United States Department of the Interior

NATIONAL PARK SERVICE
Fire Island National Seashore
120 Laurel Street
Patchogue, New York 11772

IN REPLY REFER TO:

April 4, 1996

L7615

Memorandum

To: Field Director, Northeast Field Area

From: Superintendent, Fire Island National Seashore

Subject: Finding of No Significant Impact for Fire Island National Seashore's segment of the, U.S. Army Corps of Engineers, Fire Island to Montauk Point, Long Island, Breach Contingency Plan/Environmental Assessment

Background

As a result of four significant storms (Hurricane Bob in 1991, the Halloween Northeaster of 1991, the December 1992 Northeaster, and the March 1993 Northeaster), the southern Long Island barrier island chain from Fire Island Inlet to Southhampton was seriously impacted. Because of these storms and the threat of other significant storms, the State of New York established the Governor's Coastal Erosion Task Force in January of 1993.

One recommendation of the Task Force was to "Maintain barrier landform integrity by filling highly vulnerable washover fans and new inlet breaches, and maintaining alongshore sand transport". Based on this and other recommendations of the Task Force, Fire Island National Seashore (FIIS) convened a working group which included the Army Corps of Engineers (ACOE), the U.S. Fish and Wildlife Service (USFWS), other interested State and local agencies and private interests. This group, convinced that is technically feasible and economically prudent to close a breach as soon as it is reasonably possible, developed plans for closing breaches that occur on Fire Island.

The ACOE prepared and made available for public review in June of 1995, the Environmental Assessment for the U.S. Army Corps of Engineers, New York District, Fire Island to Montauk Point Long Island, New York, a Breach Contingency Plan (BCP/EA). The BCP/EA documents a proposed action (the BCP which encompasses the Task Force's planning intent as mentioned above) and two alternatives considered for project area. The EA assesses alternative planning strategies and potential environmental impacts of implementation.

In December 1995 the Breach Contingency Plan (BCP)/Env ɔn Assessment (EA) was finalized by the ACOE in cooperation w FIIS and other federal, state and local agencies.

The plan's proposal for filling breaches within FIIS cause exception to the overall National Park Service Policy on shoreline management, which is to normally allow natural processes to proceed unabated. However, in this unique ca potential threat to lives and significant loss of develop properties outside Seashore boundaries, it is deemed reasc and responsible to consider exception to standing Service

The purpose of this Finding of No Significant Impact (FONS to document National Park Service (NPS) compliance with tl Council on Environmental Quality's procedures on the Nat: Environmental Policy Act (43 CFR 1500). This is regarding action to accept and allow the alternative selected, from BCP/EA, to be implemented within the jurisdictional area NPS. As a basis for this FONSI, the NPS is hereby adopt: ACOE's EA which has been satisfactorily completed with in the National Park Service. Further EA(s) may be necessar breach closure material stockpiling if sand becomes avail (i.e. beneficially utilizing disposal material from local maintained channels), and when specific sites can be iden within the general areas indicated in the BCP/EA.

Need for Action

Per the Governor's Coastal Erosion Task Force, Draft Fina regarding the Westhampton breach, although many opinions offered, the Task Force recognized that the impacts could determined without further study. It recommended that im actions be taken to close the breach while investigating breach's impacts on tidal range, salinity and the ecosyst Moriches Bay. Subsequent to that recommendation, and the increasing awareness that a breach could occur anywhere a severely impacted barrier islands, the Task Force has mad recommendation to "Maintain barrier landform integrity by highly vulnerable washover fans and new inlet breaches." Additionally, "this recommended action to repair breaches overwash sites should be considered interim guidance unti supported or rejected by scientific information."

The breach event that occurred at Westhampton Beach expan an initial breach of a couple hundred feet to a one-half wide inlet. While the various levels of government were whether to close the breach, acquiring the permits etc., houses on the barrier island were destroyed. The cost tc the breach went from $100,000, for a closure of a couple feet, to $8 million to close a half-mile wide inlet.

In addition to the cost, many individuals feared that the

inlet could have had other impacts related to: much higher tidal surges that could have impacted, low-lying areas of the mainland during major storms, increased salinity, altered water temperature from pre-inlet conditions, a resulting potential shift in the aquatic populations, etc.

Because of the lack of data that would support this claim, or the magnitude of these impacts, there are presently a number of studies that are underway to study these effects and gather this data. The U.S. Army Corps of Engineers has been directed by Congress to undertake a 10-year, $14 million project to evaluate such impacts. Additionally, the National Biological Survey, in coordination with the National Park Service, is in the middle of a three-year study of the geomorphological impacts of a breach or inlet formation across barrier islands, including Fire Island. This study will also provide critical data for planning program implementation strategies. A major consideration still remains as to what to do in case of a breach on Fire Island.

As the ACOE commenced with the BCP work, Fire Island National Seashore staff prepared a Draft Interim Breach Management Plan (DIBMP) . Though the NPS plan was never finalized or approved, its concepts were incorporated into the BCP/EA. FIIS staff provided considerable input to the ACOE in preparation of the Environmental Assessment. NPS statutory obligations, policies, existing plans, etc., including an alternative analysis, have been addressed and adequately considered, in the EA.

The EA also contains Appendices A-H, compliance with: the Endangered Species Act (including a Formal USFWS Biological Opinion), Sea Turtle Protection Plan, the Fish and Wildlife Coordination Act, Section 110 of the National Historic Preservation Act, Section 404 of the Clean Water Act, Applicable New York State Coastal Zone Management Policies, other pertinent correspondences, and responses to Draft BCP/EA Comments.

This BCP/EA was prepared with the knowledge that many of the biological and geomorphological issues of a breach occurrence on Fire Island are yet to be determined. Therefore, without the benefit of this scientific knowledge, this plan is intended to be an interim measure (should a breach occur), to manage and recover from the potential threats to public and private properties on Fire Island and the south shore of Long Island. This interim measure is proposed to be in place (and updated every 3-5 years) until a clear coastal policy can be achieved, using the data gleaned from proposed studies.

<u>The Proposal and Alternatives Considered</u>

The EA contains descriptions of the proposed plan and alternatives. In summary, the BCP as proposed and selected from the EA, calls for the following actions:

* Breach closure will be initiated within 72 hours of termination of a storm event that occurs along the barrier island chain from Fire Island Inlet to Southampton.

* A breach can be filled in the Wilderness Area only after inspection by the Critical Response Team including the NBS coastal geomorphologist. Once the storm subsides, and the tides recede to normal height, it can be determined if the breach is filling in naturally. Only after the above conditions are met and the decision is made that the breach will not fill in naturally, will artificial closure be undertaken.

* No stockpiling is to occur in the Wilderness Area

* Develop a standardized Project Cooperation Agreement (PCA), to be pre-negotiated by the ACOE and the local sponsor (NY DEC)

* Establish a standardized breach emergency closure cross-section design to serve as the basis for preparing construction plans and specifications

* Establish general borrow source locations (offshore, upland and stockpile areas) and delivery methods for the material (i.e. dredging, and trucking of upland material and stockpiled material)

* Complete separate impact analyses to determine actual impacts of individual stockpiles (within the Watch Hill and Sailors Haven disturbed areas), when breach closure material stockpiling sand becomes available (i.e. beneficially utilizing disposal material from locally maintained channels) and when specific stockpile siting plans can be developed.

* Identify real estate acquisition methods (in coordination with the sponsor)

* Develop a contracting strategy to procure necessary equipment and services

* Establish project approval and contracting authorities for the reparation of minor, moderate, and major breach occurrences

* The ACOE and the NY State DEC will develop a general or blanket joint permit to accomplish the proposed work. A separate NPS Special Use Permit will also be required for that portion of implementation within the jurisdictional areas of the NPS.

* Establish environmental checks and monitors both on the island and offshore to ensure maximum effort to preserve significant cultural resources, and natural resources (which include threatened and endangered species and their habitat) for

construction actions related directly to putting sand in a breach, to be conditioned by the Joint Permit and Special Use Permit.

Three alternative approaches were considered in arriving at the proposed plan: the no action, breach closure activities under ACOE emergency Guidance and the proposed plan. No other alternatives were considered.

The no-action alternative would be no Federal actions taken to provide for breach closure.

The ACOE breach closure under emergency guidance would create a situation similar to the Westhampton Emergency Breach Closure.

On May 31, 1995, the EA was made available for public and interagency review and comment. Written comments were accepted until June 30, 1995.

Summary of Environmental Impacts

No specific indication of detailed impact analysis from stockpiling are noted in the BCP/EA. Therefore, as indicated in the Background and Proposed Action sections above, before stockpiling is to occur, specific EA(s) for stockpile sites will be prepared. The EA(s) will document impacts of the effects (i.e. dewatering, loss of vegetation/habitat, operations, management etc.) of stockpiling and mitigation of such effects in order to assist in the selection of specific stockpile sites within the general stockpile areas.

The BCP/EA documents compliance with various federal policies. All of the policies and their compliance status are listed in Table 1 on page EA-38a. The most critical policy action is the Endangered Species Act of 1973, involved formal consultation proceedings with the US Fish and Wildlife Service. The consultation resulted in an opinion which indicated: "Although the biological opinion concluded that the project will not jeopardize the continued existence of the Atlantic Coast piping plover population, the project will further erode the species' already precarious status by reducing and degrading available nesting and foraging habitat."

NPS Rationale for Support of Proposed Action

The NPS realizes that until a reformulation plan is approved, emergency situations will be required to effectively deal with breaches in the barrier island. Filling breaches as quickly as possible, with minimal impacts could significantly reduce the probability of the kind of breach that occurred at Westhampton where it took 10 months and $7,000,000.00 to remedy the situation when it may have only taken 3 months and less than half the cost.

The BCP is an interim plan until the reformulation plan is completed. Once the reformulation plan is completed, a breach contingency plan will no longer be required. Filling a breach will have minimal impacts on the natural and cultural resources of Fire Island National Seashore as long as the following controlling conditions are also implemented:

1) Should a breach occur, it is intended that the BCP be activated. Guidance for the actions that occur will be the BCP in order to pro-actively address the concerns of NPS, NBS, USFWS, ACOE, state and local agencies . An on site evaluation by NPS, NBS, USFWS, ACOE, state and local professionals will determine all actions to be taken.

2) U.S. Department of the Interior, National Park Service, Fire Island National Seashore Special Use Permit with conditions will be issued (based on this FONSI) for the emergency actions involved in the construction of breach fill on NPS lands. Consultation with the USFWS and other resource management agencies will also be used to develop the permit conditions.

3) As discussed in the BCP/EA, an Environmental Assessment (EA) for Specific Site Locations of Stockpiles on NPS lands (in the disturbed portions of Watch Hill and Sailors Haven areas) will be completed when material becomes available for stockpiling. Fire Island National Seashore, Seashore staff will work cooperatively with the ACOE to complete the environmental assessment(s) for those stockpile locations within the Seashore.

4) U.S. Department of the Interior, National Park Service Special Use Permit with conditions will be completed for site-specific stockpiling EA(s) on NPS lands once FONSI(s) have been prepared for the EA(s).

FINDING OF NO SIGNIFICANT IMPACT

Selection and implementation of the BCP Proposed Action, as described above and within the jurisdictional boundary of Fire Island National Seashore, and based upon the National Park Service adoption of the BCP/EA, will not constitute a major Federal action that would have significant impact on the quality of the human environment within the meaning of Section 102 (2) (c) of the National Environmental Policy Act of 1969. Therefore, preparation of an environmental impact statement is not necessary.

Date 4/9/96

Jack Hauptman
Superintendent
Fire Island National Seashore

Concurred: Date 4/9/96

Marie Rust
Field Director, Northeast Field Area
National Park Service

ENVIRONMENTAL ASSESSMENT
BREACH CONTINGENCY PLAN
ATLANTIC COAST OF LONG ISLAND,
FIRE ISLAND INLET TO MONTAUK POINT, NEW YORK

The responsible lead agency is the U.S. Army Corps of Engineers, New York District.

ABSTRACT: Under the proposed Breach Contingency Plan, breach closure would be initiated within 72 hours of termination of the storm event, in which the State of New York formally requests action, that occurs along barrier island chain from Fire Island Inlet to Southampton, excluding the Federal Wilderness Area within the Fire Island National Seashore Boundary. The Wilderness Area would be monitored for indications of natural breach closure. If this does not occur in the Wilderness Area, or if there is an increase in tidal ranges within the Great South Bay that can potentially flood developments on the south shore of Long Island or Fire Island, the breach would then be closed under the provisions of this plan.

Fill placement to close a breach will match existing shoreline profiles of the corresponding bays (Great South Bay, Moriches Bay and Shinnecock Bay) to the north and the Atlantic Ocean to the south. A minimum berm width of 150 feet would be created at a maximum elevation of 9 feet National Geodetic Vertical Datum (NGVD) between the back-bay and the Atlantic Ocean. The fill areas would blend into existing topography west and east of the breach fill areas. Placement fill grain size shall be compatible, if possible, with the grain size of the existing beach at the breach site.

Fill will be obtained from several possible sources including, NEPA-approved upland sand sources, Federally-created stockpiles, SEQRA or locally approved stockpiles created by the State or local municipalities throughout the barrier island system, and/or hydraulically dredged from one of the following locations:

1. U.S. Army Corps of Engineers' Atlantic Ocean Borrow Areas.
2. The Federally authorized Intracoastal Waterway.
3. The Federally authorized channels of Fire Island, Moriches and Shinnecock Inlets.
4. Existing channels maintained by Suffolk County.
5. Harbor or channel areas maintained by local municipalities.

The dredging and nourishment required in this emergency project will produce three general classes of environmental impacts: the dredging of the borrow area, an increase in turbidity levels, and the placement of suitable material on the beach or in open water to restore a breached area to pre-emergency conditions.

Analysis of the impacts of placing material on the beach is based on the abundance and kind of organisms present, the quantity and quality of material placed, the method used for placement, and time of year of placement. No significant adverse impact is anticipated in the filling of the breached areas to pre-emergency conditions.

Due to the sandy substrate and the location of the site, any plume at the placement site will be restricted in size and duration, and it is not anticipated that there will be a release of pollutants or a significant lowering of dissolved oxygen levels resulting from the project, either at the dredge location or placement site.

Biological recovery of the disturbed area will occur reasonably quickly, when organisms relocate from outlying undisturbed areas. The recovery process is optimized when the placement material matches the beach material and beach profiles are the same. There are some unavoidable adverse impacts in direct deposition and direct loss of benthos at the borrow area, but they are minor and of short duration.

If you would like further information on this assessment contact:

Mr. Peter Weppler
Project Biologist
U.S. Army Corps of Engineers
New York District, CENAN-PL-EA
26 Federal Plaza
New York, New York 10278-0090

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APPENDIX B - SECTION 110 OF THE NATIONAL HISTORIC PRESERVATION ACT-WAIVER OF FEDERAL AGENCY RESPONSIBILITIES

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APPENDIX I - USACOE/USFWS ENVIRONMENTAL COMMITMENTS

TABLE 1

COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS
AND PROTECTION STATUES

FEDERAL POLICIES	COMPLIANCE
Archaeological and Historic Preservation Act, as amended	Full
Clean Air Act, as amended	Full
Clean Water Act of 1977, as amended	Full
Coastal Zone Management Act of 1972, as amended	Full
Coastal Resources Barrier Act	Full
Endangered Species Act of 1973, as amended	Full
Estuary Protection Act (PL 90-454)	Full
Federal Water Project Recreation Act, as amended	N/A
Fish and Wildlife Coordination Act, as amended	Full
Land and Water Conservation Fund Act of 1965, as amended	Full
Marine Protection, Research, and Sanctuary Act of 1969, as amended	Full
National Environmental Policy Act of 1969, as amended	Full
National Historic Preservation Act, as amended through 1992	Full
Organic Act of 1916	Full
Fire Island National Seashore Act (PL 88-587)	Full
Wilderness Act (PL 88-577)	Full
Fire Island Wilderness Act (PL 96-585)	Full
Rivers and Harbors Appropriation Act of 1899, as amended	N/A
Watershed Protection and Flood Prevention Act, as amended	N/A
Wild and Scenic River Act, as amended	N/A
Floodplain Management (E.O. 11988)	Full
Protection of Wetlands (E.O. 11990)	N/A
Toxic Substances Control Act (PL 94-469), as amended	N/A
EXECUTIVE ORDERS, MEMORANDA, ETC	
Floodplain Management (E.O. 11988)	N/A
Protection of Wetlands (E.O. 11990)	N/A
Environmental Effects Abroad of Major Federal Actions (E.O. 12114)	N/A
Impacts Upon Prime and Unique Farmlands (CEQ Memo 8-30-76)	N/A

STATE AND LOCAL POLICIES

All appropriate state and local policies will be complied with

1.00 PROJECT HISTORY

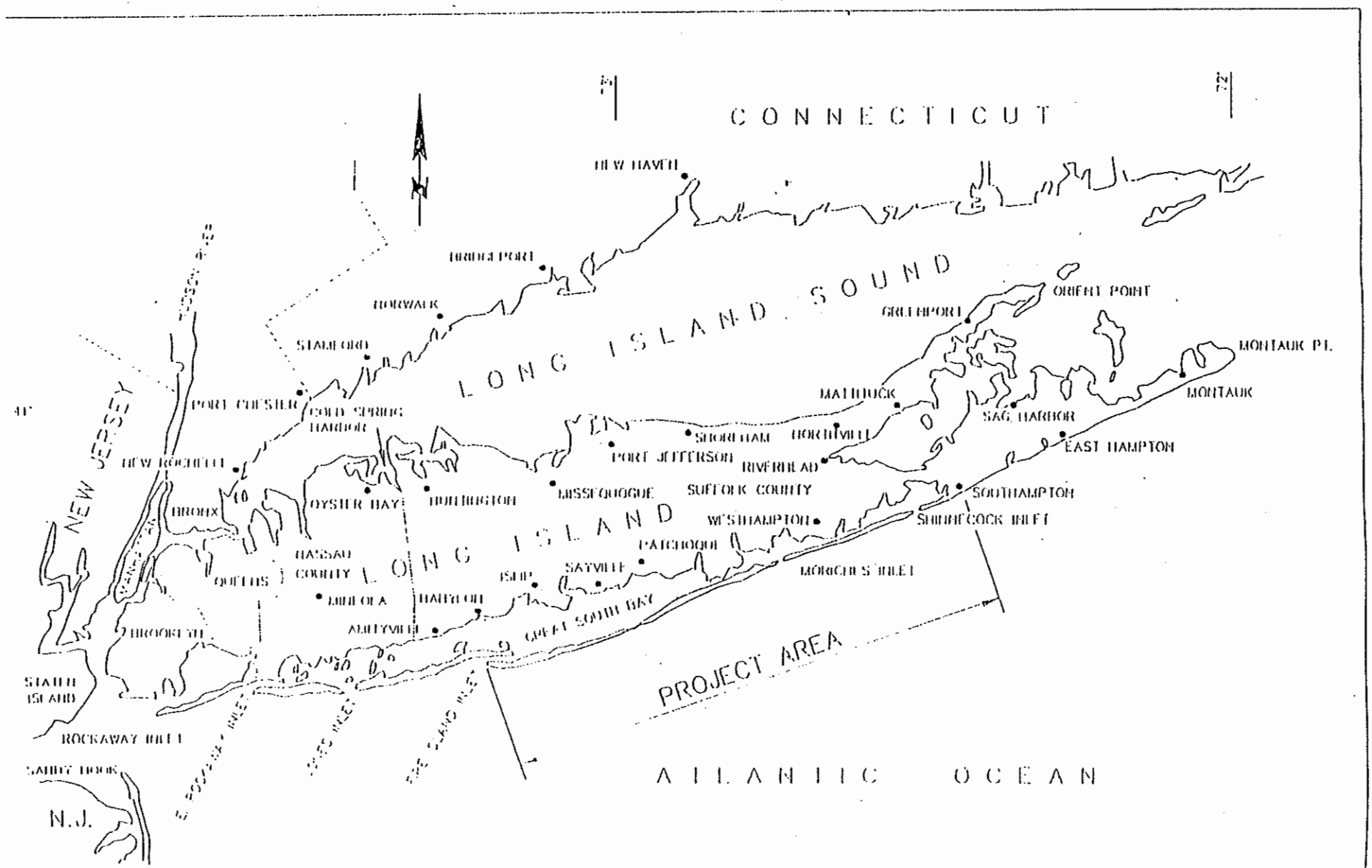
1.01 The proposed project is within the larger area under study as part of the Atlantic Coast of Long Island, Fire Island Inlet to Montauk Point (FIMP), Beach Erosion Control and Hurricane Protection Project. A comprehensive program of dune reconstruction and beach stabilization for the entire project reach was described in draft and final Environmental Impact Statements (EIS) completed in 1976 and 1978 respectively. The U.S. Department of the Interior referred the final EIS to the President's Council of Environmental Quality (CEQ) based on its findings that the document inadequately addressed environmental impacts of the project. On 6 June 1978, the CEQ recommended project reformulation to the Chief of Engineers, who in turn directed the District to reformulate the project. This project is currently being reformulated to develop a recommended course of action to address erosion along the entire 83 mile-long coastline.

1.02 The barrier island system fronting the Atlantic Ocean from Fire Island Inlet to Southampton, in Suffolk County, Long Island, New York (See Figure 1) is particularly vulnerable to breaching. This area of concern is addressed in the proposed Breach Contingency Plan described in this document.

2.00 PROJECT DESCRIPTION

2.01 Breaching refers to the condition where severe overwashing forms a new inlet which permits exchange of ocean and bay waters under normal tidal conditions. Under the proposed Breach Contingency Plan, breach closure would be initiated within 72 hours of termination of the storm event, in which the State of New York formally requests action, that occurs along barrier island chain from Fire Island Inlet to Southampton, excluding the Federal Wilderness Area within the Fire Island National Seashore Boundary. The Wilderness Area would be monitored for indications of natural breach closure. If this does not occur in the Wilderness Area, or if there is an increase in tidal ranges within the Great South Bay that can potentially flood developments on the south shore of Long Island or Fire Island, the breach would then be closed under the provisions of this plan.

2.02 Fill placement to close a breach will match existing shoreline profiles of the corresponding bays (Great South Bay, Moriches Bay and Shinnecock Bay) to the north and the Atlantic Ocean to the south. A minimum berm width of 150 feet would be created at a maximum elevation of 9 feet National Geodetic Vertical Datum (NGVD) between the back-bay and the Atlantic Ocean. The fill areas would blend into existing topography west and east of the breach fill areas.



VICINITY MAP

SCALE: 1" = 15 MILES

FIGURE 1

Placement fill grain size will be compatible, if possible, with the existing beach material based on Corps criteria.

2.03 Fill will be either trucked in from NEPA-approved upland sand sources, or from NEPA/SEQR or locally approved stockpiles at several proposed locations (See Figure 2) along the barrier island system, and/or hydraulically dredged from one of the following locations:

1. U.S. Army Corps of Engineers' Atlantic Ocean Borrow Areas (See Figure 2), not to exceed 20 feet below the existing bathymetry at the time of the pre-dredge survey.

2. The Federally authorized Intracoastal Waterway at a depth no greater than two feet below the authorized channel depth.

3. The Federally authorized channels of Fire Island, Moriches and Shinnecock Inlets.

4. Existing channels maintained by Suffolk County at a depth no greater than two feet below the permitted depth of the utilized channel.

5. Harbor or channel areas maintained by local municipalities at a depth no greater than two feet below the permitted depth of the utilized area.

3.00 NEED FOR PROPOSED ACTION

3.01 Recent coastal storm damage resulting from a series of severe northeasters (i.e. December 1992, March, 1993) indicated a need to develop an interim plan to respond to barrier island breach formations, which may occur prior to completion of the FIMP Reformulation Study. Timely response minimizes cost and environmental damage. Other studies conducted by the National Park Service (Fire Island National Seashore) and the Governor's Coastal Erosion Task Force are also addressing the required management of barrier island breaches. The plan proposed here takes these other studies into account.

3.02 Numerous portions of the barrier island system are low-lying, experiencing overwash on a recurring basis, and

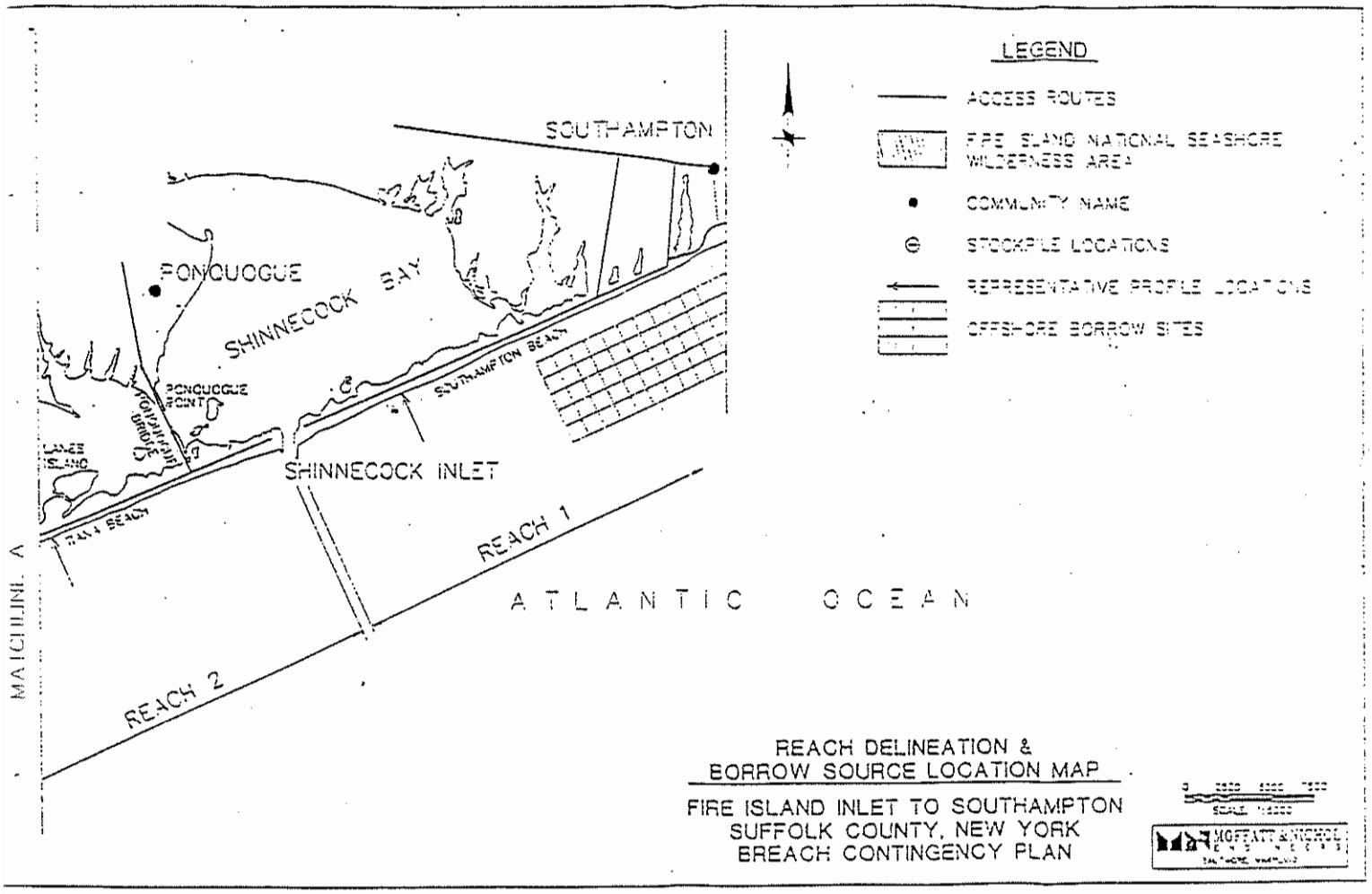

LEGEND
ACCESS ROUTES
FIRE ISLAND NATIONAL SEASHORE WILDERNESS AREA
COMMUNITY NAME
STOCKPILE LOCATIONS
REPRESENTATIVE PROFILE LOCATIONS
OFFSHORE BORROW SITES
SOUTHAMPTON
PONQUOGUE
SHINNECOCK BAY
PONQUOGUE POINT
SOUTHAMPTON BEACH
SHINNECOCK INLET
REACH 1
REACH 2
ATLANTIC OCEAN
REACH DELINEATION &
BORROW SOURCE LOCATION MAP
FIRE ISLAND INLET TO SOUTHAMPTON
SUFFOLK COUNTY, NEW YORK
BREACH CONTINGENCY PLAN
MOFFATT & NICHOL

FIGURE 2

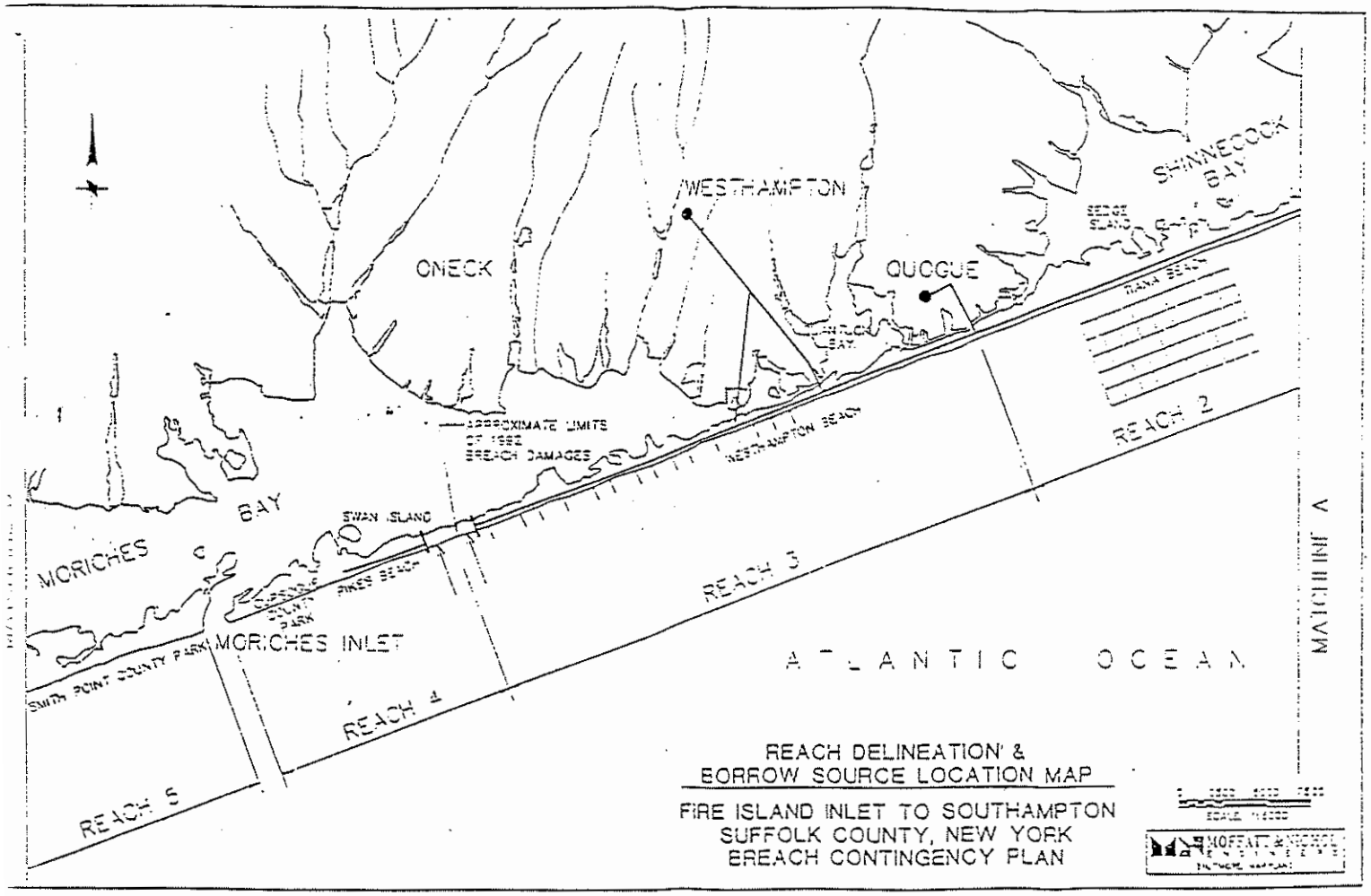

WESTHAMPTON
ONECK
QUOGUE
SHINNECOCK BAY
SEDGE ISLAND
PLANK BEACH
WESTHAMPTON BEACH
APPROXIMATE LIMITS OF 1992 BREACH DAMAGES
SWAN ISLAND
MORICHES BAY
PIKES BEACH
MORICHES INLET
SMITH POINT COUNTY PARK
REACH 1
REACH 2
REACH 3
REACH 4
REACH 5
ATLANTIC OCEAN
MATCHLINE V
REACH DELINEATION & BORROW SOURCE LOCATION MAP
FIRE ISLAND INLET TO SOUTHAMPTON
SUFFOLK COUNTY, NEW YORK
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FIGURE 2

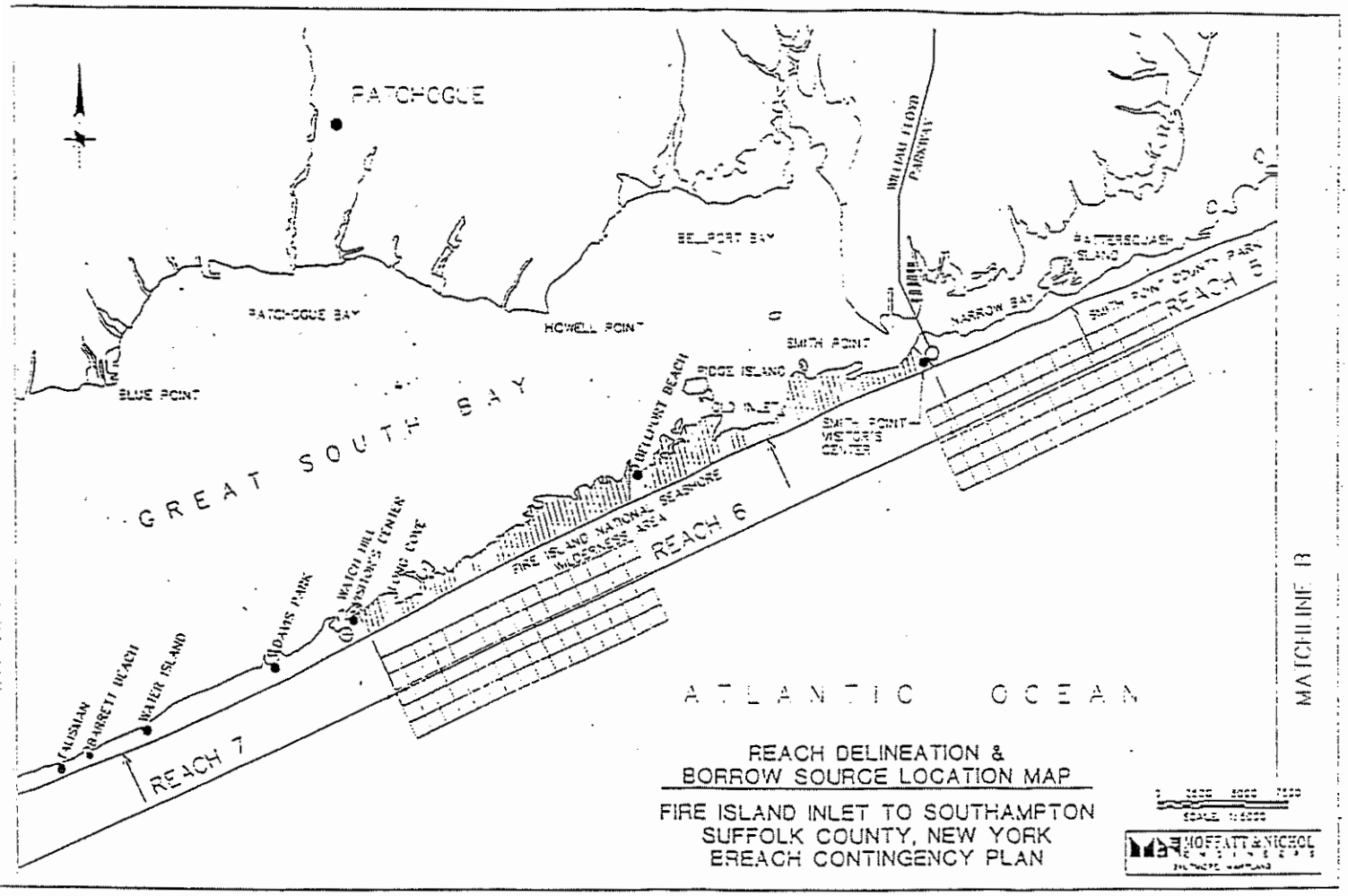
PATCHOGUE
PATCHOGUE BAY
BLUE POINT
HOWELL POINT
BELLPORT BAY
WILLIAM FLOYD PARKWAY
BATTERSQUASH ISLAND
NARROW BAY
SMITH POINT COUNTY PARK
REACH 5
SMITH POINT
ROCKY ISLAND
INLET
SMITH POINT VISITOR'S CENTER
FORT POINT BEACH
GREAT SOUTH BAY
FIRE ISLAND NATIONAL SEASHORE WILDERNESS AREA
REACH 6
WATCH HILL VISITOR'S CENTER
LONG COVE
ADAMS PARK
WATER ISLAND
BARRETT BEACH
CAUSIAN
REACH 7
ATLANTIC OCEAN
MATCHLINE B
REACH DELINEATION &
BORROW SOURCE LOCATION MAP
FIRE ISLAND INLET TO SOUTHAMPTON
SUFFOLK COUNTY, NEW YORK
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FIGURE 2

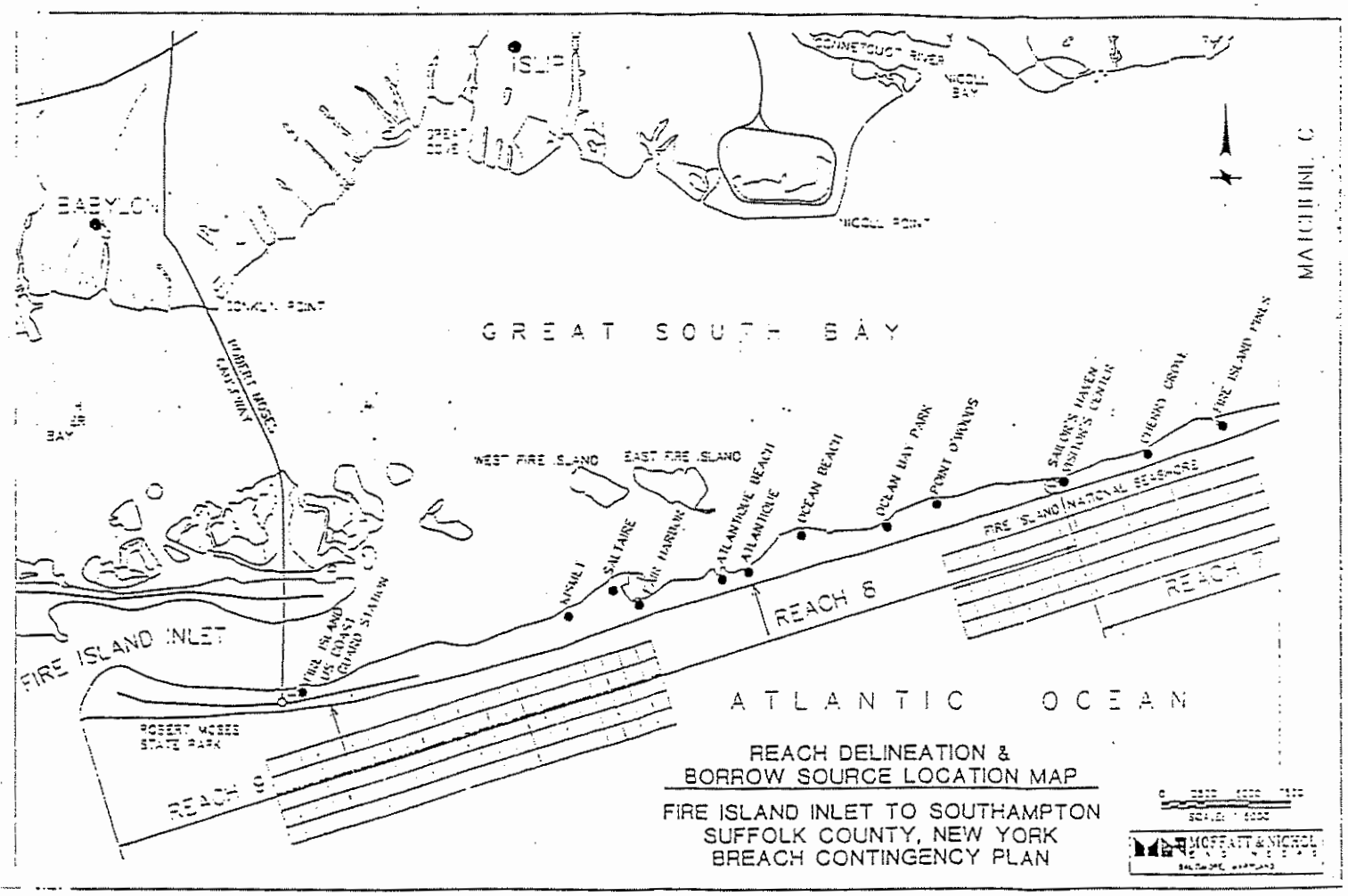

ISLIP
CONNETQUOT RIVER
NICOLL BAY
NICOLL POINT
BABYLON
GREAT SOUTH BAY
ROBERT MOSES CAUSEWAY
WEST FIRE ISLAND
EAST FIRE ISLAND
AFSMILI
SAILTAIRE
FAIR HARBOR
ATLANTIQUE BEACH
ATLANTIQUE
OCEAN BEACH
OCEAN BAY PARK
POINT O'WOODS
SAILOR'S HAVEN
OSTRICK'S CENTER
CHERRY GROVE
FIRE ISLAND PINES
FIRE ISLAND NATIONAL SEASHORE
REACH 6
REACH 7
REACH 8
REACH 9
FIRE ISLAND INLET
FIRE ISLAND US COAST GUARD STATION
ROBERT MOSES STATE PARK
ATLANTIC OCEAN
REACH DELINEATION &
BORROW SOURCE LOCATION MAP
FIRE ISLAND INLET TO SOUTHAMPTON
SUFFOLK COUNTY, NEW YORK
BREACH CONTINGENCY PLAN
MOFFATT & NICHOL

FIGURE 2

minor barrier breaches and inlet development have been relatively frequent. Recent coastal damages have indicated the possibility of future breaches having potentially adverse impact on bay hydrodynamics. Such impacts may include changes: in bay tide levels, bay salinities, and bay circulation patterns.

3.03 Investigations of the breaches that formed during the December 1992 Northeaster west of the Westhampton Groin Field, indicated that the openings vastly increased the flow of ocean water into Moriches Bay over pre-breach conditions (Conley, 1994). The increased flow of ocean tidal water associated with the 1992 Northeaster and exposure to the open ocean presented an impending threat of flooding and wave damage to mainland and barrier island residences during winter coastal storms, by allowing a significant ocean storm surge to be introduced into the bay, over the unbreached conditions.

4.00 ALTERNATIVES TO THE PROPOSED ACTION

4.01 The goal of the Breach Contingency Plan is to establish guidelines for responding to barrier island breaches that occur within the barrier island system extending from Fire Island Inlet to Southampton. There are two alternatives: 1) No Action and 2) Breach Closure Activities under Corps Emergency Procedures Guidance.

4.02 No Action. Under this alternative, no Federal construction measures would be taken to provide for preserving the barrier island system in the event of a catastrophic storm event. Therefore, when a breach occurs, wave attack protection for the barrier island and the mainland would be diminished. The back bay area would be vulnerable to increased storm-tide surges and associated flooding.

4.03 Breach Closure Activities under Corps Emergency Guidance. Response to a barrier island breach without the Breach Contingency Plan in place would follow the procedure used for the 1993 Westhampton Emergency Breach Closure. That process achieved a design cross-section similar to the one proposed by the Breach Contingency Plan in 11 months, at a cost of approximately 7 million dollars. Agency and NEPA coordination was initiated during the design phase and completed following its implementation.

5.00 AFFECTED ENVIRONMENT

5.01 *Developments*. The lands and waters within the proposed project area are owned by various interests and are subject to various uses. The Federal government (Department of the

Interior, National Park Service, [NPS]) has jurisdiction over the area included within the boundaries of the Fire Island National Seashore (FINS). The New York State government has jurisdiction over Robert Moses State Park (Office of Parks, Recreation and Historic Preservation), tidal waters (bays) (Department of Environmental Conservation) and submerged lands offshore to the three mile limit (Department of State). The Suffolk County government (Department of Parks and Recreation) has jurisdiction over county parks located at Smith Point, Moriches and Shinnecock Inlets, and small parcels of shorefront land at various locations. Most of the remaining land is held by private landowners located in Towns of Southampton, Brookhaven, Islip and Villages of Easthampton, Southampton, Westhampton Dunes, Westhampton Beach, Quogue, Bellport, Patchogue, Brightwaters, Ocean Beach, Saltaire, and local municipalities.

5.02 Fire Island National Seashore. FINS is managed by the NPS. There are 17 "exempted" and 3 Seashore District (non-exempted) communities within the boundaries of the Fire Island National Seashore (FINS) (See Figure 2). An exempted community is one that is defined by the 1964 FINS Enabling Legislation (Public Law 88-587), and described by the Federal Zoning Regulations, 36 C.F.R. Part 28, as falling within the boundaries of the Community Development District. The Seashore District is comprised of all portions of the lands and waters within the boundary of the Seashore which are not included in the Community Development District, comprising all private and public developments. The improved private properties in either district are exempted from the acquisition authority of the Secretary of the Interior, as long as the development conforms to all local and federal zoning requirements at the time of construction.

5.03 There are five National Park Service facilities on Fire Island under the jurisdiction of FINS. They are: the Lighthouse Area, Sunken Forest/Sailors Haven, Talisman, Watch Hill, and Smith Point.

5.04 FINS can be accessed via Smith Point County Park on the east end of the island and Robert Moses State Park on the west by bridges from the mainland of Long Island. There are paved roads to parking lots and the public recreational facilities at those two facilities.

5.05 FINS is accessible by the way of the above mentioned bridges by permitted four-wheel drive vehicles only. The shoreline along the entire length of Fire Island and the Burma Road, the sand trail along the interior of the island on the west end and through most of the communities, are the only lateral access routes within the FINS boundaries. (It should be noted, that the Burma Road does not extend into the Wilderness Area in the east, and through the communities of Cherry Grove and Water Island, located in the lateral center

of the island.) Together, they provide vehicular access along the island for FINS personnel, governmental agencies, law enforcement, emergencies, contractors, and seasonal vehicular access for permitted year-round residents and fishermen. For park visitors and summer residents, FINS is only accessible by water, or by foot from the parking areas at either end.

5.06 Robert Moses State Park. Robert Moses State Park is a highly developed and utilized beach recreational facility. The park is heavily utilized from May to September for beach activities. Fall and winter use is limited to surf-fishing hiking, and some off-road recreational vehicle use.

The Robert Moses Causeway provides vehicular access from the mainland of Long Island to the park.

5.07 Suffolk County Parks. Suffolk County has three major parks within the project area: Smith Point County Park, Cupsogue County Park, and Shinnecock East County Park. An undeveloped park is located at Tiana Beach (LIRPB, 1990).

1. Smith Point County Park is a fully developed beach use recreational facility. Off-road vehicle use via the Burma Road is limited at the park due to ocean shoreline erosion.
2. Cupsogue County Park which has a beach pavilion and parking lot has been open intermittently to county residents since 1984 because of repeated washovers of Dune Road.
3. Shinnecock East County Park is heavily used by campers and surf-fishermen. There are County-owned tidal wetlands along the back-bay area of the Tiana Beach Barrier Island, as well as mixed with private lands behind the Southampton barrier spit.
4. Suffolk County has approximately 475 undeveloped acres at Tiana Beach.

5.08 Other Municipalities. The Town of Southampton has recreation beach facilities west and east of the Suffolk County property as well as Pikes Beach Town Park south of Dune Road in the Village of Westhampton Dunes. The Village of Southampton owns a number of beach access points along both the ocean and bay sides of the barrier island. On Fire Island, recreational beach facilities exist within the Town of Islip at Barrett Beach and Atlantique Beach, the Town of Brookhaven at Leja Beach, and the Village of Bellport at HoHum Beach.

5.09 The developed areas within the FINS and along the Westhampton Barrier Segment have had a history of topographic disturbance (man-made and natural). Recent beach nourishment projects (locally by the Fire Island Communities, and the Emergency Breach Closure at Westhampton) has been undertaken to momentarily protect the developed areas from further

coastal damage. The natural barrier island topography does not generally exist within the developed areas of the barrier island system. Natural topography is found only where the land is one of the Federal "tract properties" located within FINS between some of the private communities.

5.10 Coastal Barrier Resources Act. This law established the Coastal Barrier Resources System and units within the system are prohibits Federal expenditure and financial assistance for the development of coastal barriers, or portions thereof, which are presently undeveloped. The coastal barrier units present within the proposed action areas are the: 1) Tiana Beach 2) Southampton Beach, and 3) Fire Island (including Robert Moses State Park).

5.11 Utilities. All electric and telephone service is provided by underwater feeders across the Great South Bay to Fire Island. The lines extend laterally along the barrier island.

5.12 The only sewage treatment plant on the barrier island is located within the Village of Ocean Beach. All other sewage disposal (private and public) is handled by individual septic systems.

5.13 Water service on Fire Island is provided by wells throughout the island. The communities of Fire Island Pines and Ocean Bay Park (private water companies), and the Village of Ocean Beach (public water authority) provide water service from their wells to individual public and private subscribers, as required. Throughout the rest of the barrier island system, water service is afforded by private wells and some portions the Suffolk County Water Authority.

Estuarine Resources

5.14 Great South Bay Area. The barrier island system is the principal natural feature fronting Great South Bay. The eastern is underdeveloped and exhibits extensive beach, dune, tidal wetlands along the back-bay area, and tidal wetland islands scattered within the bay. Larger wetland islands are located in the back-bay areas along Jones Island to the west. The mainland on the north side of Great South Bay contains two large river systems (Carmans River and Connetquot River) with extensive freshwater and tidal wetlands.

5.15 The Great South Bay Area contains eleven designated New York State, Department of State Significant Coastal Fish and Wildlife Habitats (NYSDOS, 1987). They include: Great South Bay East, Great South Bay West, Beaverdam Creek, Swan River, Carmans River, Connetquot River, Champlin Creek, Orowoc Creek, Cedar Beach, Gilgo Beach and Sore Thumb. Great South Bay has also been identified as a significant fish and wildlife habitat by the USFWS (1995).

5.16 The vast salt marshes, intertidal flats, and shallows in the Great South Bay area provide valuable nesting and feeding areas for migratory birds throughout the year, including large populations of shorebirds. Several heronies have been located on the wetland islands within Great South Bay, but the number of these natural resources is presently on the decline.

5.17 Great South Bay is also one of the most important waterfowl wintering areas (November to March) on Long Island containing populations of brant (Branta bernicula), scaup, black ducks (Anas rubribes), Canadian geese (Branta canadensis), mallards (Anas platyrhynchos), buffleheads (Bucephala albeola) and red-breasted merganser (Mergus serrator). Waterfowl use of the bay during the winter is due to the limited extent of ice cover (NYSDOS, 1987) each year. Generally, the birds feed in open water areas through midwinter, while prior to migration (early spring), the birds feed widely in the surrounding salt marshes.

5.18 Great South Bay is an productive area for marine finfish, shellfish and other marine wildlife, but indications are, these resources are on the decline. The bay serves as a feeding area and nursery (April to November) for bluefish (Pomotomus salt atrix), winter flounder (Pleuronectes americanus), summer flounder [fluke] (Paralichthys dentatus), kingfish (Memticurrhus saxatilis), tautog (Tautoga onitis), scup (Stenotomus chrysops), blue crab (Callinectes sapidus). Forage fish species that utilize the bay include Atlantic silverside (Menidia menidia), mummichog (Fundulus heteroclitus), striped killifish (Fundulus majalis), sticklebacks (Apeltes quadracus) and northern pipefish (Syngnathus fuscus) (NYSDOS, 1987).

5.19 The bay is inhabited by hard clams (Mercenaria mercenaria), soft clams (Mya arenaria), bay scallops (Aequipecten irradians) and mussels (Mytilus edulis). The area is open for commercial shellfishing.

5.20 Moriches Bay Area. The barrier beach/dune system is the most dominant natural feature fronting Moriches Bay. The Dune Road area in Westhampton, and the Village of Westhampton Dunes is highly developed. (Note: The beach area fronting the Village of Westhampton Dunes will be able to redevelop under the Legal Settlement between the Village and United States.) West of Moriches Inlet the barrier beach is undeveloped with extensive dunes, beach and back-bay wetlands. A few tidal wetland islands are located within Moriches Bay. The mainland behind the northern boundary of the bay provides numerous stream corridors associated with freshwater and tidal wetlands. Moriches Bay is connected to Shinnecock Bay by the Quogue Canal.

5.21 The Moriches Bay area contains five New York State

Designated Significant Fish and Wildlife Habitats. They include Moriches Bay, Smith Point County Park, Cupsogue County Park, and a portion of Quantuck Creek and Quogue Refuge. Moriches Bay has also been identified as a significant fish and wildlife habitat by the USFWS (1995).

5.22 The salt marshes, intertidal flats, and shallows in Moriches Bay provide valuable nesting and feeding areas for migratory birds and shorebirds throughout the year. Moriches Bay is also one of the most important waterfowl wintering areas (November to March) on Long Island containing populations of brant, scaup, black ducks, Canadian geese, mallards, buffleheads and canvasbacks (Aythya valisineria). Winter waterfowl use of the bay is due to the limited extent of ice cover (NYSDOS, 1987) each year. Waterfowl species feed in open water areas through midwinter. Prior to migration in early spring, the birds feed widely in the surrounding salt marshes.

5.23 Moriches Bay is a productive area for marine finfish, shellfish and other wildlife. The bay serves as a feeding area and nursery (April to November) for bluefish, winter flounder, summer flounder, American eel (Anguilla rostrata), tautog, scup, blue crab. Forage fish species that utilize the bay include Atlantic silverside, mummichog, striped killifish, and northern pipefish.

5.24 Moriches Bay is inhabited by hard clams, soft clams, bay scallops and mussels. The area is open for commercial shellfishing.

5.25 Shinnecock Bay Area. As in the other bay areas, the barrier beach system is the governing natural feature fronting the bay area. There are vital tidal wetlands in the back-bay area behind the Quogue/Tiana and Southampton barrier beaches. The bay is bordered by a dense residential population and small craft harbor facilities on the north and west sides.

5.26 Shinnecock Bay is connected to the west by the Quogue Canal and to Great Peconic Bay by the Shinnecock Canal. The Shinnecock Bay area contains eight New York State Designated Significant Fish and Wildlife Habitats. They include Southampton Beach, Tiana Beach, Shinnecock Bay, Dune Road Marsh, Far Pond and Middle Pond Inlets, and a portion of Quantuck Creek and Quogue Refuge.

5.27 The bay area contains extensive areas of open water and limited amounts of salt marshes and mudflats. Like the Great South and Moriches Bays, Shinnecock Bay provides valuable nesting and feeding areas for the same species of migratory birds and shorebirds.

5.28 Shinnecock Bay is a productive area for marine finfish,

shellfish and other wildlife. The bay serves as a feeding area and nursery (April to November) for bluefish, winter flounder, summer flounder, American eel, tautog, scup, blue crab. Forage fish species that utilize the bay include Atlantic silverside, mummichog, striped killifish, and northern pipefish (NYSDOS, 1987).

5.29 From December through early May, harbor seals (Phoca vitulina) (approximately 20-40 seals) can be found in the bay. Exposed sand shoals near the inlet provide a "haulout area", which the seals use for resting and sunning themselves. This location is one of five Long Island areas used as "haulouts".

5.30 Shinnecock Bay is inhabited by hard clams, soft clams, bay scallops and mussels. The area is open for commercial shellfishing. The residents of the Shinnecock Indian Reservation have established an American oyster (Crassostrea virginica) and hard clam aquaculture farm in nearby Heady Creek.

5.31 Great South Bay, Moriches Bay and Shinnecock Bay represent the one of the largest estuarine ecosystems in New York State. The environmental resources found within the ecosystem, as well as residential development on both the mainland and barrier island are threatened, if the barrier island is left to erode unchecked.

5.32 No State and/or Federal-listed endangered or threatened marine species are known to breed within the study area. During the summer and early fall months, the threatened loggerhead (Caretta caretta) and endangered Kemp's ridley (Lepiduchelys kempi), leatherback (Dermochelys coriacea), and green (Chelonia mydas) sea turtles, as well as the endangered fin (Balaenoptera physalus), humpback (Megaptera novaeangliae), and right (Eubalena glacialis) whales may be present in New York coastal waters (NMFS from USACOE, 1994). While sea turtles have been known to occur in this region, nesting has been documented only as far north as New Jersey (NRC, 1990). Although there is a possibility that the Kemp's ridley, loggerhead and green sea turtles feed in one of the bays, no reports have substantiated this.

5.33 The development of the bay areas consists mostly of marinas and other docking facilities, mooring buoys, and the associated dredged boating channels. Great South Bay contains developed bay islands (West Fire Island and Secton Island) within FINS boundaries which contain a few residences and Pattersquash Island containing a hunting club.

Terrestrial Resources.

5.34 Barrier Island. The barrier island system within the

project study area includes Fire Island which extends from Fire Island Inlet to Moriches Inlet (approximately 32 miles), the 15 mile barrier island containing Westhampton and Tiana Beaches (Moriches Inlet to Shinnecock Inlet), and the 4 mile barrier island segment which extends from east of Shinnecock Inlet to the mainland at Southampton. The barrier island system has served residential and recreational needs for the public in the past. Overwashes occur frequently in this section where dunes are non-existent. Barrier island systems are geologically dynamic. Due to the high energy storms, and bay and oceanic forces associated with the Atlantic barrier barrier island shoreline, it will naturally have the potential of becoming unstable in some subtidal areas.

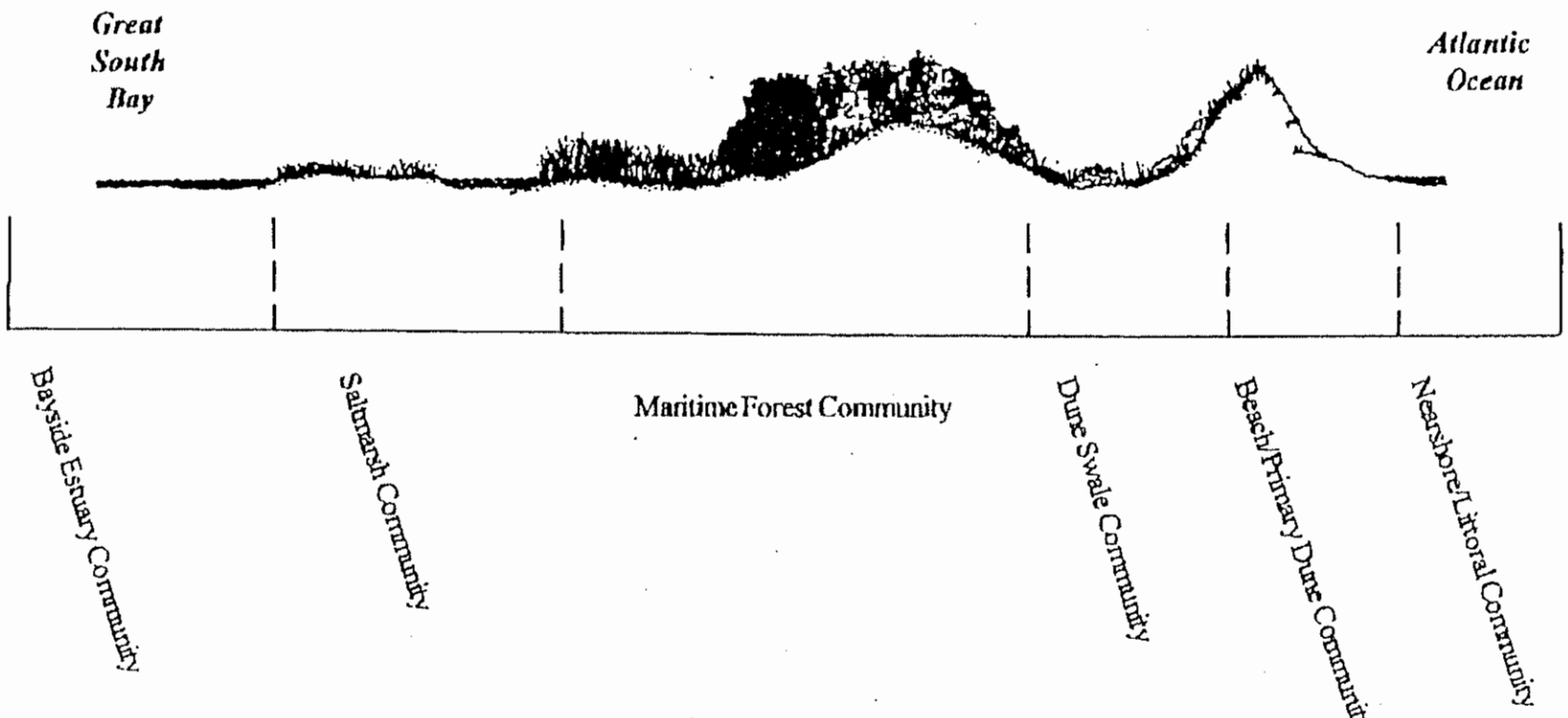
5.35 The area of the barrier island behind the Westhampton Groin Field contains private residences, beach clubs, and a Town of Southampton beach. The existing groin field has resulted in large accumulations of sand between Groins 1-11 (USACOE, 1995). The groin field also maintains the dune system which provides protection to the structures behind.

5.36 The Westhampton Groin Field area has vegetation comparable to that of the rest of the barrier island, containing primarily American beachgrass and seaside goldenrod. Piping plover nests have been sighted along this area, and as of June, 1994, approximately 25 pairs of least terns have established nests within the groin field. However, due to the high recreational summer traffic however, chick mortality is high.

5.37 Natural cross island topographical changes occur as a result of longshore sand transport through the process of longshore drift and high energy storms. Sand is moved from the ocean side of the barrier island to the center of the island, and then to the bayside. Changes associated with these events (overwash, inlet formation and closure) will build up the bayside slowly. Over hundreds of years, these events will slowly shift the island towards the bay. The barrier island system shows a topping of sand with pockets of forested areas and organic material in the marsh areas. Occasionally on the ocean beach, peat bogs are uncovered exposed areas that had been forested in the past.

5.38 Six ecological communities are found within the barrier island system (See Figure 3). The most southern community is usually under water, and is referred to as the nearshore/littoral community. The ocean beach community contains the geologic zones of: intertidal, berm, open beach, foredune, and primary dune. Behind the beach/dune system is often found a dune swale community of grasses and rushes. Interspersed throughout the interior of the barrier island

Fire Island National Seashore
General Barrier Island Cross Section
Ecological Communities



Fire Island Breach Contingency Plan (draft)
Not to Scale

are maritime forest communities. These may be bordered to the north by the frequently flooded saltmarsh community. The final system, often extending out to the island's northern boundary, 4000 feet off shore, is the bayside estuary community. There is little variation in topography in these ecological communities. The Federal Wilderness, located in the eastern eight miles of FINS, contains the best examples of these communities. The stability of these communities is sensitive to specific types of disturbance (i.e. tidal action, plant density, wave action, human development, wind activity, storms, and other natural high energy events). The following paragraphs briefly list species associated with each community.

5.39 Nearshore/Littoral Community. Fifty-four species species of finfish may be found in these waters. Some of the more common varieties are: Atlantic salmon (Salmo salar), Atlantic herring (Clupea harengus), striped bass (Morone saxatilis), black drum (Pogonias cromis), black sea bass (Centropristis striata), Atlantic halibut (Hippoglossus hippoglossus), and several species of jellyfish (NPS, 1994). Invertebrate shellfish and crustaceans are also found in the nearshore/littoral zone. These include: American lobster (Homarus americanus), hard clams, soft-shell clams, Atlantic surf clams (Spisula solidissima), sand dollars (Echinarachnius parma), and quahogs.

5.40 Man-made structures such as the groins near Westhampton, provide rocky intertidal habitat for aquatic and avian species (USFWS, 1994). Fish species utilize this habitat as a forage base and can find shelter amid the piled groin stone. In general, barnacles, crustaceans, polychaetes, mollusks can be found on, above, and around these structures.

5.41 The plant species found in this area are often transitory free floating specimens from other areas on the northern U.S. coastline or Long Island Sound. These specimens may be green seaweed such as sea lettuce (Ulva lactuca), brown seaweed such as common Southern kelp (Laminaria agardhii), red seaweed such as dulse (Rhodymenia palmata). The seaweeds may be used by smaller marine organisms as a refuge from predation. The seaweeds also collect at the hightide line and become food for area wildlife or a refuge for smaller beach wildlife.

5.42 Ocean Beach Community. Plant species found in this area must be able to withstand the variable high energy weather systems that frequent this zone. Above the high water line there usually are several annuals, such as seaside spurge, and sea rocket (Cakile edentula). American beachgrass (Ammophila breviligulata) is the most abundant plant on the foredunes, but several kinds of succulent or leathery-leaved herbaceous plants are occasional residents.

Beachgrass can survive repeated burial by the shifting sand, and it can spread rapidly by vegetative growth (rhizomes). Also found in this area; beach pea (Lathyrus maritimus) and dusty miller (Artemisia stelleriana). The roots and underground stems of the plants stabilize the dunes, and their leaves and aerial stems trap wind-blown sand. Vegetated foredunes, on sections of the barrier island allowing natural processes, form a buffer for the leeward sections of the Island against winds, salt spray, and storm tides.

5.43 Examples of fauna found in the intertidal area are amphipods such as beach fleas, crabs such as mole crabs (Emerita tallpoida), shorebirds such as sanderlings (Calidris alba), willets (Catoptrophorus semipalmatus), and dunlins (Calidris alpina).

5.44 The berm area is found at the high tide line. It is often marked by a buildup of ocean debris or vegetation. As the successive moon controlled high tides change, the berm debris/vegetation lines are found throughout the open beach (supratidal area). Species frequenting the berm debris/vegetation include: plovers, terns, gulls, along with over 50 other shorebird species.

5.45 Dune Swale Community. On back dunes, dunelets, secondary dunes, and in swales, shrubs grow with many other species of herbaceous plants, and they may form dense thickets over many acres. Beach plum (Prunus maritima), bayberry (Myrica pennsylvanica), and poison ivy (Rhus radicans) are the most common woody plants. Winds and salt spray that pass over the foredunes or through gaps in their crests control the height of the shrub canopy, and the height increases northward, away from the ocean. The shrubs of the back-dune zone can tolerate limited burial by sand. Bearberry (Arctostaphylos sp.) is characteristic on the lee (north) slope of undisturbed dunes.

5.46 If primary-dune or swale vegetation is disturbed by trampling or vehicles, the sand may be moved by the wind. Vegetation develops slowly on bare sand, and the early colonizing plants in many places are beach heather (Hudsonia tomentosa) and seaside goldenrod (Solidago sempervirens). Beachgrass normally is absent from surfaces that are being eroded actively.

5.47 Sands blown from the dunes may engulf and cover low vegetation, and then may be colonized and stabilized by woody vines, such as poison ivy and Virginia creeper (Parthenocissus quinquefolia). Although the distribution of seeds and other propagules may be nearly random, the various species are adapted to different ranges of environmental conditions. The subtle to sharp boundaries between different macroenvironments, and the spatial repetition of the

particular type of habitat in discrete patches and extensive zones, results in a mosaic of several herbaceous and shrubby vegetation types in an area that may extend several hundred feet north of the primary dunes. Generally, however, the density of plant cover increases with distance from the ocean front. The proportion of the vegetation cover formed by different species was investigated near and in the Sunken Forest within FINS by botanist Dr. Henry Art in 1971 (pers. comm. Ebert, 1995)

5.48 The only large island wildlife is found is in this zone. White-tailed deer (Odocoileus virginianus) can be found on Fire Island. Several common species of mammals are also found in the forests and tall grass sections of FINS, including red fox (Vulpes fulva), rabbits (Sylvilagus sp.), and white-footed mice (Peromyscus leucopus).

5.49 Maritime Forest Communities. The diversity of species generally expands with the increasing density of cover and the distance from the ocean. In a few protected areas, there are dense, broadleaf forests with a wind-pruned canopies 17 to 23 feet high. At Sunken Forest, the trees that occur in the transitional zone between the scrub and the forest are red cedar (Juniperus virginiana), pitch pine (Pinus rigida), wild black cherry (Prunus serotina), and winged sumac (Rhus copallina). Trees typical of the broadleaf forest are winterberry holly (Ilex verticillata), sassafras (Sassafras albidum), and serviceberry [shadbush] (Amelanchier sp.). The understory is composed of highbush blueberry (Vaccinium sp.) and other tall shrubs, as well as various lianas (woody vines), such as poison ivy, briers (Smilax sp.) Virginia creeper, and grape (Vitis sp.). Herbs, are more diverse in the Fire Island forests that in the dune and swale communities, and many of the species also are distributed widely on the upland sections of Long Island.

5.50 White-tail deer, red fox and many species of birds common to shrub forest zones are found in this area. This may also be the primary invertebrate area on the barrier island.

5.51 Saltmarsh Community. The availability of soil moisture, the salinity of the water, and the depth to the water table are major determinants of the distribution of vegetation types and of the floristic composition of vegetation types on the barrier island system. Where the surface of the porous sand is more that a few feet above the water table, soil-moisture fluctuations may be critical for plant survival. Many such areas support shrub thickets or temporary herbaceous vegetation types. Small depressions in which the freshwater table is at or near the surface during much of the year support bogs or marshes. Forest bogs and marsh transition zones support sour gum (Nyssa sylvatica) trees and such shrubs as highbush blueberry and swamp azalea

(Rhododendron serrulatum), as well as lush stands of ferns. On the bayshore, extensive salt marshes occur in areas subject inundation by salt water. The floristic composition of saltmarsh vegetation is related closely to the salinity of the water and to the frequency of inundation. Species characteristic of areas of brackish water are salt-marsh fleabane (Pluchea pupurascens), spike grass (Distichlis spicata), salt-marsh cordgrass (Spartina alterniflora), salt-meadow cordgrass (Spartina patens) groundsel bush (Baccharis halimifolia), and marsh elder (Iva frutescens).

5.52 All extensive salt-marsh grasslands on Fire Island were ditched for mosquito control in the 1960's. These remaining ditches increase the inland flow of brackish tidal waters and probably have disturbed the natural zonation of salt marsh vegetation. Both marshes and upland vegetation have been subject to an unknown degree of grazing by cattle and sheep, but virtually no records of grazing on Fire Island are known from the 20th Century.

5.53 Bayside Estuary Community. (See Section 5.13 - 5.33)

5.54 The project area is within the Atlantic Migratory Flyway for many migratory birds (i.e. geese, hawks, neotropical species) and butterflies. The barrier beach and back bay area within the serves as a nesting area for migratory shorebirds and as a wintering area for migratory waterfowl. Permanent avian species for the surrounding area include various species of gulls, crows, pigeons, and sparrows, normally associated with residential housing. The species of shorebirds which nest in colonies along the shorefront include plovers, terns, oystercatchers and sandpipers.

Threatened and Endangered Species

5.55 The Federal-listed threatened piping plover (Charadrius melodus), the State-listed threatened common tern (Sterna hirundo) and the endangered least tern (Sterna albifrons) all use essentially the same habitat: sand or sand/cobble beaches along ocean shores, bays and inlets between the high tide line and the area of dune formation. They usually nest at sites with little or no vegetation. However, it is not uncommon to find plover nests at the seaward base of dunes, or even behind the dunes, where blow-outs provide access to the ocean and where beachgrass can shelter the nest and eggs from sun and weather (Andrle, 1988). The Federal-listed endangered roseate tern (Sterna dougallii) nests on barrier beaches near dunes vegetated with beachgrass and herbaceous plants, such as seaside goldenrod (Andrle, 1988) and has been sighted within the FINS property (Bilecky, 1995). The Federally-threatened Northeast beach tiger beetle (Cicindela dorsalis dorsalis) also utilizes the same habitat.

5.56 Shorebird habitats are present within the project area. The barrier island system predominantly consists of low-lying sand flats, mudflats and sandy upland area almost devoid of vegetation (except maritime forest areas within FINS). Unoccupied and destroyed homes and housing debris are present along the barrier island with the Westhampton Barrier Segment. This area has been subjected to continued loss through the increasing occurrence of significant overwashes and breaches.

5.57 Overwash and breaching events potentially can create sand spits and deltas that provide a high quality of feeding and nesting habitat (USFWS, 1994) for a variety of shorebirds, including the piping plover. USFWS (1994) stated that "it is most likely that if the project area is allowed to remain in its present condition, there would probably be an overall increase in shorebird habitat". However, the characteristics which provide piping plovers with the most suitable habitat (relatively flat berms, overwash fans, spits, overwash areas which permit access to the back bays, and open vegetation) are the result of storm events, not necessarily the continued existence of a breach. An example of this, is the situation which occurred at Emergency Breach Closure Site at Westhampton. After the breach was filled, the number of breeding pairs increased threefold (5 nesting pair to 15 nesting pair), with several pairs nesting on the sand which was used to fill the breach. Although this was not the objective of the emergency project, it is well within the District's engineering capabilities to actively create nesting shorebird habitat as part of it's program of shoreline protection.

5.58 Piping plovers have been present in the past and were present in 1994 in various locations along the length of the barrier island system (USACOE, 1994). The Westhampton Barrier Segment has been identified by the USFWS as being considered for inclusion in a proposal to designate Critical Habitat for the Atlantic Coast Piping Plover population.

5.59 The Federal-listed threatened plant species, seabeach amaranth (Amaranthus pumilus) has also been identified in various location on the barrier island system. An October 1994 USFWS (in conjunction with The Nature Conservancy [TNC]) survey of the barrier island within the limits of Village of Westhampton Dunes, resulted in 25 plants being identified on the bayside (23 opposite just west of Groin 15) of the Westhampton Groin Field. The State-listed endangered plant, seaside knotweed (Polygonum glaucom) is present on the Fire Island Barrier Segment.

5.60 Other New York State-listed species potentially known to occur are: the threatened Eastern Mud Turtle (Kinosternon subrubrum subrubrum), found in forests, marsh, swale, estuary communities) and the Eastern Spadefoot Toad

(Scaphiopus holbrookii holbrookii) found in swale and forest communities.

5.61 Potential Offshore Borrow Areas. Borrow areas off the south shore of Long Island were identified as potential sources of material for breach closure efforts. The National Marine Fisheries Service (NMFS) in 1980 conducted a survey within three miles offshore for the Moriches to Shinnecock Reach of the FIMP Project. The survey indicated the presence of anglerfish (Lophius americanus), bluefish, butterfish (Peprilus triacanthus), Atlantic cod (Gadus morhua), winter flounder, summer flounder [fluke], yellowtail flounder (Limanada ferruginea), Atlantic mackerel (Scomber scombrus), scup, striped bass, American lobster, ocean quahog, and surf clam. The species observed are typical of species found off the south shore of Long Island. NMFS also stated that the offshore borrow areas that were to be utilized for the Moriches to Shinnecock Reach are of low benthic use, hence no significant long-term impacts are anticipated from the temporary loss of such a site due to dredging activities. An updated benthic survey of the borrow area was undertaken in the spring of 1994 for the Moriches to Shinnecock Reach Interim Project and final results are expected to be available in Spring, 1995.

5.62 Potential Stockpiled Material. To increase the time and cost effectiveness of emergency breach closures, stockpiled suitable material would be located strategically along the study area. These stockpiles would be placed in non-suitable shorebird habitat areas and marked as "Stockpiled Areas". Identified areas shall be coordinated with USFWS and NYSDEC to insure that they remain as stockpile areas and not as viable shore species habitat.

5.63 Potential Upland Source Areas. For locations easily accessible by truck, approved upland sources are to be considered to provide immediate breach closure response.

6.00 Cultural Resources

6.01 Terrestrial Cultural Resources. Archaeological surveys and inventories, including documentary research and field investigations, have indicated the potential for historic and prehistoric archaeological sites to exist within the onshore portion of the project area. These sites include former United States Lifesaving Service (USLSS) structures, former inlet locations, as well as prehistoric occupation sites. In addition a number of properties listed on the National Register of Historic Places (NRHP) are also present within its bounds. These properties include:

1. The Fire Island Light Station, located within the eastern boundary of Robert Moses State Park,

consists of the lighthouse, the keeper's quarters, the United States Coast Guard (USCG) Annex building and five ancillary structures related to radio communication technology and the archaeological remains of the first Fire Island Lighthouse dating to 1825.

2. The Beach Road Historic District located on Beach Road between Shinnecock Road and Halsey Neck Lane in Southampton on the eastern end of the project area.
3. The Dr. Wesley Bowers House also located on Beach Road in Southampton.

6.02 A number of other sites may be potentially eligible for the NRHP. These include ruins and landscape features related to the USCG, USLSS and the United States Navy located on Fire Island.

6.03 Submerged Cultural Resources. Submerged cultural resources consist of two types of sites: submerged prehistoric sites and shipwrecks. Recent studies (Pickman 1993, 1994) indicate that landsurfaces exposed during the Pleistocene and the post-Pleistocene exist beneath the barrier islands and continue offshore. These landsurfaces may have been utilized by prehistoric peoples prior to the inundation of these areas as glaciers melted.

6.04 A number of wrecks have been identified along the south shore of Long Island in both the near shore and offshore areas (Reiss 1993a, Reiss 1993b, Moeller 1978, Berg 1992). The Fire Island National Seashore has initiated a tracking/survey project to identify the materials and areas of wrecks. At present, the majority of the physical evidence identified by the study are mainly fragments of ships, ranging from small diagnostic pieces to large (over 40 feet) composite materials with diagnostic features.

7.00 ENVIRONMENTAL IMPACTS

7.01 No-Action. Under this alternative, no Federal measures would be taken to provide for stabilizing the barrier island system in the event of a catastrophic storm event. Therefore, when a breach occurs, wave attack protection for the barrier island and the mainland will be diminished. The back bay area would be vulnerable to additional impacts.

7.02 Taking no action would have a significant adverse effect upon the project area. There would be a continued, ongoing threat to existing residential structures as well as to estuarine resources. In the event of a breach occurring in the areas of private development (covering bay to ocean sections) there is a very high possibility that there will be sufficient hydrologic force on both sides of the island to

prevent natural breach closure.

7.03 If a high energy storm passes over the project area, as in the past, physical and biological alterations to the natural resources can be expected. Long-term and short-term impacts may occur, depending on the location and area resources. Initial analysis of storm affects may detect vast physical changes (i.e. washovers, breaches, fallen trees), while the truly significant long-term biological affects may not be detected for several years (i.e. plant introduction, removal of predators, creation of wetlands).

Physical Impacts

7.04 In the natural areas of the barrier island, dramatic visual changes in geography and plant life may result. This is particularly true in breach or washover sections where the two inland natural resource communities discussed in Section 6 may no longer exist (i.e. dune swale and maritime forest communities).

7.05 Physical changes to the natural resources in the developed areas would be dependent on the order of magnitude of the breach occurrence. The physical impacts of a long term breach opening on the associated impacted bay would be: 1) an increase in bay tide levels, 2) an increase in bay storm-tide levels, 3) an increase in bay salinities, 4) changes in bay circulation patterns and residence times, 5) an increase in shoaling of shellfish areas and navigation channels, 6) creation of a substantial flood tidal deltas and sand spits.

7.06 The potential threats to public, commercial, and residential properties on the barrier island system, as well as the south shore of Long Island, resulting from inlet development from a breach, and its subsequent migration, would continue to occur and possibly increase if no action is taken.

7.07 Developments. In the more developed community areas, structures have been built close together. During the historical development of the barrier island system, many natural physical factors of the barrier island had been altered (i.e. primary dunes, secondary dunes, low wetland areas). Physical impacts resulting from breaching or severe overtopping in a developed area would create a relatively low flat beach on both sides of the breached or washover area. Tidal water could inundate the developed community areas.

7.08 Reconstruction of structures destroyed by a breach on the barrier island system would not be possible until, and unless, the upland portion of the properties become restored by natural processes over time, which might never happen. Structures will not be able to be restored on the beachface or within the breached area itself, due to the low-lying, overwash nature of the property and the potential of inlet formation.

7.09 Because of the potential lack of governmental action to

restore the land, insured properties would be acquired by local or federal agencies per Federal Emergency Management Act standards, by way of federal flood insurance funding. Properties may be acquired by local or federal jurisdictions at the taxpayers' expense from willing sellers, or through acquisition by condemnation procedures if they are not covered by flood insurance. FINS would accept donations as public open space in perpetuity, of beach properties with National Seashore property destroyed by storms and breaches.

7.10 Revenues resulting from property taxes would be lost to government agencies, as storm-damaged properties are removed from tax rolls. For Federal, state, county and town parks, revenues generated from park visitors to the parks themselves and associated commercial establishments would also diminish as properties are abandoned to breach and inlet formation.

7.11 Abandonment of public recreational facilities affected by a breach would result in lost recreational opportunities for visitors and the Long Islanders who rely on these beaches for much of their recreational experiences. Additionally, state, town and county revenues, through marina and parking fees, would be lost.

7.12 Utilities. Abandonment of electrical and telephone services, water lines and sewage treatment (if affected) would be required across a breach condition. This would either result in the down-line customers left without services, or necessitate the expensive relocation of the utilities to service them.

7.13 Emergency Access. Vehicular access across a breach would most likely be impossible, depending on the depth of water to be crossed. This would result in a situation whereby access on and off Fire Island would be from either the Smith Point bridge or the Robert Moses Causeway and for the area between Shinnecock and Moriches Inlets, the three bridges within the Town of Southampton and Westhampton Beach. If more than one breach occurs, either during single storm event, or additional subsequent storms, a separate island would be created, whereby the only access would be by waterborne conveyance.

7.14 Back-bays. There would be increased maintenance requirements for the bay marinas, docking facilities, mooring buoys, and the associated dredged channels. This would be necessary, in order to provide access to Fire Island communities and for the basic operation of the facilities.

7.15 The developments on the bay islands within the boundary of FINS (because of a breach and an increase in tidal range) would be abandoned. Repairs to damaged structures would be precluded by the increased tidal ranges, and possible direct attack by wave action and tidal surges.

7.16 The communities fronting the mainland would also experience impacts associated with the breach occurence. Flooding during

tidal surges may impact utilities and emergency services situated adjacent to the bay.

7.17 Study of the December 1992 Breach at Westhampton has left many questions as to the potential impacts that might have occurred to the ecology of Moriches Bay, had the breach not been repaired. Partial explanations can be found from data collected during similar events of the recent past (Moriches Bay Breach, 1980). Under pre-breach conditions, the shallow estuarine waters of Moriches Bay warm up rapidly (as compared to the ocean). This warming action provides optimal temperature and salinity conditions (24-26 parts per thousand [ppt]) for the growth of hard clams. Observations following the 1980 Moriches Breach showed that before the breach was closed (within one year), parts of the eastern bay (far from the breach opening) retained a salinity of 26 ppt, and clams in this region displayed growth rates approximately three times greater than those in the western part of the bay (under direct influence of the breach) where salinity had risen to 30 ppt. After the breach was closed, the salinity of the western portion of the bay returned to 25 ppt (pers. comm. Cerrato, 1993). Salinity and tides were measured in Moriches Bay following the formation of the 1992 Westhampton Breach (Conley, 1994). Measurements were continued through the closure of the breach in September 1993 and finished in January 1994. At the peak of the breach's development, an additional 30% of the ocean tidal range was afforded access into the bay. This increase in bay tidal range resulted in an increase of salinity within the bay (Conley, 1994). Biological communities are structured in relation to the influence of salinity (Woodhead and McEnroe, 1991). Many other studies have also shown that higher salinities in concert with lower temperatures, have had negative impacts on hard clam growth and productivity. The increased influx of cooler, higher salinity water would affect the nature of the estuarine phytoplankton community and would thus have altered a vital food source for many of the estuarine filter-feeding organisms including shellfish. Any salinity change would disrupt what is now ideal estuarine habitat for fish and shellfish found in the bay. Ocean water intrusion could therefore significantly impact present commercial and sport fish distribution.

7.18 The presence of the new inlet along with the increase of salinity, would allow salinity-limited predators (starfish, lobster, crabs) to freely migrate into the bay and take up residence where salinity increases were sufficient. The increase in predator-related mortality to shellfish (especially the younger stages) would be devastating (pers. comm. Lawton, 1993). Studies conducted during the 1980 Moriches Breach, showed that benthic fauna in the vicinity of the breach revealed distinct oceanic assemblages, including predators not found in other parts of the bay.

7.19 There are no rivers or large freshwater areas on the barrier

island. Except for the wash-out of septic systems into the nearshore, marine water quality in the short-term, would be improved under the no action alternative due to the removal of nearby pollution sources.

7.20 Potential wildfire hazards are lessened in the no action alternative. The vegetation needed to sustain a fire is removed in a breach or washover. Because of the lack of vegetation, the threat of a spreading wildfire along the barrier island decreases.

Biological Impacts

7.21 Studies have shown a great increase in the diversity and number of species on a barrier island following a high energy meteorologic event. A breach or washover may become highly suitable habitat for colonizing shorebird species and early successional barrier island plant species. This is due to the newly formed large and generally low flat beach areas that would remain after the breach or washover. Physically the area around a breach or washover is very dynamic. Examples of the common barrier island vegetation species would be beachgrass, beach pea, and hudsonia.

7.22 It must also be noted that washover and breach areas are highly suitable piping plover habitat. If a breached area is formed the winter prior to the approximate shorebird breeding season (April 1 - July 1), the plovers in addition to other shorebirds will immediately begin using the newly altered area for foraging. In the existing the barrier island system, the primary foraging areas are the beach wracklines and areas of sparse vegetation located in the foredune area. Washover/breach areas are also prime habitat due to the availability bay associated foraging habitat. During the routine dynamic changes in washover or breach areas the vegetation is sparse. This is a positive impact in that it allows shorebirds to use these areas for nesting. The sparse beach grass and other colonizing vegetation in this area also assists these shorebirds with camouflage from predators. Another positive impact is the insects associated with the sparse vegetation (i.e. common ants and flies). They also become a food source for the foraging shorebirds.

7.23 Seabeach amaranth is a barrier island vegetation species that colonizes open space found along much of the barrier island system, especially in washover or breach areas which diminishes upland vegetative habitat. If the breached conditions are allowed to continue, one can assume that seabeach amaranth population would increase in the newly breached areas.

7.24 No action would also have an impact on prehistoric landsurfaces located under the beach. Continued erosion would expose prehistoric landsurfaces that may contain the remains of the early inhabitants of the area. Peat layers, that might lie above or contain prehistoric remains, were

exposed in areas adjacent to the breaches on the Westhampton Barrier Segment that had opened during the December 1992 storm. No material was collected from the peat layer exposed during the 1992 storm. Because of time constraints, no testing was conducted at that time. Although unlikely, materials may be identified or recovered from washed out areas. If this occurs on FINS property, the NPS would be required to protect or stabilize individual sites while the sites are assessed for archaeological significance.

7.25 No action could result in adverse effect to both known and unknown cultural resources. A breach in the barrier islands and lack of stabilization would permit wave, wind and other actions to cause irreversible damage and loss to sites in breach areas. Unknown archaeological resources, including sites located beneath the barrier islands or shipwrecks buried in the near shore area could be uncovered, damaged or destroyed as a result of a breach. The Fire Island National Seashore would be required to protect or stabilize individual sites within the boundaries of the park in accordance with Section 110 of the National Historic Preservation Act of 1966 (NHPA), as amended, until they could be fully investigated.

7.26 Submerged cultural resources located offshore, such as those in the locations of the borrow areas, would not be adversely affected by a no action plan. These sites would be located outside of wave action areas.

7.27 Breach Contingency Plan Closure. The preferred alternative for breach openings occurring west of Watch Hill and east of Smith Point on Fire Island is to initiate closure planning within 72 hours of cessation of the storm event, in which the State of New York formally requests action. Construction of the design identified in **Section 2.00** would begin as soon as possible. For the Federal Wilderness Area, monitoring of indications of natural breach closure would be conducted. If there is no indication that the breach will close naturally within the Wilderness Area, or if an increase in tidal ranges in the Great South Bay pose significant threats of flooding to developments on the south shore of Long island and along the barrier island, the breach would be artificially closed. The intent of this alternative is to stabilize the barrier island, stopping inlet migration (should one be formed) when a breach is filled.

Physical Impacts

7.28 Developments. The continued, ongoing threat to public, commercial, and residential development on the barrier island system and the south shore of Long Island, resulting from inlet development and migration, would be mitigated by breach closure. A maintained intact barrier island will provide more protection from storm damage, flooding, and oceanic force than allowing the barrier island to be sustained in a breached condition.

7.29 Emergency breach closure will not prevent natural cross island topographical changes from occurring. Sand will still migrate from the ocean side of the barrier island to the bayside by the way of wind/wave action.

7.30 It will be possible to rebuild structures destroyed by a breach under certain conditions, specifically where the elevation of the property exceeds the typical washover elevations, resulting in relatively sound upland conditions, and as permitted by local and federal regulations. Restored upland, defined by local and federal zoning standards, would enable the proper installation and sustained maintenance of sewage disposal and utilities.

7.31 In addition to the reconstruction of private residences, public recreational facilities affected by a breach would be restored allowing visitors to continue using the facilities. State, town and county revenues, generated by marina and parking fees, and private businesses would continue.

7.32 Utilities. Damaged utilities, including electrical and telephone service, could be restored across a repaired breach, thereby providing the necessary service to the severed communities and developments.

7.33 Emergency Access. Because access points available to the barrier island residences are limited, restoration of the access points is a vital benefit resulting from immediate breach closure. This would be a benefit to park personnel, local and county police, emergency access, as well as year-round residents with seasonal driving permits. Seasonal vehicular access for fisherman would also be maintained.

7.34 Back-bay Areas. Damage to marinas and other docking facilities, mooring buoys, and the associated channels for boating would be restored. The residential developments including essential services on the back bay and the bay island residents within the boundary of FINS, would still have the protection afforded by the breach closure.

7.35 Coastal Barrier Resources Units. Although the Coastal Barrier Resources Act prohibits the expenditure of Federal funds on identified units, the following exceptions allow a breach occurring within a unit to be filled:

- assistance for emergency actions essential to saving lives or protection of property within the coastal barrier units. Such actions shall be limited to the extent necessary to alleviate the emergency and not be used as a justification for any projects that exceed the scope and needs of the true and immediate emergency.
- non-structural projects, such as the planting of dune grass or beach nourishment which mimic, enhance, or restore natural stabilization

systems, would be performed for shoreline stabilization.
- funds for the maintenance, replacement, reconstruction, or repair, but not the expansion, of publicly owned or publicly operated roads, structures, or facilities.

Biological Impacts

7.36 Beach Nourishment. Impacts associated with the placement of sand on the beach are based on the abundance and kind of organisms present, the quantity and quality of material placed, the placement method used, and the time of year of placement. Sessile organisms would experience the immediate impacts through direct deposition, lowered oxygen and light penetration, and/or disturbance during critical life cycle periods. Mobile species, bottom dwellers and free swimmers, can usually escape.

7.37 Beach nourishment will also prevent the barrier island from breaching, thereby protecting the back-bay communities from inundation and other storm-related damage. The fragile estuarine environment will also be protected from salinity changes, preventing the intrusion of oceanic predators.

7.38 Borrow Areas. The sand to be placed on the shore will be obtained from a borrow areas located offshore of the barrier island system (See Figure 2). The maximum depth to which the borrow area will be dredged is 20 feet below existing bottom.

7.39 The dredging of the borrow area could generate three categories of adverse impacts:

1) the direct loss of benthic infauna within the dredged area. Mobile epibenthic forms such as fish and crustaceans would be expected to leave the area and should not be significantly impacted. Benthic recolonization would depend on the depth of the dredged area, sedimentation rate, and bottom substrate type. The depth of the borrow area will be limited where possible in order to minimize the potential for altering the bottom conditions within the pits.

2) an increase in turbidity levels. Due to the sandy substrate and location of the site, any plume will be restricted in size and duration and it is not anticipated that there would be any release of pollutants or significant lowering of dissolved oxygen levels resulting from the project. Surface sediments of the borrow area do possess a small percentage of silt which would be released into the water column. The dynamic wave and current conditions of the project area would rapidly dissipate the suspended solids.

3) the dredging of the any borrow site has the potential to impact cultural resources. However, the dredging of previously utilized borrow areas for which records of remote sensing anomalies representing potential cultural resources,

would decrease the chance of any potential impacts. If the use of a previously used borrow area for which a remote sensing study has been conducted is not feasible, then the New York State Historic Preservation Office (SHPO) will be consulted, and a plan to minimize the effect of dredging on unknown cultural resources will be developed.

7.40 No significant impacts to benthos located in the borrow area are anticipated due to their ability to recolonize in approximately 12-18 months.

7.41 The use of short-term heavy equipment required to both facilitate breach closure and make use of stockpiled sand may impact the beach habitat, i.e. disturbance (breaking up) of the sand. This may have short-term affect on upland beach vegetation, but should not exceed impacts associated with long-term offroad recreational vehicle use.

7.42 Proposed Sand Stockpiling Activities. The use of approved trucked upland source material will have different impacts than the dredging option. The impacts associated with the movement of upland sourced material would consist of:

1. Increased short-term noise and air emissions from the delivery trucks.

2. Increased short-term traffic and decreased aesthetics on the local residential route system.

3. Increased energy requirements for the truck use.

7.43 The design features, siting and logistics regarding any proposed sand stockpiling on Fire Island have not been finalized. As a result, only generic physical and biological impacts to sand stockpiling are discussed below. In the event a stockpile is created using Federal funds, a separate NEPA document containing a more detailed discussion of these and other associated issues will be prepared. Effects associated with stockpiles created by State or local municipalities would be addressed by way of the State and local environmental statutes.

7.44 Dewatering. In order to minimize the introduction of salt water into nearby freshwater systems or the movement of silty sediments into nearby habitats, dredged material will require dewatering before placement on upland sites. Dewatering of dredged material on land may potentially introduce saline water into the shallow freshwater lens on Fire Island. Increases in groundwater salinity from dewatering may cause adverse impacts to maritime forest and plant communities, as well as fauna of the barrier island habitats. This aspect of sand stockpiling will need to be studied further before a decision is finalized.

7.45 A potential mitigation measure may entail establishing dewatering sites (i.e. at existing dredge spoil islands). Best management practices such as the use of hay bales or sediment screens around the stockpile site will be examined as means to limit the migration of a small amount of fines from the stockpile. As stated above, specific analyses of sand stockpiling will be performed in a separate NEPA document which will include the necessary measures to mitigate the identified potential impacts.

7.46 Potential impacts to wetlands and other vegetated habitats included impacts resulting from burial by way of direct placement of material, trucking activities and migration of stockpiled sand from either aeolian or bedload transport.

7.47 To avoid impacts related to burial, the District will locate sand stockpiles in areas which do not coincide with freshwater and tidal wetlands or other vegetated areas of ecological importance. The location of wetlands will be based on field surveys and consultation with other Federal and state environmental agencies, as well as in-house information.

7.48 Existing vehicle routes on the barrier island will be used whenever possible, to reduce impacts to barrier island vegetation. Impacts of vehicular traffic may cause disaggregation of drift lines, as well as destruction of annual and perennial plant seedlings (Leatherman, 1988). By limiting vehicular traffic to the previously established access routes, impacts to saltmarsh, freshwater wetland, or other habitats may be avoided or substantially minimized.

7.49 Sand compaction associated with trucking activities may also affect the upland beach environment. However, negative effects are probably minimal since no discernable impacts were observed in several western Fire Island communities in 1992, which experienced a high level of vehicular traffic during beach nourishment activities.

7.50 Potential impacts to marsh areas resulting from the migration of coarser grained sand stockpile sediments by way of bedload transport will be evaluated in a subsequent NEPA document, as will the transport of fine grained sediments. Installation of sediment screens may prevent movement of larger grained material and migration of the stockpile, but will need to be examined further. Finer material which is transported by way of aeolian processes into adjacent wetlands may not pose a significant impact due to wetlands depend on finer material for maintenance of substrate.

7.51 The District will study various design options in order to reach a visually and aesthetically acceptable stockpile scheme within design limitations.

7.52 Threatened and Endangered Species. There is a potential for endangered Kemp's ridley, leatherback, and green sea turtles, as well as threatened loggerhead turtles to be present near the vicinity of the project area (borrow area locations) during the summer and early fall months (NMFS, 1993). Coordination with NMFS has resulted in agreement that if hopper dredges are utilized between mid-June to mid-November, a monitoring plan that places NMFS-approved observers onboard to determine if impacts occur will be implemented. The District will place special conditions into the Plans and Specifications forming the construction contract for the project to comply with NMFS' determination. These special conditions are set forth in Appendix A, attached.

7.53 The piping plover, Federal-listed as threatened and the State-endangered least tern utilize the barrier island. The Federal-listed threatened plant species, seabeach amaranth also has the capability to utilize the project area. The District will coordinate with Federal, state and local environmental agencies to position stockpiles in areas which are not utilized by the least tern, piping plover and seabeach amaranth. The possibility exists that a sand stockpiled may be used as nesting habitat by these shorebirds. Stockpiles which consist of sand and cobble material, exhibit a low design profile, and are near bayside tidal flats, may attract nesting piping plovers. Stockpiles with a fairly flat top may be utilized by least terns as nesting habitat. In the event that a stockpile is used as a nesting area, and then utilized for breach closure activities, there may be a loss of potential habitat.

7.54 In order to address the above possibility, the District based on consultation with the Federal, state and local environmental agencies, will examine different stockpiling siting and design options in a separate NEPA document.

7.55 Construction scheduling may necessitate fill placement during the shorebirds' nesting season (April-August). During informal consultation under Section 7 of the Endangered Species Act of 1973, as amended, USFWS concluded that the proposed Breach Contingency Plan is likely to adversely affect the piping plover and seabeach amaranth. In addition to the potential direct impacts of the associated with breach closure activities, USFWS is concerned with the potential indirect impacts resulting from the project area being potentially re-developed and re-occupied once closure is completed. The District prepared a Biological Assessment for the piping plover and seabeach amaranth in March, 1995 and initiated Formal Consultation in April, 1995. In the BA, the District proposed to provide protective measures and implement a coordinated survey/monitoring protocol (USFWS, 1995) to ensure the safety of the piping plover and seabeach

amaranth. The Biological Opinion dated July, 1995 accepted the protective measures we proposed. In addition to them, the District must consult with the USFWS for the siting and establishment of any proposed sand stockpiles. Please refer to Appendix G -(Biological Opinion) of this EA and Appendix I (Environmental Commitments) for the detailed description and required District involvement relating to the protective measures.

7.56 Cultural Resources. Stabilization of a breach should have no adverse effect on known or unknown cultural resources located on the shore. Stabilization may serve to protect sites from destruction or irreversible damage. Any sites located at the breach would have been destroyed when it was created. Exposed sites or wrecks located adjacent to a breach might be adversely affected by sand placement if fill is placed to close a breach is also placed along the shore adjacent to the breach location. These sites would require investigation prior to sand placement.

7.57 If peat layers, that may contain prehistoric remains, are exposed, there should be opportunity given (as is feasible under project conditions and as long as there is no time delay added to breach closure) to conduct, at a minimum, pedestrian surveys. Any area with potential remains should be surveyed and documented.

7.58 Considering the almost total absence of any archaeological materials from pre- and post-contact on Fire Island, at a minimum, the breach area should be surveyed by qualified archaeologist prior to any filling as long as there is no time delay added to the breach closure.

7.59 Placement fill trucked in from NEPA-approved upland sand sources or hydraulically dredged from the Federally authorized Intracoastal Waterway, or the Federally authorized channels of Fire Island, Shinnecock, and Moriches, or existing channels maintained by Suffolk County or local municipalities would not have an adverse effect on cultural resources. Fill obtained from NEPA approved sources would also have had their Section 106, NHPA compliance completed. The existing channels have been dredged in the past, destroying any potential cultural remains located within them. However, the use of heavy equipment has the potential to impact exposed sited adjacent to the breach areas.

7.60 The U.S. Army Corps of Engineers' Atlantic Ocean Borrow Areas identified for this Management Plan have not been surveyed for the remains of shipwrecks or for the potential for submerged prehistoric landsurfaces. Use of an offshore borrow area has the potential to impact cultural resources located within these borrow sites.

7.61 Historic Preservation Guidelines. The Advisory Council

Guidelines for the Protection of Historic Properties, 36 CFR Part 800.12 provides guidance for emergency undertakings. This section pertains to emergency undertakings that will be implemented in 30 days after the disaster or emergency takes place. If an action plan will not be implemented within 30 days, then any plan developed to close the breach will be reviewed in accordance with 36 CFR Part 800.4 through 800.6, which govern the Section 106, NHPA process.

Emergency Undertakings

1. 36 Part 800.12(a)/36 CFR Part 78. According to section 8 00.12(a), a Federal agency head may elect to waive historic preservation responsibilities in accordance with 36 CFR Part 78, "Waiver of Federal Agency Responsibilities Under Section 110 of the National Historic Preservation Act" (Appendix B). Section 110 of the NHPA provides regulations concerning historic properties under the ownership or on property owned by any Federal Agency. Under 36 CFR Part 78, a Federal Agency may waive all requirements of Section 110 of the NHPA, in whole or in part, in the event of a major natural disaster or an imminent threat to the national security. Waiver of Section 110 responsibilities, however, does not affect an agency's Section 106 responsibilities for taking into account the effects of emergency activities on properties included in or eligible for the NRHP and for affording the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on such activities.

Federal Agencies making use of the waiver authority shall follow the notice requirements specified in 36 CFR Part 78.4 and copies of the notice shall be sent to the ACHP and the New York State Historic Preservation Office (NYSHPO) and will be reviewed by the Secretary of the Interior for a determination of consistency in accordance with 36 CFR Part 78.5.

For this management plan, this waiver could only be utilized for events that occur within the bounds of the Fire Island National Seashore, which is Federal property managed by the National Park Service, for breach closure plans implemented in this area within 30 days of the emergency. No other Federally owned property exists within the breach management plan project area.

2. 36 CFR Part 800.12(b) and (c). According to this portion of the regulation, when an Agency Official proposes an emergency undertaking as a necessary response to a disaster declared by the President or State Governor and Section 800.12(a) does not apply, then the Agency Official may satisfy Section 106 by notifying the ACHP and the NYSHPO of the emergency undertaking and affording them an opportunity to comment within seven days. In addition, section 800.12(b) also applies to imminent

threat to public health or safety as a result of natural disaster or emergency declared by a local government's chief executive officer or legislative body, provided that if the ACHP or the NYSHPO object, the Agency Official shall then comply with Sections 800.4 through 800.6, which oversee Section 106 compliance .

This section would be utilized for most of the breach closures implemented within 30 days of an emergency.

7.62 Breach Closure Activities under Corps Emergency Guidance. Without breach closure as per the Breach Contingency Plan, the typical response to a barrier island breach would be similar to the 1993 Westhampton Emergency Breach Closure, which took about 11 months to fill as opposed to 2.5 months. This increased duration could permit the breach to enlarge in time, thereby allowing potentially more damage to occur within the developed areas (including emergency services) as well to the estuarine resources. 7.61. The sand spits and tidal deltas that will be potentially created may provide highly suitable feeding and nesting shorebird habitat. A breach closure 11-12 months later may impact the shorebirds that begin to utilize the newly formed habitat.

7.63 Cultural Resources.

Non-Emergency (more than 30 days) Actions

For actions that will not be implemented within 30 days of an emergency and therefore, do not qualify for waivers of the Section 106 process, the following processes should be followed for complying with Section 106.

1. If a breach is filled using sand derived from a NEPA approved sand source or stockpile or from previously dredged inlets and no sites were uncovered by t he process that created the breach on areas adjacent to the breach, then this project should h ave no effect on cultural resources. The NYSHPO should be notified of the proposed action and the determination of No Effect.

2. If a breach is filled using sand derived from the NEPA sand source or stockpile or previously dredged inlets, but cultural resources are uncovered on the beach adjacent to a breach by the processes that created it, they may be impacted by sand placement used to close the breach. The site should be investigated by the appropriate personnel prior to construction. This investigation will determine if the site is potentially eligible for the NRHP, if sand placement will have an adverse impact on it, and if additional studies may be

required. The results of this investigation will be coordinated with NYSHPO. If, upon further investigation, the site is either not eligible for the NRHP or will not be adversely impacted by sand placement the NYSHPO will be notified of the action, the existence of the cultural resource, the status of its NRHP eligibility and the determination of no effect or no adverse effect. If the site is eligible for the NRHP and will be impacted by sand placement, then the alternative of avoidance of the site by the action to fill the breach will be explored. If the site can be avoided, then a determination of no adverse effect can be applied to the site. If avoidance is unfeasible, then the NYSHPO and the ACHP shall be advised and a plan for the documentation of the eligible properties will be developed and undertaken prior to construction of the action plan in that portion of the project area.

3. If the only feasible sand source for filling the breach is the use of the identified offshore borrow areas, then the project may have an adverse effect on cultural resources located within the borrow area. Prior to construction, the borrow areas would require a remote sensing survey, including side scan sonar, magnetometer and sub-bottom profiling, to determine if any potential NRHP eligible remains of shipwrecks are present within the borrow area. Avoidance of all targets identified by this survey would be required during dredging. All work would be coordinated with the NYSHPO. If avoidance of targets is not feasible, then the targets would require additional investigations in the form of underwater archaeological surveys to determine which targets are the remains of wrecks and their NRHP eligibility. A plan for all NRHP wrecks documentation would be developed and implemented in coordination with the NYSHPO and the ACHP.

8.00 COORDINATION

8.01 The proposed breach contingency plan has been coordinated with the following agencies:

National Park Service
U.S. Fish and Wildlife Service
U.S. Environmental Protection Agency
National Marine Fisheries Service
New York Department of Environmental Conservation
New York Department of State
  Coastal Zone Management Program
New York State Office of Parks, Recreation and
  Historic Preservation (SHPO)
Suffolk County Executive
Town of Southampton
Town of Brookhaven

Town of Islip
Village of Southampton
Village of Westhampton Beach
Village of Westhampton Dunes
Village of Quogue
Village of Bellport
Village of Patchogue
Village of Brightwaters
Village of Ocean Beach
Village of Saltaire
Other Municipalities

8.02 A Fish and Wildlife Coordination Act Report has been prepared by the USFWS-Long Island Field Office and is attached as Appendix C.

8.03 The Water Quality Certificate (WQC) application process is ongoing. A Section 404 (b)(1) evaluation is attached as Appendix D.

8.04 The proposed project's Consistency Determination for the applicable the New York State Coastal Zone Management (CZM) Policies is attached as Appendix E.

8.05 Coordination with the New York SHPO, in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, is ongoing.

8.06 Table 1 indicates the relationships of the proposed plan to various Federal environmental protection and requirements statutes and Executive Orders, as well as state and local requirements. This project sets forth a plan for an emergency action to be taken. The project reconstructs the impacted portion of the barrier island system, returning it to conditions which existed prior to the occurrence of a breach. For these reasons, it is concluded that implementation of this plan for emergency breach closure is not a major federal action significantly affecting the quality of the human environment, and that a fully coordinated Environmental Impact Statement (EIS) will not be necessary in order for this action to proceed in accordance with the National Environmental Policy Act.

9.00 CONCLUSION

9.01 The goal of the Breach Contingency Plan is to establish guidelines for responding to barrier island breaches that occur within the barrier island system extending from Fire Island Inlet to Southampton. Decisions following the occurrence of a barrier breach must be constituted efficiently. There is a need for a rapid response and the coordination necessary in order to commence closure activities. These include, but not limited to, the New York

State request for emergency assistance, field survey by the Breach Contingency Plan Team, preparation of the Plans and Specifications, and the contract award.

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APPENDIX A