amendment to the general management plan

GREAT KILLS PARK
STATEN ISLAND UNIT

GATEWAY



NATIONAL RECREATION AREA • NEW YORK / NEW JERSEY

amendment to the general management plan

draft
december 1989

GREAT KILLS PARK
STATEN ISLAND UNIT
GATEWAY NATIONAL RECREATION AREA • NEW YORK/NEW JERSEY

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

CONTENTS

PURPOSE OF AND NEED FOR THE AMENDMENT 1

PARK DESCRIPTION 4
- NATURAL RESOURCES 4
  - Uplands 4
  - Wetlands 11
  - Shoreline 11
  - Water Quality 12
  - Vegetation 15
  - Wildlife 15
- EXISTING CONDITIONS AND VISITOR USE 16

ALTERNATIVES INCLUDING THE PREFERRED ALTERNATIVE 18
- ALTERNATIVE I - PREFERRED ALTERNATIVE 18
  - Bathhouse 21
  - Crookes Point 22
  - Harbor Area 22
  - Marina 25
  - Uplands 26
  - Roads and Trails 26
  - Facility Treatment and Management 27
  - Cost Estimates 28
- ALTERNATIVE II 28
- ALTERNATIVE III - NO ACTION/EXISTING CONDITIONS 32

ENVIRONMENTAL CONSEQUENCES 35
- ALTERNATIVE I - PREFERRED ALTERNATIVE 35
- ALTERNATIVE II 36
- ALTERNATIVE III - NO ACTION/EXISTING CONDITIONS 37

COMPLIANCE STATUS 38
- FLOODPLAINS AND WETLANDS MANAGEMENT 38
- COASTAL ZONE MANAGEMENT 38
- ENDANGERED SPECIES 38
- OTHER COMPLIANCE CONSIDERATIONS 39

AGENCIES CONTACTED 41

CONSULTATION AND COORDINATION 42

BIBLIOGRAPHY 43

PLANNING TEAM 44

MAPS

Location . 2
Prelandfill Conditions 5
Park Areas and Sanitary Landfill Location 7
Floodplains 9
Wetlands 13
Management Zones 19
Alternative I - Preferred Alternative 23
Alternative III - No Action 33

PURPOSE OF AND NEED FOR THE AMENDMENT

This document is an amendment to the Great Kills Park development concept plan portion of the 1979 *General Management Plan* (GMP) for Gateway National Recreation Area. The GMP proposed improvements to circulation patterns, facility and open space designs, and the natural environment of the Great Kills area.

The purpose of this amendment is to update the GMP to reflect changes in conditions at Great Kills Park. The primary concern is the proposed treatment for the bathhouse. Since completion of the 1979 plan the landforms within the park have been modified through natural processes, and these modifications, particularly on the ocean side, have made GMP development proposals related to the shoreline impractical. Specifically, the shoreline in front of the bathhouse has eroded to such an extent that access to portions of the building has been eliminated and the building is in danger of being isolated from the land; therefore, rehabilitation of the bathhouse, as proposed in the GMP, is no longer an appropriate treatment.

A number of other concerns addressed in the 1979 GMP have also been considered in this amendment. These concerns include the following:

The present concessioner-operated marina is operating at full capacity. The present location of the marina creates a conflict with beach users who park in the lot near the marina.

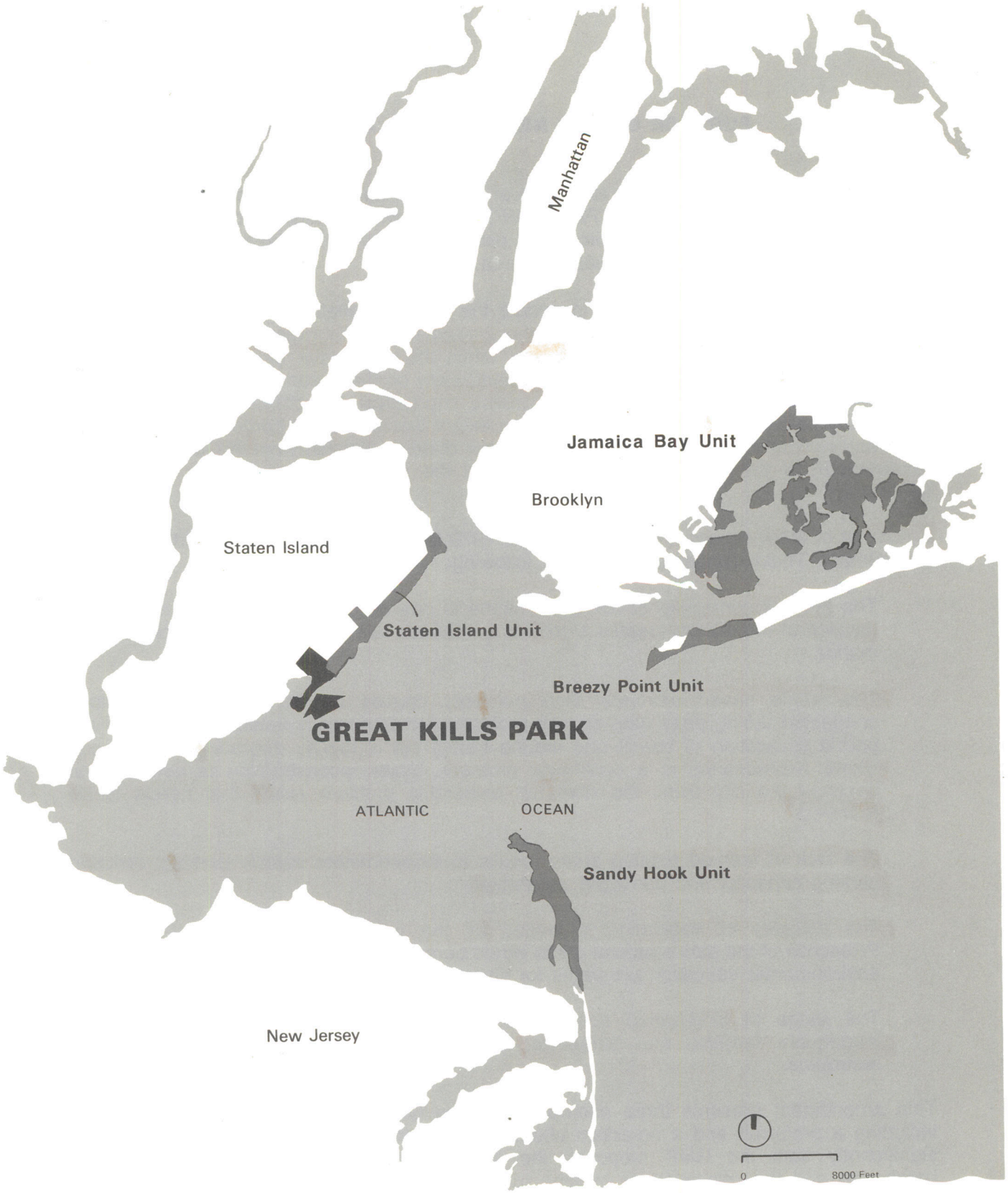
The single paved entrance road not only causes access problems (becomes congested during peak use, causes problems for emergency vehicles, and does not permit separation of beach and marina traffic) but is rapidly degrading to the point where maintenance is a continuing problem. Major reconstruction is needed, but because the city owns the road, an ownership problem exists that needs to be resolved.

The lack of marked parking areas results in indiscriminate vehicle parking, reduced parking capacity, and damaged vegetation.

The diversity of vegetation is limited by the proliferation of phragmites reeds. Protection of the park's natural areas would be enhanced by improved interpretive and environmental education programs for visitors.

The range of land-based activities and length of visitor season are limited by inadequate facilities and amenities, including trails, shelters, picnic areas, and restrooms.

This amendment presents three alternatives to the GMP proposal for Great Kills Park, including a preferred and a no-action alternative. The two action alternatives do not vary significantly from the GMP proposal; the greatest variation is the demolition of the bathhouse and the relocation of existing functions and services to other facilities in the park. The level of development under all of the alternatives is the same as or less than that proposed in the GMP.



LOCATION

GREAT KILLS PARK
STATEN ISLAND UNIT

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

646 | 40242C
DSC | JUN 89

The following approved planning documents support the park's development and use:

Statement for Management and Environmental Assessment, April 1976

Interpretive Prospectus, June 1978

Final Environmental Statement, August 1979

General Management Plan, August 1979

Resource Management Plan, October 1980

This amendment will provide management with the flexibility needed to develop appropriate levels of programs and facilities as environmental conditions and use patterns change over the next few decades.

PARK DESCRIPTION

Great Kills Park is on the southeastern shore of Staten Island, New York, and consists of an upland area; Crookes Point, a sand spit; the harbor behind the spit; and the beach area along the southeastern side of the spit. During the early 20th century the spit was breached and formed an island (see the Prelandfill Conditions map). In the 1930s and 1940s a harbor bulkhead was constructed, and Crookes Point was attached to the mainland; this was accomplished by filling the breached area with sand from dredging operations in the Great Kills Harbor and inlet channel. Also during the 1940s the upland area was raised to an elevation of 35 feet by adding sanitary landfill, which buried much of an existing salt marsh behind the beach (see the Park Areas and Sanitary Landfill Location map). The landfill has subsequently become overgrown with dense stands of reed grass (*Phragmites communis*), commonly known as phragmites.

Great Kills Park was officially opened as a New York City park in 1949, and construction of the bathhouse was started. The debris-laden waters around the park at first failed to attract recreationists, and the park remained a favorite haunt of vandals as well as an ideal site for dumping cars and other illegal activities. However, by the late 1960s, as the waters of the lower New York Harbor became clean enough for swimming and Staten Island became more densely populated, Great Kills Park had evolved into a popular beach area for nearby residents.

In 1972 Great Kills Park was designated as part of the newly established Gateway National Recreation Area, forming a portion of the Staten Island unit.

Great Kills Park provides attractions for more than 500,000 visitors each year. Facilities support a variety of recreational activities, and there are undeveloped shoreline areas where visitors can learn, study, fish, explore, or just relax and enjoy the harbor setting. The park also provides interpretive activities for the general public and serves as a major environmental education site for New York City schoolchildren and organized groups. The swimming season is short (Memorial Day to Labor Day), and one of the park's objectives is to provide more land-based activities so that the length of the visitor season can be extended.

The following sections describe the immediate environment of Great Kills Park, its resources, facilities, and present use. Detailed information about the natural resources of the area is in the 1976 *Statement for Management and Environmental Assessment*, the 1979 *Final Environmental Impact Statement*, and the 1979 *General Management Plan*.

NATURAL RESOURCES

Uplands

The majority of the northern uplands section of Great Kills Park is extensively covered with phragmites reed grass. This sanitary landfill site has been severely disturbed and will require decades to leach out its pollutants, aerate its soil, and regenerate the type of environment that can sustain a natural shoreline system. Mixed grasslands with developing deciduous forests grow on the uplands along Hylan Boulevard.

A large portion of the Crookes Point area is classified as uplands (see the Floodplains map) with dune and mixed shrub-grassland communities. This area has the most diverse vegetation in Great Kills Park and provides an important habitat for monarch butterflies

PRELANDFILL CONDITIONS
STATEN ISLAND UNIT/GREAT KILLS PARK

GATEWAY NATIONAL RECREATION AREA
UNITED STATES DEPARTMENT OF THE INTERIOR/NATIONAL PARK SERVICE

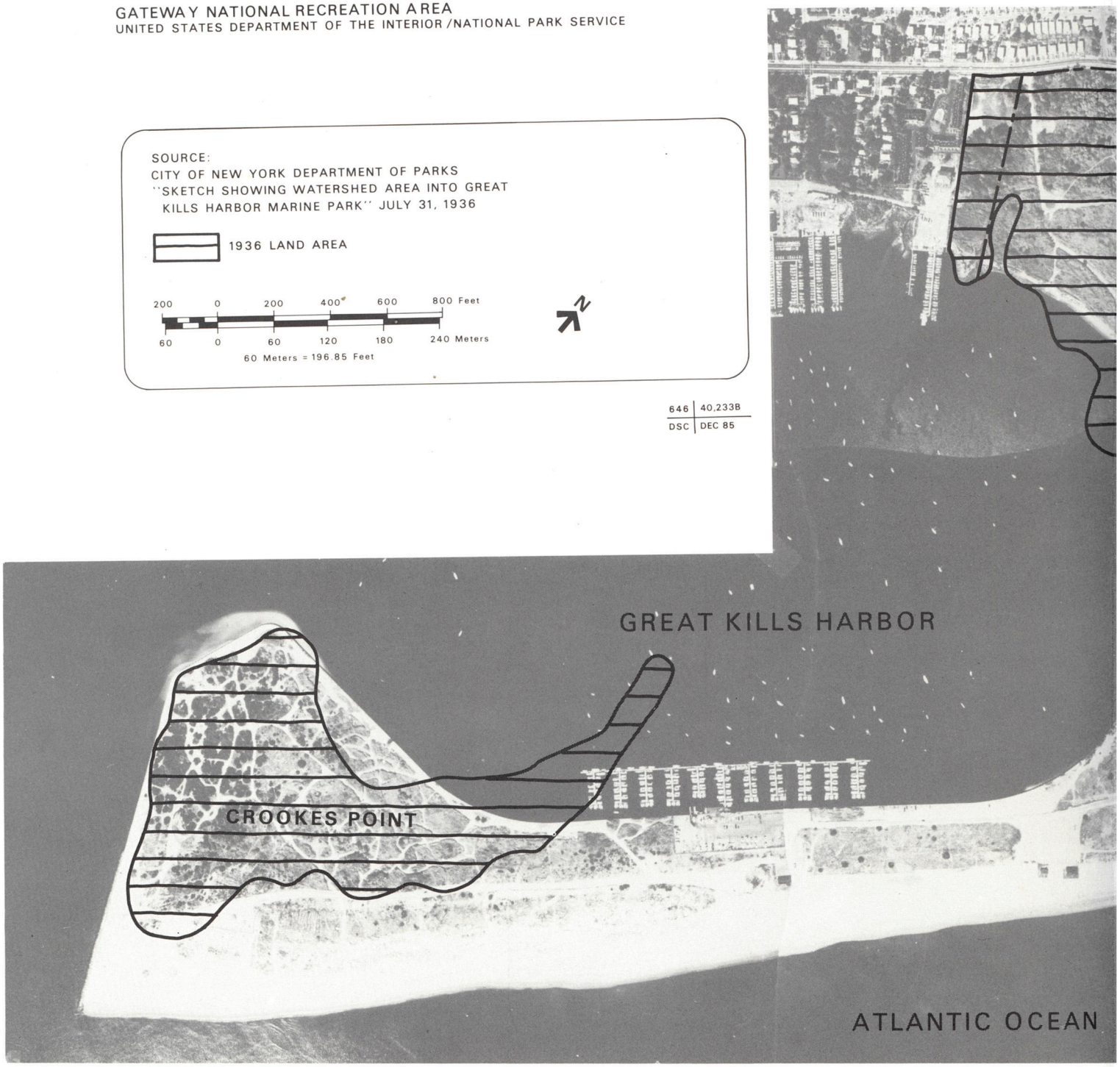
SOURCE:
CITY OF NEW YORK DEPARTMENT OF PARKS
"SKETCH SHOWING WATERSHED AREA INTO GREAT KILLS HARBOR MARINE PARK" JULY 31, 1936

1936 LAND AREA

200 0 200 400 600 800 Feet
60 0 60 120 180 240 Meters
60 Meters = 196.85 Feet

N

646	40,233B
DSC	DEC 85




DUCK CREEK
LOCKMAN CREEK
MILL CREEK
OAKWOOD POINT
N.Y.C. LAND WITHIN LEGISLATIVE BOUNDARY

PARK AREAS AND SANITARY LANDFILL LOCATION

STATEN ISLAND UNIT/GREAT KILLS PARK

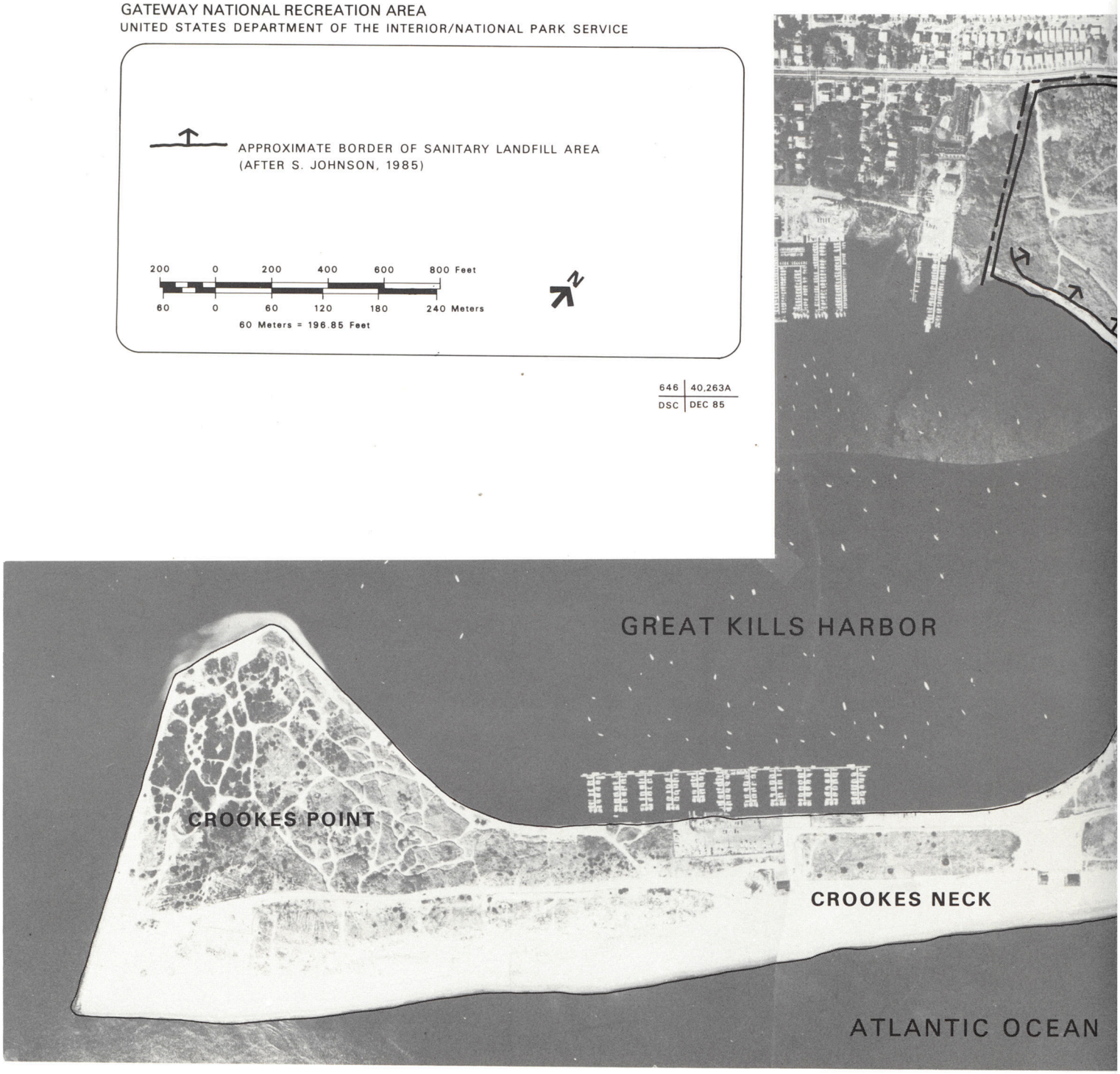
GATEWAY NATIONAL RECREATION AREA
UNITED STATES DEPARTMENT OF THE INTERIOR/NATIONAL PARK SERVICE

APPROXIMATE BORDER OF SANITARY LANDFILL AREA
(AFTER S. JOHNSON, 1985)

200 0 200 400 600 800 Feet
60 0 60 120 180 240 Meters
60 Meters = 196.85 Feet

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N.Y.C. LAND WITHIN LEGISLATIVE BOUNDARY
UPLANDS
APPROXIMATE EASTERN EDGE
OF SANITARY LANDFILL

FLOODPLAINS MAP
STATEN ISLAND UNIT/GREAT KILLS PARK

GATEWAY NATIONAL RECREATION AREA
UNITED STATES DEPARTMENT OF THE INTERIOR/NATIONAL PARK SERVICE

ZONE A 100-YEAR BOUNDARY

ZONE B 500-YEAR FLOOD BOUNDRY

ZONE C AREAS OF MINIMAL FLOODING

ZONE A7 Areas of 100-year flood;
base flood elevations and flood hazard factors determined.

BASIC DATA:
FLOOD INSURANCE RATE MAP PANEL 126, SEPT. 30,1982

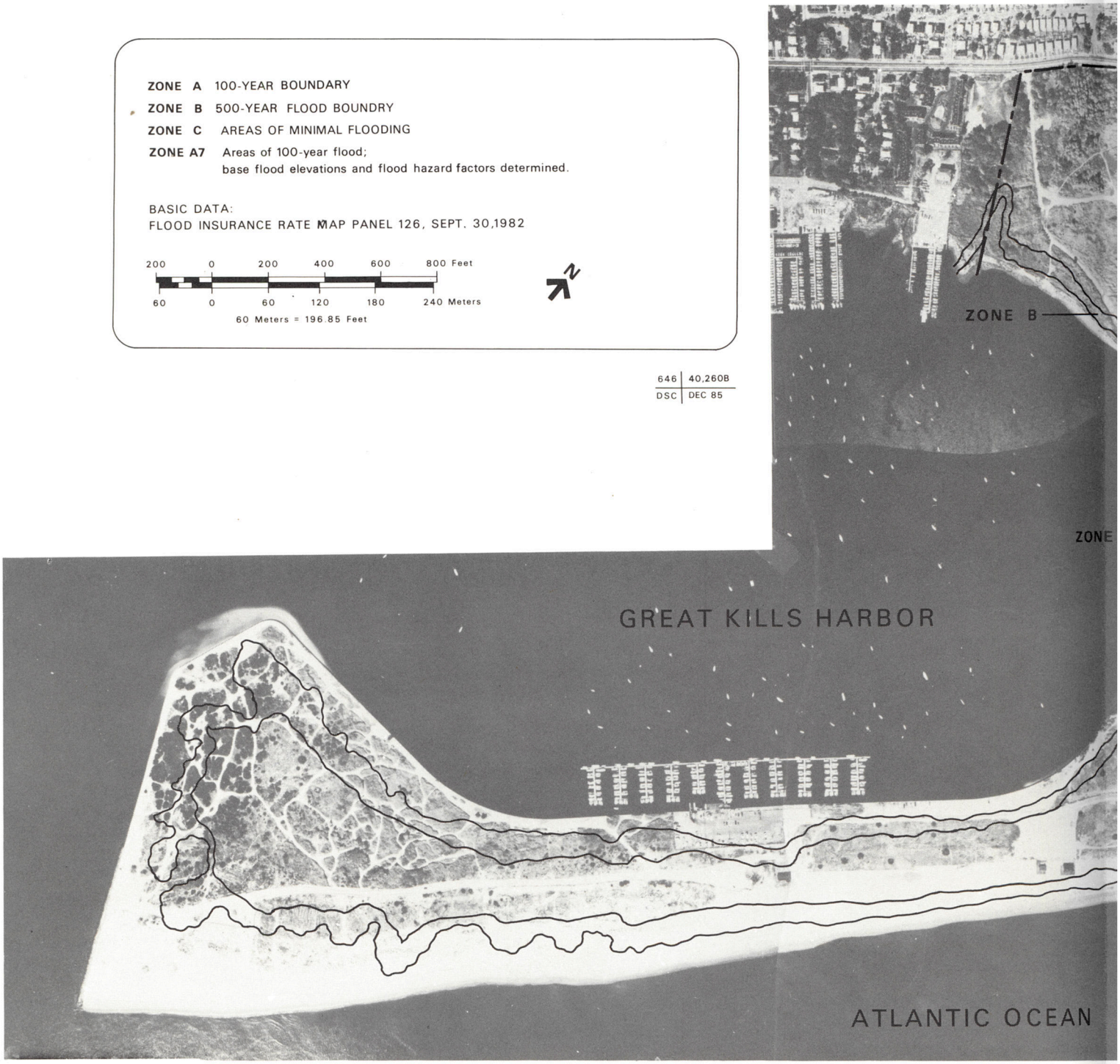
200 0 200 400 600 800 Feet

60 0 60 120 180 240 Meters

60 Meters = 196.85 Feet

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N.Y.C. LAND WITHIN LEGISLATIVE BOUNDARY
ZONE C
A
ZONE A7

during their migration. Scars cut through the vegetation by off-road vehicles have been healing since off-road vehicle use was restricted about four years ago.

Wetlands

There are three freshwater wetland areas within the Great Kills Park boundary. These areas are designated as POW (palustrine open water), PEM (palustrine emergent), and PFOI (palustrine forested - broadleafed deciduous). These small areas, which are shown on the Wetlands map, are slowly developing into wildlife habitat.

The POW area on the northeast side of the park, across from the sewage treatment plant, is approximately 2.75 acres in size and was once used to store sewage sludge. Since construction of the new plant, the ponds have been used to store excess storm sewer water resulting from rare heavy storm conditions. During the normal spring wet season, this area could be considered a wetland with a marshlike environment. The area attracts nesting black-crowned night herons. The dominant vegetation consists of phragmites, mudwort, red elderberry, and pokeberry.

The area designated as PEM is due north of the bathhouse overflow parking lot. This marsh area is approximately 2 acres in size and contains a small depression that collects rainwater and attracts waterfowl and shorebirds. Most of the area is phragmites marsh; the interior contains open water.

The last freshwater wetland site, PFOI, is in the northeast corner of the park. This small wetland begins approximately 200 feet southwest of the intersection of Hylan Boulevard and the existing park entrance road. It encompasses approximately 1 acre, and although it is not really considered a wetland, it contains a small depression that could collect water during the rainy season. The area contains upland tree species dominated by sassafras, black cherry, staghorn sumac, and ailanthus.

Besides the wetland areas depicted on the Wetlands map, there are two drainage swales (shallow, slow-moving bodies of freshwater). The first, in the vicinity of the PFOI area, runs south of and parallel to Hylan Boulevard and passes under the park entrance road. Beyond the entrance road the second swale drains south along the park's eastern edge into the Atlantic Ocean. The swales are essentially phragmites marshes. Upslope out of the swale, vegetation is similar to that of the PFOI area.

The other four wetland areas are considered estuarine areas and are described in the following "Shoreline" section.

Shoreline

The southern shoreline of Staten Island was formed by headland erosion and littoral drift that created a barrier beach. The dynamic nature of the shoreline can be seen by comparing historic maps and records data. The present spit has retreated approximately 900 feet landward from its position in 1836 when it protected the salt marsh that had formed behind it. The present peat outcrop is a remnant of that marsh.

Along the beach side of Great Kills is a small dune system that could be remnant of a larger system that existed before Crookes Point was attached to the mainland. Over the years the area experienced increasing visitation without a natural resource management strategy, and the dune system became so stressed that, for all practical purposes, it does

not now reflect what was once a vital component of the overall ecosystem. Typical dune vegetation exists within the system, and with a proper management strategy the dunes could begin to recover naturally.

The southwest/northeast-oriented shoreline described on the Wetlands map as areas E2FL (estuarine intertidal flat - basically the Atlantic Ocean) and E2BB (estuarine intertidal beach bar - unvegetated sandy beach) is exposed predominantly to low wave energy because of its partly protected position in lower New York Bay. The beach areas contain bird species such as gulls, and sanderlings and dunlins feed on the tide line in the winter. In the intertidal flat many species of wading and shore birds can be seen when the tide is out. On an incoming tide diving birds are prevalent.

The peat bog is also a part of the intertidal flat system in the area directly in front of the old beach house. This area is rich in nutrients, and the deposits provide habitat for many plants and animals other than birds. The detritus-laden waters influence a large part of the total beach ecosystem. Some of the most dominant plant species include sea lettuce, hollow green weeds, and Spartina. There are also various species of mollusks, bivalves, annelid worms, arthropods, and fish.

During storms, large ocean waves passing between Sandy Hook and Breezy Point are focused directly at the Great Kills area. The southerly transport of sand is usually minimal because of the low wave energy, with substantial transport occurring only during storms. Very little sand removed from the bathhouse area during storms is replaced because of the low wave energy. In addition, the peat outcrop just north of the bathhouse and the groins and jetties farther north along the shore prevent longshore sand transport into the bathhouse area. The result of these processes is the erosion of the shoreline at the bathhouse. It has been determined, from test pits, that the sanitary landfill is far enough from the eastern shoreline that it is not threatened by erosional processes.

Sand eroded from the bathhouse area has accreted updrift of a jetty at Crookes Point. Although the jetty was extended in 1958, the jetty compartment was filled by the early 1970s. Sand has since drifted around the jetty and been deposited on the west side of Crookes Point and in the navigation channel.

The last estuarine wetland area, described as E2EM on the Wetlands map, is located between the beach east of the bathhouse and the old sewage plant overflow ponds. Part of the POW area drainage swale is associated with this area as the swale flows southward. The area depicted on the map encompasses an area well beyond the limit of the swale and its wetlands. Along the swale proper, the dominant wetland species is phragmites. On drier ground red elderberry and mugwort are present.

Because the drainage swale is steep-sided, its aerial extent is less than shown on the map. The remainder of the area depicted on the map is uplands dominated primarily by red mulberry, staghorn sumac, evening primrose, white clover, and common mullein. This area is managed to retain its existing characteristics; it will continue to be protected and allowed to proceed as natural succession dictates.

Water Quality

In 1975 the National Marine Fisheries Service sampled offshore waters for faunal diversity. The samples taken included a large number of juvenile and adult worms, clams, crabs, and shrimp. This broad supply of food sources for fish populations in the bay system indicated that the habitat was not badly stressed by pollutants. Recent monitoring by the National

WETLANDS
STATEN ISLAND UNIT/GREAT KILLS PARK

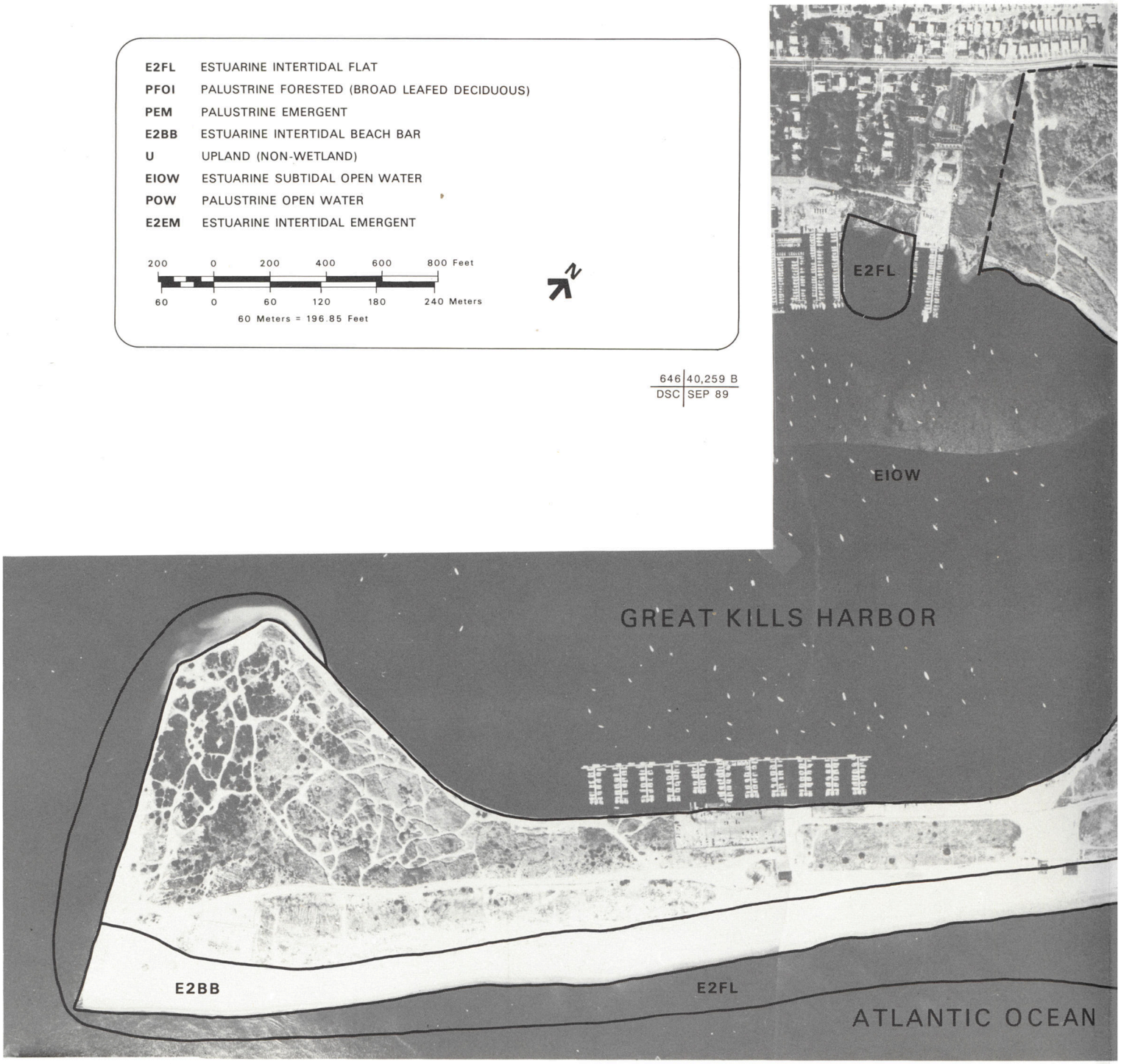
GATEWAY NATIONAL RECREATION AREA
UNITED STATES DEPARTMENT OF THE INTERIOR/NATIONAL PARK SERVICE

E2FL	ESTUARINE INTERTIDAL FLAT
PFOI	PALUSTRINE FORESTED (BROAD LEAFED DECIDUOUS)
PEM	PALUSTRINE EMERGENT
E2BB	ESTUARINE INTERTIDAL BEACH BAR
U	UPLAND (NON-WETLAND)
EIOW	ESTUARINE SUBTIDAL OPEN WATER
POW	PALUSTRINE OPEN WATER
E2EM	ESTUARINE INTERTIDAL EMERGENT

200 0 200 400 600 800 Feet
60 0 60 120 180 240 Meters
60 Meters = 196.85 Feet

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DRAINAGE SWALE
PFOI
U
N.J.C. LAND WITHIN LEGISLATIVE BOUNDARY
U
U
E2EM
E2EM
PEM
POW
DRAINAGE SWALE
E2EM
E2BB

Park Service shows that there has been a qualitative improvement in water quality at the Staten Island beaches. These waters are generally safe for swimming, but most beach users prefer to sunbathe only. Over the past few years, sewage outfall or floating waste have required that the beaches be closed. Should this situation continue to worsen, beach oriented visitor services may be revised or eliminated. Past water quality data from the New York State Department of Environmental Protection (DEC) classified the waters of the park and adjacent areas as class SB (surface saline waters suitable for primary and secondary contact recreation and any other use except for taking shellfish for market purposes). As of May 1, 1989, the New York State DEC has authorized commercial harvesting of the hardshell clam (*Mercenavia mercenavia L.*) from Great Kills Harbor for depuration purposes. The clams are removed from New York State waters; however, clams are not allowed to be taken from NPS waters.

Vegetation

Most of the uplands in Great Kills Park are disturbed reed grass (phragmites) marsh and mixed grasslands with thickets of small trees and shrubs. Phragmites is an effective invader of disturbed areas, especially dredge spoils. The fact that phragmites is dominant in both the upland and marsh areas indicates how effective it is as an invader in both types of ecosystems. The reeds that cover much of the uplands give stability to fill material and provide cover for small animals, but they provide less food value for wildlife than other marsh plants. Phragmites does contribute significantly to the detrital/organic load of the harbor and estuary in general. Areas within Great Kills that maintain water exhibit diverse vegetation.

In the upland areas of southern Staten Island, surveys have shown a dominance of American hackberry, with widespread Carolina poplar, bigtooth aspen, and pine oak. A wooded area along Hylan Boulevard contains sweetgums, tulip poplars, blackgums, elms, and red cedar.

Upland areas of Crookes Point have been severely disturbed by visitor use but still retain thickets of bayberry, beach plum, sumac, hackberry, and black cherry. The front dune/beach environment is dominated by dune grass, seaside goldenrod, sea rocket, prickly pear cactus, and beach cocklebur. The rear dunes contain shrub and thicket growth dominated by bayberry, Virginia creeper, and poison ivy.

Wetland species in the marsh areas include phragmites, cattails, and various types of marsh grasses. Vegetation in the low-lying deciduous forest includes red elderberry, mugwort, pokeberry, and black cherry as overstory vegetation. Understory vegetation includes species such as multiflora rose, field garlic, and common blue violet. The peat bog and offshore areas contain rockweed and sea lettuce. These two algae species aid in stabilization of the shoreline and provide cover for small benthic invertebrates.

There are several environmentally sensitive areas, including the tidal peat bog along the shore, the remnants of the original drainage area, the dune system, and other wetlands.

Wildlife

Lists of mammals, birds, reptiles, amphibians, finfish, and benthic invertebrates have been prepared by the Park Service and U.S. Army Corps of Engineers. The vegetation types discussed above provide habitat for a variety of wildlife species.

There are over 81 species of birds, including ducks and other water birds, hawks, owls, and several passerine species. Most are residents, seasonal residents, or transients in the shore zone. Open areas of beach grass provide habitat for large numbers of amphibians and reptiles. Diamond-backed terrapins (turtles) are found at the harbor on Crookes Point and are considered a species of critical concern in New York State. Green frogs and Fowler's toads are found in shaded areas south of Hylan Boulevard. Small mammals that do not require large areas of cover are still numerous, including brown bats, chipmunks, shrews, gray squirrels, deer mice, meadow voles, eastern and star-nosed moles, muskrats, rabbits, and opossum. Crookes Point contains the most diverse vegetation in the park and is an important habitat for migrating birds and insects, particularly the monarch butterfly.

The aquatic habitats of the park and adjacent areas provide a rich variety of estuarine, saltwater and freshwater plants, vertebrates, and invertebrates. The harbor and shore environments have submerged areas extremely sensitive to physical disturbance and pollution. Most of the wetlands in the park lie within the 100-year flood hazard zone.

EXISTING CONDITIONS AND VISITOR USE

The Gateway region is most often under a continental influence, with a dominant westerly airflow. Near the coastline, temperatures over land and water vary substantially. Breezes are most pronounced during the summer months, encouraging sailboating in the harbor. Precipitation on Staten Island averages about 50 inches per year. The greatest rainfall occurs during the summer months, but the area has a fairly even year-round distribution. There is often steady rain or snow during the winter. Sites exposed to onshore winds receive more frequent and generally greater amounts of precipitation, which affects visitation and types of activities.

Park activities at Great Kills include boating, windsurfing, sunbathing, swimming, bicycling, jogging, walking, bird-watching, fishing, model airplane flying, equestrian events, field sports, interpretation, and environmental education. There are an average of 7,500 visitors on heavy use days; on peak days, visitation approaches 10,000. The most concentrated visitor use occurs during the five warm months (May through September), when the park receives 90 percent of its yearly total.

The bathhouse, designed as the nucleus of the park, is a large brick structure about 2 acres in size with a concrete foundation supported by approximately 1,600 piles. The building houses maintenance equipment, a conference room, public restrooms, a first-aid station, a visitor contact center, interpretive exhibits, and space for concessioners, lifeguards, and other park personnel. The building is being undermined by severe shoreline erosion that threatens access to the structure. Part of the bathhouse is without a land base, extending over the ocean on exposed pilings. The ocean wave action is causing the building to separate, rendering portions of it unusable. Sewer lines periodically collapse.

Other park facilities include a paved 600-car parking lot adjacent to the bathhouse (with traffic crossing diagonally through the lot), a 250-car graveled overflow lot, the north and south beach centers (concession facilities with public restrooms), a concessioner-run marina of 350 slips and 350 parking spaces, and 1 mile of two-lane access road with some parking along the shoulders. A dirt access road provides access to a 60-car parking area on Crookes Point; this area is used by fishermen with permits. The model airplane field, horse arena, five ballfields, track, and various hiking trails have separate parking areas. A New York City sewage line runs diagonally through the park toward a municipal sewage treatment plant at Fresh Creek on the eastern border of the park. Former stormwater storage ponds, identified here as wetland areas, are on park land near the neighboring

sewage treatment plant. The park interior is crisscrossed with trails and roads caused by unauthorized off-road vehicle use. Visitors park indiscriminately while fishing or attending sports events because parking areas are not clearly marked. Measures to control these activities are being taken.

Most access to the site (93 percent) is by automobile. About 4 percent of the visitors come by bicycle – the highest percentage of all Gateway units. Daily bus access is provided seasonally from mid-June through Labor Day on the S-103S line along Hylan Boulevard. In the summer the city bus runs to the central parking lot. During the peak summer season the access road is too small to handle the increased traffic, resulting in traffic congestion and problems for emergency vehicles at the intersection with Hylan Boulevard.

ALTERNATIVES INCLUDING THE PREFERRED ALTERNATIVE

The section includes three alternatives to the GMP proposal for Great Kill Park, including a preferred and a no-action alternative. The impacts of implementing the alternatives are evaluated in the "Environmental Consequences" section. Following is a summary of the GMP proposed actions.

The entrance road would be maintained, and a second road would be constructed farther south to form a circulation loop.

The existing bathhouse would serve as the nucleus of a new beach center, which would provide expanded services and space for environmental education programs and community meeting rooms. Paved parking for 650 cars would be provided, with another 500 spaces on nearby fields for overflow parking.

A new, larger beach center would replace the existing facility on Crookes Neck. A 300-car parking lot would serve the center.

The marina would be replaced by a new marina at the northeastern end of the bay. The marina complex would include a boat launch and vehicle/boat-trailer parking.

On the harbor side of Crookes Neck, the bulkhead near the existing marina would be rehabilitated or reconstructed (phase 1 of the reconstruction or rehabilitation is already complete), and a walking/biking esplanade established. A small parking lot for 40 vehicles would be constructed at the terminus of the Crooks Point access road. The rest of Crookes Point would be managed to reestablish natural conditions.

The peat outcrop and stream mouth would be managed as a protected zone (see Management Zones map).

The details of the Great Kills proposal are included in the 1979 *General Management Plan, Gateway National Recreation Area.*

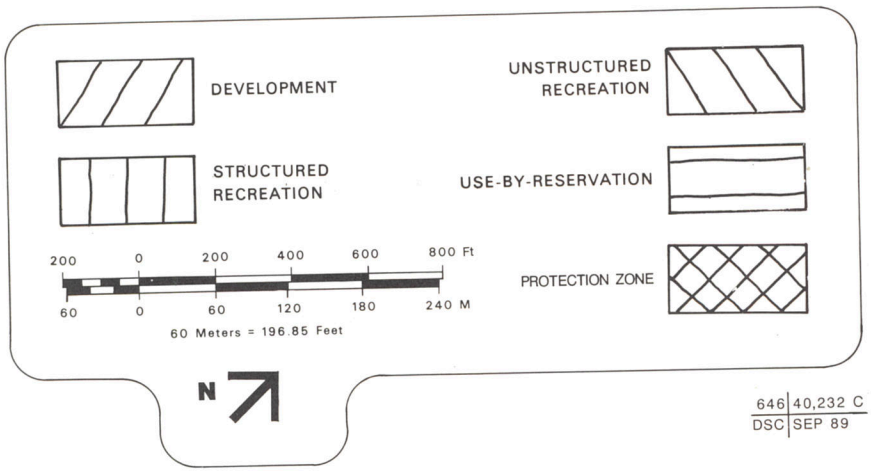
ALTERNATIVE I - PREFERRED ALTERNATIVE

This alternative differs from the GMP in its proposal for the bathhouse. Demolition is recommended, rather than stabilization and renovation of the structure as proposed in the GMP, because the land surrounding the bathhouse is unstable and eroding at a rapid rate. Facilities and services currently proposed for the bathhouse would be incorporated into an expanded south beach center, a new visitor/interpretive center, and a new administrative complex. Other major differences from the GMP include relocating some parking areas, changing the distribution of spaces, and constructing an amphitheater and a picnic area near the harbor.

Like the GMP, the preferred alternative proposes relocating the marina, constructing a public boat launch area, establishing a promenade along the bulkhead, removing the north beach center, enlarging the south beach center, and improving parking and circulation. All facilities would be designed for access by handicapped people.

MANAGEMENT ZONES
(FROM THE GATEWAY NRA GENERAL MANAGEMENT PLAN)

STATEN ISLAND UNIT/GREAT KILLS PARK
UNITED STATES DEPARTMENT OF THE INTERIOR/ NATIONAL PARK SERVICE



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N.Y.C. LAND WITHIN LEGISLATIVE BOUNDARY

Bathhouse

The rapid erosion of the beach in front of the bathhouse has restricted access to the building and threatened the structure. Therefore, demolition of the bathhouse, utility lines, and access and relocation of its functions and activities is proposed. The bathhouse site would be completely cleared and revegetated. A foundation east of the bathhouse would be removed and revegetated, and the dunes restored. The bathhouse parking lot would be retained to provide 250 overflow parking for public beach use and use of the new visitor facilities in the harbor area.

The visitor services proposed for the bathhouse in the 1979 GMP would be relocated to the south beach center on Crookes Neck. The center would provide food service, outside showers, sheltered seating, eating space capable of accommodating school groups, restrooms, and a first-aid lifeguard facility. Parking for 280 cars would be constructed near the center. In addition, the existing marina lot would provide space for 300 vehicles and 15 buses. Nearby high use areas would be posted to alert visitors to erosion problems. Wooden-slat boardwalks would be built over sensitive areas, and snow fencing would be placed to control access to otherwise unprotected dunes.

Park police and maintenance functions currently in the bathhouse would be relocated to a new complex on the northern end of the existing paved parking area north of the bathhouse. The police area would include offices, lockers, stables, and a detention area. The facility would serve as headquarters for the Staten Island unit's resource management activities and maintenance functions and would have an office, supply and storage rooms, a fire cache, a locker and lunchroom, and shops for automotive, electrical, and plumbing repair needs. The police/maintenance area would be fenced for security and screened with vegetation. Garages and a courtyard would be provided for police and maintenance vehicles.

A new visitor center, to be located next to the overflow parking lot of the existing bathhouse, would constitute the principal NPS presence on Staten Island. The primary purpose of the new center would be as an educational facility to serve organized groups. Secondary purposes would include visitor orientation/information and permit issuing, park administration offices, and community meeting space. The facility would provide general information about Gateway National Recreation Area and specific orientation to the Staten Island unit. It would include a meeting/conference room, an education facility for environmental programs, exhibit and audiovisual space, and offices and additional space for interpretive and other park staff. An observation deck and sky interpretation facility might be incorporated.

To meet the intended needs of the park unit and the anticipated interpretive program, the visitor center facility would have to include a reception area with space for exhibits, an educational room with a capacity of 80-100 people and fitted sinks and storage areas, a 150- to 200-person capacity multipurpose audiovisual room, lunchroom and kitchen facilities for use by staff and outside groups, and offices for interpretive and other park administrative and program staff. If an observatory was included in the design, there should be separate roof access to permit use by amateur astronomers when park staff is not present. A minimum of 7,000 square feet would be required for this structure. Detailed specifications would be included in the interpretive prospectus that is being prepared concurrently with this plan.

Crookes Point

Crookes Point would be available for use by reservation, and parking permits would be issued to fishermen. The parking lot would be reduced from 80 to 40 spaces and edged with logs to prevent vehicles from driving off the lot and damaging the dunes and their vegetation. The lot would be designed to accommodate two school buses.

Once a clearly defined trail system was in place, the dune and shrub areas would be used for environmental education, and interpretive waysides would be placed at appropriate locations. Dunes behind the swim beach would be restored and stabilized with native vegetation and fencing. Groups would be able to use the beaches and dune areas for environmental education walks. High use areas would be posted to alert visitors to erosion problems. Wooden-slat boardwalks would be built over sensitive areas, and snow fences might be established to control random access to otherwise unprotected dunes. Swimming would not be permitted at the southern end of Crookes Point. Beaches south of those staffed with lifeguards would be posted to discourage recreational use.

The north beach center southwest of the existing bathhouse is in an area expected to be eroded in the next 20-25 years. This facility and its 150-car parking lot would be removed, and the south beach center on Crookes Neck would be expanded to include the facilities and services proposed for the bathhouse in the 1979 GMP (see the "Bathhouse" section for design details). The area where facilities were removed would be allowed to return to natural conditions.

Harbor Area

Great Kills embraces a beautiful harbor, and the preferred alternative would enhance appreciation of this visual resource by establishing an 8-foot-wide surfaced and landscaped promenade with waysides around the inner harbor from Hylan Boulevard to Crookes Point. The promenade would provide excellent views of boating and fishing activities and would likely become a popular attraction for community residents and other park visitors.

The 1979 GMP called for reconstruction of the bulkhead around the harbor. The bulkhead has been rebuilt from Crookes Point to the existing marina and from the southeast side of the existing marina part way around the back of the harbor. The remaining 750-foot section of the seawall near the proposed marina is now being rebuilt (see the "Marina" section).

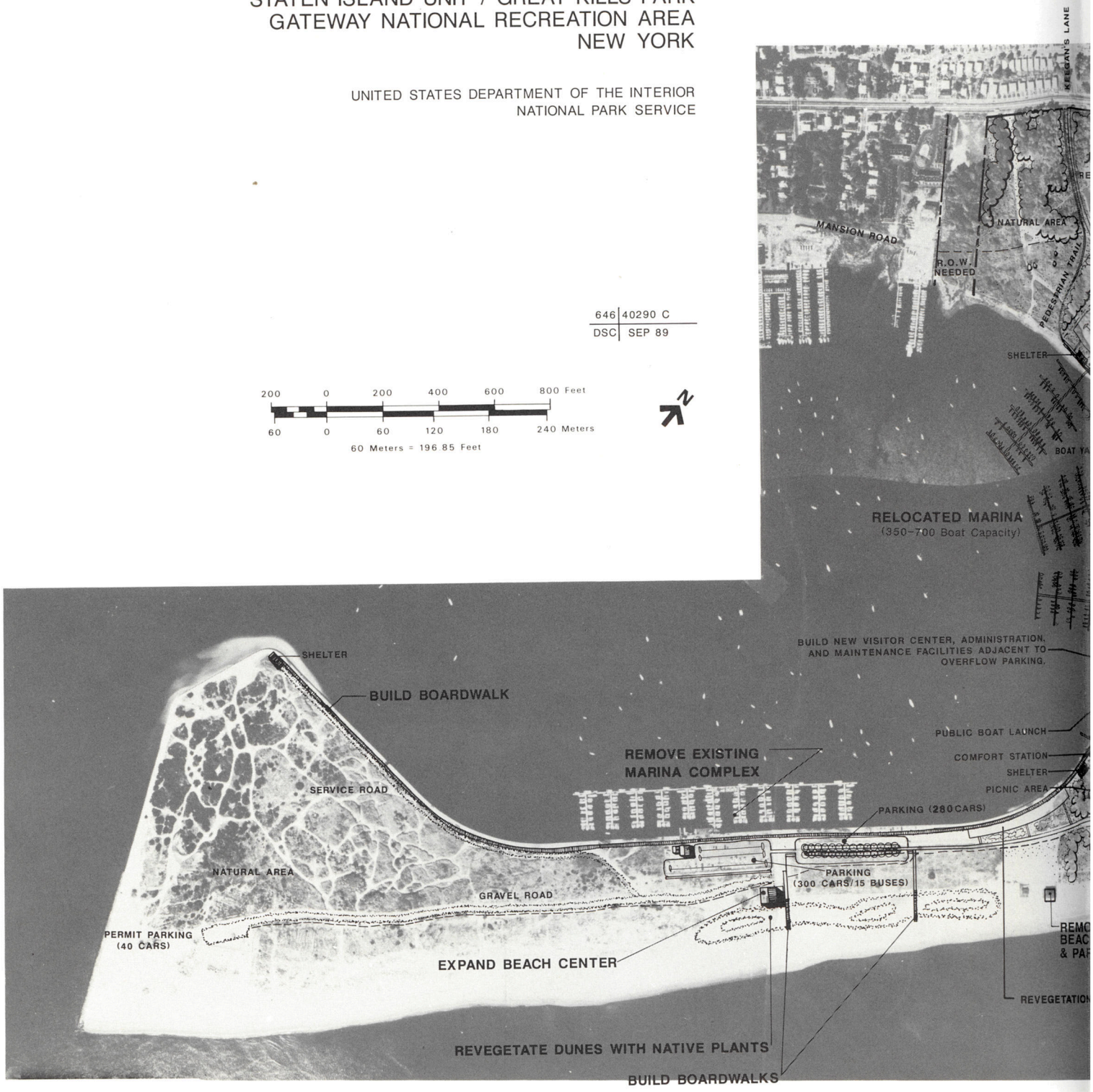
A 500-person capacity amphitheater with a paved stage and grass-covered earth slope for seating is proposed near the harbor. The amphitheater would be used for community theater performances, concerts for children and adults, and interpretive programs. This amphitheater would be screened and enclosed with vegetation. A comfort station would be provided between the amphitheater and boat launch area.

According to a 1987 feasibility study, the proposed public boat launch ramp would probably be heavily used because there are no other launch ramps in the area. Demand for at least two launch lanes and car/trailer parking for 50 vehicles is projected. The ramp would be sited on the northeast side of the existing marina to minimize conflicts with other marina activities. The launch area would include a place for trailers and vehicles to line up during peak periods so they would not interfere with boat launching. A dock would be provided at the launch ramp for loading passengers. South of the public boat launch ramp, 75 new picnic sites would overlook the harbor.

ALTERNATIVE I
(PREFERRED ALTERNATIVE)

STATEN ISLAND UNIT / GREAT KILLS PARK
GATEWAY NATIONAL RECREATION AREA
NEW YORK

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE




EXISTING PEDESTRIAN ACCESS
HYLAN BOULEVARD
EALIGN ENTRANCE ROAD
EXISTING BALL FIELDS
EXISTING RESTROOM
PARKING (100 CARS)
PARKING (290 CARS)
FUTURE PARKING (100 CARS)
PARKING (60 CARS)
SHELTER
PARKING (280 CARS)
BOAT SERVICE BUILDING
BIKE TRAIL
MODEL AIRPLANE FIELD
MARINA ADMINISTRATION BUILDING
PEDESTRIAN TRAIL
EXISTING ENTRANCE ROAD
SHELTER
PARKING (280 CARS)
AMPHITHEATER
PICNIC AREA
BRIDGE
WETLANDS
EXISTING OVERFLOW PARKING (250 CARS)
WETLANDS
BIRD/WILDLIFE HABITAT
PARKING 50 CARS
EXISTING PARKING (600 CARS)
OBLITERATE SERVICE ROAD
JOGGING TRAIL
NATURAL AREA
PICNIC AREA
SHORELINE STUDY AREA
NATURE TRAIL
REMOVE BATHHOUSE AND FOUNDATION
NATURAL BOG
APPROXIMATE SHORELINE
CENTER
KING LOT
AREA

The New York City Department of Ports, Terminals and International Trade has agreed to establish commuter ferry service in the area of the proposed Great Kills public boat ramp. This ferry service would be available seven days a week between Great Kills and Manhattan.

Marina

The concessioner-run marina on the east side of the harbor existed before the establishment of Gateway National Recreation Area. It has a 350-boat slip capacity, a 350-car parking area, and overflow parking for 100 cars on nearby dirt areas. The 1979 GMP proposed moving the marina to the north side of the harbor for the following reasons:

> Visitors driving to the marina must pass through the entire park, entering with beach traffic and further congesting Hylan Boulevard and the park entrance road. A relocated marina with separate access would greatly relieve traffic congestion.
>
> Many community members have asked for a boat launch area with vehicle/trailer parking. The present marina does not have space for new parking areas. The proposed location would accommodate expanded parking for vehicles and trailers at the marina, for a boat launch site, dry dock storage, and other services.

Under the preferred alternative, the marina would be relocated to the site proposed in the GMP, and the total number of boat slips would be no less than 350 and no more than 700. A two-lane boat launch with adjacent parking would be added nearby. The Park Service would be responsible for the marina development, including dry-dock storage (not included in the cost estimates), the access road, and utilities.

Marina parking would be separated from ballfield parking to provide a greater measure of security for boaters. An area of paved parking spaces would be provided (420 for a 350-slip marina up to 850 for a 700-slip marina); 50 of those spaces would be designated for the public boat launch. (An analysis of the area has indicated that no more than 50 boats can be safely launched and returned in a day.) Maintaining the number of boat slips at a minimum of 350 is justified based on boater demand over the past several years.

Following are some preliminary concepts for marina design. If alternative I was selected, these concepts would be refined and a preferred design would be developed. The preferred design elements would be detailed in the request for proposals (RFP) for final design, construction, and operation of the facility.

The dock layout could consist of three main walkways and three perpendicular walkways on each main walkway. Two-boat-capacity finger floats could extend from the perpendicular walkways. The main walkways could radiate from the shoreline toward the center of the harbor. This layout would relate well to the shore facilities while providing optimal security (only three gated access points) for the docked boats. (The dock configuration would, of course, be subject to final design and depth considerations.) The U.S. Army Corps of Engineers has advised that present regulations allow docks to extend beyond the designated pierhead line, so an addition to this layout could extend into the harbor. The center dock could contain a sanitary pump-out and fueling facility with approved equipment, which could be monitored to ensure minimal degradation of the harbor water quality.

The marina administrative building could be centrally located along the waterfront and include public restrooms, food service, and a ships' store. To complement the food service, the structure could be surrounded by a patio/deck area with outdoor seating.

A boat service/repair shop and yard and possibly a display area for boat sales could be located adjacent to the marina administrative building. An office in the repair shop could serve as the boat sales outlet. The service yard should contain storage space and a marina hoist. The service yard compound should be fenced for security reasons and the yard screened from view.

Full-time security personnel for this type of marina are needed year-round. Attractive and functional fencing and gates should be incorporated into the final design.

Uplands

The five ballfields would be rehabilitated; however, the Park Service would not develop new athletic fields at Great Kills. Future plans might call for lighted ballfields (see the cost estimates). A new, paved 100-car parking lot, approximately equal in size to the existing lot, would be constructed parallel to the new entrance road to serve athletic field users and spectators. An adjacent 100-car grass overflow lot could be paved in the future if there was sufficient demand to use this area for parking. The model airplane field east of the horse arena would be retained in its present location.

The two wetland areas, which total about 75 acres, would continue to be protected as wildlife habitat. These areas, including the rainwater wetland, could attracts an even greater variety of wildlife with selective planting of native vegetation. Any alteration to the wetland areas could jeopardize the existing bird and wildlife species and would require consultation with the U.S. Fish and Wildlife Service pursuant to wetlands protection requirements.

The existing hardwood vegetation east of Hylan Boulevard would screen road noise and act as a natural buffer for the uplands area.

Roads and Trails

The northern access road off Hylan Boulevard would continue to be the main park entrance. Fifty parking spaces would be established near the entrance and edged with timber for use by joggers (city buses would also continue to use this area as a turnaround). This road would provide access to the existing paved parking lot, a new visitor/interpretive center, a new public boat launch area, a new Crookes Neck beach center, the Crookes Point beach and fishing area, and other facilities in the vicinity.

The southern access road at the Keegan's Lane intersection with Hylan Boulevard, which currently leads to the ballfields, would be realigned and paved for direct access to the relocated marina and field sports area. A bridge or culvert might be needed over the drainage channel between Hylan Boulevard and the new marina. This secondary entrance would greatly improve traffic safety and circulation by providing a road loop and two exits for use on peak traffic days. A gate just north of the public boat launch, where the new road would connect with the existing road, would permit park personnel to keep marina and beach traffic separate. Normally, marina traffic would be directed to the Keegan's Lane entrance and beach traffic would use the main entrance. However, in case of an accident, a sudden rainstorm, or unexpected congestion, both entrances would be available for exiting.

During construction of the new Keegan's Lane entrance road, the existing water main would be moved from the old alignment to the new alignment, and the old road alignment would be rehabilitated to create more natural area within the park (see the Alternative I map).

Bicycling opportunities would be expanded. The sewer right-of-way that runs east-west through the center of the park would be paved and designated as a class 1 (scenic and challenging) bike trail. This trail could be linked with city bike routes so that visitors could start at Fort Wadsworth, 7 miles to the northeast, and bike all the way through Great Kills Park. The Park Service would cooperate with the proper state and city agencies to develop the bikeway. To complete the trail to Mansion Road on the park's southwest boundary, a bridge would have to be provided over a small creek, and the existing fence opened.

The present jogging trail along the main park road is heavily used and would be extended to Crookes Point along the roadway and proposed promenade. An uplands walking trail would be developed to make the park interior accessible to pedestrians and to lead to the high point of Great Kills Park, where there are some striking views of the harbor and ocean. A nature trail would be developed in the eastern part of the park to interpret the peat bog, the nesting area north of the trail, and the wave-induced erosion of the beach. Self-guiding interpretive signs would be placed along the trail.

A new service road/bikeway for use by emergency, police, and maintenance vehicles would be developed parallel to the harbor seawall. The road/bikeway would be separated from the proposed promenade by a grassy strip a minimum of 10 feet wide.

Facility Treatment and Management

Design Requirements. Several design factors would be considered in implementing this proposal. All new facilities would be of the appropriate scale, material, color, and texture to minimize the visual impacts and relate to the coastal theme.

The following represent the approximate square footage requirements for the proposed NPS buildings:

visitor/interpretive center - 7,000 square feet
police/resource management/maintenance building - 10,800 square feet
beach center - 3,800 square feet
comfort stations (2) - 700 square feet each (ballfield area and boat launch)
horse stable - 600 square feet

All disturbed areas would be revegetated using native species and stabilized to minimize disturbance to the natural systems. Native plantings would be used to buffer intrusions and allow new facilities to more easily blend into the surrounding environment. All park facilities, including nature trails, would be made more accessible to the handicapped through the use of special design features. Visitors would be informed of administrative and regulatory policies, and signs would inform and direct them to appropriate areas. Trash and recycling receptacles would be provided to support the increase in picnicking and other visitor activities.

Management/Funding. A recent update of the 1987 feasibility study for the new Great Kills marina (NPS 1989) states: "As listed in the proformas, a 350-slip marina would not be feasible for a concessioner to build and operate. A 700-slip marina, while appearing in the proforma as infeasible, should be advertised to determine the interest of the investing public. It should be noted that all cost figures used in this updated economic feasibility study are Class "C" figures as received from the Denver Service Center's estimating branch. It is conceivable that a much lower construction cost could be realized by a non-governmental entity and therefore affect the feasibility of the proposed development." Therefore, traditional NPS/congressional appropriations would be sought to provide the

necessary levels of capital funding for construction at Great Kills Park. The amount required for marina relocation and development would depend on the level of concessioner participation.

Cost Estimates

Cost estimates are classified as either preliminary or final. Preliminary estimates are based on broad quantities such as square feet or linear feet of construction. Final estimates are made only after all detailed engineering and architectural design work has been completed and all quantities are known. The following is a preliminary estimate based on 1989 costs (1990 for the marina). The total gross costs of alternative I would be about $21,305,693.

ALTERNATIVE II

This alternative would provide a lower level of development than the preferred alternative because the marina would not be relocated. Retaining marina activity at its present location would affect the park's development options because space for public parking and beach support services would be reduced. The marina building would not be expanded, and with the exception of adding a fast-food service, all other services would remain the same. The barge that currently houses the marina offices, storage, gas docks, and ships store would be removed and replaced with an onshore facility. Boat-docking capacity would remain at 350 slips. Parking would not be expanded and would not include space for buses. Access into the area would continue to be along the main entrance road.

Most other actions under this alternative, including demolition of the bathhouse, expansion of the south beach center, and construction of a visitor/interpretive facility and administrative complex would be the same as those described under the preferred alternative. The public boat launch and promenade would be constructed in the harbor area; the amphitheater and picnic area would not be included in the development.

Table 1: Gross Cost Estimates - Preferred Alternative
(1989 Dollars)

Item	Cost 350 slips	Cost 700 slips
Development		
Repair bulkhead (phase II)	$ 4,900,000	$ 4,900,000
Construct pedestrian promenade along inner harbor with comfort station	559,000	559,000
Construct boat launch ramp (2 lanes)	486,000	486,000
Construct 500-seat amphitheater in harbor area	425,000	425,000
Develop 75 picnic sites in harbor area and 25 elsewhere in the park	326,000	326,000
Provide 100 paved spaces and 100 overflow spaces (gravel) near ballfields	456,000	456,000
Install ballfield lights	180,000	180,000
Demolish bathhouse	982,000	982,000
Construct Crookes Neck beach center	652,000	652,000
Construct 280-car parking lot and demolish 150-car parking lot	1,474,000	1,474,000
Construct shelters (4) to support public use throughout the park	226,000	226,000
Construct visitor/interpretive center	1,467,000	1,467,000
Construct visitor center exhibits	293,000	293,000
Construct park police/ resource management/maintenance facility	921,000	921,000
Relocate marina (see table 2 for approximate cost breakdown)	4,315,766	7,199,535

Item	Cost 350 slips	Cost 700 slips
Access		
Establish entrance parking, edging	9,000	9,000
Establish new secondary entrance road alignment and obliterate old road; repave or adapt bathhouse parking lot	741,000	741,000
Establish access road to uplands environmental education area and 40-car parking area	245,000	245,000
Extend and pave portions of bike trail, construct culvert bridge	119,000	119,000
Extend jogging trail	157,000	157,000
Develop uplands trail	174,000	174,000
Develop nature trail in northeast corner	69,000	69,000
Develop service road/bikeway along promenade with planted strip	230,000	230,000
Resource Preservation		
Selectively plant native species, stabilize pond	1,167,000	167,000
Establish boardwalk dune crossings	51,000	51,000
Restore dunes	217,000	217,000
Landscape	651,000	651,000
Total Gross Costs	**$21,199,766**	**$24,083,535**

Note: Except for the marina (see next page), gross construction costs include percentages (a total of 51%) for project planning, project supervision, and contingencies. All costs would be the responsibility of the Park Service.

Table 2: Marina Development/Relocation Cost Estimates - Preferred Alternative (Class C estimates - 1990 Dollars)

Item	Cost 350 slips	Cost 700 slips
Establish wet boat slips with water and electrical hookups	$1,620,675	$3,241,350
Construct paved and lighted parking (420/850 cars; 50 designated for public boat launch)	463,050	937,125
Provide new underground utilities from new park entrance to new marina sites (3/4 mile)	551,240	551,240
Construct boat sewage pumpout station	55,125	55,125
Construct marina fuel dock	275,625	275,625
Construct public restrooms with showers (1,250/2,000 sf)	275,625	441,000
Construct marina office, ships store, laundry, and food vending area	264,000	264,000
Construct engine and equipment repair shop (1,500/3,000 sf)	247,500	495,000
Subtotal	**3,752,840**	**6,260,465**
Contingencies - 15%	562,926	939,070
Total Construction Costs*	**4,315,766**	**7,199,535**

Note: Development costs for a dry dock/boat trailer storage area are not included in these cost estimates.

*Costs for planning and design contingencies and construction supervision are not included in the cost estimates. These factors would add 51 percent to the above subtotal.

ALTERNATIVE III - NO ACTION/EXISTING CONDITIONS

A no-action alternative is included to provide a baseline for comparison of the improvements presented in the preferred alternative and alternative II (see the Alternative III map). This alternative is not under consideration because it does not fulfill the requirements of the *General Management Plan*.

Activities at the beach, marina, and ballfields would continue to be the major uses at the park. The marina operation would continue in its present location, and there would be no expansion of this facility beyond the present 350 parking spaces and 350 boat slips. Crookes Neck and Crookes Point parking would continue at present capacities. The graveled surfaces would be retained, and timber retaining edges would not be installed.

The main paved entrance road would continue to be the only access into the park; the southern entrance road would remain unpaved and would be used primarily by motorists exiting the park and heading north on Hylan Boulevard. The main beach parking lot would remain unchanged. Marina traffic would continue to pass through the lot. The bike trail would not be relocated or connected with the bikeway outside the park.

Use of the bathhouse would continue until the structure became unsafe for occupancy, at which time it would be demolished. No new facilities would be constructed.

Environmental trails without wayside exhibits would continue to be used. Water quality would remain unchanged.

ALTERNATIVE III - NO ACTION EXISTING CONDITIONS

STATEN ISLAND UNIT/GREAT KILLS PARK

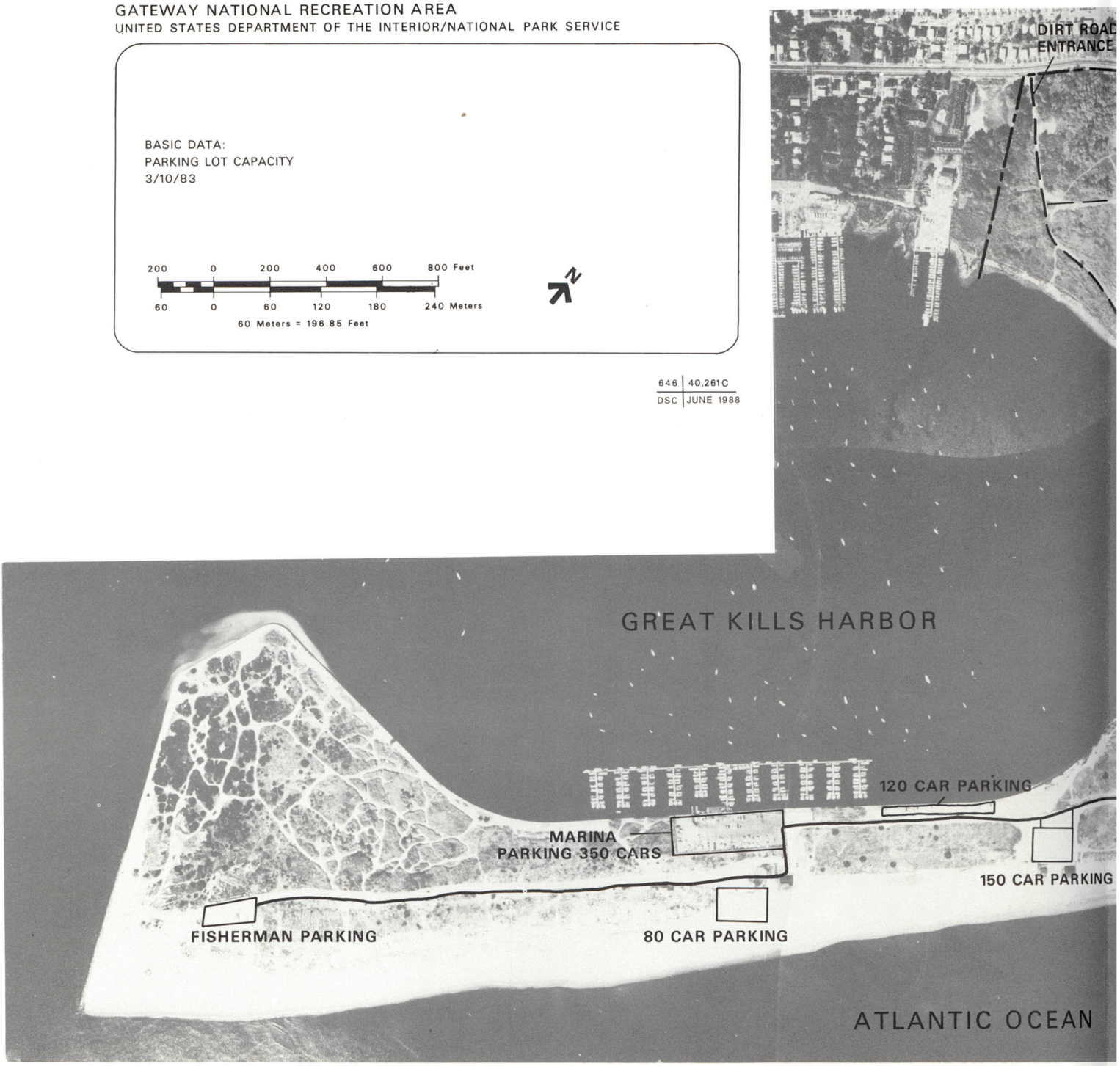
GATEWAY NATIONAL RECREATION AREA
UNITED STATES DEPARTMENT OF THE INTERIOR/NATIONAL PARK SERVICE

BASIC DATA:
PARKING LOT CAPACITY
3/10/83

200 0 200 400 600 800 Feet
60 0 60 120 180 240 Meters
60 Meters = 196.85 Feet

N

646 | 40,261C
DSC | JUNE 1988




MAIN PARK
ENTRANCE ROAD
HYLAN
BOULEVARD
50 CAR PARKING
ALONG ROAD
N.C. LAND WITHIN LEGISLATIVE BOUNDARY
BALL FIELDS
COMFORT
STATION
PAVED SEWER
R.O.W.
MODEL
AIRPLANE
FIELD
PARK BOUNDARY
HORSE ARENA
OVERFLOW PARKING
250 CARS
PONDS
OAKWOOD
SEWAGE
TREATMENT PLANT
600 CAR PARKING
MAIN BATHHOUSE

ENVIRONMENTAL CONSEQUENCES

ALTERNATIVE I - PREFERRED ALTERNATIVE

Impacts on Natural and Cultural Resources

The proposed developments would provide facilities necessary for an enjoyable visitor experience, with only minimal impacts on the park's resources. Relocation of the marina would require permits from the U.S. Army Corps of Engineers and New York State Department of Environmental Conservation and a consistency determination for the state's coastal zone management program. The marina would be designed with swales, sediment basins, etc., to minimize contamination of the harbor from runoff. (moved from separate paragraph) During construction, the effects on water quality would be minimized by using turbidity booms, silt fences, or other methods as determined and/or required by the Corps of Engineers. If dredging was needed to accommodate a new marina basin, spoil disposal would be accomplished under the direction and conditions given by the Army Corps of Engineers in accordance with local and state requirements. There would be no effect on endangered or threatened species from construction or management activities because, except for transient species, no known federally protected threatened or endangered species exist in the park (letter from U.S. Fish and Wildlife Service, dated May 2, 1988).

Removal of the piles associated with the present marina development could result in contaminants being released into the water, thus disrupting the benthic community (see the "Water Quality" section under "Other Compliance Considerations"). This impact would be mitigated by cutting off the piles at the bay bottom. Disposal of all waste construction materials would meet federal, state, and local regulations.

The effects on nearshore waters resulting from demolition of the bathhouse would be controlled by the use of sediment/siltation booms or similar devices. These control devices would also prevent any leachates or contaminants from getting into nearshore waters during removal of the support pilings.

Temporary increases in noise and air pollution would occur during demolition of existing facilities and construction of new ones. If hazardous materials that could affect air quality were discovered during demolition or construction, careful evaluation of the materials and disposal methods would be made in compliance with federal, state, and local regulations and guidelines.

All new construction, including visitor and management facilities, parking, roads, etc., would be on previously disturbed areas and would have minimal impacts on upland vegetation. Trails for hiking and biking would be upgraded along existing alignments and would not impact critical areas. Because much of Great Kills Park was previously a landfill, land clearing and leveling during construction could create expose unknown hazardous materials. Measures for mitigating this potential problem are discussed in the "Substrate Analysis" section.

Moving the water main to the new Keegan's Lane entrance road (or constructing a new water main) and revegetating the old entrance road would increase the natural area of the park and still provide access to the water main for repair needs.

The removal of most developments in and near the primary dune system would allow the dunes to recover. Dune recovery would be enhanced by planting native beach grasses. The development of boardwalk access to the beach would aid in the natural recovery of

vegetation cover on the dunes and the protection of planted areas. Interpretive programs stressing the ecological interaction of beach and dune would further aid in protecting the dunes. Defining a trail system and restricting use in some areas of Crookes Point would allow heavily used trails to recover.

Defining and enhancing use areas in the uplands would concentrate activities and reduce the impacts of random use that have occurred in the past.

Research has not identified any cultural resources at Great Kills. An archeologist would evaluate all potential ground-disturbing activities before any construction work to determine the likelihood of such resources being present. Archeological testing and evaluation would be carried out as appropriate.

Alternative I established preliminary design concepts for a new marina and support facilities. If this alternative was selected, a request for proposals (RFP) would be issued, which would contain a preferred marina design based on these design concepts. If it appeared that the selected proposal would have environmental impacts that have not been assessed in the GMP or this amendment, further detailed environmental compliance documentation would be accomplished before NPS approval of the development proposal. Marina construction would be accomplished by the selected concessioner.

Impacts on Visitor Use

Relocating the marina and expanding the south beach center would provide for better separation of boating and public beach use and improve services for both of these user groups. Other new facilities in the harbor area, including the promenade, public boat launch, amphitheater, picnic area, and visitor/interpretive center, would increase recreational opportunities and attractions in the park. Realigning and paving the Keegan's Lane entrance road would reduce congestion on the main entrance road and provide safer and more convenient entry and exit, particularly during peak periods. Actions to define and/or improve hiking, biking, and jogging trails improve experiences and reduce safety hazards for these visitors.

Removal of the north beach center and parking lots and use of lots farther from the beach would increase the walking distance to the beach.

New developments would likely stimulate increased visitation, including visits by regional residents who do not currently use the area. The Park Service would be able to reach a wider public in providing interpretation and environmental education programs about the Great Kills resources.

Park traffic would increase and might have negative effects on neighboring communities. Community residents would benefit from improved facilities and services at the park.

ALTERNATIVE II

Under this alternative the bathhouse and north beach center would be removed, the south beach center would be expanded, and the marina would remain in its present location, with onshore offices and supplies and no additional parking. These actions would result in additional traffic congestion on Crookes Neck and along the park's access routes as well as increased conflicts between beach and marina users. Visitors heading for the marina would continue to drive through the beach parking lots, creating safety hazards, adding to

congestion, and reducing lot capacity. All vehicles would continue to use the existing park entrance road, resulting in congestion and traffic lines on peak days. Bicyclists would continue to be disturbed by model airplane enthusiasts driving and parking on the bike trail, and the bike trail would not interconnect with any other areas.

Other impacts on natural and cultural resources and visitor use would be the same as under alternative I.

ALTERNATIVE III - NO ACTION/EXISTING CONDITIONS

Impacts on Natural and Cultural Resources

No new impacts would occur. Many actions to protect and enhance the park environment would not be undertaken, including ecological diversification of the uplands area, restoration of the natural dune system, and extension of the environmental trail system; however, the continuation of present policies would reduce adverse impacts on these areas. Phragmites encroachment would continue. Water quality would not be affected.

The bathhouse would not be demolished and would continue to be used until it becomes too dangerous for occupancy, projected to be as early as 1990. After the bathhouse was abandoned, it might collapse into the ocean, and nearshore waters and marine life might be affected by hazardous waste contamination.

Research has not identified any cultural resources at Great Kills. Because this alternative would not involve any new construction, archeological investigations would not be completed in the area and the existence of cultural resources would remain unknown.

Impacts on Visitor Use

Beach recreation would continue to be the major use of the park. The marina and the ballfields would be other significant uses, although the capacity of both facilities would fall considerably short of demand. The effects of leaving the marina at the present location would be similar to those of alternative II.

The uplands would continue to support a semi-diversified ecosystem, and there would be no additional interpretive or educational programs about the interesting resources of this park. Opportunities to picnic and enjoy the uplands area would be limited. New open space activities and facilities, including environmental trails and interpretive facilities, would not be available to current or future visitors.

The continuation of existing uses would have no additional effects on neighboring communities.

COMPLIANCE STATUS

Great Kills is a public use/administrative site located primarily on land that has been extensively modified and occupied for at least 45 years. A large portion of the area was once a landfill. Under the preferred alternative existing structures at the site would be rehabilitated or demolished, and new structures would be built in areas already impacted by existing development. Consequently, further disturbance would have minimal impacts on natural resources and any currently unknown cultural resources, as documented in the preceding "Environmental Consequences" section. Based on the level of impacts, this planning action qualifies as a categorical exclusion from NEPA procedures under 516 DM 6, appendix 7.4.A.(1): "changes or amendments to an approved plan, when such changes would cause no or only minimal environmental impact."

FLOODPLAINS AND WETLANDS MANAGEMENT

Executive Orders 11988, "Floodplain Management," and 11990, "Protection of Wetlands," direct federal agencies to avoid development in floodplains and wetlands whenever there is a practicable alternative and to avoid, to the extent possible, adverse impacts associated with the occupancy or modification of floodplains and wetlands. The U.S. Federal Emergency Management Agency has inventoried floodplains in this area, and the zones are depicted on the Floodplains map in the "Park Description" section.

The National Park Service facilities proposed in this document are functionally dependent on the waterfront. Therefore, no options for placement of facilities outside the 100-year floodplain in the project area are possible. New structures or rehabilitation of existing structures in the 100-year floodplain and high hazard areas would incorporate methods for protecting life and minimizing storm damage. No critical actions (e.g., storage of irreplaceable objects or documents) would occur in the 500-year floodplain. Flood-proofing would be an important design criterion. The park staff would cooperate with municipal and state agencies to develop and annually update the hurricane evacuation plan.

A statement of findings would be prepared to document the rationale for locating structures and facilities within the floodplain and to identify mitigating actions to protect life and property. Approval of the statement of findings by the NPS director is required before implementation of the plan.

None of the proposed actions would result in significant long- or short-term adverse effects on wetlands. Rather, wetland values would be interpreted to further the public's appreciation of wetland communities.

COASTAL ZONE MANAGEMENT

Regulations implementing the Coastal Zone Management Act of 1972 require consistency with New York's coastal zone management program. State concurrence with a National Park Service determination of consistency is required as part of plan approval.

ENDANGERED SPECIES

The U.S. Fish and Wildlife Service and National Fisheries Service have advised that no federally listed or proposed endangered or threatened species live in or use the project area, except for occasional transients under U.S. Fish and Wildlife jurisdiction.

Based on the determinations of the U.S. Fish and Wildlife Service (letter dated May 2, 1988) and the National Marine Fisheries Service (letter dated April 29, 1988), the National Park Service has determined that the proposed action would have no effect on endangered or threatened species or critical habitat of these species within the proposed project area.

OTHER COMPLIANCE CONSIDERATIONS

Water Quality

Construction of new facilities, removal of old facilities (bathhouse, barge pilings), and park operations would have little impact on water quality. NPS dredge, fill, and dock construction would comply with the requirements of section 404 of the Federal Water Pollution Control Act, section 10 of the Rivers and Harbors Act, and other applicable local, state, and federal regulations. Turbidity during construction would be limited by turbidity booms, silt fences, or other methods as necessary and would cause, at worst, only a temporary localized situation. Dredge spoil materials would be disposed of in appropriately contained upland sites, including sites within the park, in an effort to mitigate the effects of the rising sea level in accordance with federal and state permit requirements.

The proposed boat basin/dock, visitor services buildings, and parking areas would be designed to minimize contamination of waters in the harbor and uplands areas from rainwater runoff and to facilitate tidal flushing, as well as to control reflective wave action off bulkheads. Some release of petroleum products associated with normal boat use and maintenance would be unavoidable but would not be expected to significantly affect park land or water resources considering that current boat use and present operations do not demonstrate any significant adverse impacts on water quality. Since the proposal could more than double the amount of boat use with the Great Kills harbor area, water quality monitoring would be initiated after the proposal was implemented. Required measures would be implemented by the National Park Service if monitoring revealed a problem or an increase in measurements related to petroleum products.

In 1983 the National Park Service obtained a permit from the U.S. Army Corps of Engineers and a consistency determination from New York's Department of State for phases I and II of the rehabilitation and construction of the harbor bulkhead.

Substrate Analysis

As mentioned earlier, the area in which the proposed actions would be implemented was once an active landfill. During the design phase of implementation, it would be necessary to have core samples taken at various points where construction activity would disturb the surface and subsurface areas of the park. These samples would then be tested for hazardous materials to ensure that construction activities would not expose workers, staff, or visitors to potential problems. If results indicated that certain sites had or might have the potential of exposing hazardous materials, alternative project design and methods of construction would be identified and evaluated.

Soils

There would be no effect on prime or unique farmland soils because none exist at the site.

Cultural Resources

There are no properties in Great Kills Park that are listed on the National Register of Historic Places, and the Park Service has not identified any properties that are eligible for listing on the register.

Great Kills has undergone archeological surveys on various occasions, all with negative results. This was not unexpected as the site was used as a landfill for a number of years before being designated as a unit of Gateway National Recreation Area. Any archeological resources still intact would be either deeply buried or on the site periphery where construction activities are unlikely. Still, any ground-disturbing activities would be evaluated for potential impact to buried archeological features, and a program of archeological testing would be undertaken. If significant resources were encountered, construction activities would be halted until redesign or excavation mitigation could be completed. If such sites were subsequently determined eligible for inclusion on the National Register of Historic Places, the Park Service would undertake the steps necessary to have the site listed. A memorandum of agreement under the programmatic memorandum of agreement (PMOA) among the Advisory Council on Historic Preservation, the National Conference of State Historic Preservation Officers, and the National Park Service was concluded on the Gateway National Recreation Area *General Management Plan*, February 23, 1981. Developments proposed in this document are in keeping with those outlined in the GMP and are not subject to further review by the state or the Advisory Council under the PMOA.

AGENCIES CONTACTED

N.Y. City Department of Ports and Terminals, Waterfront Development Group

N.Y. City Fire Department, Marine Division

N.Y. State Department of Environmental Conservation

N.Y. State Department of State

U.S. Army Corps of Engineers, Regulatory Branch

U.S. Fish and Wildlife Service

National Marine Fisheries Service

CONSULTATION AND COORDINATION

Copies of the draft Amendment to the General Management Plan will be sent to the following agencies for review; they will also receive copies of the final plan for their information:

Federal Agencies

Department of Agriculture
    Soil Conservation Service
Department of the Army, Corps of Engineers
Department of Commerce
    National Oceanic and Atmospheric Administration,
    National Marine Fisheries Service
Department of Education
Department of Energy
Department of Housing and Urban Development
Department of the Interior
    Bureau of Land Management
    Fish and Wildlife Service
    Geological Survey
Department of Labor
Department of Transportation
    Coast Guard
    Federal Aviation Administration
    Federal Highway Administration
    Urban Mass Transit Administration
Environmental Protection Agency
Federal Emergency Management Agency
General Services Administration

New York State Agencies

Department of State
Regional Clearinghouse

New York City Agencies

Department of City Planning

The following agencies will be sent informational copies of this amendment:

Advisory Council on Historic Preservation
New York State Historic Preservation Officer

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ALLEN, J.R.

1985 "Draft Summary, Great Kills (GATE) Bathhouse Erosion." Prepared for the National Park Service. On file at Gateway National Recreation Area, Brooklyn, N.Y.

CORPS OF ENGINEERS, U.S. DEPARTMENT OF THE ARMY

1976 "Staten Island, New York, Fort Wadsworth to Great Kills Park, Beach Erosion and Hurricane Protection Project, General Design Memorandum No. 1, Fort Wadsworth to Arthur Kill, Appendix I, Environmental Analysis."

This document contains lists of vegetation, birds, mammals, amphibians, reptiles, finfish, and benthic invertebrates on Staten Island and in adjacent waterways.

JOHNSON, SIDNEY M.

1985 "Structural Engineering Services for the Beach and Bathhouse Facility at the Gateway National Recreation Area, Staten Island, New York." Prepared for the National Park Service. On file at Gateway National Recreation Area, Brooklyn, N.Y.

NATIONAL PARK SERVICE, U.S. DEPARTMENT OF THE INTERIOR

1978 *Statement for Management and Environmental Assessment, Gateway National Recreation Area, New York/New Jersey.* Denver Service Center, Denver, Colo.

1979a *Final Environmental Statement for the General Management Plan, Gateway National Recreation Area, New York/New Jersey.* Denver Service Center, Denver, Colo.

1979b *General Management Plan, Gateway National Recreation Area, New York/New Jersey.* Denver Service Center, Denver, Colo.

1987 "Concessions Economic Feasibility Study, Great Kills Marina, Staten Island Unit (GATE)." On file at Gateway National Recreation Area, Brooklyn, N.Y.

1989 "Update of 1987 Feasibility Study, Great Kills Marina." On file at Gateway National Recreation Area, Brooklyn, N.Y.

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As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural and cultural resources. This includes fostering wise use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people. The department also promotes the goals of the Take Pride in America campaign by encouraging stewardship and citizen responsibility for the public lands and promoting citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

Publication services were provided by the graphics and editorial staffs of the Denver Service Center.
NPS D-122 December 1989

*U.S. GOVERNMENT PRINTING OFFICE 773-038/00011