support village programs.

Roads and trails will link the historic features on Use-by-Reservation lands surrounding the village. Interpretive tours and associated programs will relate to visitors the history of this important military installation.

A buffer will be established to screen the U.S. Coast Guard enclave at the tip from adjacent park lands.

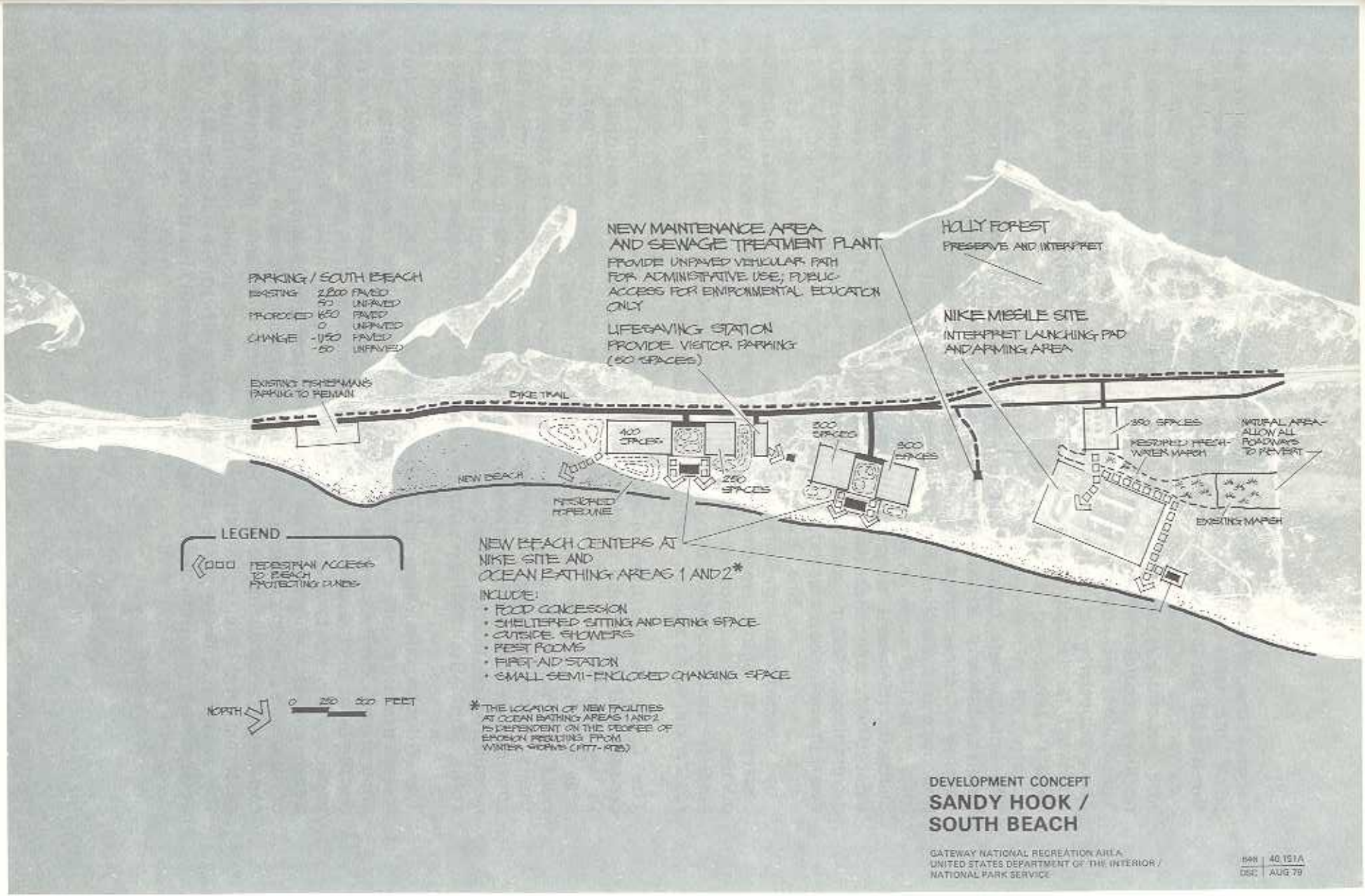
Development concept plans for the two beach center complexes at South and North Beaches are discussed below in separate subsections. Other lands at Sandy Hook will be managed for a

variety of low-intensity educational, interpretive, and recreational uses. Lands along the roadway at the southern end of the peninsula will be reserved primarily for fishermen and picnickers, although nature study and environmental education will also be important activities. The unique holly forest and the coastal ecosystems of the Spermaceti Cove area will be the focus of interpretive tours and programs. Primitive walking trails and bike trails will provide access to and through these and other significant natural communities. A permit system will aid in controlling the levels and intensity of use. A supervised group campground, also to be used on a permit basis, will be established at the Nike radar site.

Utility systems at Sandy Hook will be developed or upgraded and maintained as necessary to support the planned levels of use for the unit. Water will continue to be supplied by artesian wells, serviced by an existing treatment plant located just east of the bend in the main road northwest of the Nike radar site.

Fort Hancock and the northern beach centers will continue to be serviced by the existing sewage treatment plant south of the proposed Gunnison Beach center. The outfall line there has been replaced by a tertiary treatment system (settlement pond), which is located on an already disturbed site south of the southernmost proposed North Beach parking lot. The two beach centers at the southern end of Sandy Hook that were destroyed during the winter of 1977-78 had septic tanks and leach fields, all of which were damaged or washed away during the same storms. They will be replaced by one of the following: a new sewage treatment plant to be located at the proposed maintenance area between the main beach centers and the Nike missile site; a connection to the sewage treatment plant at North Beach; a connection to the Monmouth County sewerage system; or, after secondary sewage treatment, a connection into the existing Monmouth County outfall pipe that crosses Sandy Hook at the southern end. An environmental assessment will precede the selection of a sewage treatment alternative for the area.

Development Concept Plan - South Beach. The intent of the plan for this portion of the unit is to reduce the intensity of use somewhat and create a more attractive and natural environment by redesigning the southern facility and more evenly distributing beach activity between the North and South Beach areas. Some of the small parking lots and roadside spaces along the entrance road will be upgraded for continued use by fishermen. Two smaller lots of 400 and 250 spaces will replace the 1,300 hard-surface spaces remaining on the site of the southernmost beach center destroyed in the 1977-78 storms. (This lot contained 1,800 spaces at the time of Draft Environmental Statement publication and about 1,900 spaces before the winter storms of 1976-77.) An adjacent 50-car lot will


PARKING / SOUTH BEACH
EXISTING 2,800 PAVED
50 UNPAVED
PROPOSED 1650 PAVED
0 UNPAVED
CHANGE -1150 PAVED
-50 UNPAVED
EXISTING FISHERMANS PARKING TO REMAIN
BIKE TRAIL
NEW MAINTENANCE AREA AND SEWAGE TREATMENT PLANT
PROVIDE UNPAVED VEHICULAR PATH FOR ADMINISTRATIVE USE; PUBLIC ACCESS FOR ENVIRONMENTAL EDUCATION ONLY
LIFESAVING STATION
PROVIDE VISITOR PARKING (50 SPACES)
HOLLY FOREST
PRESERVE AND INTERPRET
NIKE MISSILE SITE
INTERPRET LAUNCHING PAD AND ARMING AREA
400 SPACES
250 SPACES
500 SPACES
300 SPACES
350 SPACES
RESTORED FRESH-WATER MARSH
NATURAL AREA - ALLOW ALL ROADWAYS TO REVERT
EXISTING MARSH
NEW BEACH
RESTORED FOREDUNE
LEGEND
PEDESTRIAN ACCESS TO BEACH PROTECTING DUNES
NEW BEACH CENTERS AT NIKE SITE AND OCEAN BATHING AREAS 1 AND 2*
INCLUDE:
• FOOD CONCESSION
• SHELTERED SITTING AND EATING SPACE
• OUTSIDE SHOWERS
• REST ROOMS
• FIRST-AID STATION
• SMALL SEMI-ENCLOSED CHANGING SPACE
NORTH
0 250 500 FEET
* THE LOCATION OF NEW FACILITIES AT OCEAN BATHING AREAS 1 AND 2 IS DEPENDENT ON THE PROGRESS OF EROSION RESULTING FROM WINTER STORMS (1977-1978)
DEVELOPMENT CONCEPT
SANDY HOOK / SOUTH BEACH
GATEWAY NATIONAL RECREATION AREA
UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE
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service the lifesaving station/visitor-contact facility. These three small lots will be connected by landscaped berm areas to minimize the impact of the parking facilities on the natural scene.

The second beach center site will also have its hard-surfaced parking reduced--from 1,000 to 600 spaces in two equal-sized lots. These lots will be connected by a similar landscaped berm area. The reductions in the size of the present parking lots will permit improved landscaping and regeneration of the dune areas that have been flattened and surfaced.

The approximate locations of the two destroyed beach centers have been tentatively accepted as the sites for the new centers. The spacing of these sites is closer than an optimum configuration, and they are set farther forward into the original dune area than is ideal. A thorough evaluation will be required after the proposed beach nourishment program is completed and a stable situation is established. At that time, the approximate location and size of the developing foredune will be apparent, and suitable sites behind that dune line can be selected.

The combination of increased beach size and reduced parking capacity at South Beach should reduce the visitor density on this portion of the Sandy Hook beach. The two beach centers will be able to accommodate approximately 5,000 visitors at any one time; restrooms and shelter will be provided for up to 8,000 people.

The Coast Guard lifesaving station between the two main beach centers will be rehabilitated for interpretation and for continued use as an information facility. The existing 250-car unpaved parking area nearby will be replaced by the proposed 50-car lot, and the remainder of the site landscaped. The new maintenance facility for the southern portion of Sandy Hook will be constructed on a site approximately halfway between the main beach centers and the Nike missile installation. This site is sufficiently removed from the beach areas that the facility should be virtually invisible to visitors.

The Nike missile site will be restored as far as is feasible and interpreted; all the subsidiary buildings used for arming and storage will be retained. A new 350-car parking lot will be created on the site of the present maintenance area. This lot will provide parking for visitors to the missile site and to the third, smaller beach center, which will be located behind the primary dune north of the missile emplacement. The new beach center will have a capacity to serve up to 600 people at any one time, with additional restroom and shelter facilities for 200 more people. Densities on the adjacent portion of beach are expected to be less than 1,100 square feet per person on average summer weekend days.

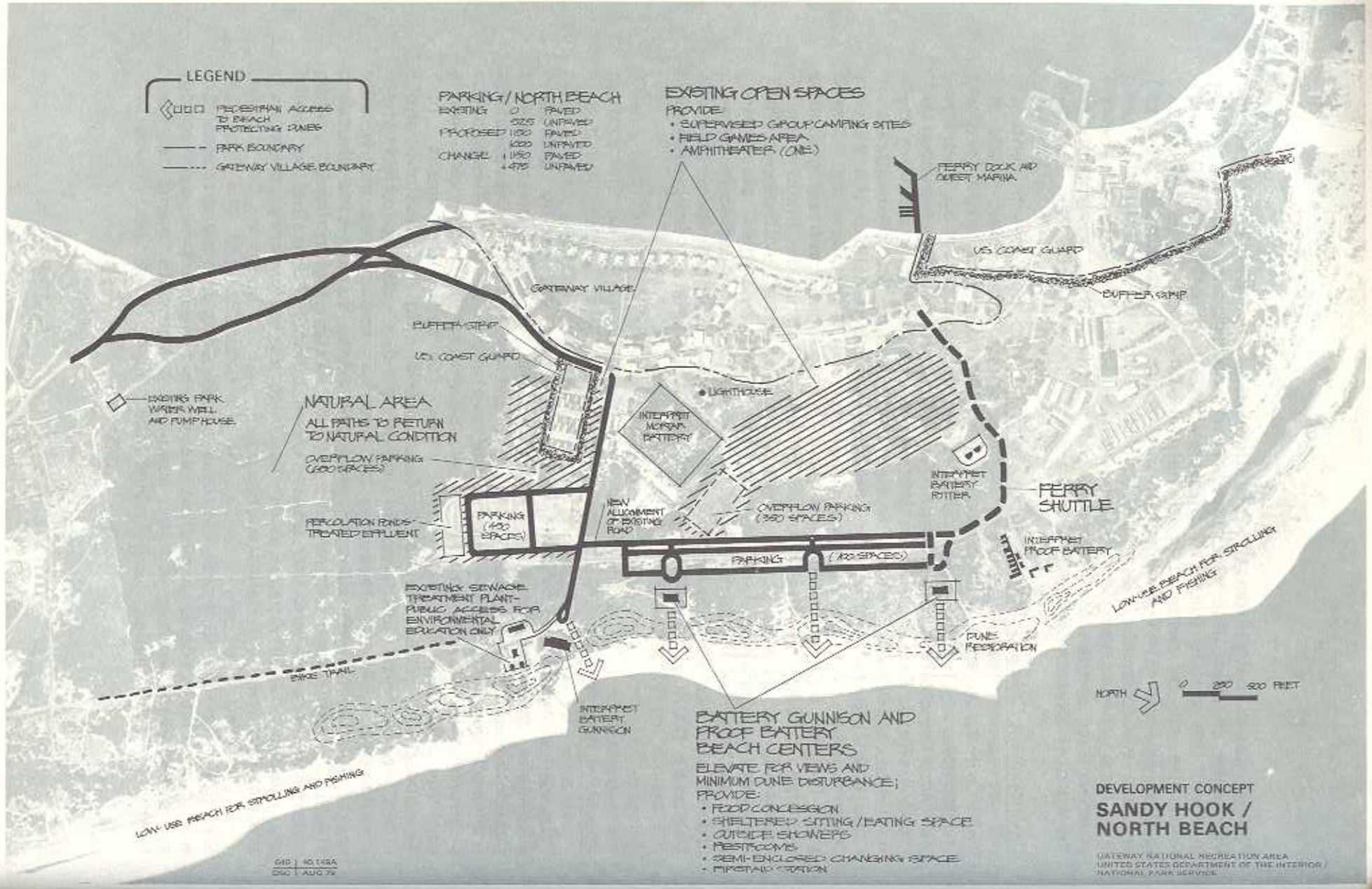
The proposed path from the parking lot to the Nike beach center will cross an area that was once a freshwater marsh, but was filled in when the missile emplacement was constructed. If possible, this filled site will be restored to its natural state and will be connected to the remaining marshes north and south of the missile site to produce a continuous marsh area. The path to the beach center and from the center across the dunes to the beach will be a boardwalk or similar structure, so that access will be controlled and the natural environment protected.

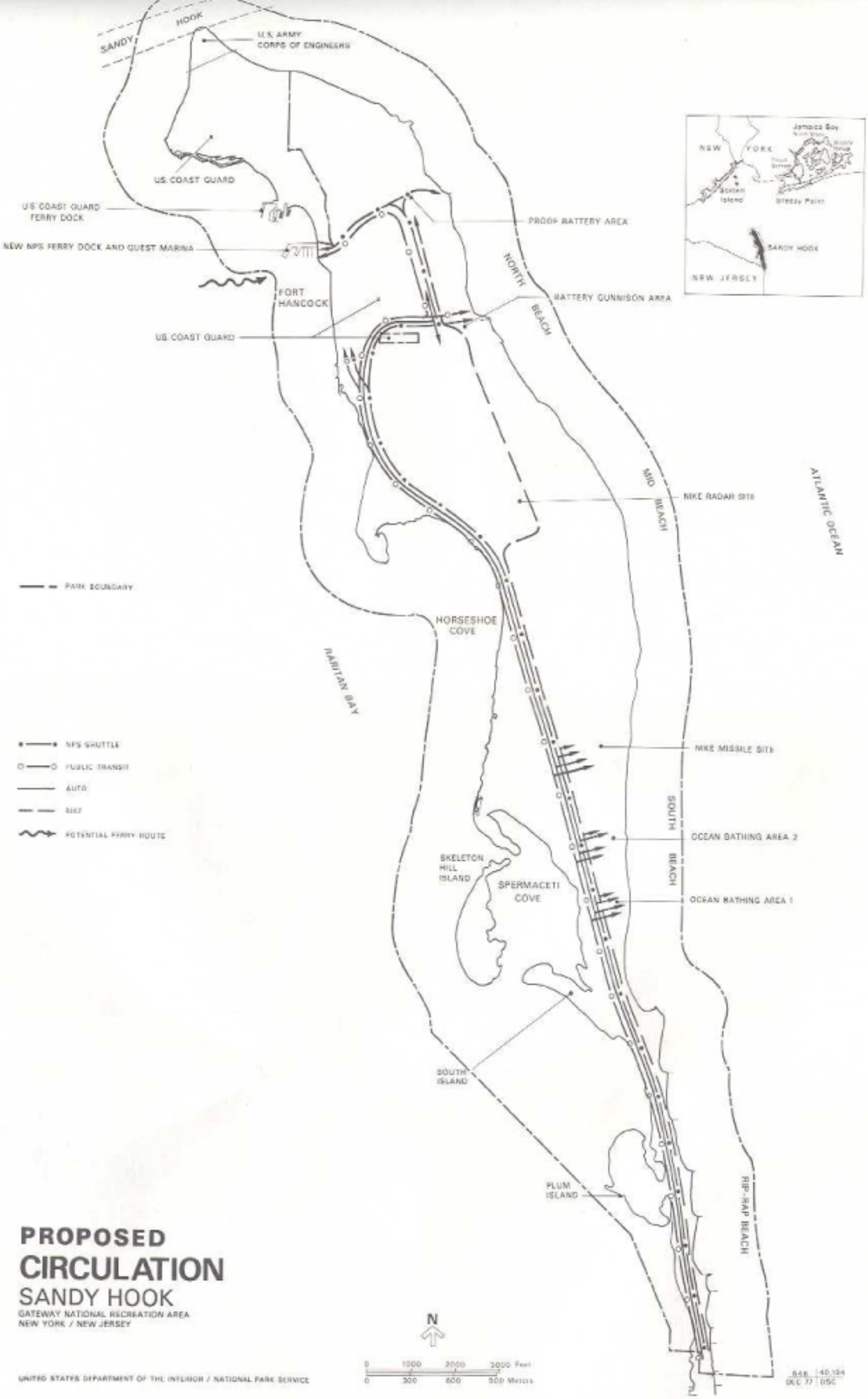
Development Concept Plan - North Beach. Two new beach centers will be constructed at the northern end of Sandy Hook, each of which will be able to accommodate some 4,000 people at any one time (restrooms and shelter for 6,000). Beach densities on average summer weekend days will range from 180 square feet per person at Proof Battery Beach--the destination of most visitors arriving by ferry--to about 240 square feet per person on Gunnison Beach. Paved parking for 1,150 cars will be established behind the beach centers, plus overflow parking space for another 1,000 cars. The sites for the beach centers and parking lots have been selected to minimize impacts on the natural environment and on historic and archaeological sites. At the same time, the design will permit the facilities to function well as convenient and enjoyable places to visit. The Proof Battery Beach center will have an adjacent turn-around area for Park Service shuttle vehicles bringing visitors from the ferry dock. The northern beach centers will also serve many of the people arriving by other public transit.

## Access and Circulation

Primary access to Sandy Hook will continue to be by private automobile and private boat, with additional increases in bicycle, public-transit, and chartered bus travel. The proposed transportation study will explore various ways to improve public-transit access to the park, and the Park Service will continue to work with the New Jersey Department of Transportation, the Monmouth County Planning Commission, and other appropriate agencies in realizing this goal through the creation of bikeways that can be used as impact-free means of travel to and through most areas of the Hook, park-n-ride shuttle staging areas along Route 36 and in Atlantic Highlands, and waterborne transit with departures from inner harbor sites as well as Keyport, Keansburg, and the Amboys. A ferry dock is proposed in the Fort Hancock area.

Circulation in the unit will continue to be along the main roadway, with secondary roads providing access to the various developed areas, where parking will be available. Motorists going to the North Beach complex will leave the main road just south of


LEGEND
PEDESTRIAN ACCESS TO BEACH PROTECTING DUNES
PARK BOUNDARY
GATEWAY VILLAGE BOUNDARY
PARKING / NORTH BEACH
EXISTING 0 PAVED
525 UNPAVED
PROPOSED 1150 PAVED
600 UNPAVED
CHANGE: +1150 PAVED
+475 UNPAVED
EXISTING OPEN SPACES
PROVIDE:
• SUPERVISED GROUP CAMPING SITES
• FIELD GAMES AREA
• AMPHITHEATER (ONE)
FERRY DOCK AND QUEET MARINA
U.S. COAST GUARD
BUFFER STRIP
GATEWAY VILLAGE
BUFFER STRIP
U.S. COAST GUARD
LIGHTHOUSE
EXISTING PARK WATER WELL AND PUMP HOUSE
NATURAL AREA
ALL PATHS TO RETURN TO NATURAL CONDITION
OVERFLOW PARKING (600 SPACES)
INTERPRET MORAN BATTERY
INTERPRET BATTERY ROTTER
FERRY SHUTTLE
PERCOLATION PONDS - TREATED EFFLUENT
PARKING (450 SPACES)
NEW ALIGNMENT OF EXISTING ROAD
OVERFLOW PARKING (350 SPACES)
INTERPRET PROOF BATTERY
PARKING (400 SPACES)
EXISTING SEWAGE TREATMENT PLANT - PUBLIC ACCESS FOR ENVIRONMENTAL EDUCATION ONLY
LOW USE BEACH FOR STROLLING AND FISHING
DUNE RESTORATION
BIKE TRAIL
INTERPRET BATTERY GUNNISON
NORTH
0 250 500 FEET
BATTERY GUNNISON AND PROOF BATTERY BEACH CENTERS
ELEVATE FOR VIEWS AND MINIMUM DUNE DISTURBANCE;
PROVIDE:
• FOOD CONCESSION
• SHELTERED SITTING / EATING SPACE
• OUTSIDE SHOWERS
• RESTROOMS
• SEMI-ENCLOSED CHANGING SPACE
• FIRESTAID STATION
LOW USE BEACH FOR STROLLING AND FISHING
DEVELOPMENT CONCEPT
SANDY HOOK / NORTH BEACH
GATEWAY NATIONAL RECREATION AREA
UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE




# PROPOSED CIRCULATION
## SANDY HOOK
GATEWAY NATIONAL RECREATION AREA
NEW YORK / NEW JERSEY

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

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the Fort Hancock Gateway Village and be routed east along an existing road past the Coast Guard housing area and into the new parking areas serving the beach complex. The existing eastern access route running north-south through the central portion of the Mid Beach area will be closed to autos and buses, and the unused lands allowed to revert to a more natural condition. All roadways will be patrolled to restrict unauthorized parking along the shoulders or use of the shoulders as an extra lane. Signing and, if necessary, physical barriers such as bollards will be used to restrict such activities.

National Park Service shuttle buses will continue to run the length of the peninsula, providing an alternate means of circulation between the several developed areas in the unit; shuttle stops will be established at all of the beach centers. As soon as possible based on cooperative transportation planning, shuttles will also service connecting commercial bus lines and park-n-ride staging areas and will bring visitors to the northernmost Proof Battery Beach from the Fort Hancock ferry pier.

Visitors arriving by bicycle will utilize a trail that parallels the main road as far north as the Nike radar site where a separate bicycle path (established along the old roadway closed to motorized vehicles) will diverge from the main road to provide a more peaceful route into the North Beach area. Bicycle use will be encouraged within the unit, and connecting secondary paths as well as bicycle storage areas will be developed wherever appropriate and environmentally acceptable.

Horseshoe Cove will continue to serve as a private boat anchorage area, although landings on shore will not be permitted.

## Projected Visitor Use Levels

Visitor use at Sandy Hook is expected to increase from the present 2 million people annually to an estimated 3.6 million at the end of Stage I. Projections are based on the assumptions that 1) an additional 10,000 people will come to the park by ferry on an average summer weekend day, and about 5,000 will arrive on this transit mode each summer weekday; 2) spring and fall use of Sandy Hook--excluding Gateway Village visits--will double (including 5,000 ferry arrivals on weekends and 2,000 on weekdays), and winter use will quadruple; and 3) the Gateway Village will attract some 650,000 additional visitors, primarily during the spring, fall, and winter months. No additional private automobile arrivals are projected on summer weekends.

SANDY HOOK - DAILY VISITOR USE
FY 1976 and Projected for Stage I

| | OBAs 1 & 2 | Nike Beach | Gunnison Beach | Proof Battery Beach | Total Swim Area* |
|---|---|---|---|---|---|
| SWIMMABLE BEACH AREA (sq. ft.) | 1,255,000 | 440,000 | 762,000 | 535,000 | 2,990,000 |
| BEACH CAPACITY/DAY @ 75 sq. ft. per person (# of people) | 41,000 | 14,700 | 25,500 | 17,800 | 99,000 |
| AVERAGE SUMMER WEEKEND DAY: | | | | | |
| Arrive by Auto | | | | | |
| FY 1976 | 13,000 | 0 | 100 | 1,900 | 15,000 |
| Projected | 10,000 | 1,000 | 2,000 | 2,000 | 15,000 |
| Arrive by Public Transit | | | | | |
| FY 1976 | 0 | 0 | 0 | 250 | 250 |
| Projected | 0 | 0 | 0 | .250 | 250 |
| Arrive by Ferry | | | | | |
| Projected | 0 | 0 | 5,000 | 5,000 | 10,000 |
| Total Daily Use | | | | | |
| FY 1976 | 13,000 | 0 | 100 | 2,150 | 15,250 |
| Projected | 10,000 | 1,000 | 7,000 | 7,250 | 25,250 |
| Noon Beach Use (total daily use/turnover rate of 2.5) | | | | | |
| FY 1976 | 5,200 | 0 | 40 | 760 | 6,000 |
| Projected | 4,000 | 400 | 3,200 | 2,900 | 10,500 |
| Beach Density (sq. ft./person) | | | | | |
| FY 1976 | 241 | 0 | 20,000 | 700 | 500 |
| Projected | 315 | 1,100 | 240 | 180 | 300 |
| CAPACITY OF PROPOSED FACILITIES (# of people) | 5,000-8,000 | 600-800 | 4,000-6,000 | 4,000-6,000 | |

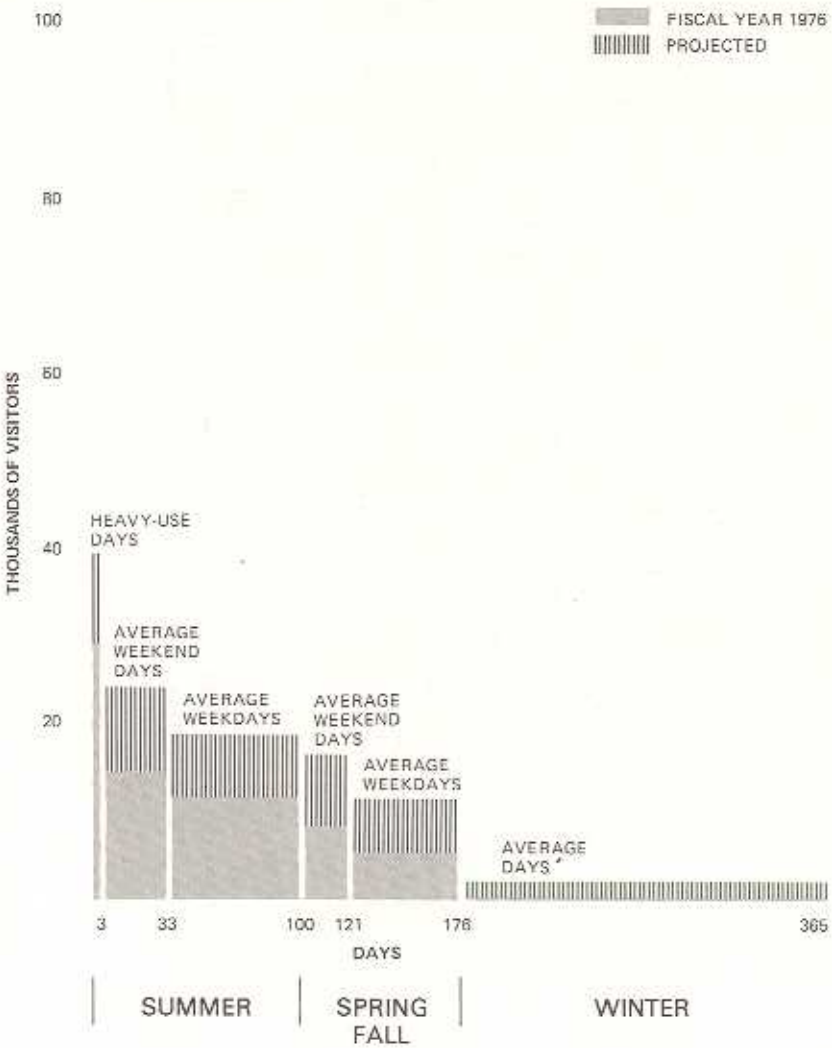
PEAK WEEKEND DAY TRAFFIC ENTERING PARK

| | Total People | Total Vehicles |
|---|---|---|
| FY 1976 | | |
| Auto (±3.5 people/car) | 30,000 | 8,600 |
| Public Transit and Charter (50 people/bus) | 500 | 10 |
| Total | 30,500 | 8,610 |
| Projected | | |
| Auto (±3.5 people/car) | 30,000 | 8,600 |
| Public Transit and Charter (50 people/bus) | 500 | 10 |
| Ferry | 10,000 | 0 |
| Total | 40,500 | 8,610 |

*Total beach area is 7,967,000 sq. ft. and includes, in addition to the swimming beaches, Rip Rap Beach - 500,000 sq. ft., Mid Beach - 2,275,000 sq. ft., and Fishing Beach (north of Proof Battery Beach) - 2,200,000 sq. ft.; these areas are unsafe for swimming and/or are proposed for other low-density uses.

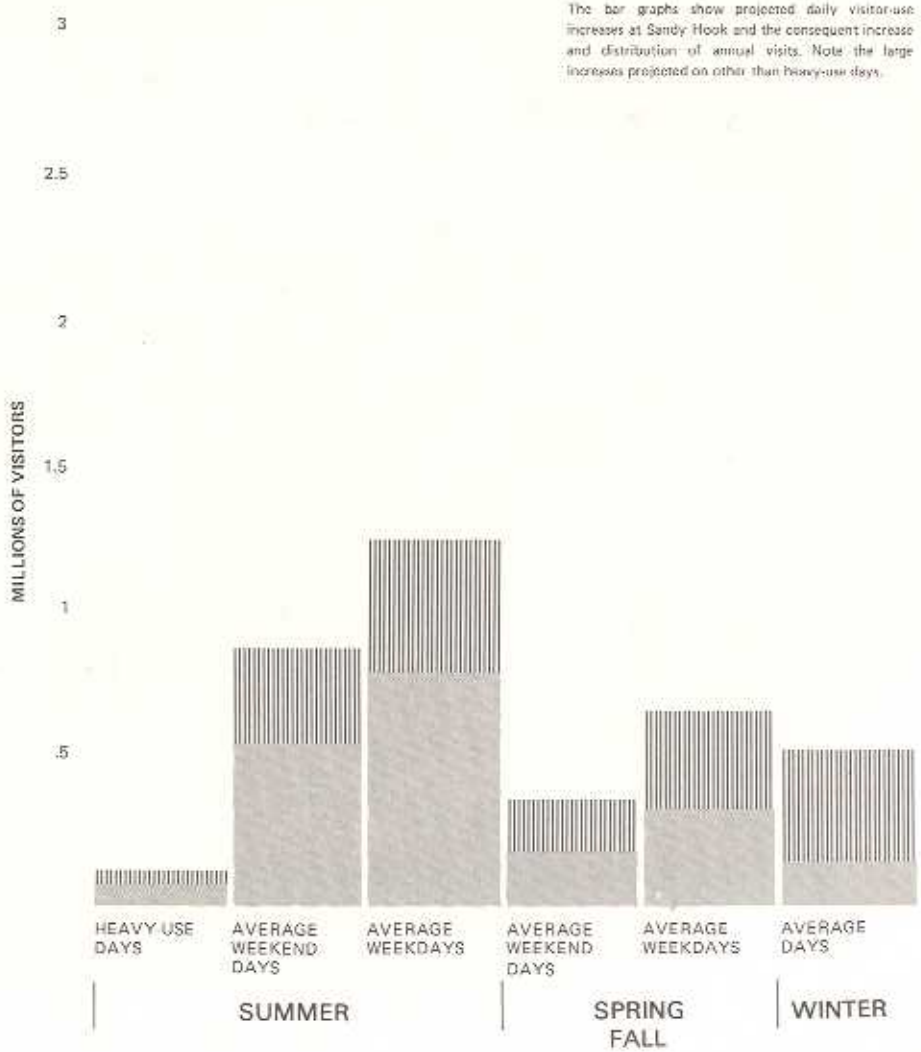
# SANDY HOOK

## DAILY USE




## ANNUAL USE

The bar graphs show projected daily visitor-use increases at Sandy Hook and the consequent increase and distribution of annual visits. Note the large increases projected on other than heavy-use days.



## STATEN ISLAND

Plans for Staten Island emphasize the rehabilitation and upgrading of existing recreational sites and the development of new facilities to support active uses; at the same time, the important cultural resources and the remaining natural landscapes will be managed to perpetuate their intrinsic characteristics and value.

About one-third of the land and landlocked water areas of the unit will be administered as part of the Protection and Use-by-Reservation zones. Within these areas, natural systems will be restored and preserved, and uses will be limited to environmental studies and low-intensity recreational activities on a controlled basis. The more intense recreational uses will be centered near the beach/recreation facilities in the southern portion of Great Kills, at Miller Field, and eventually along the ocean beaches of South and Midland Beaches and in the Fort Wadsworth Gateway Village (South and Midland Beaches and Fort Wadsworth are not yet under the jurisdiction of the National Park Service). These areas, which will be used for both casual and more intensive recreation, represent about two-thirds of the Staten Island Unit.

The 1-3/4 miles of swimmable beach at Great Kills/Crookes Neck will be maintained, and when water quality permits, an additional 3½ miles at South/Midland Beaches will be opened for swimming; the remaining 2¼ miles will be maintained for less intense beach uses.

The historic structures at Miller Field and Fort Wadsworth will be given historic district status and adaptively restored to support proposed uses.

The development of Staten Island is shown in three stages based on pending land transfers, improvement in water quality, and coordination with the Corps of Engineers. In Stage I Great Kills Park and Miller Field--the portions of the unit currently operated by the National Park Service--will be upgraded and developed to make them more attractive to the people who are already using them (transportation problems make it infeasible to serve large numbers of new people until Stage II). Substantial areas of Great Kills Park and Crookes Point will be left in a natural state, including all areas considered of special importance as a result of ecological analysis. The Oakwood Beach area (transfer pending) will also be preserved, as will habitats along Midland/South Beaches when they are acquired.

Land transfers and improved water quality will permit the second stage of development to take place. This stage will include the construction of new beach facilities in the Midland/South Beach vicinity and adaptive reuse of Fort Wadsworth as a Gateway Village.

Important historic structures will be preserved and interpreted, providing a major visitor attraction all year. If any unknown or unassessed cultural resources exist on the properties yet to be transferred, they will be evaluated and appropriate management strategies developed.

Stage III at Staten Island will entail a study of the feasibility of constructing a major offshore island complex, connected by a bridge to the beach. These islands could be built up around the Hoffman and Swinburne Islands in areas where depths are extremely shallow, as little as 2 or 3 feet. After a relatively short walk, people would be able to picnic right next to the main ship channel. The islands could also be developed to make them destinations for private boat and ferry trips.

Access to the Staten Island Unit during Stage I will continue to be along Hylan Boulevard and from connecting city streets to Father Capodanno Boulevard. The difficulty in reaching the park on these roads is expected to limit use primarily to local visitors. When Fort Wadsworth and the rest of the Staten Island beaches have been turned over to Gateway, cars and buses will be able to enter Fort Wadsworth directly from the Verrazano Expressway and then exit Fort Wadsworth onto Father Capodanno Boulevard, a wide street that runs parallel with the beaches, so that traffic problems on congested local streets will not be a limiting factor. Ferries will be able to dock at Battery Weed after the site is rehabilitated.

Total annual visitor use of the Staten Island Unit is expected to increase by only 18 percent in Stage I. When all lands have been transferred and developed--and the waters north of Great Kills become swimmable--the figures for annual visits are expected to double.

## ZONING AND RESOURCES MANAGEMENT

The Staten Island Unit, where few undisturbed natural areas remain, will be zoned and managed to allow preservation of these areas and expansion of recreational sites and facilities on the remaining previously disturbed and developed lands.

The Protection zone will include two small sites at Great Kills Park: the unusual offshore peat deposit north of the existing bathhouse, and the mouth of the stream that flows into the northwest corner of Great Kills Harbor; these areas, less than 1 percent of the total Staten Island land acreage, will be protected from random access by means of posting and patrols.

The more extensive Use-by-Reservation zone (34 percent of the total) will include the large, phragmites-dominated upland area in

the northern portion of Great Kills; the dune/grassland/marsh ecosystem at Crookes Point--an important migratory bird and butterfly habitat; the previously filled back-beach areas at Oakwood/New Dorp; and the rare swamp white-oak forest at Miller Field. Tiny Swinburne Island has been tentatively placed in this zone, based on subsequent study. Use-by-Reservation lands will be managed to perpetuate natural conditions, and uses will be limited to educational and low-intensity recreational activities. Significant cultural resources, primarily those under historic district status at Miller Field and Fort Wadsworth, will also be managed under the protective strategies identified for this zone.

The 7½ miles of Staten Island beaches will all be placed in the Beach zone (12 percent of the total lands), although the beaches north of Great Kills and Crookes Neck will not be available for swimming until water quality in the lower bay is substantially improved. Approximately 320,000 square feet of sand will be added to the beach in front of Great Kills to stabilize the shoreline and provide additional recreational opportunities. The Corps of Engineers has tentative but unapproved plans to initiate similar sand nourishment in front of the Oakwood/New Dorp area. The swimmable beaches at Great Kills/Crookes Neck will be managed to allow increased beach use; the beaches north of Great Kills will be cleaned up, maintained, and made available for other shoreline activities until such time as they can be opened for swimming.

The remainder of Staten Island's lands will be zoned and managed for active outdoor recreation, indoor sports, community programs, and, at Fort Wadsworth, Gateway Village activities. Unstructured Recreation zoning strategies will be applied in most of the southern half of Great Kills (adjacent to the beach and recreation facilities), along the bulkhead at Crookes Point, around the periphery of Miller Field, behind the beach in the central part of Midland/South Beaches, and in areas of Fort Wadsworth surrounding the proposed Gateway Village. These areas, constituting about 22 percent of the unit, will generally be managed to permit low-intensity spontaneous recreation; at Miller Field, where such lands form the boundary of the park, landscaping will be incorporated to provide a natural buffer.

Structured Recreation lands, totaling 12 percent of the unit, will also be established near the active-use areas of the Staten Island Unit: the uplands surrounding the Great Kills marina/recreation center complex, the central portion of Miller Field, open areas adjacent to the existing facilities at Midland/South Beaches, and a small area adjacent to the Fort Wadsworth Gateway Village. Lands in this zone, all previously disturbed sites, will be managed to provide the facilities and services necessary for relatively high-intensity active recreation.

# MANAGEMENT ZONES

## STATEN ISLAND

GATEWAY NATIONAL RECREATION AREA
NEW YORK / NEW JERSEY

Development Support zone lands include the sites of the Great Kills/Crookes Neck Beach centers and their parking lots; the proposed marina/recreation center complex on Great Kills Harbor; the seaplane hangar and adjacent lands in the eastern part of Miller Field, as well as the small parking facilities in the western portion; and the beach support facilities at Midland and South Beaches. All of these sites are on disturbed uplands, and most support existing developments that will be adapted or adaptively restored as the core facilities of recreational complexes. Development Support subzone lands comprise about 10 percent of the unit.

When Fort Wadsworth is transferred to the National Park Service, a portion of it (about 100 acres) will be zoned, developed, and managed as a Gateway Village subzone.

## VISITOR USE AND DEVELOPMENT

### Design and Use Concepts

The Stage I proposals for development and use at Great Kills and Miller Field are described in separate subsections below. The other recreational sites along the shore have been zoned to reflect both their inherent characteristics and their present and projected uses. In the case of South and Midland Beaches, zoning and design concepts take into consideration the possible evolution of use patterns over the next ten years. Short-range plans, to be implemented late in Stage I if the lands are donated to the National Park Service, call for upgrading and maintenance of existing facilities as necessary to support present local uses. However, if and when the waters in this area become swimmable, South and Midland Beaches will likely become major recreational attractions; in this event, the areas will be developed to accommodate active beach use by relatively large numbers of regional as well as local visitors. All plans for this area of Staten Island will take into consideration the Corps of Engineers hurricane protection project that is now in the planning stages.

No new construction is proposed along the undeveloped back beach at Oakwood/New Dorp. These areas will be reserved for supervised group camping and nature study.

Fort Wadsworth will be studied to determine the best mix of preservation, adaptive restoration, and new construction to establish it as a Gateway Village. A development concept plan for the fort complex will be prepared after approval of this plan and transfer of the property from the Department of Defense to the National Park Service. Proposals for the Gateway Village will be based on concepts similar to those described for Sandy Hook. Battery Weed, a Fort Wadsworth structure currently listed on the

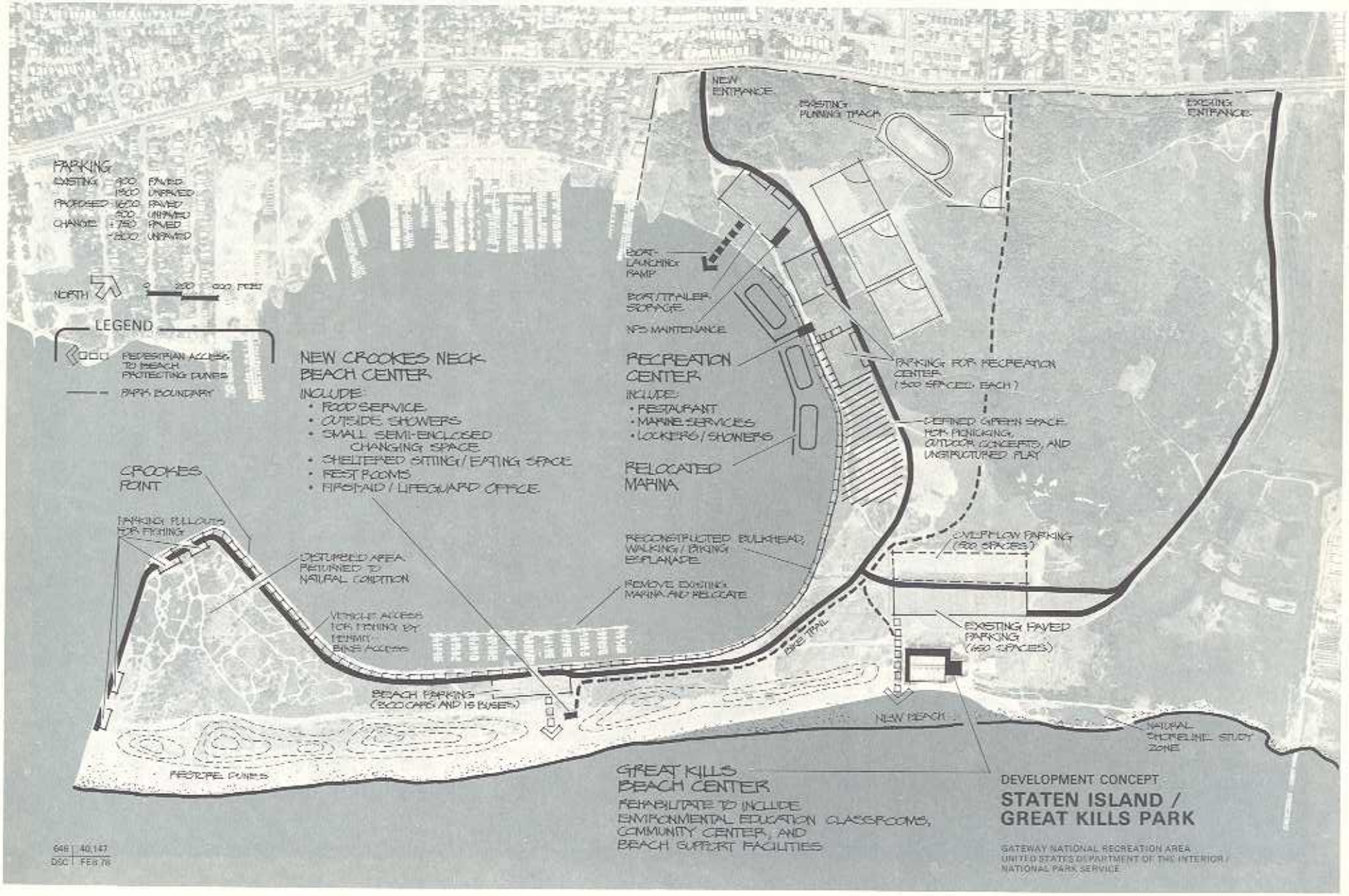
National Register of Historic Places, and a number of other gun batteries (which may be added to a revised National Register nomination form at a later date) will eventually serve as interpretive sites within the Fort Wadsworth complex. Battery Weed may also be adapted for visitor uses or administrative purposes, although the primary consideration in planning and design for this structure will be the retention of its historic appearance and integrity.

The short-range treatment proposed for the unit's other significant cultural features is ongoing maintenance and stabilization as necessary. This will ensure resource preservation until more intensive treatment is undertaken and will permit interim interpretive programs to be implemented. The unit was recently surveyed for unknown and unevaluated archaeological materials. This preliminary survey aided in resource identification, but additional detailed studies of all historic and prehistoric resources will be necessary to enable the Park Service to develop a comprehensive cultural resources management plan. Because additional beach development may eventually take place near the site of historic "Oude Dorp," Staten Island's first European settlement (located just outside the present park boundary near South/Midland Beaches), the Park Service will also conduct a professional survey of that site.

Existing utility systems within the unit will be maintained. New York City will continue to provide water and sewerage services to all Staten Island areas. Water supply and sanitary sewer system facilities, where required, will be connected to New York City lines. Electricity will continue to be supplied by Consolidated Edison.

Development Concept Plan - Great Kills Park. Great Kills is an established, operating park, and development plans for it represent rearrangement and improvement rather than total change. The existing entrance road will be maintained, and a second road constructed farther south near the site of an unpaved, dead-end access route (see access discussion following); this change will permit convenient access to all developed areas of Great Kills and will allow a circulation loop to be established that will reduce the potential for traffic congestion.

The existing beach center will serve as the nucleus of a new facility that will provide expanded beach services as well as space for environmental education programs and community meeting rooms. Paved parking for 650 cars will be provided on the approximate site of the existing parking lot, and an additional 500 spaces will be designated on nearby fields for overflow parking on heavy-use days. The site of a small, satellite beach center on Crookes Neck will also be retained, although the proposed new facility will be a larger structure. A 300-car parking area, on the site of the


PARKING
EXISTING 800 PAVED
1900 UNPAVED
PROPOSED 1600 PAVED
600 UNPAVED
CHANGE +750 PAVED
-1300 UNPAVED
NORTH
0 200 600 FEET
LEGEND
PEDESTRIAN ACCESS TO BEACH PROTECTING DUNES
PARK BOUNDARY
NEW CROOKES NECK BEACH CENTER
INCLUDE
• FOOD SERVICE
• OUTSIDE SHOWERS
• SMALL SEMI-ENCLOSED CHANGING SPACE
• SHELTERED SITTING / EATING SPACE
• REST ROOMS
• FIRSTAID / LIFEGUARD OFFICE
CROOKES POINT
PARKING PULLOUTS FOR FISHING
DISTURBED AREA RETURNED TO NATURAL CONDITION
VEHICLE ACCESS FOR FISHING BY PERMIT, BIKE ACCESS
BEACH PARKING (500 CARS AND 15 BUSES)
PRESERVE DUNES
NEW ENTRANCE
EXISTING RUNNING TRACK
EXISTING ENTRANCE
BOAT LAUNCHING RAMP
BOAT/TRAILER STORAGE
NPS MAINTENANCE
RECREATION CENTER
INCLUDE:
• RESTAURANT
• MARINE SERVICES
• LOCKERS / SHOWERS
RELOCATED MARINA
PARKING FOR RECREATION CENTER (300 SPACES EACH)
DEFINED GREEN SPACE FOR PICNICKING, OUTDOOR CONCERTS, AND UNSTRUCTURED PLAY
RECONSTRUCTED BULKHEAD, WALKING / BIKING ESPLANADE
REMOVE EXISTING MARINA AND RELOCATE
OVERFLOW PARKING (500 SPACES)
BIKE TRAIL
EXISTING PAVED PARKING (450 SPACES)
NEW BEACH
NATURAL SHORELINE STUDY ZONE
GREAT KILLS BEACH CENTER
REHABILITATE TO INCLUDE ENVIRONMENTAL EDUCATION CLASSROOMS, COMMUNITY CENTER, AND BEACH SUPPORT FACILITIES
DEVELOPMENT CONCEPT
STATEN ISLAND / GREAT KILLS PARK
GATEWAY NATIONAL RECREATION AREA
UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE
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DSC | FEB 78

existing marina parking lot, will service this beach center. The Great Kills/Crookes Neck facilities will be designed to accommodate up to 4,500 visitors at any one time (3,000 at the "Bathhouse" Beach center, 1,500 at the Crookes Neck Beach center; restrooms and shelter for up to 4,000 and 2,000, respectively). The establishment of the new facility on Crookes Neck is expected to aid in distributing use more evenly over this section of beach, so that on average summer weekend days, visitor densities will range from 170 square feet per person at Bathhouse Beach (Great Kills) to 500 square feet at Crookes Neck Beach. This will represent a change from the 140 square feet and 880 square feet per person, respectively, that exists today.

The existing marina at Great Kills will be replaced by a new marina development on the northeastern end of the bay. This will allow the consolidation of parking and backup facilities for the marina with those proposed to serve the new recreation complex and playing fields. The marina/recreation center complex will include facilities for boat launching and storage of boat trailers.

The harbor side of Crookes Point, in the vicinity of the existing marina, will be rebulkheaded, and small parking pullouts for about 40 vehicles (primarily for fishermen) will be constructed along the access road that will be built parallel to the bulkhead (see access discussion). The rest of Crookes Point will be managed to reestablish and maintain natural conditions, and the effects of present indiscriminant vehicular access will be corrected. Much of the northern portion of Great Kills will also be managed to preserve the natural landscape. Special environmental features like the peat outcrop and stream mouth will be safeguarded from excessive use and random access.

All development proposals for Great Kills will be initiated in Stage I. Phase I will involve replacement of the bulkhead, repair of existing uncontrolled access paths, and development of a single road and bike trail along the new bulkhead at Crookes Point. The new bathhouse at Crookes Neck Beach will be designed and constructed, and the new marina/recreation center and maintenance area will be built. At the end of Phase I, the present marina will be closed and removed, and at the same time service will be initiated at the new facility under suitable arrangements. Phase II at Great Kills will involve rehabilitation of the existing bathhouse and removal of the maintenance function from this structure, to be replaced by beach support, classrooms, and related spaces devoted to environmental education.

Development Concept Plan - Miller Field. Miller Field will be developed as a center for active outdoor recreation and athletics. The seaplane hangar in the southwest corner of the field may be adaptively reused as the nucleus of the developed area, which will

NEW DEPARTMENT SCHOOL NOT YET DONATED BY N.Y. CITY
PAVED PARKING (100 SPACES)
UNRESERVED FIELD
BUFFER STRIP (PARTIAL SCREENING OF RESIDENTIAL AREA MAINTAINING VISUAL LINK FROM RESIDENCES TO FIELD)
BUFFER STRIP (PARTIAL SCREENING OF RESIDENTIAL AREA MAINTAINING VISUAL LINK FROM RESIDENCES TO FIELD)
RESERVED ATHELETIC FIELDS
HIKING/JOGGING/WALKING PATHWAYS AROUND PERIMETER OF FIELD
PARK VEHICLES AND VISITORS ON PERMIT BEYOND THIS POINT
FIELD PARKING FOR MAJOR EVENTS (200 SPACES)
PAVED PARKING FOR NORMAL USE OF FIELD (100 SPACES)
EXISTING ADMINISTRATION BUILDING - CONVERT TO PUBLIC USE
HARD-SURFACE COURT GAMES, INDOOR POOL
SOFT-SURFACE RECREATION AND PARKING FOR MAJOR EVENTS IN SPORTS AREA
PAVED PARKING (300 SPACES) FOR NORMAL USE OF RECREATION CENTER
INTERPRET ELM TREE LIGHT AND TOWER
PARKING
EXISTING 200 PAVED
220 UNPAVED
PROPOSED 300 PAVED
270 UNPAVED
CHANGE 0 PAVED
0 UNPAVED
NORTH
0 200 400 FEET
LEGEND
PEDESTRIAN ACCESS TO BEACH PROTECTING DUNES
PARK BOUNDARY
EXISTING HANGAR
REHABILITATE FOR INDOOR SPORTS, COMMUNITY MEETINGS, AND SUPPORT FACILITIES FOR BEACH AND OUTDOOR SPORTS
PLAZA
PROVIDE:
• COMMUNITY-EVENTS FACILITIES
• ENTRANCE
• CHILDREN AND ADULT PLAY SPACE
DEVELOPMENT CONCEPT
STATEN ISLAND / MILLER FIELD
GATEWAY NATIONAL RECREATION AREA
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incorporate facilities for indoor sports, community events, and beach use, as well as a plaza, swimming pool (enclosed), and athletic courts. The northwestern corner of the field, where a portion of the locally unique swamp white-oak forest is located, will be preserved as an environmental study area; the National Park Service will also seek a cooperative agreement with New York City to ensure that the portion of the forest that lies on adjacent excluded land (proposed New Dorp High School) is preserved in a compatible manner. The nearby building now used as housing for Park Service personnel will become an environmental education center.

The existing administration building, on the north side of the field near Father Capodanno Boulevard, will be converted for other uses, such as a senior-citizen center, when administration for the Staten Island Unit shifts to Fort Wadsworth. The remainder of the field will be landscaped as field space for a variety of organized and casual sports.

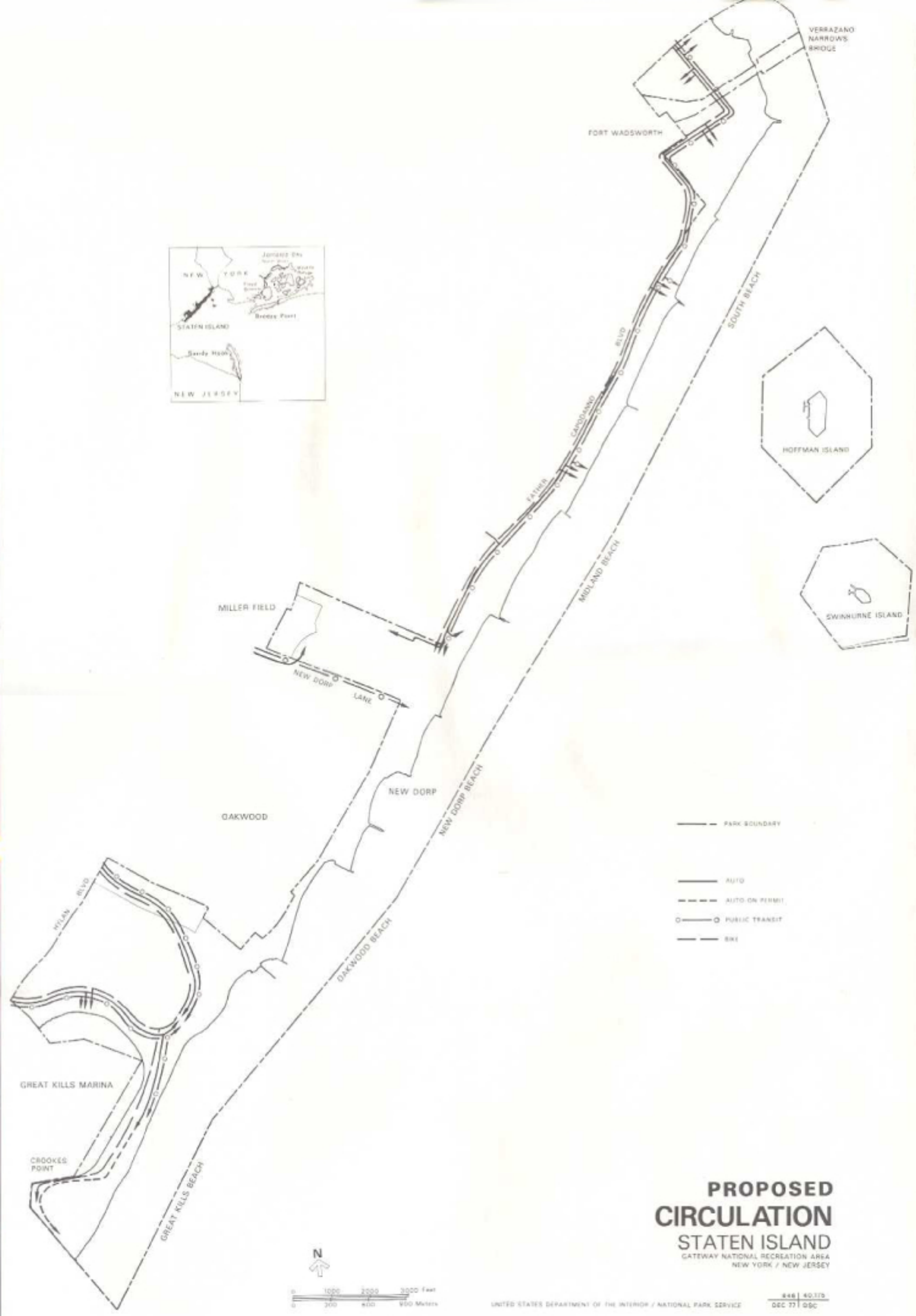
The main entrance to Miller Field will be shifted from the New Dorp Lane side to Father Capodanno Boulevard. Parking areas will be included just inside this entrance, along the north side of the athletic fields, and near a small secondary entrance from New Dorp Lane (about 700 spaces total). This latter entrance will dead-end at the parking lot there. The buffer landscaping established on the north and south sides of the field will ensure that access takes place at the designated entry points and will screen the field from surrounding residential areas.

The Miller Field hangar has been proposed for nomination to the National Register as a historic district. The structure will need substantial rehabilitation work to adapt the interior space for recreational purposes. Detailed study of the structure will permit managers to determine if it is cost-effective to rehabilitate it. If so, care will be taken to preserve the external facade and appearance of the hangar.

In Phase I, Stage I, at Miller Field, the entrance and parking areas will be relocated as proposed, and the buffer strips, ballfields, picnic areas, and courts will be upgraded and expanded. In Phase II, if it is feasible, the hangar will be rehabilitated for indoor recreation, and a pool constructed.

## Access and Circulation

Although private automobiles will continue to provide the primary means of access to the Staten Island Unit, no developments are planned that will encourage additional auto traffic in the park on summer weekends during Stage I. The number of parking spaces




# PROPOSED CIRCULATION

## STATEN ISLAND

GATEWAY NATIONAL RECREATION AREA
NEW YORK / NEW JERSEY

available on parkland will remain about the same, and all new parking lots will incorporate space for bus parking and turnaround. The means for extending bus service to and from nearby communities and rapid transit stops will be sought through cooperation with appropriate transportation agencies and other authorities and through the limited funding authorized under P.L. 95-344.

Access to Great Kills will continue to be along Hylan Boulevard, and the existing entrance road right-of-way will be retained and upgraded to provide primary access to the main beach center. During Phase I a second entrance road will be constructed farther south to service the proposed marina/recreation center complex and to provide an alternate route to the beach. Additional studies will be completed to determine the most appropriate location for the intersection of this road and Hylan Boulevard in order to avoid additional traffic conflicts and minimize potential impacts on the mature forest just inside the park boundary there; the approximate site will be where Hylan Boulevard intersects Keegan's Lane. The southern entrance road will extend about 3/4 of a mile. It will pass the marina/recreation center complex and continue east to connect with the northern entrance road, providing a circulation loop through the Great Kills area.

A secondary circulation route about 1 mile long will extend from the junction of the main roads south along the harbor edge of Crookes Point. This road will provide access to the proposed parking lot for Crookes Neck Beach and to the designated parking pulloffs along the bulkhead. Auto travel beyond the parking lot will be on a permit basis only in order to protect the sensitive Crookes Point habitats from overuse. Cars will be allowed to park only at designated sites, and signs or physical barriers such as bollards will be installed to prevent random parking or other unauthorized uses.

During Stage I, access to Miller Field will continue to be from Lily Pond Avenue or Hylan Boulevard to connecting streets that intersect Father Capodanno Boulevard; limited secondary access will be possible from New Dorp Lane. When the Fort Wadsworth, South Beach, and Midland Beach properties are turned over to the Park Service, motorists will be able to exit the Verrazano Expressway into Fort Wadsworth and travel through the fort complex and down Father Capodanno Boulevard into the northern end of Miller Field. This route will also service the Midland/South Beach areas and the fort itself. Secondary access to the northern part of the unit will still be possible from connecting city streets.

The main entrance for Miller Field will be shifted from New Dorp Lane to Father Capodanno Boulevard to reduce present traffic congestion at the New Dorp Lane/Hylan Boulevard intersection and

STATEN ISLAND - DAILY VISITOR USE
FY 1976 and Projected for Stage I

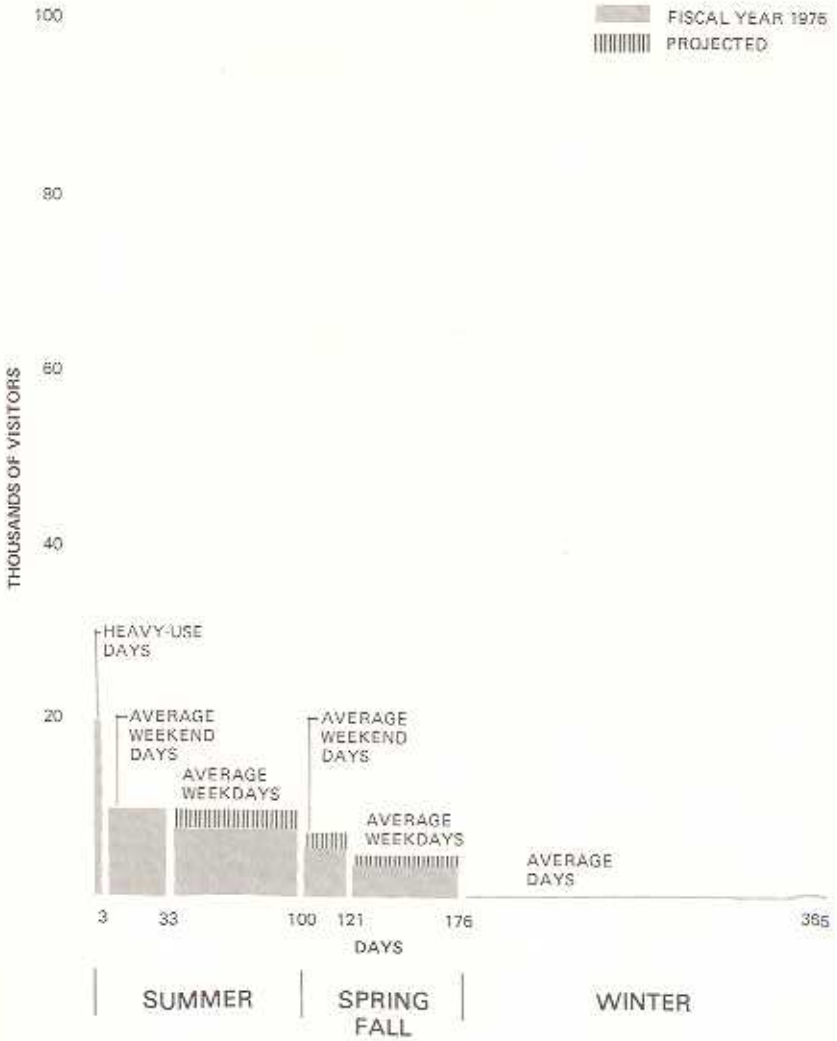
| | Bathhouse Beach | Crookes Neck Beach | Total Swim Area |
|---|---|---|---|
| SWIMMABLE BEACH AREA (sq. ft.) | 340,000 | 460,000 | 800,000 |
| BEACH CAPACITY/DAY @ 75 sq. ft. per person (# of people) | 11,400 | 15,600 | 27,000 |
| AVERAGE SUMMER WEEKEND DAY: | | | |
| Arrive by Auto | | | |
| FY 1976 | 5,000 | 1,300 | 6,300 |
| Projected | 5,000 | 1,300 | 6,300 |
| Arrive by Public Transit and Charter | | | |
| FY 1976 | 1,000 | 0 | 1,000 |
| Projected | 0 | 1,000 | 1,000 |
| Total Daily Use | | | |
| FY 1976 | 6,000 | 1,300 | 7,300 |
| Projected | 5,000 | 2,300 | 7,300 |
| Noon Beach Use (total daily use/ turnover rate of 2.5) | | | |
| FY 1976 | 2,400 | 520 | 2,920 |
| Projected | 2,000 | 920 | 2,920 |
| Beach Density (sq. ft./person) | | | |
| FY 1976 | 140 | 880 | 270 |
| Projected | 170 | 500 | 270 |
| CAPACITY OF PROPOSED FACILITIES (# of people) | 3,000-4,000 | 1,500-2,000 | |

PEAK WEEKEND DAY TRAFFIC ENTERING PARK

| FY 1976 and Projected | Total People | Total Vehicles |
|---|---|---|
| Auto (±3.5 people/car) | 6,300 | 1,800 |
| Public Transit and Charter (50 people/bus) | 1,000 | 20 |
| Total | [illegible] | [illegible] |

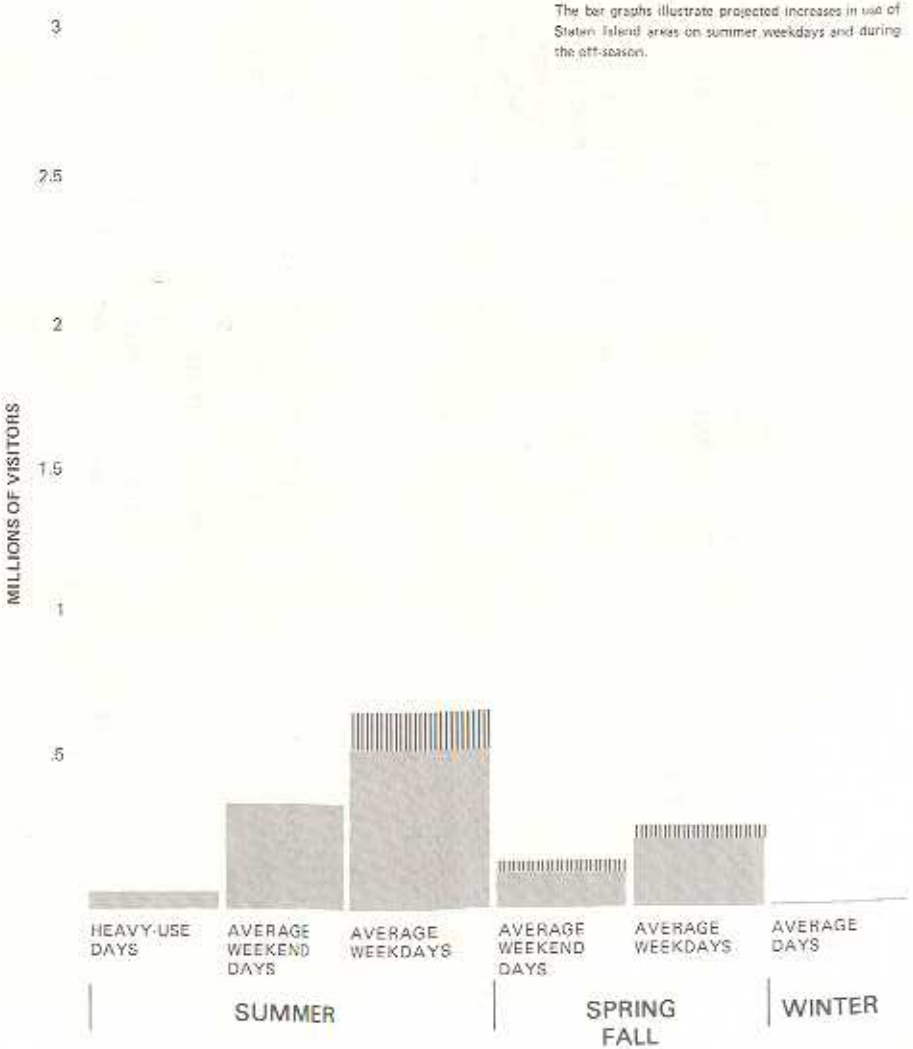
# STATEN ISLAND

## DAILY USE




## ANNUAL USE

The bar graphs illustrate projected increases in use of Staten Island areas on summer weekdays and during the off-season.



to support the increased traffic that can be expected when the northern route is opened in Stage II. Parking areas will be developed near the Father Capodanno terminus. A small entrance will be provided on New Dorp Lane near the northwest corner of the field to permit access to the sports fields there.

Bicycle paths will parallel access routes through Fort Wadsworth and along Father Capodanno Boulevard into Miller Field when this route is opened for public use. Paths will also be established at Great Kills Park to permit bicycle access to all developed areas there. The low-use areas at Oakwood/New Dorp will be accessible on foot from Great Kills and Miller Field.

## Projected Visitor-Use Levels

Annual visitor use of the Staten Island areas open to the public during Stage I (Great Kills and Miller Field) is expected to increase less than 20 percent, from 1.2 million to 1.4 million people. The opening of additional parklands and access routes in Stage II should permit a doubling of this figure to some 3 million visitors annually. Peak-day visits, primarily to the Great Kills/Crookes Neck swimming areas, are also expected to remain at approximately the present levels during Stage I, with bus service providing access for some 1,000 people and another 6,300 arriving by private automobile.

# BREEZY POINT

Breezy Point proposals seek to expand opportunities for beach use and other active outdoor recreation while preserving important natural landscapes and habitats as well as identified cultural features. In addition, proposed use at Breezy Point is based on an east-west gradient, with higher densities projected in the more accessible eastern portions of the unit and gradually diminishing use toward the western Tip. Although access limitations were a major factor in determinations to establish a gradient of use, resource considerations and the existence of a large enclave property in the western half of the unit also played a part in the final decision.

Slightly less than half of the lands on Breezy Point will be restored and preserved by managing them as part of the Protection and Use-by-Reservation zones. These areas, encompassing disturbed lands proposed for upgrading as well as undisturbed natural resources and habitats like the tern-nesting sites, existing and proposed dune systems, forested uplands, and most of the bay shore will be protected from public use or reserved for low-impact activities such as hiking, fishing, nature study, and environmental education. The more intense recreational uses of Breezy Point will take place at the four beach/recreation centers at Jacob Riis, Fort Tilden, Tankel Beach, and the Tip--although even for these developed areas, an east to west gradient of use is projected, with much higher densities occurring at Riis/Tilden than at Tankel Beach and especially the more remote Tip Beach. These and other active use areas will comprise the remainder of the unit's land acreage.

In total, 3-3/4 additional miles of protected public beach will be added to the existing mile of public beach at Jacob Riis Park; ½ mile of beach at Fort Tilden will be retained for activities like strolling and fishing, as the waters there are not safe for swimming because of riptides.

The plan calls for the extension of beach use from the existing Riis Park development into part of the area occupied by Fort Tilden (the portion suitable for swimming) and the development of two additional beach/recreation complexes farther west on the peninsula. Riis Park will be upgraded to better accommodate existing recreational patterns. The eastern part of Fort Tilden will be renovated and developed to open spaces for swimming and other beach activities as well as a wide variety of outdoor and indoor sports, programs, and events; it will also include an area designed especially for use by the handicapped. The western portion will be reserved for historical interpretation and low-intensity recreational activities.

As part of the development proposals for Fort Tilden and Jacob Riis, selected historic structures and other features will be adaptively reused to support intended recreational activities. At the same time, the historic district status of these two areas--the first representing the country's coastal defense system, the second illustrating public park development--will be respected and enhanced in design work wherever possible.

The existing beach clubs in the western portion of Breezy Point will be reused as the nuclei of two recreation centers--one at Tankel Beach and one at the Tip. Development will be comparable to that described for the Sandy Hook beach centers. On weekdays and out-of-season, these centers will be used primarily by groups arriving by bus; some people will be able to stay overnight at nearby campsites or hostels, in supervised groups on a reservation basis. The site of the recently demolished commercial development and housing project near Tankel Beach will be landscaped to provide for outdoor activities.

The continued existence of the Breezy Point Cooperative is accommodated in the plan. Buffer zones may be established around the Cooperative as suggested in the Gateway legislation. Summer weekend traffic to the Tip will be by Park Service shuttle only, on a stabilized path that will be located behind the foredune on the ocean side of the Cooperative.

Because the private automobile will continue to be important in bringing people to other parts of Breezy Point, traffic congestion will continue to be a problem. Part of the problem will be ameliorated by intercepting some motorists at Floyd Bennett Field and shuttling those people across the bridge in Park Service vehicles.

The plan includes provision for a new ferry pier on the bay side. Up to 10,000 people per day on summer weekend days will be able to come to Breezy Point by water.

Total annual visitor use at Breezy Point will increase by some 45 percent in Stage I, with most increases taking place on summer weekdays and during the spring, fall, and winter. Peak-day use is expected to be approximately 100,000--the present peak-day numbers plus 10,000 visitors arriving by ferry.

## ZONING AND RESOURCES MANAGEMENT

As stated above, because of access and circulation limitations, the management zoning and development concepts for Gateway lands on Breezy Point are based on a gradient of uses, with the most intense activities taking place at Riis Park and the least intensive at the

PRIMARY ROAD
LIGHT-DUTY ROAD
PARK BOUNDARY
EXACT BOUNDARY TO BE DETERMINED UPON ACQUISITION OF BEACH BY NPS
BUILDING
PAVED AREA
BOARDWALK OVER DUNES

PROTECTION
USE BY RESERVATION
UNSTRUCTURED RECREATION
BEACH
STRUCTURED RECREATION
DEVELOPMENT SUPPORT

N

0 1000 2000 3000 Feet
0 300 600 900 Meters

# MANAGEMENT ZONES

## BREEZY POINT

GATEWAY NATIONAL RECREATION AREA
NEW YORK / NEW JERSEY

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

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Tip Beach center (the site of the present Breezy Point Surf Club). A large portion of the remaining Tip area, including the high and low salt marsh community and the mixed grassland/primary dune system, will be placed in the Protection zone, and no recreational uses will be allowed. Other existing and proposed dune systems--at Tankel Beach, Tilden Beach, on the ocean side in front of the Coop, and along the length of beach in front of the central wooded area of Fort Tilden--will also be managed as Protection zone lands and protected from random access by means of boardwalks, designated routes to the beach, or other operational methods. The third type of land in the Protection zone will be the buffer areas. Two are proposed: one surrounding the Breezy Point Cooperative (this buffer was mentioned in the Gateway enabling legislation), and another west of the community of Roxbury. The design and exact dimensions of these buffers have not yet been determined in detail. The Protection zone will include 20 percent of the total land area of Breezy Point.

The intermediate grassland/reed-marsh area between the Protection zone lands at the Tip will be placed in the Use-by-Reservation zone; this entire western end of the Tip--except a narrow Unstructured Recreation zone along the northwest shoreline to allow access for fishing on the jetty--will be preserved in its natural state. Use-by-Reservation lands will be available for environmental education and nature study on a group permit basis. A large grassland/thicket/forest area (mixed conifer) west of Fort Tilden and extending north of Rockaway Beach Boulevard to the bay edge will also be part of the Use-by-Reservation zone and will be managed to perpetuate its natural and historic values. Acreage in this zone will constitute about 25 percent of the total.

All identified significant historic resources will also be managed under the strategies for the Use-by-Reservation zone. Areas and isolated features at Fort Tilden and Riis Park will be given historic district status and nominated to the National Register of Historic Places as sites illustrating coastal defense and public park development, respectively. Any other currently unknown or unassessed cultural resources that are discovered during future planning, design, and development will be fully evaluated, and appropriate management techniques developed.

All the ocean beaches along Breezy Point (4-3/4 miles; 24 percent of total) will be placed in the Beach zone and opened for some type of recreational use. The potentially hazardous beach in front of the Fort Tilden forested area will be cleaned up and maintained; no swimming will be permitted in this area. The narrow, floodprone shoreface in front of the proposed Tankel Beach development will be expanded by some 435,000 square feet through sand nourishment by the Corps of Engineers; sand sources may include dredged material from Rockaway Inlet or from an offshore area, or accreted sand from further east.

The disturbed area surrounding and extending north of the existing beach center at the Tip will be restored to a more natural condition and zoned for unstructured recreation. Similar zoning and management will take place on lands surrounding the proposed Tankel Beach center, on an upland site between Riis Park and the proposed Tilden Beach development, and in the area north and east of Riis. The last three areas will be landscaped to provide recreational settings. Acreage in the Unstructured Recreation zone will represent 14 percent of Breezy Point's lands.

Small field/court areas (Structured Recreation zone; 6 percent of total) will be established on disturbed lands adjacent to the proposed beach centers at Tankel Beach and Tilden Beach, and at Riis Park.

Suitable lands will be placed in the Development Support subzone and managed to provide necessary support facilities for beach use and other active recreation. This zone will include the five beach/recreation centers--one at the Tip, two at the Tankel Beach complex, one at Fort Tilden, and the existing Riis Beach development--a bayside ferry dock, an administrative complex east of Roxbury, and parking areas where necessary. All Support subzone areas lie on cleared or developed land, and most have existing facilities that will be adapted, or adaptively restored, as part of the development designs. These lands will comprise 11 percent of Breezy Point.

## VISITOR USE AND DEVELOPMENT

### Design and Use Concepts

Concept plans for the proposed developed areas at Fort Tilden, Tankel Beach, and Tip Beach are discussed and illustrated in the following subsections. Riis Park, although it will continue to be the most intensively used portion of Breezy Point, will remain largely as it is, and therefore no development concept plan is included here. The location and configuration of existing facilities at Riis will be retained, but significant modernizing improvements will be made. The bathhouse will undergo intensive study and will then be rehabilitated so that it more fully supports a wide range of beach and other recreational activities. Picnicking sites will be designated. This work will take place in Phase II or Stage II.

The short-range level of treatment proposed for the unit's significant cultural features is ongoing maintenance and stabilization, as necessary to allow resource preservation until more intense treatment is undertaken. The Riis Park bathing pavilion, support structures, beach, and attendant recreational areas are being nominated to the National Register as a historic district.

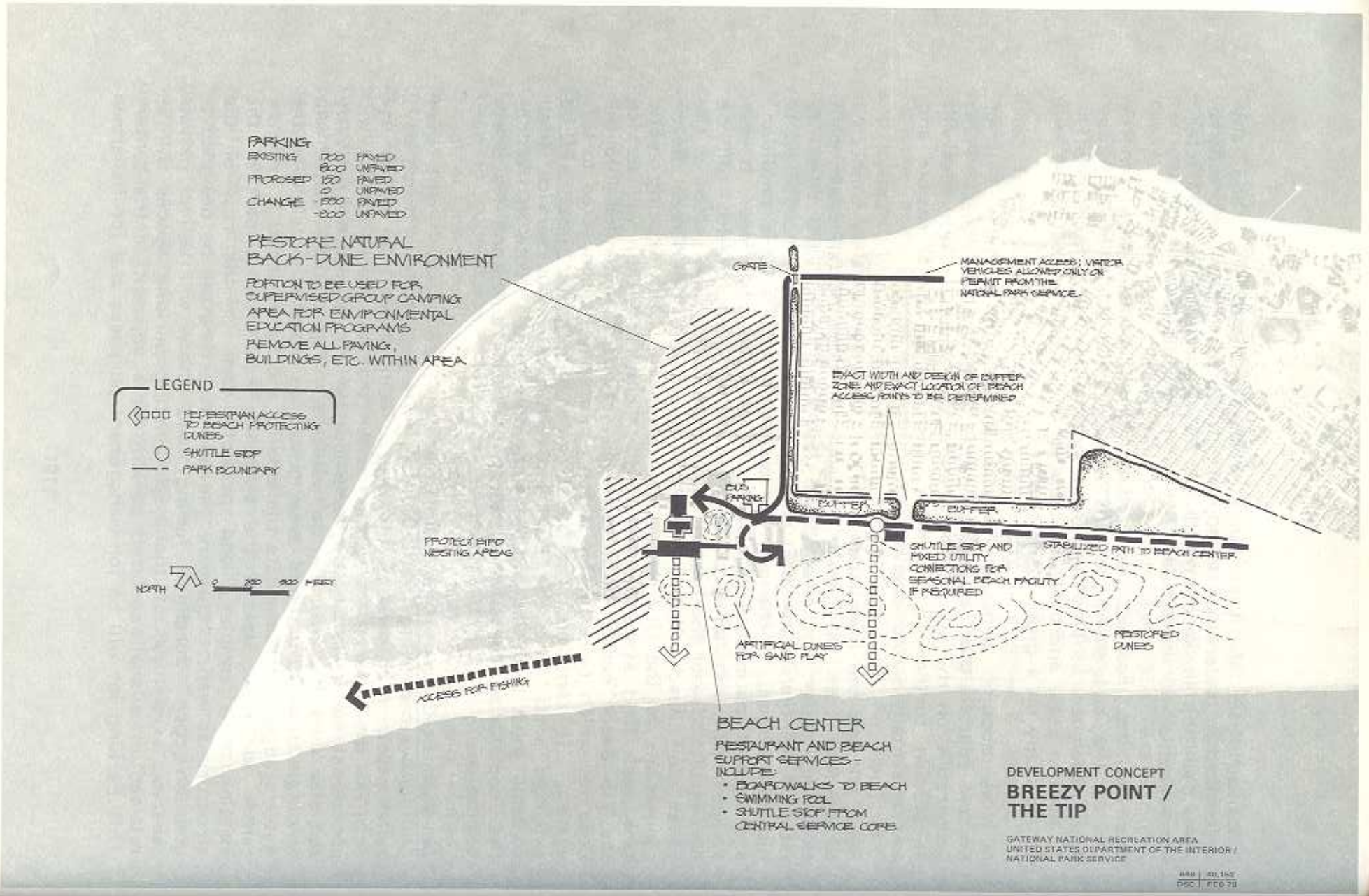
Continued use of Riis as a recreational facility, and any modernization undertaken to support present or future recreational styles, will be in keeping with its historic origins and character. Improvements will include facilities for interpretation.

The remaining area not discussed as part of a development concept plan is the bay shore west of Roxbury and north of Rockaway Beach Boulevard. This significant open area will be preserved in its natural state and made available for environmental education and nature study on a group permit basis.

A ferry dock is proposed for construction on the bay side of Breezy Point--either at Fort Tilden or near the Breezy Point Cooperative on the site of the present yacht club. Both sites will be studied further to determine which is the most feasible and environmentally sound location.

Riis Park and the installations at Fort Tilden are already connected to the New York City sewer system. An unconnected sewer main extending under Rockaway Beach Boulevard from Fort Tilden to within 1,000 feet of the east gate of the Coop may be hooked up to the city system, if the main is found to be in suitable condition, and connections made to the Tankel Beach developed areas. If not, a new main, or an expanded septic tank/leach field, will be developed. Use of the present septic tank/leach field system at the Silver Gull Beach Club will be discontinued if the Tankel Beach connections to the city system are completed. The existing septic tank/leach field system at the Breezy Point Surf Club will service the Tip Beach center until sewerage service is extended into the Coop, at which time the Tip Beach center may be connected to this system. If required, permanent water and sewer lines will be extended west from the Tankel Beach system to service small portable toilet facilities erected along the shuttle route in front of the Coop during the summer season (see the Tankel and Tip Beach discussions).

Development Concept Plan - Tip Beach. The Breezy Point Surf Club draws something like 3,000 cars on a peak summer beach day, all of which enter through the Breezy Point Coop. On similar use days in the future, the beach center that the Park Service will operate at approximately the same location will be reached only by National Park Service shuttle vehicles. The shuttle route will terminate at a turnaround area located as close as possible to the water's edge to accommodate the elderly and handicapped. The new center will make use of the swimming pool that is part of the existing club complex, and possibly some of the rest of the structure as well. However, the new structure will be designed to give an open, porchlike feeling, and there will be no private cabanas. Only 150 of the 2,500 existing parking spaces will be retained in a small surfaced parking area adjacent to the center. This parking lot will be for management purposes and for fishermen


PARKING
EXISTING 1200 PAVED
800 UNPAVED
PROPOSED 150 PAVED
0 UNPAVED
CHANGE -850 PAVED
-800 UNPAVED
RESTORE NATURAL BACK-DUNE ENVIRONMENT
PORTION TO BE USED FOR SUPERVISED GROUP CAMPING
AREA FOR ENVIRONMENTAL EDUCATION PROGRAMS
REMOVE ALL PAVING, BUILDINGS, ETC. WITHIN AREA
LEGEND
PEDESTRIAN ACCESS TO BEACH PROTECTING DUNES
SHUTTLE STOP
PARK BOUNDARY
NORTH
0 200 400 METERS
PROTECT BIRD NESTING AREAS
ACCESS FOR FISHING
GATE
MANAGEMENT ACCESS; VISITOR VEHICLES ALLOWED ONLY ON PERMIT FROM THE NATIONAL PARK SERVICE.
EXACT WIDTH AND DESIGN OF BUFFER ZONE AND EXACT LOCATION OF BEACH ACCESS POINTS TO BE DETERMINED
BUS PARKING
BUFFER
BUFFER
SHUTTLE STOP AND MIXED UTILITY CONNECTIONS FOR SEASONAL BEACH FACILITY IF REQUIRED
STABILIZED PATH TO BEACH CENTER
ARTIFICIAL DUNES FOR SAND PLAY
RESTORED DUNES
BEACH CENTER
RESTAURANT AND BEACH SUPPORT SERVICES - INCLUDE:
• BOARDWALKS TO BEACH
• SWIMMING POOL
• SHUTTLE STOP FROM CENTRAL SERVICE CORE
DEVELOPMENT CONCEPT
BREEZY POINT / THE TIP
GATEWAY NATIONAL RECREATION AREA
UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

or environmental education group use on permit. Picnic areas will be established.

Boardwalks will provide pedestrian access from the shuttle stop and beach center complex to the beach and to an interpretive-viewing platform overlooking the protected dune/marsh area to the west. The primary dune line in the Tip Beach vicinity will be allowed to grow back; small artificial dunes will be constructed behind this line and immediately in front of the center to provide areas for sand play in a dune environment.

Much of the rest of the Tip area will be managed to create a stable natural environment. Tern-nesting sites will be protected, and other areas will be opened for environmental education programs.

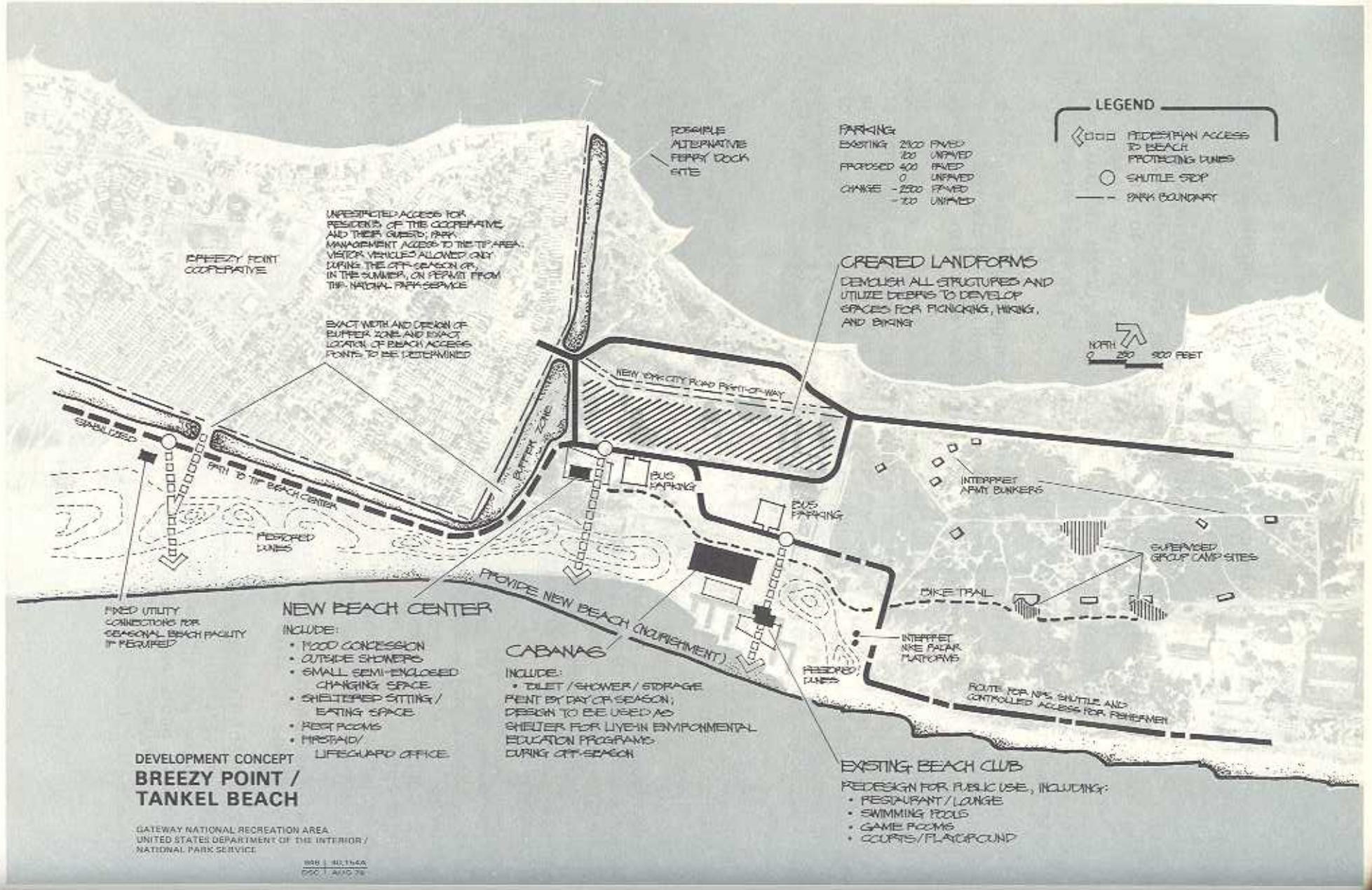
Supervised group camping will be accommodated. A moderate number of off-road vehicles will be permitted access to the jetty at the Tip, on a permit basis. Otherwise, the jetty will only be reached on foot. It is anticipated that this westernmost segment of the beach will be a place where considerable privacy, even solitude, is possible even on days when the rest of the beach is heavily used.

The Tip Beach center will be able to accommodate up to 6,000 people at any one time, with shelter and restroom facilities for up to 8,000 people. Most people are expected to use the beach directly in front of the beach center, but even so, the width of the beach means that densities there will be less than they are at other parts of Breezy Point (an anticipated 520 square feet per person on average summer weekend days). The gradual reestablishment of the natural dune system behind the beach will enhance the "away-from-it-all" character being sought for this portion of Gateway.

The beach area in front of the Coop will be accessible from designated stops along the Park Service shuttle route to the Tip. The number of stops, as well as the number of access points through the Coop's buffer zone and the exact nature of the buffer, will be determined in future designs. Permanent connections may be provided at the stops for comfort facilities that can be put up for the season and taken down for the rest of the year.

The development of the Tip area is planned to take place in Phase II of Stage I, after the beach in front of the Coop is acquired.

Development Concept Plan - Tankel Beach. Two interconnected beach centers will be established at Tankel Beach. The eastern one will occupy the site of the present Silver Gull Beach Club, and the swimming pools and other components of the existing structures will be adaptively reused. The existing cabana structures, which invade the beach, will be removed, but new cabana and seasonal


LEGEND
PEDESTRIAN ACCESS TO BEACH PROTECTING DUNES
SHUTTLE STOP
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EXISTING 2900 PAVED
700 UNPAVED
PROPOSED 400 PAVED
0 UNPAVED
CHANGE -2500 PAVED
-700 UNPAVED
POSSIBLE ALTERNATIVE FERRY DOCK SITE
UNRESTRICTED ACCESS FOR RESIDENTS OF THE COOPERATIVE AND THEIR GUESTS; PARK MANAGEMENT ACCESS TO THE TIP AREA; VISITOR VEHICLES ALLOWED ONLY DURING THE OFF-SEASON OR, IN THE SUMMER, ON PERMIT FROM THE NATIONAL PARK SERVICE
BREEZY POINT COOPERATIVE
EXACT WIDTH AND DESIGN OF BUFFER ZONE AND EXACT LOCATION OF BEACH ACCESS POINTS TO BE DETERMINED
CREATED LANDFORMS
DEMOLISH ALL STRUCTURES AND UTILIZE DEBRIS TO DEVELOP SPACES FOR PICNICKING, HIKING, AND BIKING
NORTH
0 250 500 FEET
NEW YORK CITY ROAD RIGHT-OF-WAY
BUFFER ZONE
STABILIZED
PATH TO TIP BEACH CENTER
RESTORED DUNES
BUS PARKING
BUS PARKING
INTERPRET ARMY BUNKERS
SUPERVISED GROUP CAMP SITES
BIKE TRAIL
PROVIDE NEW BEACH (NOURISHMENT)
FIXED UTILITY CONNECTIONS FOR SEASONAL BEACH FACILITY IF REQUIRED
NEW BEACH CENTER
INCLUDE:
• FOOD CONCESSION
• OUTSIDE SHOWERS
• SMALL SEMI-ENCLOSED CHANGING SPACE
• SHELTERED SITTING / EATING SPACE
• REST ROOMS
• FIRST-AID/ LIFEGUARD OFFICE
CABANAS
INCLUDE:
• TOILET / SHOWER / STORAGE
RENT BY DAY OR SEASON; DESIGN TO BE USED AS SHELTER FOR LIVE-IN ENVIRONMENTAL EDUCATION PROGRAMS DURING OFF-SEASON
INTERPRET NIKE RADAR PLATFORMS
RESTORED DUNES
ROUTE FOR NPS SHUTTLE AND CONTROLLED ACCESS FOR FISHERMEN
EXISTING BEACH CLUB
REDESIGN FOR PUBLIC USE, INCLUDING:
• RESTAURANT / LOUNGE
• SWIMMING POOLS
• GAME ROOMS
• COURTS / PLAYGROUND
DEVELOPMENT CONCEPT
BREEZY POINT / TANKEL BEACH
GATEWAY NATIONAL RECREATION AREA
UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

locker facilities will be developed for use by the general public (no club memberships). The new cabanas may be designed so that they can be used as overnight accommodations in environmental education programming during the off-season. The beach centers will be able to accommodate up to 9,000 people at any one time; shelter and restroom facilities will be provided for up to 15,000 people. The Corps of Engineers nourishment project will add approximately 430,000 square feet of beach in front of the beach center complex for environmental protection and to provide better beach-use densities. An estimated 220 square feet per person on average summer weekend days is projected.

Parking at Tankel Beach will be reduced from 3,600 to 400 car spaces (175 bus spaces) in two small lots designed for use primarily by buses. The lots will be convenient to shuttle stops and beach facilities. On summer weekend days, there will be no automobile access to the Tankel Beach facilities; all access will be by Park Service shuttle or by public or chartered bus.

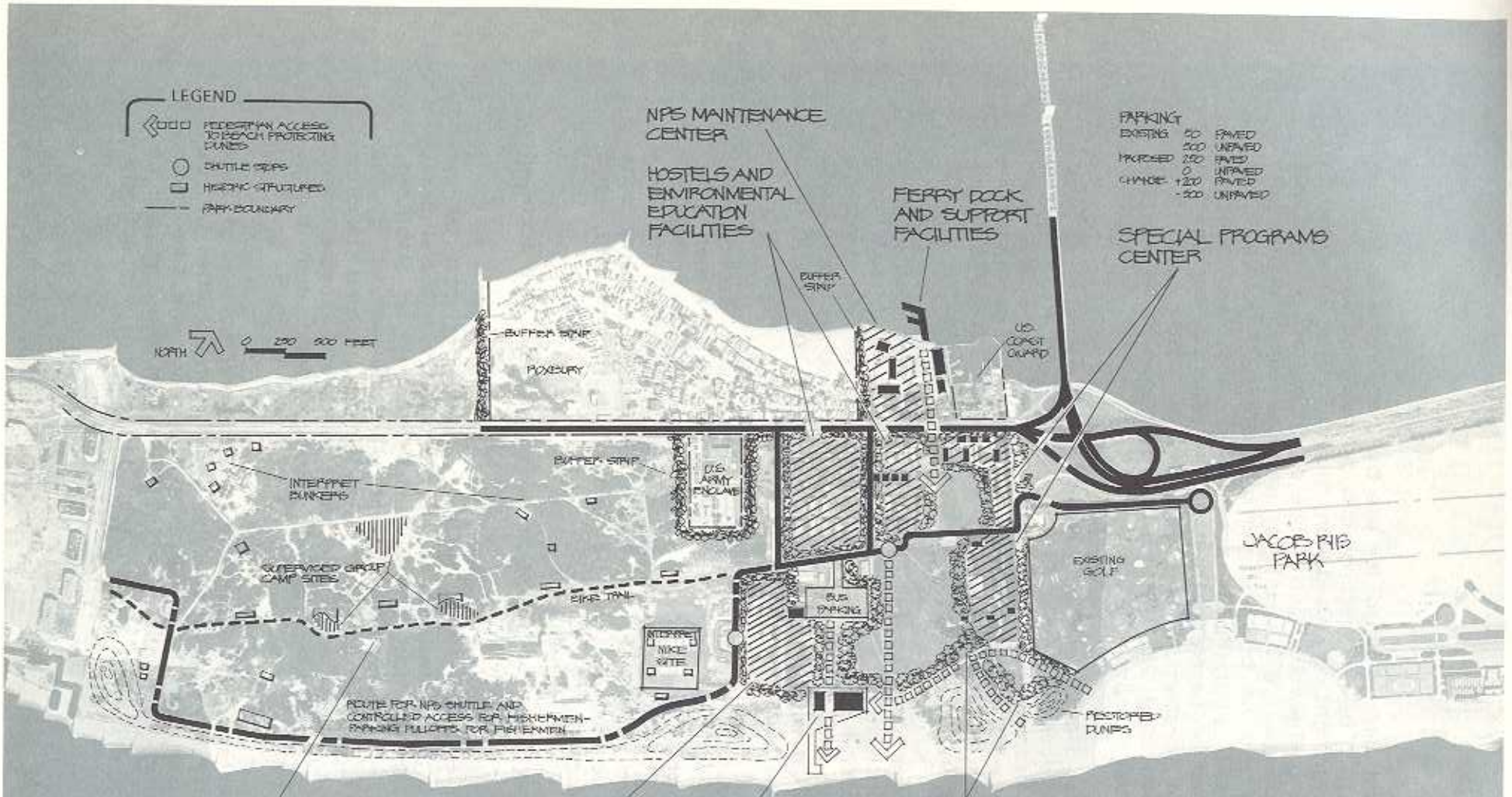
All of the half-completed commercial structures north of the Silver Gull facility, including the high-rise skeletons, have been demolished. The site where the towers were located will become a landscaped natural area for picnicking and other outdoor activities. Part of the rubble from the demolition project may be left in place and used to create landscaped hills.

As mentioned above, a buffer zone will surround the Breezy Point Cooperative, separating it from the Tankel Beach developed area. The dunes between Tankel Beach and Tip Beach, extending east into the Tankel Beach development, and especially in the area between the Silver Gull and Fort Tilden (where the primary dune line has been destroyed) will be allowed to regenerate, and subsequently protected.

Bathhouse construction and renovation at Tankel Beach will occur in Phase I of Stage I.

Development Concept Plan - Fort Tilden. The westernmost portion of Fort Tilden will be managed as a predominantly natural area, with the missile emplacement and batteries restored or stabilized, and interpreted. The missile emplacement will be reached by the shuttle, which will pass south of the wooded area behind the dune line; the batteries will be accessible along paths and bicycle trails. Supervised group camping areas will also be designated in this western area.

A new beach center will be built in the eastern portion of Fort Tilden. Operating in combination, the Riis/Tilden facilities will be able to accommodate up to 14,000 people at any one time (with shelter and comfort facilities for 22,000). Beach densities will be approximately 250 and 140 square feet per person, respectively.


LEGEND
PEDESTRIAN ACCESS TO BEACH PROTECTING DUNES
SHUTTLE STOPS
HISTORIC STRUCTURES
PARK BOUNDARY
NORTH
0 250 500 FEET
NPS MAINTENANCE CENTER
HOSTELS AND ENVIRONMENTAL EDUCATION FACILITIES
FERRY DOCK AND SUPPORT FACILITIES
SPECIAL PROGRAMS CENTER
PARKING
EXISTING 50 PAVED
500 UNPAVED
PROPOSED 250 PAVED
0 UNPAVED
CHANGE +200 PAVED
-500 UNPAVED
BUFFER STRIP
POXBURY
U.S. COAST GUARD
INTERPRET BUNKERS
U.S. ARMY ENCLAVE
SUPERVISED GROUP CAMP SITES
BIKE TRAIL
NIKE SITE
BUS PARKING
EXISTING GOLF
JACOB RIIS PARK
ROUTE FOR NPS SHUTTLE AND CONTROLLED ACCESS FOR HIKERS-MEN-PARKING PULLOUTS FOR FISHERMEN
RESTORED DUNES
BUNKER AREA
PROVIDE:
• HISTORIC INTERPRETATION AND ADAPTIVE USE OF HISTORIC STRUCTURES
• DESIGNATED SUPERVISED GROUP CAMPING SITES
NEW SPECIAL FACILITIES
INCLUDE RECREATION FACILITIES DESIGNED SPECIALLY FOR HANDICAPPED, WITH EASY ACCESS TO BEACH
NEW BEACH CENTER
INCLUDE:
• FOOD CONCESSION
• OUTSIDE SHOWERS
• SMALL SEMI-ENCLOSED CHANGING SPACES
• SHELTERED SITTING / EATING SPACE
• REST ROOMS
• FIRSTAID / LIFE GUARD OFFICE
NEW PICNIC AREAS
PROVIDE GRASSY SHADED AREAS FOR DAY-USE "BASE CAMPS"
DEVELOPMENT CONCEPT
BREEZY POINT / FORT TILDEN
GATEWAY NATIONAL RECREATION AREA
UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE
646 | 40,150
OSC | FEB 78

Just to the west of the new Tilden Beach center will be a recreation complex designed to be especially enjoyable for the handicapped. (Barrier-free environments are a Park Service policy, but special facilities can only be provided at certain locations.) Selected buildings at Fort Tilden will be adaptively reused as hostels and environmental study centers; the hostels will be administered by an organization like the American Youth Hostel Association. Tilden will also provide large areas for athletics, informal recreation, and picnicking. A substantial amount of dune regeneration will occur on both sides of the new beach center where the dunes have been destroyed by previous occupants.

The new bathhouse at Fort Tilden will be developed in Phase I, Stage I, and usable structures will be rehabilitated for program use. The dune area in front of the proposed bathhouse will also be allowed to regenerate by natural means.

## Access and Circulation

Land access to Breezy Point will continue to be along existing routes--from Brooklyn via the Marine Parkway Bridge and from the Rockaways and parts of Queens via Beach Channel Drive. It is anticipated that there will be no significant increases in automobile traffic above current levels on weekends down the Flatbush Avenue corridor and through the Rockaways. It is also anticipated, because of reduced parking capacity on Breezy Point and the alternate use of Floyd Bennett for parking, that there will be a significant decrease in the number of vehicles crossing the Marine Parkway Bridge.

Most of the automobile parking places associated with the existing Silver Gull Beach Club and Breezy Point Surf Club will be eliminated, as will all but 500 of the spaces in the Fort Tilden vicinity. These spaces will be replaced by parking areas developed at Floyd Bennett Field (approximately 3,000 spaces). On summer weekends, visitors coming to Breezy Point by private automobile will drive to and park at the Riis parking lot or will park at Floyd Bennett Field and be shuttled in National Park Service vehicles to any of the several destinations on Breezy Point; on days when the number of visitors to Breezy Point does not require the use of parking space at Floyd Bennett Field, shuttles will start from the Riis parking lot.

A special "elephant train" type of shuttle system operating on Breezy Point, capable of driving on an unpaved stabilized surface, will originate at the west end of Riis Park, pass through Fort Tilden's developed area, turn south toward the beach, stop at the Nike missile emplacement and batteries, continue northwest to the Tankel Beach centers, and finally, running on a stabilized path

between the dune line and the buffer zone surrounding the Breezy Point Cooperative, arrive at the final destination, the Tip Beach center. Gateway-related traffic through the Coop will be eliminated on summer weekends (with the exception of special bus service for environmental education groups and fishermen and park staff vehicles), and all public access to the Tip Beach area will be by shuttle.

Bus parking areas and turnarounds are planned at the Tankel Beach and Fort Tilden centers (as well as those existing at Riis Park) for any bus lines that are extended into the park and for chartered buses. On days when the number of visitors is small and the shuttle is running only from Tankel Beach to the Tip, portions of these lots will be available for automobile parking.

The ferry pier, to be located at a yet to be determined site on the bay side of Breezy Point, will service ferries arriving from nearby sites such as Coney Island as well as regional embarkation points like Battery Park and Hoboken. The possibilities for waterborne transit will be fully explored in the proposed transportation study that will follow approval of this plan.

Many existing roads and pathways on Gateway lands will either be converted for use as bicycle trails or have surfacing removed so that vegetation can grow back. The road down the center of Fort Tilden will be converted to a bicycle trail for access to Tankel Beach.

## Projected Visitor-Use Levels

Visitor use at Breezy Point is expected to increase by 45 percent from the present 3.8 million annually to an estimated 5.5 million at the end of Stage I. Projections are based on the assumptions that 1) an additional 10,000 people will come to the park by ferry on an average summer weekend day, and about 5,000 will arrive by this transit mode each summer weekday; 2) about 10,000 additional visitors will arrive by land access systems on weekdays; and 3) spring and fall use of Breezy Point will almost double (including 5,000 ferry arrivals on weekends and 2,000 on weekdays), and winter use will increase by some 19,000 people. No additional land access is proposed on summer weekends until the transportation study explores ways to increase use without significant impacts on the regional environment.

Estimated average weekend day use for all Breezy Point is expected to increase from 45,000 to 55,000 people (from 18,000 to 22,000 in a peak hour). Again, this increase is based on establishment of ferry service.

FLOYD BENNETT FIELD

ROCKAWAY INLET

MARINE PARKWAY BRIDGE

TRIBOROUGH BRIDGE AND TUNNEL AUTHORITY (TBTA)

BEACH CHANNEL DRIVE

US COAST GUARD

FERRY DOCK

US ARMY RESERVE

ROCKWAY

ROCKAWAY BEACH BLVD

BREEZY POINT COOPERATIVE

JACOB RIIS PARK

TANKEL BEACH

FORT TILDEN

STABLEDD PATH

ATLANTIC OCEAN

BREEZY POINT TIP

PARK BOUNDARY

EXACT BOUNDARY TO BE DETERMINED UPON ACQUISITION OF BEACH BY NPS

AUTO

AUTO WEEKDAYS OR ON PERMIT ONLY

NPS SHUTTLE FROM FLOYD BENNETT FIELD

BREEZY POINT NPS SHUTTLE

BIKE

PUBLIC TRANSIT

POTENTIAL FERRY ROUTE

NOTE: RESIDENTS AND GUESTS OF RESIDENTIAL ENCLAVES WILL HAVE ACCESS AT ALL TIMES

N

0 1000 2000 3000 Feet

0 300 600 900 Meters

# PROPOSED CIRCULATION

## BREEZY POINT

GATEWAY NATIONAL RECREATION AREA
NEW YORK / NEW JERSEY

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

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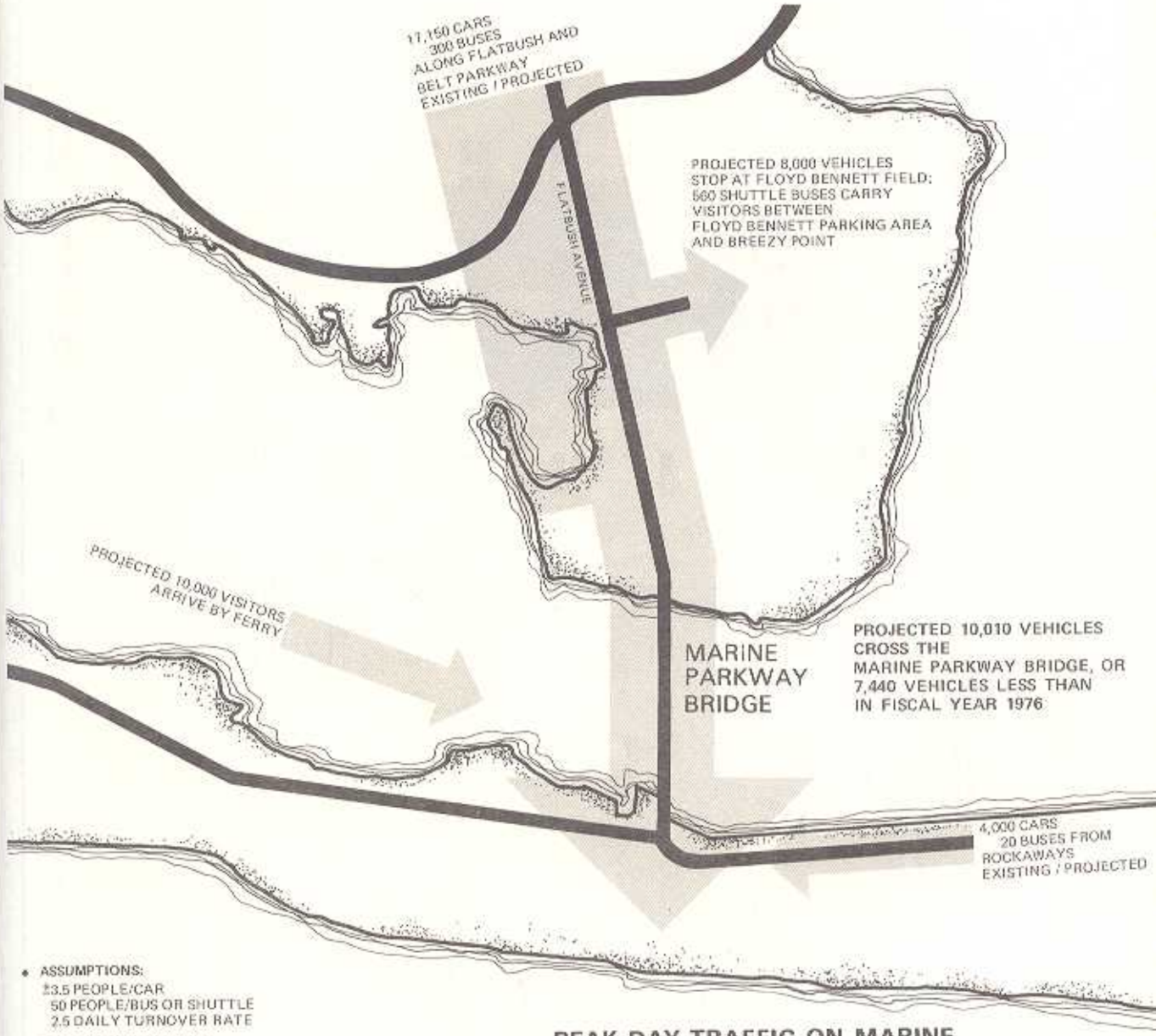
AUG 79 | DSC




- ASSUMPTIONS:
  ±3.5 PEOPLE/CAR
  50 PEOPLE/BUS OR SHUTTLE
  2.5 DAILY TURNOVER RATE
- BREEZY POINT FY 1976
  PEAK-DAY VISITATION-90,000
- PROJECTED PEAK-DAY VISITATION-100,000
  DUE TO FERRY SERVICE

## PEAK-DAY TRAFFIC ON MARINE PARKWAY BRIDGE-FY 1976 AND PROJECTED FOR STAGE I

| 646 | 40,205 |
|---|---|
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GATEWAY NATIONAL RECREATION AREA
UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

## BREEZY POINT - DAILY VISITOR USE
FY 1976 and Projected for Stage I

| | Tip Beach | Tankel Beach | Fort Tilden | Jacob Riis | Total Swim Area* |
|---|---|---|---|---|---|
| SWIMMABLE BEACH AREA (sq. ft.) | 2,100,000 | 1,637,500 | 385,000 | 1,960,000 | 6,082,000 |
| BEACH CAPACITY/DAY @ 75 sq. ft. per person (# of people) | 70,000 | 55,000 | 13,000 | 65,000 | 203,000 |
| AVERAGE SUMMER WEEKEND DAY: | | | | | |
| Arrive by Auto | | | | | |
| FY 1976 | 5,000 | 12,000 | 0 | 20,000 | 37,000 |
| Projected | 0 | 0 | 0 | 20,000 | 20,000 |
| Arrive by Public Transit and Charter | | | | | |
| FY 1976 | 0 | 0 | 500 | 8,000 | 8,500 |
| Projected | 0 | 6,500 | 2,000 | 0 | 8,500 |
| Arrive by NPS Shuttle from Floyd Bennett Field | | | | | |
| Projected | 0 | 12,000 | 5,000 | 0 | 17,000 |
| Arrive by Ferry and Shuttle on Stabilized Path | 10,000 | 0 | 0 | 0 | 10,000 |
| Total Daily Use | | | | | |
| FY 1976 | 5,000 | 12,000 | 500 | 28,000 | 45,500 |
| Projected | 10,000 | 18,500 | 7,000 | 20,000 | 55,000 |
| Noon Beach Use (Total daily use/turnover rate of 2.5) | | | | | |
| FY 1976 | 2,000 | 4,800 | 200 | 11,200 | 18,200 |
| Projected | 4,000 | 7,400 | 2,800 | 8,000 | 22,200 |
| Beach Density (sq. ft./person) | | | | | |
| FY 1976 | 1,050 | 340 | 1,930 | 180 | 340 |
| Projected | 520 | 220 | 140 | 250 | 280 |
| CAPACITY OF PROPOSED FACILITIES (# of people) | 6,000-8,000 | 9,000-15,000 | 4,000-6,000 | 10,000-16,000 | |

PEAK WEEKEND DAY
TRAFFIC ENTERING BREEZY POINT

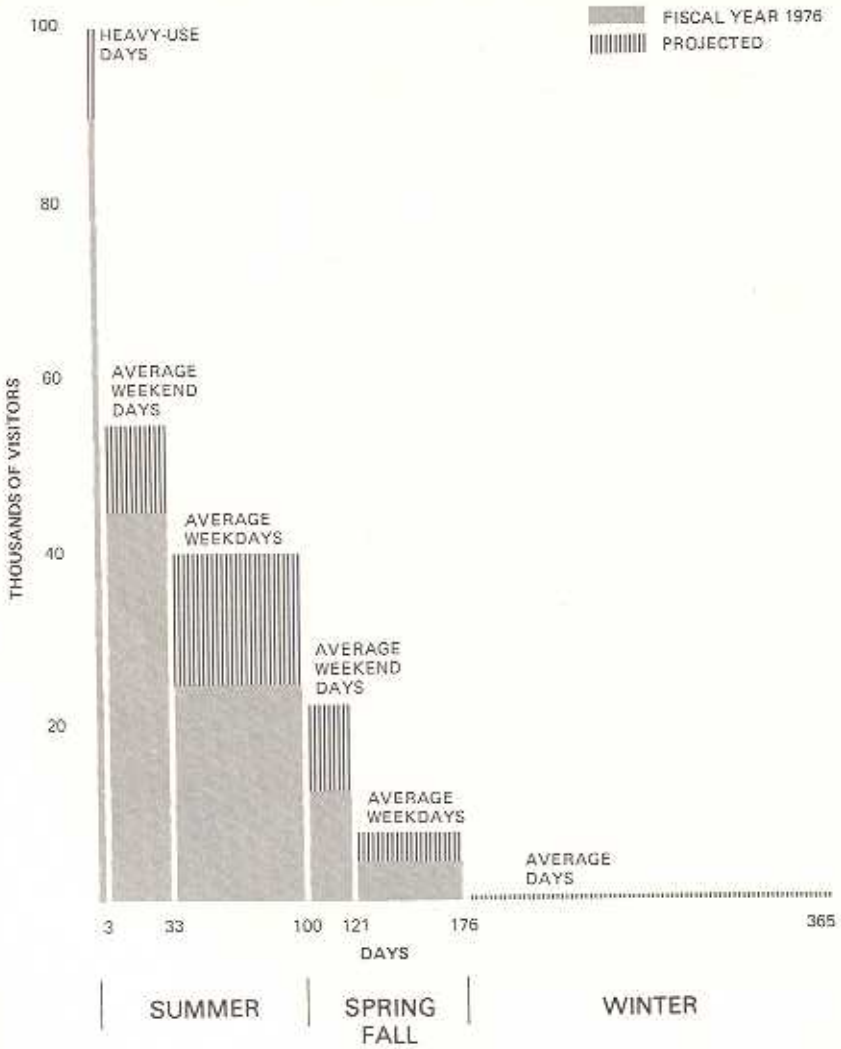
| | Total People | Total Vehicles |
|---|---|---|
| FY 1976 | | |
| Auto (±3.5 people/car) | 74,000 | 21,150 |
| Public Transit and Charter (50 people/bus) | 16,000 | 320 |
| Total | 90,000 | 21,470 |
| Projected | | |
| Auto (±3.5 people/car) | 46,000 | 13,150 |
| Public Transit and Charter (50 people/bus) | 16,000 | 320 |
| Shuttle from Floyd Bennett Field (50 people/shuttle) | 28,000 | 560 |
| Ferry | 10,000 | 0 |
| Total | 100,000 | 14,030 (8,000 additional autos will enter the park at Floyd Bennett Field, avoiding the Marine Parkway Bridge) |

[illegible]

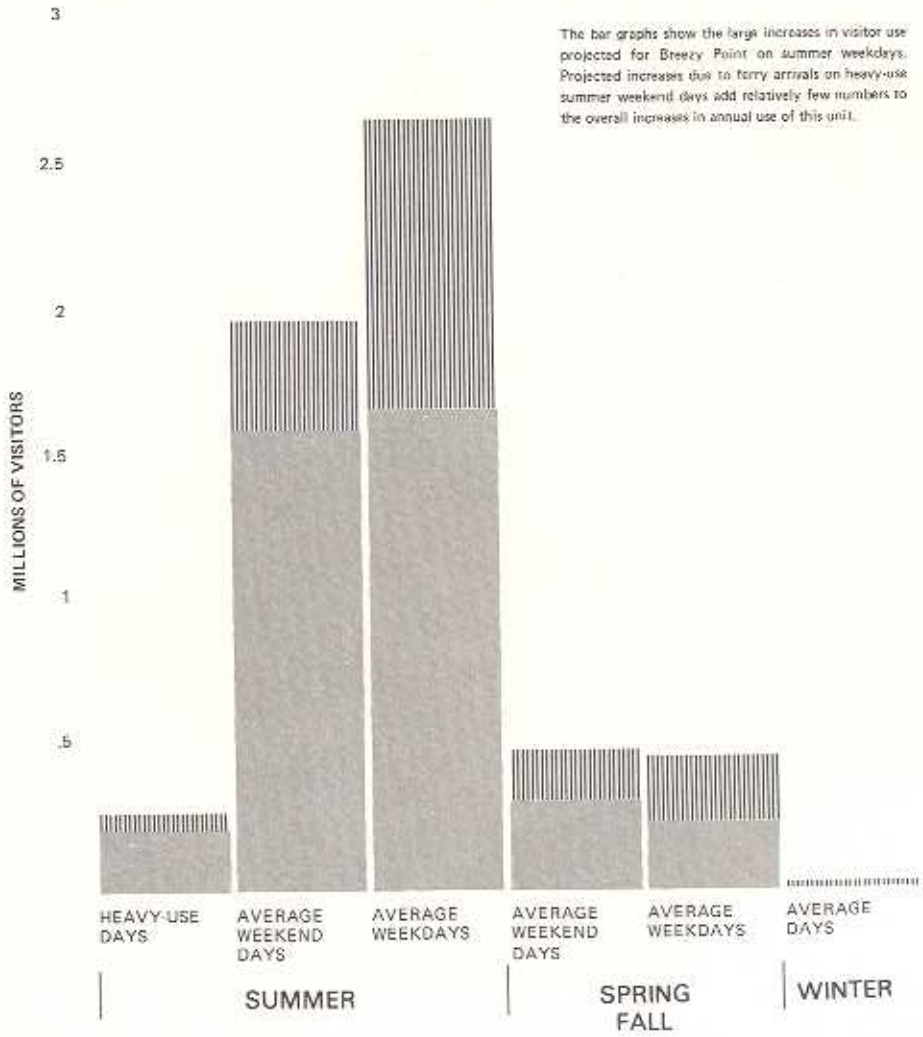
and the arrow western portion of Fort Tilden--780,000 sq. ft.; these areas [illegible]
uses.

# BREEZY POINT

## DAILY USE




## ANNUAL USE




The bar graphs show the large increases in visitor use projected for Breezy Point on summer weekdays. Projected increases due to ferry arrivals on heavy-use summer weekend days add relatively few numbers to the overall increases in annual use of this unit.

## FLOYD BENNETT FIELD/ PLUMB BEACH/BERGEN BEACH

Proposals for the Floyd Bennett Field/Dead Horse Bay area are based on two central concepts: one, that a new natural landscape will be created on the underlying "impacted" land, designed in such a way that it will blend gradually into the natural environment that is preserved in Jamaica Bay; two, that a Gateway Village will be developed which will demonstrate sound design through preservation of historic structures in a constructive relationship with nature.

Based on these concepts, zoning and design plans have been developed that will result in restoration and preservation of more than half the land area of this portion of Gateway; in many cases, restoration will involve extensive work because the land has been so severely disturbed by previous uses. The remaining areas of this unit--primarily the Gateway Village complex and the small outdoor recreation areas of Plumb and Bergen Beaches--will witness the most active uses. Plumb Beach and Bergen Beach have been planned essentially as extensions of the Floyd Bennett Field/Dead Horse Bay concept because of their intimate relationship to the central land base and the possibility of future transit connections.

The Floyd Bennett Field Gateway Village and the newly created landscapes will be an object lesson in creative relationships between man and the environment, as illustrated through programming, new and renovated building, and new techniques of reclamation. A continuum of experiences beginning with the natural environment of Jamaica Bay and leading to the most evidently man-made environment at the Gateway Village will underline the inclusiveness of environmental concerns and illuminate various aspects of the relationship between man and nature. The following categories of land development illustrate this progression and give a sense of the way various parts of the Floyd Bennett Field/Dead Horse Bay area will be used:

The natural environment of the Jamaica Bay, including:

Natural Wetlands (Protection zone areas); visit by special arrangement

Created Wetlands (also Protection zone) - reclamation of the shore that is now bulkheaded; visit by special arrangement

Environmental Reserve (Use-by-Reservation lands) - reclamation of the backup landscapes based on the ecology and wildife of the area; visit by reservation

Arboretum (part of the Unstructured Recreation zone) - a parklike area designed to accept active use, emphasis on trees for shade; open public use

Cultivated Lands and Community Nursery (also zoned Unstructured Recreation) - a nursery with greenhouses for winter gardening operated by trained staff and community groups where plant materials, including vegetables and flowers, are grown for Gateway areas and community parks within the region; open public use

Intensive Recreation (Structured Recreation zone) - playing fields, tennis, basketball, runway (hard surface) sports; programmed or open public use

Gateway Village and Marina (Development zone) - shops, hostels, a mobile-camper park, a small number of housing units for park personnel and urban ranger trainees, educational, cultural, and community facilities, food services, and a marina; open public use

Essentially, the more natural areas will occupy the periphery of Floyd Bennett Field and will "wrap around" areas set aside for intensive recreation and the Gateway Village. The exception is a small beach area designated on the south shore of Dead Horse Bay just west of the Flatbush Avenue corridor, which will be used for swimming if water quality improves sufficiently. The Gateway Village will be developed in and around the present Hangar Row; most of the incorporated buildings will be adaptively reused historic structures, but mixed with new features so that the whole reflects the best thinking in urban design. Historic civil aviation support features will be a primary component of the overall design and presentation, and these and other resources will be carefully restored and adapted to communicate the significance of Floyd Bennett Field in history.

In addition to being the central location for all-year recreational, educational, and cultural programs, the Gateway Village can become a national center for study and evaluation of new technologies and environmental programs, with associated spaces for exhibition and public education. Experimental systems and projects will provide the subject matter for educational activities in this urban ecology center; although the core facilities will be located at Floyd Bennett Field, the park itself will provide the laboratory where people can learn about such new techniques--their benefits, consequences, and long-term effects.

Institutional cooperation will be essential in realizing the objectives of an urban ecology center. As envisioned, the center will be

operated in connection with both regional universities and institutions in the New York/New Jersey area and nationally recognized institutions like the Smithsonian Institution.

Along with its focus on environmental training and experimentation, the Gateway Village will provide an urban ranger training center, which will graduate personnel experienced in the most advanced techniques of park and recreation management in an urban environment.

Finally, the Floyd Bennett Field Gateway Village, a focal point for the entire park, will be the site of the William Fitts Ryan Memorial Visitor Center and a central orientation and staging area for visitors to Gateway.

A second, smaller complex of adaptively reused buildings will be developed on the opposite side of Floyd Bennett Field near Jamaica Bay, to support and provide visual connection to the Gateway Village across the historic central runway system. The outline of the runway system will be preserved for recreational uses.

Most automobiles and buses will be intercepted at two major parking fields on either side of the Belt Parkway/Flatbush Avenue interchange. Visitors will then be shuttled to their various destinations--both within Floyd Bennett Field and on Breezy Point--by National Park Service vehicles.

The permit currently extended to the New York City police helicopter unit will be continued until that use is no longer compatible with recreational uses and development, or for at least the next five years. The city has informed the National Park Service that it is confident an alternative location can be arranged within that time frame, if required. The U.S. Navy and U.S. Coast Guard have administered and held title to portions of Floyd Bennett Field for a number of years and are expected to remain on site for the foreseeable future. However, the Coast Guard has indicated a willingness to consider realignment or relocation of their present facilities in order to permit rational development of parklands there. The Park Service, in cooperation with the Coast Guard, will seek to develop alternative locations within Floyd Bennett Field that will be less disruptive to recreational activities.

Total annual visitor use of the Floyd Bennett Field area is expected to increase by nearly 20 percent during Stage I--due almost entirely to increased use of the Gateway Village. Year-round use of the indoor facilities, as well as increased summer weekday and spring and fall use, will be encouraged.

## ZONING AND RESOURCES MANAGEMENT

The zoning scheme for Floyd Bennett Field reflects plans for major restoration of severely altered natural landscapes, preservation of important historic structures and recognition of the field's role as a center of early civil aviation, and development of the park's principal year-round activity center--the Floyd Bennett Field Gateway Village.

At Floyd Bennett Field, lands zoned for protection ring the edge of the field, encompassing both existing high and low salt marshes and areas proposed for restoration to a similar condition. These areas comprise 6 percent of the field's total acreage. Large expanses of Use-by-Reservation lands (51 percent of the field total) extend from these protected edges to the central core of the field--the area designated as the Gateway Village/historic district. The prime natural resources management objective for the Protection and Use-by-Reservation zone lands will be to restore the landscape--not to its original condition, which would be impossible, but to a new ecological balance.

A small shoreline area south of Dead Horse Bay and west of Flatbush Avenue has been zoned Beach.

In order to preserve the historic character of the field while allowing compatible management and development of the area as a Gateway Village, zoning for structured and unstructured recreation and development has been based on the existing field configurations. Zones devoted to unstructured and structured recreation have been designated to follow the outline of the field, with the Unstructured Recreation lands encompassing the relatively flat open lands surrounding the central runway system and the Structured Recreation lands including the runway configuration itself as well as areas bordering Hangar Row. Unstructured Recreation zone lands are also planned south of the Belt Parkway on both sides of Flatbush Avenue. Combined acreage for these two zones comprises 28 percent of the field total. These lands will be maintained to provide for a wide range of active and passive recreational pursuits.

An already developed and extensively altered area on the eastern side of the field bordering Jamaica Bay, which contains two hangars that are not of the original civic aviation period, will be developed as part of the Development Support subzone, as will the proposed marina complex and ferry dock at Dead Horse Bay. The large parking areas north of the Gateway Village/marina complex that are planned to service both Floyd Bennett Field and Breezy Point visitors, as well as a smaller parking lot south of the village, have also been placed in this subzone. These developed areas will be managed to support the levels and types of use planned for the

Gateway Village vicinity. Total Support subzone acreage is 9 percent of the field area.

The Gateway Village, incorporating the existing Hangar Row and constituting 2 percent of the land area, will be managed as part of the Village subzone. The proposed historic district, which will include the site of the historic central runway system, the administration building/control tower, and six hangars that date from the 1929-1931 period, will be planned to maintain the historic ambience while developing the core area as a Gateway Village--a recreational/educational/cultural complex where interior space in the hangars and attendant buildings as well as adjacent open space on and near the runways will be adaptively reused and rehabilitated as part of the larger design. The best planning and design efforts will be employed to ensure the protection and enhancement of the district's overall appearance as well as the integrity of individual buildings. The historic district is being nominated to the National Register.

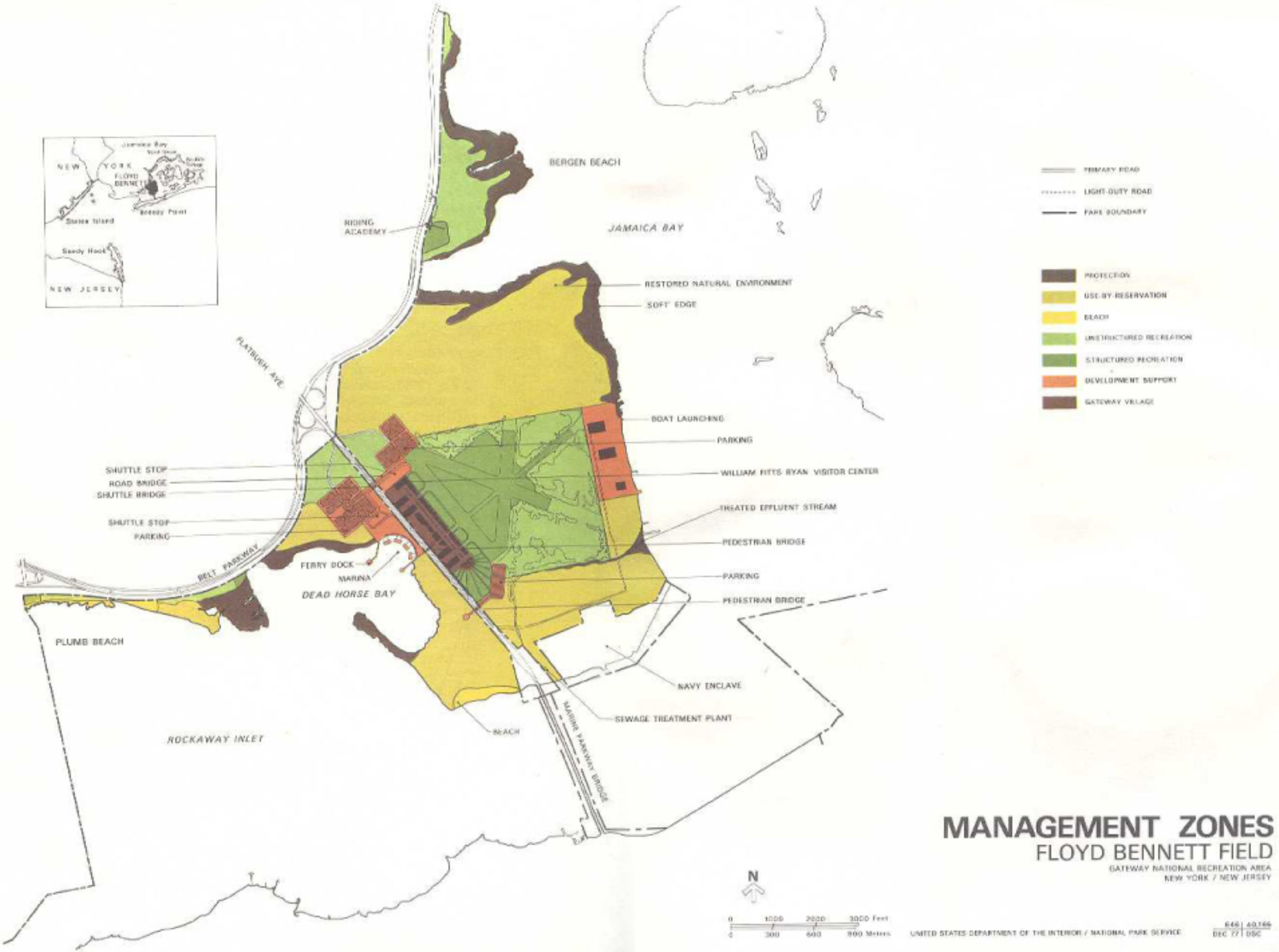
Sensitive marshlands at Plumb Beach are zoned for protection, and less vulnerable shoreline areas for use-by-reservation. A small beach area has been designated in the central area, based on the assumption that Rockaway Inlet waters will one day be safe for swimming. Plumb Beach land directly adjoining the Belt Parkway is zoned Unstructured Recreation, and two small Structured Recreation zones have been designated at the eastern and western ends of the area. No Development zones are proposed.

A large portion of Bergen Beach is zoned for protection, to preserve the fragile and significant marshlands there. Unstructured Recreation lands are designated along the Belt Parkway, and the area occupied by the existing horseback riding academy is zoned for structured recreation. Again, no Development zones are proposed.

## VISITOR USE AND DEVELOPMENT

### Design Concept

The design concept for Floyd Bennett Field takes into account the fact that portions of the field and the buildings of Hangar Row have been nominated for the National Register of Historic Places. The National Register nomination covers the portion of the field that had been filled and regraded at the time of its use as a commercial airport, outlines the configuration of the runways as they existed at that time, and includes all structures that date from the field's use for commercial aviation.




# MANAGEMENT ZONES
## FLOYD BENNETT FIELD
GATEWAY NATIONAL RECREATION AREA
NEW YORK / NEW JERSEY

During a subsequent period Floyd Bennett Field became a miltary base and major changes and additions were made. The runways and taxiways were widened and lengthened, and a new runway added. The portion of the field that was filled and regraded was greatly enlarged. A major new hangar, the "nose-cone hangar," was added to Hangar Row, plus many other structures, both temporary and permanent, in various parts of the field.

Based on these facts, principles for the adaptive reuse of Floyd Bennett Field have been established. A fundamental decision is that the field will not be used for aviation; rather, it will become the site of the park's premier Gateway Village complex, to be located in and around Hangar Row, with other lands--except for the Navy enclave and Coast Guard base--returned to a more natural condition for both conservation and recreation purposes.

All of the park's Gateway Villages are to be highly intensive centers for year-round recreational, educational, and cultural activities. The Gateway Village at Floyd Bennett Field will also be the site of the Gateway administrative offices, the William Fitts Ryan Memorial Visitor Center, the ranger training center for personnel who will be working in urban parks, and the cooperative facilities of the urban ecology center. Detailed development and use proposals for the Gateway Village will be included in the forthcoming development concept plan for Floyd Bennett Field and the recreation management plan for the park; however, in keeping with the village concept, the area will include hostels, shops and restaurants, and some housing for Park Service personnel attending the ranger training center. Stores, apartments, and other "village" services needed by residents will be provided as appropriate. A marina complex with a ferry dock, promenade, viewing areas, and connections to the village center will be developed at Dead Horse Bay. These and other design and use proposals for the Gateway Village will be based on the central concept of the village as a dynamic place--an area where large numbers of disparate activities combine to create an exciting, motivating environment.

The existing landscape at Floyd Bennett Field was created in a very pragmatic way, with little or no regard for natural processes and ecosystems. A prime objective of the plan is to restore large portions of this landscape to a condition more in harmony with nature and surrounding natural areas.

The nomination of designated Floyd Bennett Field sites to the National Register makes it important to find ways of preserving the ambience of the historic civil aviation field without diminishing the Gateway Village concept or the idea of restoring the natural landscape, which are both central goals of the plan. The method proposed for preserving this ambience is as follows.

The most salient characteristics of the civil aviation field were the outline of the field itself, the configuaration of the runways, the buildings of Hangar Row, and the relationship of these buildings to the field. It is proposed that the areas devoted to active and passive recreation encompass the acreage of the original civil aviation field. In that way the outline of the old field will always be visible, something that is not the case at the present time. The landscape outside the confines of the old field will be restored or brought to a new natural balance and given Use-by-Reservation or Protection zone status (the only exception will be the small Development Support zone area on the east side of the field.) Within the confines of the old field, the land will remain flat and relatively open. A runway configuration approximating that of the aviation field will be established, and all other runways and taxiways will be removed. The new configuration will not be identical to that of the original runways, but the general concept will be conveyed to visitors. One way to relate the runway configuration to the natural landscape may be to plant vegetation to enclose the vistas formed by the configuration--the runways thus becoming something like the allées in a French garden. In this or some other way the scope and vistas of the airfield will be preserved, but at the same time they will become part of the landscape composition being created for the whole field.

It is proposed that the design of any new buildings added to the Hangar Row area be such that the important visual connections between the hangars and runways and between the administration building/control tower and the runways are maintained. By leaving areas where no buildings are to be constructed, these vistas can be preserved while the additional buildings needed to give the village a sense of immediacy are provided. The spatial relationships that prevailed when the field was a civil aviation facility will remain, but will be given new life and new uses appropriate to their rôle as part of the Gateway Village.

As part of the Gateway Village design, nursery gardens will be established between the village and the airfield, and an arboretum will be planted at the village's southern end. These elements, besides serving as important visitor attractions, will "soften" the transition between the intensively used setting of the village and the surrounding landscapes.

The existing sewage treatment plant in the southern part of Floyd Bennett Field will be upgraded to provide tertiary treatment and will be connected to all facilities in the Gateway Village. A protected stream, which will provide natural sewage treatment, will be established to run from the treatment plant southeast of the core historic district into Jamaica Bay on the eastern side of the field. The stream will carry outflow materials that have received some level of treatment at the plant. It is planned to serve as an

educational exhibit--on a controlled-viewing basis--illustrating how natural sewage treatment occurs in marshlands. The development concept plan for Floyd Bennett Field will include a more detailed analysis of the required level of treatment before the outflow materials are allowed to enter the stream. Outflow materials that are not released into the protected stream at Floyd Bennett Field will receive tertiary treatment before leaving the plant.

The Plumb Beach and Bergen Beach sites adjoining the Floyd Bennett Field/Dead Horse Bay complex have been planned as part of the central area. Existing landscapes and visitor services at these sites will be improved. The waters at Plumb Beach are not swimmable at present; when they are, this area will become a pleasant beach as well as a place for picnics and outdoor recreation. The small visitor-contact facility and concession will be retained and upgraded. The franchise for a stable and riding trails at Bergen Beach still has some years to run.

In Phase I, all unsuitable structures at Floyd Bennett Field will be demolished. Such structures lying within the boundaries of the National Register historic district and recognized as contributing elements of the district will be demolished only after full consideration of their historical values and compliance with the regulations of the Advisory Council on Historic Preservation. All proposals for Plumb Beach and Bergen Beach will also be initiated in Phase I.

Phase II will see the initiation of development of the Floyd Bennett Gateway Village and the implementation of related proposals for the remainder of Floyd Bennett Field. Because of the magnitude of this work, and the required planning and design, it is expected that this development will continue through all three stages of the plan.

## Access and Circulation

Access to Floyd Bennett Field will continue to be from the Belt Parkway and along Flatbush Avenue. Entrance points into the field will be opened and closed according to the volume of use on a given day and the destination of the majority of visitors. When Floyd Bennett is fully developed, primary access points will be south of the Belt Parkway (just north of the Gateway Village/marina complex) on both sides of Flatbush Avenue. Two large parking areas (3,000 spaces) will service Floyd Bennett Field visitors on summer weekdays and during the spring, fall, and winter; on summer weekend days they will accommodate both Breezy Point and Floyd Bennett visitors, and National Park Service shuttles will run between the parking areas and the Riis Park parking lot. (During Phase I, temporary parking for 3,000 cars will be provided on the existing runway surfaces.) A smaller entrance and parking lot just

south of the Gateway Village will be opened for Gateway Village/Floyd Bennett Field visitors only, on days of heaviest use; this parking area will not have a stop on the proposed shuttle route.

The Park Service shuttles to and from Floyd Bennett Field will follow a one-way continuous circulation route from the western end of the two large parking areas, through the marina complex, along Flatbush Avenue, and across the Marine Parkway Bridge into Breezy Point (the Riis parking lot, Fort Tilden, and Tankel Beach); return will be across the bridge, up Flatbush, and into the eastern large parking area. Shuttle access between the parking areas across Flatbush will be via an overpass. There will be five shuttle stops north of the bridge: one in each of the parking areas, one at the marina, and two at the Gateway Village.

A secondary access road just north of the Marine Parkway Bridge entrance will lead into the eastern portion of Floyd Bennett Field, providing access for administrative and maintenance personnel, for staff and residents at the Navy enclave on the southern edge of the field, and for visitors on permit for special programs and events.

A bikeway will be constructed adjacent to the southern right-of-way of the Belt Parkway to connect with the route that has already been established. Secondary connections into the field area will be provided, as feasible. The main bikeway, which extends on New York City lands parallel to the parkway as far as Spring Creek Park, will circulate through the park and provide access to North Channel Bridge.

Two additional overpasses across Flatbush Avenue, to be designed and built in Phase II, will provide for circulation between the Gateway Village and the marina complex and western parking area.

Plumb Beach and Bergen Beach will continue to be accessible from the Belt Parkway at pulloff areas. As Floyd Bennett Field is developed, these areas may also become accessible by shuttle and shallow-draft ferry from the main field parking areas.

Projected Visitor-Use Levels

Increases in annual visitor use during Stage I are expected to result almost entirely from the opening of the Gateway Village at Floyd Bennett Field. (This projection is true for the entire Jamaica Bay Unit.) Because the village will be programmed to encourage year-round use, an estimated 7,500 people daily--except on summer weekends when activities at the field will be reduced to avoid traffic conflicts with beach visitors to Breezy Point--are projected throughout the year.

Use at Bergen and Plumb Beaches is expected to remain at present low levels.

BERGEN BEACH

JAMAICA BAY

FLATBUSH AVE.

PEDESTRIAN CROSSING

BELT PARKWAY

FERRY DOCK

DEAD HORSE BAY

PLUMB BEACH

ROCKAWAY INLET

MARINE PARKWAY BRIDGE

PARK BOUNDARY

PUBLIC TRANSIT

AUTO

AUTO ON PERMIT

NPS SHUTTLE ON WEEKENDS AND HOLIDAYS

BIKE

POTENTIAL FERRY ROUTE

N

0 1000 2000 3000 Feet

0 300 600 900 Meters

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

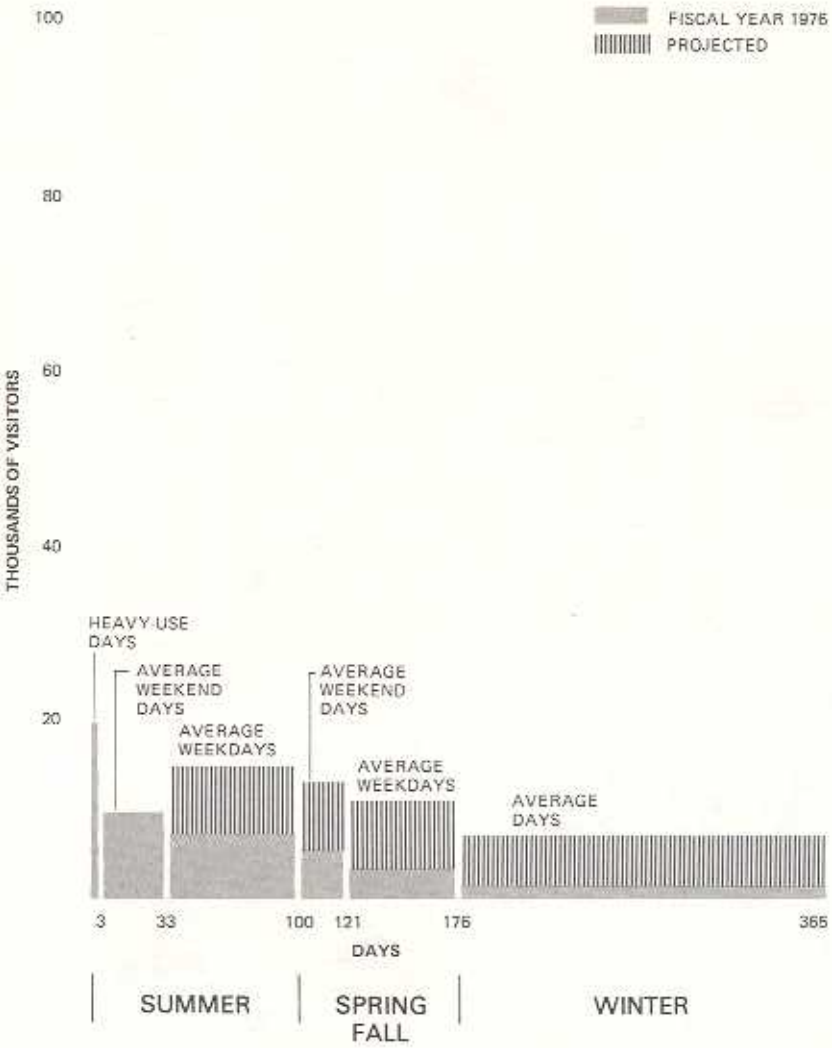
# PROPOSED CIRCULATION

## FLOYD BENNETT FIELD

GATEWAY NATIONAL RECREATION AREA
NEW YORK / NEW JERSEY

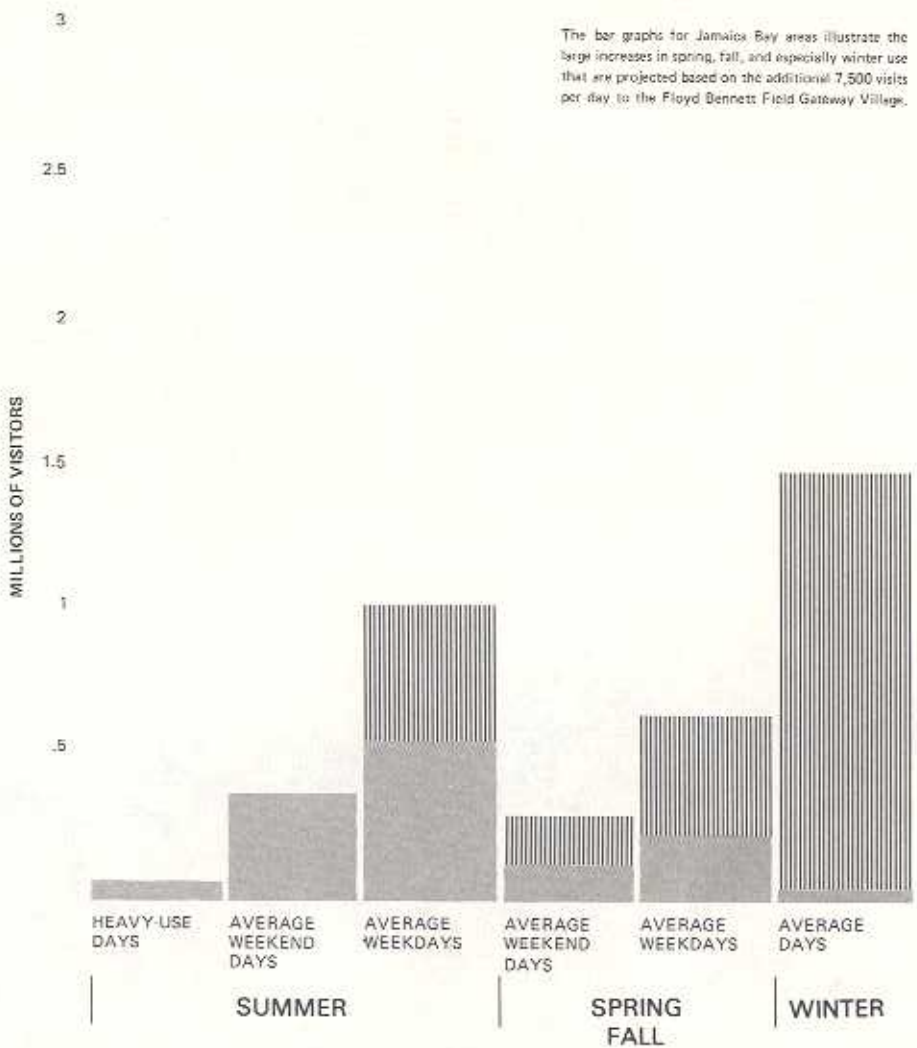
# JAMAICA BAY UNIT
(FLOYD BENNETT FIELD, NORTH SHORE, WILDLIFE REFUGE)

## DAILY USE




## ANNUAL USE

The bar graphs for Jamaica Bay areas illustrate the large increases in spring, fall, and especially winter use that are projected based on the additional 7,500 visits per day to the Floyd Bennett Field Gateway Village.



## NORTH SHORE

Because of access limitations and limited capacity, proposals for existing parklands along the north shore of Jamaica Bay, including Canarsie Pier, Spring Creek Park, and Frank Charles and Hamilton Beach Parks, are directed toward improving existing landscapes and upgrading park facilities to better serve the people who now use them. The two landfill areas at Fountain and Pennsylvania Avenues will be the exception to this concept, as their large size and relatively easy accessibility will permit major new recreational and cultural opportunities to be provided when all the lands are turned over to the Park Service in the mid-1980s.

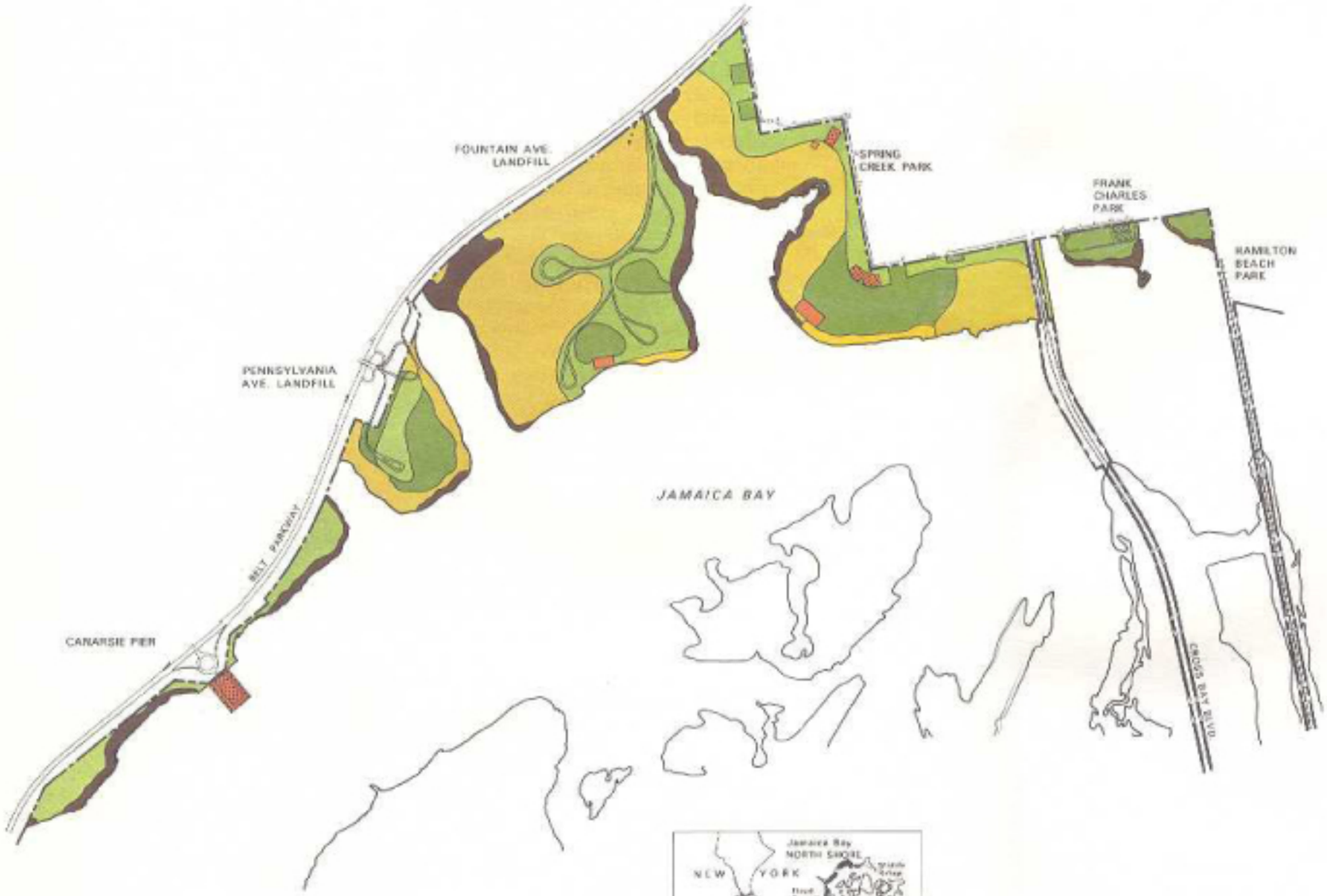
Slightly more than half of the total land area of the north shore will be restored and preserved in Protection and Use-by-Reservation zones; the marshes and some of the upland areas are included in this category. The active-use areas will comprise the other half and will be centered on the pier at Canarsie Park, in proposed developed and outdoor recreation areas at Spring Creek Park, at the existing facilities of Frank Charles and Hamilton Beach Parks, and eventually at developed sites at the Pennsylvania and Fountain Avenue landfills. At the landfills and at Spring Creek--after the waters of Jamaica Bay are clean enough for swimming--approximately ½ mile of beach will be opened to the public.

Total annual visitor use of Jamaica Bay north shore areas is not expected to increase significantly in Stage I. After the two landfills are opened to the public (projected in Stage II), a substantial increase in use is anticipated.

### ZONING AND RESOURCES MANAGEMENT

Lands at Canarsie Pier, Spring Creek Park, and Frank Charles and Hamilton Beach Parks have been zoned to maintain or enhance their use as "community parks" while permitting the necessary protection of the fragile bay fringes. The two landfill sites at Pennsylvania and Fountain Avenues, proposed for transfer to the park from the city by the mid-1980s, are planned for ultimate use as regional parks serving relatively large populations from surrounding metropolitan areas, and their zoning reflects these plans. The zoning should also be considered conceptual--that is, not resource based--because the composition and configuration of the landfills will continue to change until the Park Service acquires the lands; the present zones are loosely based on the city's map of probable site configuration at time of transfer.

The high and low salt marshes at Canarsie Park will be managed as part of the Protection zone. The upland areas flanking the pier will be landscaped for unstructured recreation, and the pier itself



N

0 1000 2000 3000 Feet
0 300 600 900 Meters

# MANAGEMENT ZONES

## NORTH SHORE

GATEWAY NATIONAL RECREATION AREA
NEW YORK / NEW JERSEY

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

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will be upgraded to provide for a variety of Development Support subzone activities.

The expanding high and low marshes at the Fountain Avenue and Pennsylvania Avenue landfills will also be included in the Protection zone, and Use-by-Reservation zone areas will be designated wherever upland marshes appear to be establishing themselves. A small beach area is indicated on the southern shore of the Fountain Avenue landfill, again on the assumption that Jamaica Bay waters will one day be swimmable. Unstructured Recreation zones are proposed in the central core at Pennsylvania Avenue and at the summit of the hill now being created at Fountain Avenue, extending into the area between the entrance and the proposed beach. Structured Recreation lands are shown surrounding the central core at Pennsylvania Avenue and at two small sites on the western side of the Fountain Avenue area. A small Development Support subzone is included on the southern shore at Fountain Avenue.

Spring Creek Park, at present an expansive land area covered with dense stands of phragmites, has been zoned to allow protection of sensitive marsh edges while permitting management and development of the remainder of the site as a community park. Large Use-by-Reservation zones will extend inland from the protected edges, except in a natural shoal area on the southern shore, which will be renovated for use as a beach. A strip along the inland border of the park has been designated Unstructured Recreation to allow the development of a series of landscaped open spaces. A large area behind the Beach zone has been placed in the Structured Recreation zone, as well as several small sites along the inland border that are proposed for development as community gardens. (This use will be possible only if soil analysis indicates that the level of heavy metals in the underlying fill material is acceptable.) Development Support subzones have been designated at three sites to permit the establishment of adequate facilities to support planned use.

Frank Charles and Hamilton Beach Parks are zoned to reflect existing conditions: sensitive marshlands along the bay edge zoned for protection, and upland areas, now containing playfields and tennis courts, for structured recreation.

## VISITOR USE AND DEVELOPMENT

### Design and Use Concepts and Development Concept Plan for Spring Creek Park

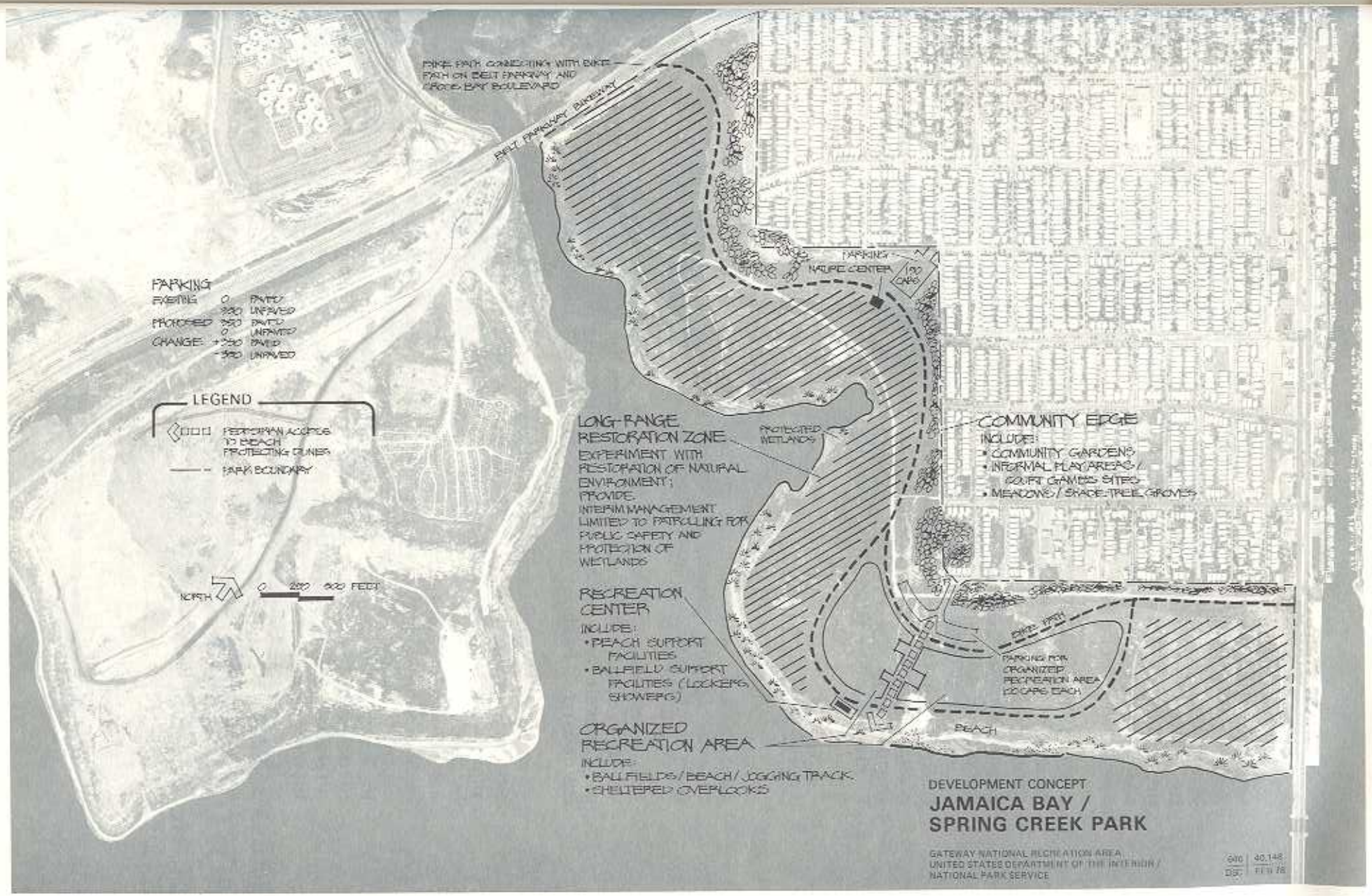
Design concepts for Spring Creek call for major modification of the existing landscape to encourage restoration and expansion of more diverse natural systems while providing well-defined spaces for a

variety of community activities. In general, natural systems will be established and/or maintained in areas closer to the bay edges. The existing high and low marshes will be managed to encourage their perpetuation or expansion and will be protected through signing and patrols. Use-by-Reservation lands will be available for informal low-intensity uses such as nature study and walking. A small support facility will be located just east of the proposed beach area on the southern shore; the facility will include lockers, showers, and other beach services, as well as the necessary rental and storage functions to support use of the adjacent upland field-sport area. This area, behind the beach, will contain ballfields, courts, other facilities for active recreation, and an esplanade with overlooks of the bay. Two small parking areas (total, 200 spaces) will be constructed just north of this field area, with access provided to the fields and to the beach support facility. These parking lots will also serve visitors to the community garden area on the southeastern border of the park. Similar community garden/meadow/designed play areas will be established along the entire eastern border of Spring Creek Park. These areas will be separated from the organized sports sites and the more natural lands by a bikeway connecting the Belt Parkway bike trail with Cross Bay Boulevard. The "buffer" strip of active-use areas will help minimize random auto access into the more protected areas of this park. A nature center will be provided in the northwestern section, and a small parking area (150 spaces) will serve visitors to this facility and surrounding natural park areas.

Proposals for other north shore sites remain conceptual at this stage. Canarsie Pier will be upgraded to include a community/cultural center and additional parking. The back-bay lands adjacent to the pier and the Belt Parkway will be landscaped to provide spaces for picnicking, sunbathing, and field sports. A community garden will be established. The possibility of developing of an amphitheater for performances will be explored.

The Frank Charles and Hamilton Beach community parks will have playgrounds, tot lots, ballfields, courts, and picnic areas. Where existing facilities are adequate to support projected use, sites will be upgraded rather than new developments constructed.

The lands at Spring Creek, Canarsie, Frank Charles, and Hamilton Beach Parks, all of which will be renovated and developed in Stage I, are planned for continued use by nearby community residents. The spacious landfill sites, to be designed and developed in Stage II after they are turned over to the Park Service, are proposed for recreational use by a more diverse visiting public. These two major land areas, totaling about 500 acres, have the potential to become an extremely valuable recreational resource--and one easily accessible to large concentrations of people. Areas for active outdoor recreation and for nature study and environmental


BIKE PATH CONNECTING WITH BIKE PATH ON BELT PARKWAY AND CROSS BAY BOULEVARD
BELT PARKWAY BIKEWAY
PARKING
EXISTING 0 PAVED
280 UNPAVED
PROPOSED 350 PAVED
0 UNPAVED
CHANGE +350 PAVED
-280 UNPAVED
LEGEND
PEDESTRIAN ACCESS TO BEACH PROTECTING DUNES
PARK BOUNDARY
NORTH
0 200 400 FEET
PARKING
NATURE CENTER
120 CARS
LONG-RANGE RESTORATION ZONE
EXPERIMENT WITH RESTORATION OF NATURAL ENVIRONMENT; PROVIDE INTERIM MANAGEMENT LIMITED TO PATROLLING FOR PUBLIC SAFETY AND PROTECTION OF WETLANDS
PROTECTED WETLANDS
COMMUNITY EDGE
INCLUDE:
• COMMUNITY GARDENS
• INFORMAL PLAY AREAS / COURT GAMES SITES
• MEADOWS / SHADE TREE GROVES
RECREATION CENTER
INCLUDE:
• BEACH SUPPORT FACILITIES
• BALLFIELD SUPPORT FACILITIES (LOCKERS, SHOWERS)
BIKE PATH
PARKING FOR ORGANIZED RECREATION AREA 120 CARS EACH
BEACH
ORGANIZED RECREATION AREA
INCLUDE:
• BALL FIELDS / BEACH / JOGGING TRACK
• SHELTERED OVERLOOKS
DEVELOPMENT CONCEPT
JAMAICA BAY / SPRING CREEK PARK
GATEWAY NATIONAL RECREATION AREA
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interpretation are proposed, as well as a beach site at the Fountain Avenue fill, which is expected to be a major asset once the waters of Jamaica Bay becomes swimmable. The fill is currently being done to a contour plan developed by the New York City planning department. This will result in elevations that reach 160 feet above sea level at a number of points, providing good long-distance overlooks toward the bird sanctuary in Jamaica Bay.

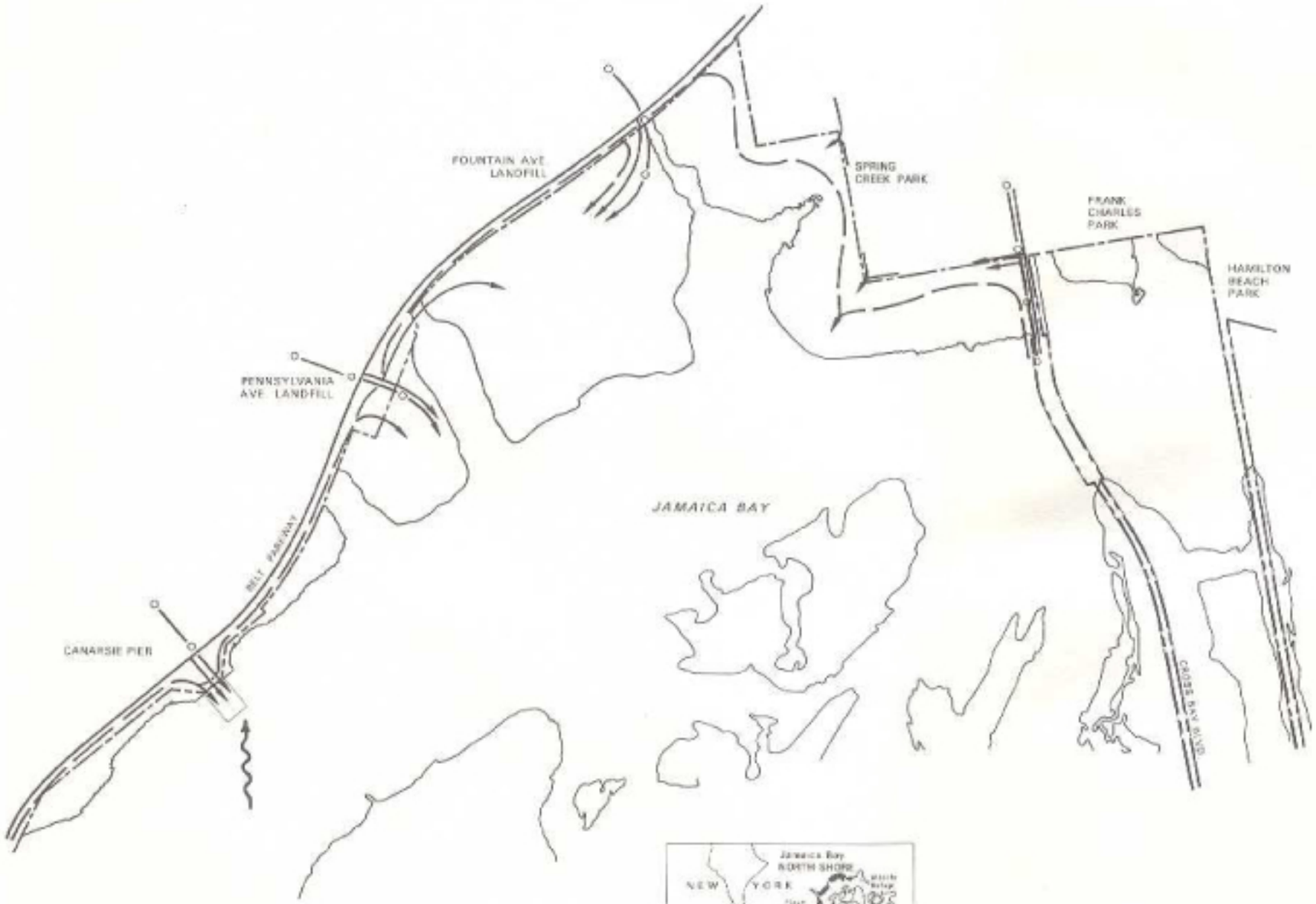
Prior to cessation of landfill operations at the Pennsylvania and Fountain Avenue sites, the Park Service will complete environmental assessments of conditions there. The assessment for the Pennsylvania Avenue fill, which is currently underway, will be completed and approved before 1981. A similar assessment of the Fountain Avenue fill will be prepared and approved before 1986. Both these studies will address environmental factors, appropriate closure plans, and viable alternative plans for management of resources in the future. All assessment work will be accomplished in close coordination with the city.

## Access and Circulation

Access for cars and buses to parklands along the north shore of Jamaica Bay will continue to be from the Belt Parkway or, in the case of Spring Creek, Frank Charles, and Hamilton Beach Parks, from Cross Bay Boulevard and connecting residential streets.

The Rockaway Parkway interchange will provide primary access for visitors coming to Canarsie Pier along the Belt Parkway. Residents of Canarsie and other nearby communities will enter from Rockaway Boulevard. Parking areas at Canarsie will be maintained.

When the landfill areas are transferred to the Park Service, the existing interchange at the parkway and Pennsylvania Avenue will allow easy access to the smaller landfill area. The access pattern in this location is sufficiently different from that for Floyd Bennett Field/Breezy Point that the site should be able to accept large numbers of people on summer weekends. Fountain Avenue has recently been widened from Linden Avenue South to the Belt Parkway underpass. This widening was part of earlier city plans to develop the vacant land north of the highway and to provide an interchange at Fountain Avenue and the parkway. If a new interchange is built at Fountain Avenue, by responsible agencies, this area of Gateway will also have direct access from the Belt Parkway. Otherwise, access could be from Fountain Avenue or from Conduit Boulevard along a service road paralleling the parkway to Fountain Avenue, or across a bridge from the Pennsylvania Avenue to the Fountain Avenue site.




PARK BOUNDARY

AUTO

PUBLIC TRANSIT

BIKE

POTENTIAL FERRY ROUTE

N

0 1000 2000 3000 Feet

0 300 600 900 Meters

# PROPOSED CIRCULATION

## NORTH SHORE

GATEWAY NATIONAL RECREATION AREA
NEW YORK / NEW JERSEY

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

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Spring Creek Park will be accessible from Cross Bay Boulevard just north of the North Channel Bridge; connecting city streets will provide secondary access for local community residents to parking areas in the northwestern section of the park. Hamilton Beach and Frank Charles Parks will be reached only from connecting streets that intersect Cross Bay Boulevard.

Proposals for the Spring Creek area include the establishment of a bike trail that will connect with the Belt Parkway bikeway on the north and provide access through the park to Cross Bay Boulevard.

## Projected Visitor-Use Levels

Use of the north shore parklands to be developed in Stage I is not expected to increase to a substantial degree. When the landfill sites are developed and opened to the public, they should draw up to 1.5 million visitors annually.

# WILDLIFE REFUGE

The central part of Jamaica Bay will continue to be managed as a wildlife refuge, except for the Broad Channel community which will remain as an enclave. No major changes are planned from the present mode of operation, although resource upgrading, maintenance, and protection will be accomplished to ensure the continued viability of natural habitats.

The plan proposes to restore and preserve all of the lands, marshlands, and landlocked waters in Jamaica Bay except for the currently developed strip that encircles the visitor center and a small site south of North Channel Bridge. The structures and facilities at the visitor center will be maintained. All bird nesting and feeding areas and all marsh islands will be managed to perpetuate the wildlife refuge status of this park area.

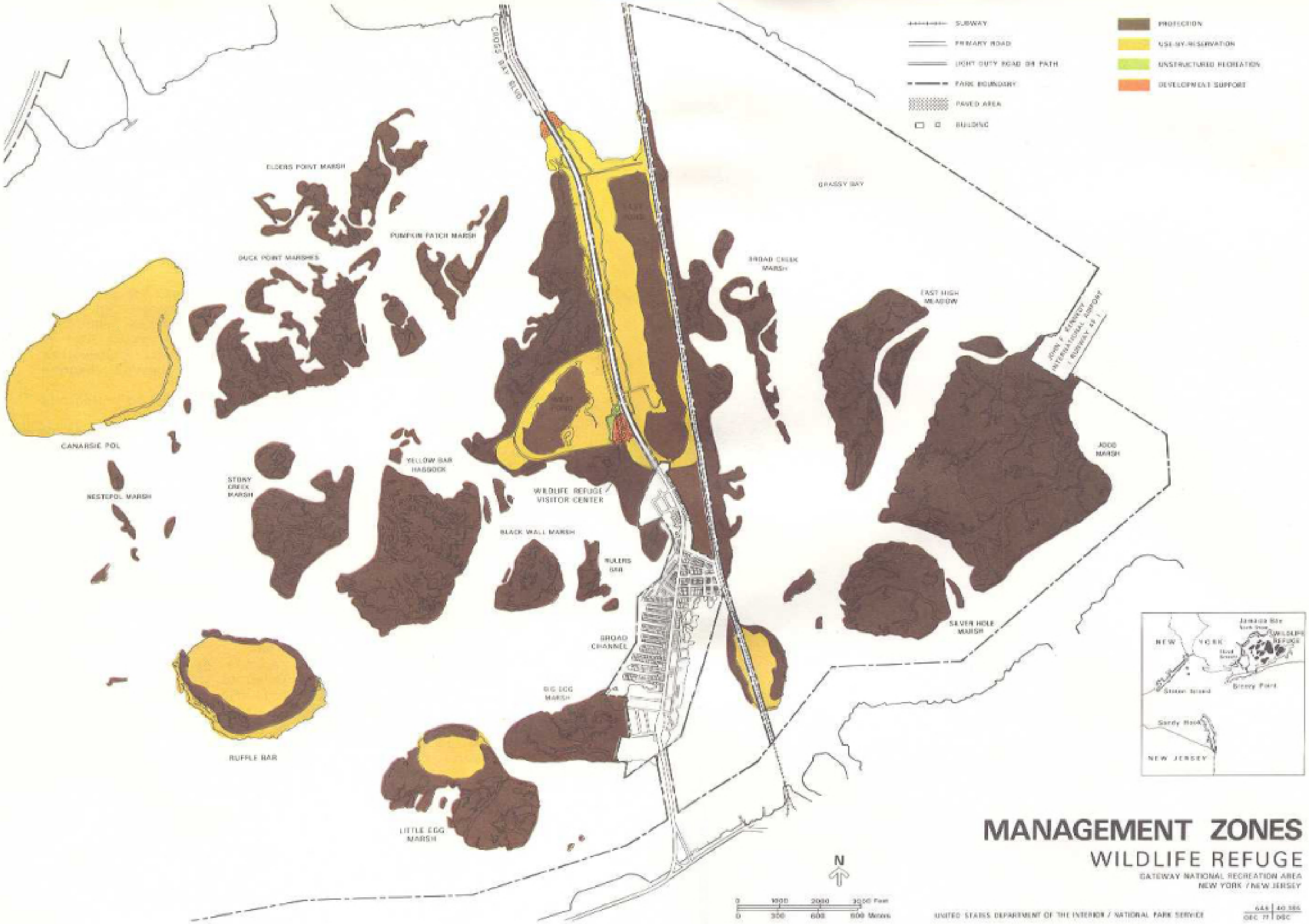
Use levels are not expected to increase significantly during the life of the plan, and no access or development changes are proposed that would affect present use patterns.

## ZONING AND RESOURCES MANAGEMENT

The wildlife refuge has been zoned principally for protection and use-by-reservation to ensure the perpetuation of significant wildlife species and habitats within the bay. The most sensitive habitat/nesting areas on some of the islands have been designated for protection, as have East and West Ponds; the remainder of the islands and most of the wildlife refuge fastlands have been zoned for use-by-reservation. These areas total 99 percent of the wildlife refuge acreage. The small area surrounding the existing visitor center at the refuge, where visitors occasionally picnic at present, has been zoned for unstructured recreation. The visitor center and parking lot, as well as a small concession area at the northernmost end of this portion of Gateway (adjacent to North Channel Bridge), have been included in the Development Support subzone.

Jamaica Bay water quality is a critical issue at Gateway. Several studies will be undertaken to determine the feasibility and appropriate sharing of responsibilities for the intitiation of the following projects concerning water quality in the bay:

> Restoration of Jamaica Bay's tidal flushing pattern by construction of an adequate channel or sluiceway under the Kennedy International Airport runway in Jo Co Marsh. This project will require additional study of the sediment deposits in the Grassy Bay section of the bay to the north of the runway.




# MANAGEMENT ZONES

## WILDLIFE REFUGE

GATEWAY NATIONAL RECREATION AREA
NEW YORK / NEW JERSEY

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Restoration of the bay's tidal flushing pattern by renovation of the existing sluiceway directly below East and West Ponds and through the Metropolitan Transit Authority trestle fill, which currently obstructs the circulation of water through the middle islands and marshes of the bay.

Establishment of closed-cycle aquiculture systems in the bay.

Strict enforcement of current wastewater treatment standards, especially as concerns the elimination of industrial pollutants in the bay. This will be necessary to bring water quality up to a level that permits swimming.

Budgeting for the additional construction of stormwater holding tanks for sewage plants in the Jamaica Bay drainage basin. Additional aeration capacity should be provided to prevent current severe oxygen loss due to elimination of oxygen-free wastewaters into the bay, particularly in the vicinity of Kennedy Airport.

Elimination of landfill leachate pollution.

The entire Jamaica Bay area (including Floyd Bennett Field and the lands along the north shore) will be surveyed for unknown or unevaluated archaeological materials. If any such materials are discovered, they will be protected from vandalism or possible deterioration until professional staff determine their significance and recommended treatment.

## VISITOR USE AND DEVELOPMENT

### Design and Use Concepts

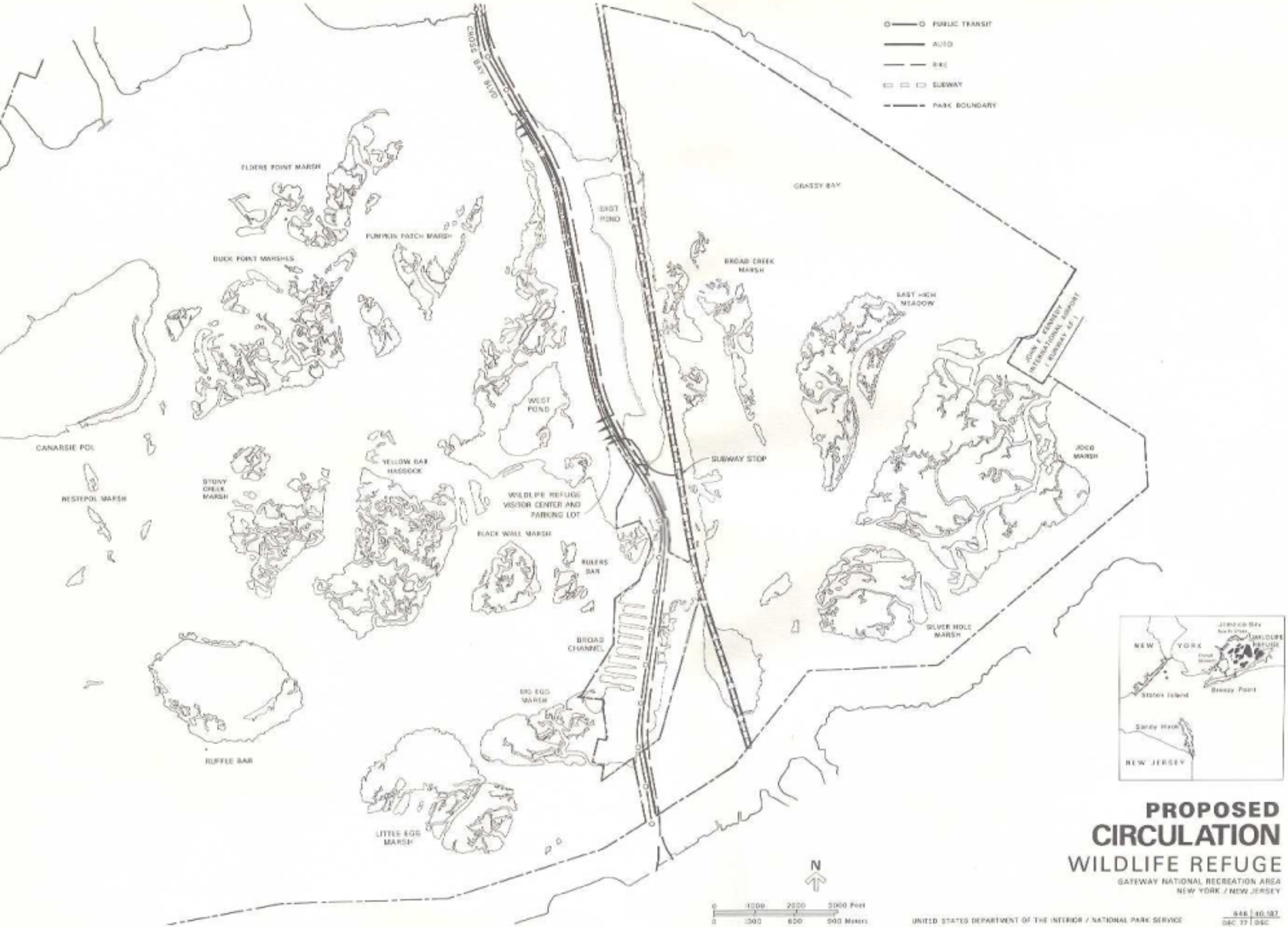
The majority of this portion of Gateway will continue to be managed as a wildlife refuge and will be open to the public on an as-requested permit basis. The refuge is already operating successfully, and the only changes recommended are some minor improvements to the visitor center facility. Picnicking will continue to be allowed in the small open area adjacent to the visitor center, and the concession area at North Channel Bridge will be retained and upgraded to support fishing along and south of the bridge. The bay waters and some of the islands will continue to be available for use by boaters, fishermen, and bait gatherers under the policies set forth in the "Natural Resources Management" section of this document.

## Access and Circulation

Land access to the Jamaica Bay Wildlife Refuge and to the fishing areas near North Channel Bridge will continue to be along Cross Bay Boulevard only. The existing parking areas and pulloffs at these sites will be maintained. The islands within Jamaica Bay will be accessible by private boat as regulated by park management.

## Projected Visitor-Use Levels

Visits to the Jamaica Bay Wildlife Refuge portion of Gateway are expected to remain at their present low levels for the life of this plan.




# PROPOSED CIRCULATION

## WILDLIFE REFUGE

GATEWAY NATIONAL RECREATION AREA
NEW YORK / NEW JERSEY

# APPENDIXES

## A: LEGISLATION

# An Act

86 STAT. 1308

To establish the Gateway National Recreation Area in the States of New York and New Jersey, 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 preserve and protect for the use and enjoyment of present and future generations an area possessing outstanding natural and recreational features, the Gateway National Recreation Area (hereinafter referred to as the "recreation area") is hereby established.

Gateway National Recreation Area, N.Y.-N.J. Establishment.

(a) The recreation area shall comprise the following lands, waters, marshes, and submerged lands in the New York Harbor area generally depicted on the map entitled "Boundary Map, Gateway National Recreation Area," numbered 951-40017 sheets 1 through 3 and dated May, 1972:

(1) Jamaica Bay Unit—including all islands, marshes, hassocks, submerged lands, and waters in Jamaica Bay, Floyd Bennett Field, the lands generally located between highway route 27A and Jamaica Bay, and the area of Jamaica Bay up to the shoreline of John F. Kennedy International Airport;

(2) Breezy Point Unit—the entire area between the eastern boundary of Jacob Riis Park and the westernmost point of the peninsula;

(3) Sandy Hook Unit—the entire area between Highway 36 Bridge and the northernmost point of the peninsula;

(4) Staten Island Unit—including Great Kills Park, Miller Field (except for approximately 26 acres which are to be made available for public school purposes), Fort Wadsworth, and the waterfront lands located between the streets designated as Cedar Grove Avenue, Seaside Boulevard, and Drury Avenue and the bay from Great Kills to Fort Wadsworth;

(5) Hoffman and Swinburne Islands; and

(6) All submerged lands, islands, and waters within one-fourth of a mile of the mean low water line of any waterfront area included above.

(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 in writing, the Secretary of the Interior (hereinafter referred to as the "Secretary") is authorized to 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, publication in Federal Register.

SEC. 2. (a) Within the boundaries of the recreation area, the Secretary may acquire lands and waters or interests therein by donation, purchase or exchange, except that lands owned by the States of New York or New Jersey or any political subdivisions thereof may be acquired only by donation.

Lands, waters, acquisition.

(b) With the concurrence of the agency having custody thereof, any Federal property within the boundaries of the recreation area may be transferred, without consideration, to the administrative jurisdiction of the Secretary for administration as a part of the recreation area.

Federal property transfer.

(c) Within the Breezy Point Unit, (1) the Secretary shall acquire an adequate interest in the area depicted on the map referred to in section 1 of this Act to assure the public use of and access to the entire beach. The Secretary may enter into an agreement with any property owner or owners to assure the continued maintenance and use of all remaining lands in private ownership as a residential community com-

Breezy Point Unit.

posed of single-family dwellings. Any such agreement shall be irrevocable, unless terminated by mutual agreement, and shall specify, among other things:

(A) that the Secretary may designate, establish and maintain a buffer zone on Federal lands separating the public use area and the private community;

(B) that all construction commencing within the community, including the conversion of dwellings from seasonal to year-round residences, shall comply with standards to be established by the Secretary;

(C) that additional commercial establishments shall be permitted only with the express prior approval of the Secretary or his designee.

(2) If a valid, enforceable agreement is executed pursuant to paragraph (1) of this subsection, the authority of the Secretary to acquire any interest in the property subject to the agreement, except for the beach property, shall be suspended.

(3) The Secretary is authorized to accept by donation from the city of New York any right, title, or interest which it holds in the parking lot at Rockaway which is part of the Marine Bridge project at Riis Park. Nothing herein shall be deemed to authorize the United States to extinguish any present or future encumbrance or to authorize the State of New York or any political subdivision or agency thereof to further encumber any interest in the property so conveyed.

Rockaway, parking lot, conveyance.

(d) Within the Jamaica Bay Unit, (1) the Secretary may accept title to lands donated by the city of New York subject to a retained right to continue existing uses for a specifically limited period of time if such uses conform to plans agreed to by the Secretary, and (2) the Secretary may accept title to the area known as Broad Channel Community only if, within five years after the date of enactment of this Act, all improvements have been removed from the area and a clear title to the area is tendered to the United States.

Jamaica Bay Unit.

Broad Channel Community.

SEC. 3. (a) The Secretary shall administer 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. In the administration of the recreation area 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: *Provided*, That the Secretary shall administer and protect the islands and waters within the Jamaica Bay Unit with the primary aim of conserving the natural resources, fish, and wildlife located therein and shall permit no development or use of this area which is incompatible with this purpose.

Administration.

(b) The Secretary shall designate the principal visitor center constructed within the recreation area as the "William Fitts Ryan Visitor Center" in commemoration of the leadership and contributions which Representative William Fitts Ryan made with respect to the creation and establishment of this public recreation area.

William Fitts Ryan Visitor Center, designation.

(c) The Secretary is authorized to enter into cooperative agreements with the States of New York and New Jersey, or any political subdivision thereof, for the rendering, on a reimbursable basis, of rescue, firefighting, and law enforcement services and cooperative assistance by nearby law enforcement and fire preventive agencies.

Federal-State cooperative agreements.

(d) The authority of the Secretary of the Army to undertake or contribute to water resource developments, including shore erosion control, beach protection, and navigation improvements (including the deepening of the shipping channel from the Atlantic Ocean to the New York harbor) on land and/or waters within the recreation area shall be exercised in accordance with plans which are mutually acceptable to the Secretary of the Interior 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 land resource development.

Water resource developments.

(e) The authority of the Secretary of Transportation to maintain and operate existing airway facilities and to install necessary new facilities within the recreation area shall be exercised in accordance with plans which are mutually acceptable to the Secretary of the Interior and the Secretary of Transportation and which are consistent with both the purpose of this Act and the purpose of existing statutes dealing with the establishment, maintenance, and operation of airway facilities: *Provided*, That nothing in this section shall authorize the expansion of airport runways into Jamaica Bay or air facilities at Floyd Bennett Field.

Airway facilities, maintenance, operation, and installation.

(f) The Secretary shall permit hunting, fishing, shellfishing, trapping, and the taking of specimens on the lands and waters under his jurisdiction within the Gateway National Recreation Area in accordance with the applicable laws of the United States and the laws of the States of New York and New Jersey and political subdivisions thereof, except that the Secretary may designate zones where and establish periods when these activities may not be permitted for reasons of public safety, administration, fish or wildlife management, or public use and enjoyment.

Hunting, fishing, and trapping.

(g) In the Sandy Hook and Staten Island Units, the Secretary shall inventory and evaluate all sites and structures having present and potential historical, cultural, or architectural significance and shall provide for appropriate programs for the preservation, restoration, interpretation, and utilization of them. Sandy Hook and Staten Island Units.

(h) Notwithstanding any other provision of law, the Secretary is authorized to accept donations of funds from individuals, foundations, or corporations for the purpose of providing services and facilities which he deems consistent with the purposes of this Act. Donations.

SEC. 4. (a) There is hereby established a Gateway National Recreation Area Advisory Commission (hereinafter referred to as the "Commission"). Said Commission shall terminate ten years after the date of the establishment of the recreation area. Gateway National Recreation Area Advisory Commission, establishment; termination.

(b) The Commission shall be composed of eleven members each appointed for a term of two years by the Secretary as follows: Membership.

(1) two members to be appointed from recommendations made by the Governor of the State of New York;

(2) two members to be appointed from recommendations made by the Governor of the State of New Jersey;

(3) two members to be appointed from recommendations made by the mayor of New York City;

(4) two members to be appointed from recommendations made by the mayor of Newark, New Jersey; and

(5) three members to be appointed by the Secretary to represent the general public.

(c) The Secretary shall designate one member to be Chairman. Any vacancy in the Commission shall be filled in the same manner in which the original appointment was made. Chairman.

(d) A member of the Commission shall serve without compensation as such. The Secretary is authorized to pay the expenses reasonably incurred by the Commission in carrying out its responsibility under this Act upon vouchers signed by the Chairman. Expenses.

(e) The Commission established by this section shall act and advise by affirmative vote of a majority of the members thereof.

(f) The Secretary or his designee shall, from time to time, consult with the members of the Commission with respect to matters relating to the development of the recreation area.

SEC. 5. 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 $12,125,000 for the acquisition of lands and interests in lands and not more than $92,813,000 (July, 1971 prices) for development of the recreation area, plus or minus such amounts, if any, as may be justified by reason of ordinary fluctuations in the construction costs as indicated by engineering cost indices applicable to the type of construction involved herein. Appropriations.

Approved October 27, 1972.

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LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 92-1392 accompanying H.R. 1121 (Comm. on Interior and Insular Affairs) and No. 92-1589 (Comm. of Conference).
SENATE REPORT No. 92-345 (Comm. on Interior and Insular Affairs).
CONGRESSIONAL RECORD:
Vol. 117 (1971): Aug. 6, considered and passed Senate.
Vol. 118 (1972): Sept. 26, considered and passed House, amended, in lieu of H.R. 1121.
Oct. 13, House agreed to conference report.
Oct. 14, Senate agreed to conference report.
WEEKLY COMPILATION OF PRESIDENTIAL DOCUMENTS:
Vol. 8, No. 44 (1972): Oct. 28, Presidential statement.

B: PRELIMINARY CAPITAL BUDGET - GATEWAY NATIONAL RECREATION AREA
(in 1976 dollars, in millions)

| Item | New Facility | Rehabilitated Facility | Rehabilitated Land | Total |
|---|---|---|---|---|
| STAGE I | | | | |
| Sandy Hook | | | | |
| 5 beach centers @ 1.5 each | 6.0 | | 1.5 | 7.5 |
| Beach center utilities | 1.7 | | | 1.7 |
| Eroded areas stabilization | | | 4.0 | 4.0 |
| Batteries stabilization, landscaping, interpretive signs, etc. | | .5 | .5 | 1.0 |
| Fort Hancock Gateway Village | | 5.0 | .5 | 5.5 |
| Ferry pier and related facilities | 1.0 | | | 1.0 |
| TOTAL | 8.7 | 5.5 | 6.5 | 20.7 |
| Staten Island | | | | |
| Great Kills beach center | | .8 | .2 | 1.0 |
| Great Kills recreation center (and beach center) | 1.5 | | .5 | 2.0 |
| Great Kills utilities | 1.2 | | | 1.2 |
| Relocation of marina | 1.0 | | .2 | 1.2 |
| Great Kills roads, parking, landscaping | .5 | | 1.5 | 2.0 |
| Bulkheading | | | 4.0 | 4.0 |
| Miller Field hangar | | 2.5 | .5 | 3.0 |
| Miller Field utilities | | .8 | | .8 |
| Miller Field road improvement and parking | | | .8 | .8 |
| Miller Field site development and landscaping | | | 2.5 | 2.5 |
| TOTAL | 4.2 | 4.1 | 10.2 | 18.5 |
| Breezy Point | | | | |
| Riis Park bathhouse | | 1.0 | | 1.0 |
| Riis Park landscaping | | | 1.0 | 1.0 |
| Fort Tilden beach restoration and bulkhead | | | 2.0 | 2.0 |
| Fort Tilden beach center | 1.3 | | .2 | 1.5 |
| Fort Tilden demolition and landscaping | | | 2.0 | 2.0 |
| Fort Tilden structures | | 1.0 | | 1.0 |
| Fort Tilden utilities | | .3 | | .3 |
| Fort Tilden batteries stabilization | | .5 | | .5 |
| West Beach beach center complex | 1.2 | 1.0 | .3 | 2.5 |
| West Beach vacant structures demolition | | | 1.0 | 1.0 |
| West Beach landforms | | | 1.0 | 1.0 |
| West Beach utilities | | .3 | | .3 |
| West Beach buffer zone, landscaping, stabilization path | | | 1.5 | 1.5 |
| Tip Beach beach center | 1.0 | .3 | .2 | 1.5 |
| Tip utilities | | .5 | | .5 |
| Tip buffer zone, landscaping, stabilization path | | | 1.5 | 1.5 |
| Bay shore landscaping | | | 3.0 | 3.0 |
| Ferry pier and related facilities | 1.0 | 1.0 | | 2.0 |
| TOTAL | 4.5 | 5.9 | 13.7 | 24.1 |

| Item | New Facility | Rehabilitated Facility | Rehabilitated Land | Total |
|---|---|---|---|---|
| STAGE I (cont.) | | | | |
| Floyd Bennett Field | | | | |
| Landscaping and site improvements | | | 30.0 | 30.0 |
| Gateway Village | 10.0 | 10.0 | | 20.0 |
| Roads | | | 2.0 | 2.0 |
| Utilities | | 2.0 | | 2.0 |
| Dead Horse Bay pier | 2.0 | | | 2.0 |
| Dead Horse Bay landscaping | | | 1.3 | 1.3 |
| Plumb Beach landscaping and site development | | .3 | 1.0 | 1.3 |
| Plumb Beach utilities | | .2 | | .2 |
| Bergen Beach landscaping | | | .5 | .5 |
| TOTAL | 12.0 | 12.5 | 34.8 | 59.3 |
| Jamaica Bay, North Shore and Wildlife Refuge | | | | |
| Canarsie Pier and Spring Creek Park landscaping | | | 1.0 | 1.0 |
| Canarsie Pier | | 3.0 | | 3.0 |
| Wildlife refuge visitor center and trails | | .4 | .2 | .6 |
| Wildlife refuge - West Pond gate valve | | | .2 | .2 |
| TOTAL | | 3.4 | 1.4 | 4.8 |
| TOTAL PARKWIDE - STAGE I | 29.4 (23%) | 31.4 (25%) | 66.6 (52%) | 127.4 |
| STAGE II | | | | |
| Staten Island | | | | |
| South Beach beach center | 1.2 | | 2.0 | 3.2 |
| Midland Beach beach center | 1.2 | | 2.0 | 3.2 |
| South and Midland Beach boardwalk area | | 1.0 | .5 | 1.5 |
| South and Midland Beach utilities | | .6 | | .6 |
| Fort Wadsworth Gateway Village | | 4.0 | 1.0 | 5.0 |
| Ferry pier | | 1.0 | | 1.0 |
| TOTAL | 2.4 | 6.6 | 5.5 | 14.5 |
| Floyd Bennett Field | | | | |
| Parking, roads, trails | | | 15.0 | 15.0 |
| Landscaping | | | 13.0 | 13.0 |
| Gateway Village | 5.0 | 5.0 | | 10.0 |
| TOTAL | 5.0 | 5.0 | 28.0 | 38.0 |

| Item | New Facility | Rehabilitated Facility | Land | Total |
|---|---|---|---|---|
| STAGE II | | | | |
| Jamaica Bay North Shore and Wildlife Refuge | | | | |
| Landfills parking and access | | | 2.5 | 2.5 |
| Landfills connecting bridge | 3.0 | | | 3.0 |
| Landfills recreation center (1 large) | 3.0 | | .5 | 3.5 |
| Landfills recreation centers (2 small) | 1.5 | | .5 | 2.0 |
| Landfills utilities | 1.2 | | | 1.2 |
| Landfills landscaping and site restoration | | | 12.0 | 12.0 |
| Landfills outdoor recreation facilities | 1.2 | | | 1.2 |
| TOTAL | 9.9 | | 15.5 | 25.4 |
| TOTAL PARKWIDE - STAGE II | 17.3 (22%) | 11.6 (15%) | 49.0 (63%) | 77.9 |
| STAGE III | | | | |
| Staten Island | | | | |
| Creation of new islands around Hoffman and Swinburne Islands | | | 37.5 | 37.5 |

SUMMARY OF TOTALS

| | New Facility | Rehabilitated Facility | Land | Total | |
|---|---|---|---|---|---|
| Stage I | | | | | |
| Sandy Hook | 8.7 | 5.5 | 6.5 | 20.7 | (16%) |
| Staten Island | 4.2 | 4.1 | 10.2 | 18.5 | (14%) |
| Breezy Point | 4.5 | 5.9 | 13.7 | 24.1 | (19%) |
| Floyd Bennett Field | 12.0 | 12.5 | 34.8 | 59.3 | (43%) |
| Jamaica Bay | | 3.4 | 1.4 | 4.8 | ( 8%) |
| | 29.4 | 31.4 | 66.6 | 127.4 | |
| Stage II | | | | | |
| Staten Island | 2.4 | 6.6 | 5.5 | 14.5 | (19%) |
| Floyd Bennett Field | 5.0 | 5.0 | 28.0 | 38.0 | (48%) |
| Jamaica Bay | 9.9 | | 15.5 | 25.4 | (33%) |
| | 17.3 | 11.6 | 49.0 | 77.9 | |
| Stage III | | | | | |
| Staten Island | | | 37.5 | 37.5 | |
| TOTAL - ALL STAGES | 46.7 (20%) | 43.0 (18%) | 153.1 (62%) | 242.8 | |

UNIT DISTRIBUTION - ALL STAGES

| | | |
|---|---|---|
| Sandy Hook | 20.7 | ( 9%) |
| Staten Island | 70.5 | (29%) |
| Breezy Point | 24.1 | (10%) |
| Floyd Bennett Field | 97.3 | (40%) |
| Jamaica Bay | 30.2 | (15%) |
| | 242.8 | |

TOTAL - ALL STAGES - 1979 DOLLARS: 301.24
(as adjusted by Consumer Price Index .806 - Bureau of Labor statistics, 1976-1979)

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As the nation's principal conservation agency, the Department of the Interior has basic responsibilities to protect and conserve our land and water, energy and minerals, fish and wildlife, and parks and recreation areas, and to ensure the wise use of all these resources. The department also has major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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