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Recommendations for a Barrier Island Breach Management Plan for Fire Island National Seashore, including the Otis Pike High Dune Wilderness Area, Long Island, New York

Technical Report NPS/NER/NRTR—2007/075



ON THE COVER

Breach Event at Water Island, Fire Island National Seashore, 1993
Photo by James R. Allen

Recommendations for a Barrier Island Breach Management Plan for Fire Island National Seashore, including the Otis Pike High Dune Wilderness Area, Long Island, New York

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Executive Summary

The U.S Army Corps of Engineers, New York District is developing engineering plans, including economic costs and benefits, for storm damage reduction along an 83 mile stretch of the coastal barrier islands and beaches on the south shore of Long Island, NY from Fire Island Inlet east to the Montauk Point headland. The plan, expected to include various alternatives for storm protection and erosion mitigation, is referred to as the Fire Island to Montauk Point Reformulation Plan (FIMP). These plans are expected to follow the Corps of Engineers' Environmental Operating Principles striving for long term environmental sustainability and balance between environmental protection and protection of human health and property.

Fire Island National Seashore (FIIS), a 19,579 acre unit of the National Park System includes a 32 mile long coastal barrier island located within the FIMP project area. A seven-mile section of the park, Otis Pike Fire Island High Dune Wilderness Area, is also a designated Federal Wilderness Area. The FIIS includes not only the barrier island and sand dunes, but also several islands, sand flats and wetlands landward of the barrier, submerged parts of Great South Bay shoreface, extending approximately 4,000 feet into the bay with the inner shelf region extending approximately 1,000 feet seaward of the Fire Island shoreline.

The Fire Island barrier islands, a sand-starved system dominated by highly dynamic processes, are struggling to maintain their integrity in the face of sea-level rise and storms. Adding to the dilemma is that development on the barriers and the mainland has increased greatly during the past 50 years. As such, managers and decision makers in federal agencies, state agencies and local governments are challenged to balance tradeoffs between protection of lives and property, public access and long term conservation of natural habitats and processes and the plants and animals that depend on these habitats.

National Park Service (NPS) policy stipulates that natural coastal processes be maintained to the greatest extent possible and not be impeded so as to conserve and preserve landforms, habitats and natural ecosystem resources that rely on the landforms and processes for long-term sustainability of the national park. Storms and associated processes such as waves, tides, currents and relative sea-level change are critical elements for the formation and evolution of these barrier islands, sand dunes, back-barrier sand flats and lagoons and vegetated wetlands. Processes such as wave run-up, overwash and barrier beaching, which occur during elevated storm surge are all necessary processes in enabling the efficient transfer of sediments, nutrients and marine water from the Atlantic Ocean across the barriers and into Great South Bay. A large body of scientific data and information published over the past 50 years shows that such transfers of sediment and water from the ocean to the bays are essential for the long-term maintenance of the barrier island and back-bay systems and their biologically diverse habitats and ecosystems. Current relative sea-level rise (~12 in/century) is chronic and pervasive in driving Long Island coastal change and with the likelihood of accelerating sea level rise in the near future, coastal hazards such as erosion, inundation, and storm surge flooding will increase, with corresponding increased risk to life and property on both Fire Island and on the mainland.

In addition, the cumulative effects over the past century and more, both direct and indirect, of human impacts on the Long Island coast have altered the barrier beach and dunes and sediment transport

processes. These impacts have likely increased the potential for breaching and increased risk to life and property on the coast and the mainland. Examples of direct impacts are: the stone jetties at Moriches, Shinnecock, and Fire Island tidal inlets and groin field structures at Westhampton that alter littoral processes, armoring and erosion-control stabilization of headlands such as the Montauk Point headlands, and deepening of navigation channels by dredging through the tidal inlets and in the bays. Indirect impacts that have a bearing on decisions to deal with breaching are: high-risk development of the barrier islands and low-lying areas of the mainland vulnerable to flooding, and the dredging of nearshore sand shoals for beach nourishment.

The NPS strives to employ a coastal management framework for decision making that is based on assessment of the physical and ecological properties of the shoreline as well as human welfare and property. In order to protect developed areas of Fire Island and the mainland from loss of life, flooding, and other economic and physical damage, the NPS will likely need to consider allowing artificial closure of some breaches within the FIIS under certain circumstances. The decision by the NPS to allow breaches to evolve naturally and possibly close or to allow artificially closing breaches is based on four criteria:

1. Volumes of sediment transported landward and exchange of water and nutrients;
2. Elevated water levels and flooding risk to mainland life and property;
3. Engineering processes of artificial closure; and
4. Economic costs and benefits of artificial closure.

This report for breach management presents protocols which specify when breach closures within the FIIS might be desirable and necessary, as well as provides recommendations for artificial breach closure engineering operations which are intended to minimize negative impacts to the natural wilderness values and cultural resources within the FIIS, particularly the Otis Pike Wilderness Area. The goal of the plan is to strike a balance between protecting natural resources and allowing natural processes to operate and avoiding loss of life and excessive property damage.

Introduction

Coastal barrier islands along the Atlantic coast, as well as other similar coastal regions formed through the interaction of complex processes associated with storms, waves, tidal currents, winds, fluctuations in sediment supply, and change in relative sea level over the past several thousand years (Leatherman and Allen 1985; Williams and Meisburger 1987; Williams et al. 1995). These highly dynamic processes, plus an increasing variety of human activities over the past century, continue to drive changes to barrier coasts.

Recent studies by Pendleton et al. (2004) show that much of the developed parts of the U.S. coast are vulnerable to future sea-level rise, including mid-Atlantic regions such as Long Island. In particular, the barriers have been subject to numerous tropical and extratropical storms, well recorded in both the geologic record derived from sediment cores as well as from historical maps and archive records. During major storms, elevated water level from surge and wave run-up often inundate the barrier and dunes with strong flows of both water and sediment. Channels can be eroded into the barrier and dunes, forming either “partial or ephemeral breaches” or “full or semi-permanent breaches,” allowing flow of water and sediment between the ocean and the back-bay areas at either partial stages of the tide or flow at all tidal stages. Large storms with high ocean water surface elevations and large waves over time can produce multiple breaches along a barrier island. Barrier-island storm overwash and breaching is a natural process necessary for transporting marine sediment landward.

Over time, the sediment transported landward of the barrier by storm overwash and breaching provides the foundation framework for barrier island migration during sea-level rise and marine transgression. These overwash sediments also provide the platform foundation on which back-barrier marshes develop and aggrade in order to keep up with sea-level rise. Storm overwash processes can also deposit sediment on the core of the barriers which builds up and elevates the islands and dunes, allowing the barriers to maintain their elevation, ideally keeping pace with rising sea level. Breaches generally are temporary features and close naturally by infilling of littoral sediments, but may persist and become semi-permanent tidal inlets.

Many of the islands and intertidal sand flats in Great South Bay are relict landforms resulting from earlier storm overwash and breach events. Studies have shown that breaches tend to recur in similar locations on the barrier that are somewhat predictable through geomorphic and geologic study and analysis (Leatherman and Allen 1985). For example, Leatherman and Joneja (1980), using historical maps and charts, identified 26 inlet sites between Fire Island Inlet and Shinnecock Inlet. Fire Island Inlet has migrated west several miles over the past several hundred years and is the only Fire Island Inlet that remained open over the past 300 years although it is been a dredged inlet for several decades.

As human developments along the Fire Island coast (see Figure 1) have expanded over the past 50 years, the impacts of major storms on infrastructure have been immense. The 1931, 1938 and 1944 Hurricanes, Hurricane Gloria (1985), the 1950 large Northeaster extratropical storms, and the 1962 Ash Wednesday

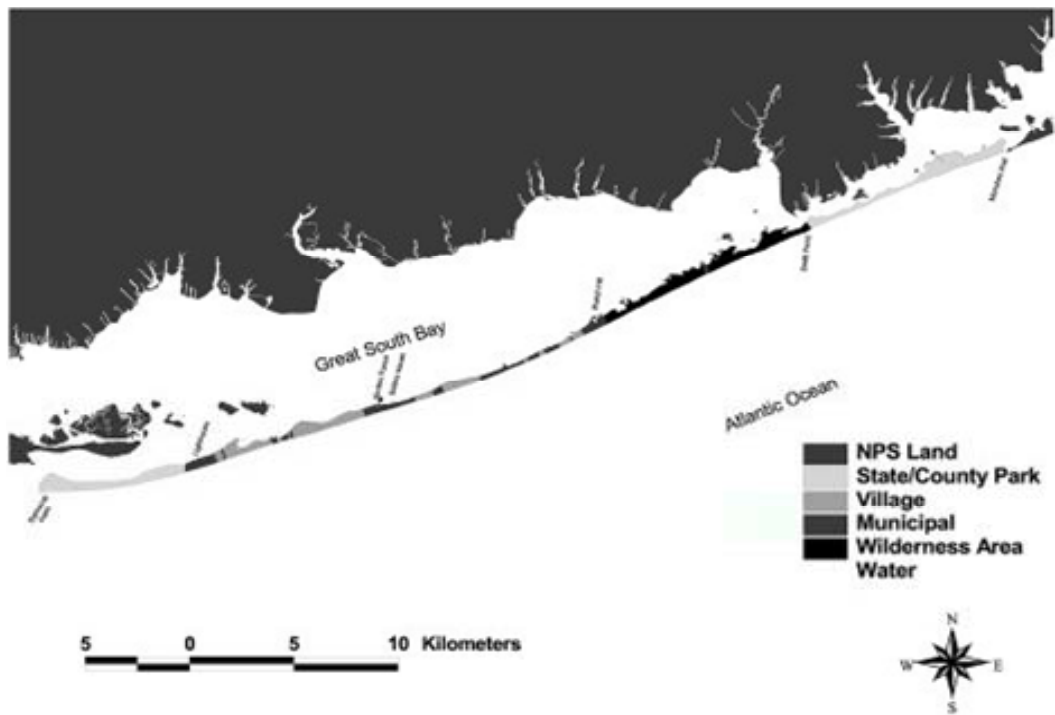


Figure 1. Location Map of Fire Island National Seashore, NY

extratropical storm were significant coastal events. The 1931 Hurricane opened Moriches Inlet, the 1938 Hurricane opened Shinnecock Inlet and 11 other smaller breaches, and the Ash Wednesday Storm (1962) caused 50 washovers and one breach. Both Moriches and Shinnecock Inlets are kept open with jetties and dredging to maintain navigation access. Both of these inlets have been very effective traps for littoral sediments with the growth and development of ebb and flood tidal shoals since their initial opening. These storms and several more recent ones, which occurred from 1980 to 1993 caused significant changes in the coastal barrier along the south shore of Long Island. The Halloween storm of October 1991 followed by the December 1992 Northeaster and the storm of 1993 caused major coastal damage and economic impacts. A breach opened adjacent to the east jetty at Moriches Inlet during a January 1980 storm, grew to 2,600 feet and was closed by the Corps by February 1981. Two breaches occurred in the vicinity of Pikes Beach during a December 1992 storm, spanning approximately 4,000 feet west of the westernmost groin in the Westhampton groin field. The breaches that occurred in 1980 and 1992 were closed by the Corps, as congressionally authorized, using sand dredged from nearby navigation channels and from offshore sand borrow sites.

The U.S. Army Corps of Engineers, New York District, authorized by the River and Harbor Act of 1960, has been working to develop a plan for storm damage reduction along this stretch of coastal barriers from the Fire Island Inlet to Montauk Point. The originally authorized project (1960) was developed prior to the enactment of the National Environmental Policy Act (NEPA); however, the plan that was developed in 1977 under this authority was subject to NEPA review. In accordance with NEPA requirements, an Environmental Impact Statement (EIS) for the entire project area was prepared by the Corps, New York District in 1978. The Department of the Interior referred the EIS to the Council on Environmental Quality (CEQ) as unacceptable as the plan failed to address the impacts from the construction of a proposed 20-foot high dune along the length of the shoreline would have on the natural system. Leatherman and Allen (1985) observe that one of the most significant characteristics of barrier islands and indeed Fire Island is their tendency to migrate landward in response to sea level rise. An artificially created dune would act to preclude overwash processes and probably limit new inlet breaching. The CEQ concluded that the EIS did not look at a sufficiently wide range of alternatives, nor did it treat the entire project area as an integrated system. The CEQ recommended to the Corps, New York District that the project be reformulated. Currently, the final Fire Island to Montauk Point Reformulation Plan and Environmental Impact Statement are scheduled to be completed in 2007.

Background

Included within this 83-mile FIMP project area is the Fire Island National Seashore. Fire Island National Seashore was established:

"for the purpose of conserving and preserving for the use of future generations certain relatively unspoiled and undeveloped beaches, dunes, and other natural features ... which possess high values to the Nation as examples of unspoiled areas of great natural beauty in close proximity to large concentrations of urban population" Public Law 88-587 (Sept. 11, 1964).

In recognition of the complexity of managing a developed coastal barrier seashore, the legislation clarifies the relationship between the Department of the Interior and the Department of the Army as:

“The Secretary of the Interior shall administer and protect the Fire Island National Seashore with the primary aim of conserving the resources located there. The authority of the Chief of Engineers, Department of the Army, to undertake or contribute to shore erosion or beach protection measures on lands within the Fire Island National Seashore shall be exercised in accordance with a plan that is mutually acceptable to the Secretary of the Interior and the Secretary of the Army and that is consistent with the purposes of the Fire Island National Seashore enabling Act (16 U.S.C. § 459e-7).”

In addition to the inclusion of the park as a unit of the National Park System, a section of the park was subsequently set aside as federal wilderness. Similar legislation was also signed for Golden Gate National Recreation Area and Gulf Islands National Seashore. P.L. 88-577 established the National Wilderness Preservation System over the concern that in the future, few unmodified areas might remain. Wilderness policy as stated in the act was,

“...to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States and its possessions, leaving no lands designated for preservation and protection in their natural condition, it is hereby declared to be the policy of the Congress to secure for the American people of present and future generations the benefits of an enduring resource of wilderness. For this purpose there is hereby established a National Wilderness Preservation System to be composed of federally owned areas designated by Congress as ‘wilderness areas’, and these shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness; and no Federal lands shall be designated as ‘wilderness areas’ except as provided for in this chapter or by a subsequent Act (P.L. 88-577, Sept. 3, 1964, codified at 16 U.S.C. § 1131 (a).”

The Otis Pike Fire Island High Dune Wilderness area was designated by P.L. 96-585, December 23, 1980 within the FIIS; a 1,363-acre natural preserve along a seven-mile stretch of coastal barrier extending from the toe of the primary dune along its southern boundary to the Great South Bay, its northern boundary.

Although Congress stipulates that this wilderness designation, "...shall not preclude the repair of breaches that occur in the wilderness area in order to prevent loss of life, flooding, and other severe economic and physical damage to the Great South Bay and surrounding areas." Given the environmental and economic benefits which can result from island breaching in maintaining many natural values and resources of the Wilderness area, a modified approach of repairing breaches is appropriate to consider. Island breaching allows for an exchange of water between the bay and ocean which increases salinity, enhances flushing and water quality, and reduces residence times and alters circulation patterns (Conley 2000). Breaching also provides the sediment pathways necessary for the formation of back-barrier sand flats and flood-tidal deltas which form a diverse array of landforms and habitats which enhance natural biological diversity (Cerrato 2001; Tanski et al. 2001).

Throughout most of the last century, the philosophy guiding the management of preserves and wilderness areas within the National Park System emphasized the protection of resources from disturbances. Natural disturbances such as fire, floods, and insects were considered to be damaging to the natural values of the national parks (Parsons 2000, Parsons 1996). The occurrence of fire in particular was considered to be catastrophic. However, by the 1960's and with the publication of the Leopold Report (Leopold et al. 1963), there was a growing awareness and acceptance of ecological principles. The traditions of past park management were challenged (Sellars 1997) and significantly modified. The NPS now calls for natural processes to be maintained and for human-altered systems to be restored to allow natural processes to function and natural landforms to develop and evolve.

"The National Park Service will preserve the natural resources, processes, systems, and values of units of the national park system in an unimpaired condition, to perpetuate their inherent integrity and to provide present and future generations with the opportunity to enjoy them." (NPS Management Policies 2006)

"The Service will allow natural geologic processes to proceed unimpeded. Geologic processes are the natural physical and chemical forces that act within natural systems, as well as upon human developments, across a broad spectrum of space and time. (NPS Management Policies 2006, Chapter 4.8.1)

Intervention in natural geologic processes will be permitted only when:

- Directed by Congress;
- Necessary in emergencies that threaten human life and property;
- There is no other feasible way to protect natural resources, park facilities, or historic properties; or
- Intervention is necessary to restore impacted conditions and processes, such as restoring habitat for threatened or endangered species" (NPS Management Policies 2006, Chapter 4.8.1).

Management of Federal Wilderness

The management of island breaching in national parks and in federal wilderness areas on coastal barrier islands, similar to the management of fire, mosquitoes, and other natural perturbations poses a major challenge for national seashore managers. The Wilderness Act calls for federal wilderness to be both wild (untrammled or unmanipulated) and natural, thus allowing natural phenomena or processes to proceed unimpeded.

To meet the mandate of the Wilderness Act, as well as to consider the implications of this management on the potential for loss of life and flooding and other severe economic and physical damage to the Great South Bay and surrounding areas, the BMP will be developed in accordance with the NPS' Minimum Requirement Concept.

Application of the Minimum Requirement Concept (Section 6.3.5, NPS Management Policies)

All management decisions affecting wilderness must be consistent with a minimum requirement concept. When determining minimum requirement, the potential disruption of wilderness character and resources will be considered before, and given significantly more weight than, economic efficiency and convenience. If a compromise of wilderness resource or character is unavoidable, only those actions that preserve wilderness character and/or have localized, short-term adverse impacts will be acceptable and where those methods are determined to be the 'minimum tool' for the project. The use of motorized equipment and the establishment of management facilities are specifically prohibited when other reasonable alternatives are available. The minimum requirement process cannot be used to permit roads or inappropriate commercial enterprises within wilderness unless these are authorized by specific legislation.

The minimum requirement concept is to be applied as a two-step process that documents:

- (1) A determination as to whether or not a proposed management action is appropriate or necessary for the administration of the areas as wilderness, and does not pose a significant impact to the wilderness resources and character; and,
- (2) If the project is appropriate or necessary in wilderness, the selection of the management method (tool) that causes the least amount of impact to the physical resources and experiential qualities (character) of wilderness.

U. S. Army Corps of Engineers' Breach Contingency Plan

Recognizing, based on history, that significant breaching is likely to occur along the 83-mile stretch of Fire Island to Southampton coast and concern over the ability to respond quickly to close breaches and reduce risk of property damages led the Corps, New York District to develop a Breach Contingency Plan (BCP). This plan is currently being considered as an alternative within the FIMP with the definition of a breach being an event where water flows between the ocean and the bay continuously at low tide after a storm subsides. This plan provides for the rapid response to breaching along the coastal barrier and presents an implementation plan for breach closure along the 83-mile project stretch. The plan includes stockpiling of sand for fill on Fire Island and having the regulatory details worked out in advance. The BCP Report was approved and permitted by the New York Department of Conservation in February 1996 and according to the Corps the plan is valid until April 2007.

The Corps, New York District conducted an analysis of breach vulnerability and stability (U.S. Army Corps of Engineers 1996). Their analysis considered site accessibility, borrow source locations, breach vulnerability, economic development, coastal processes, topographic features, and potential breach closure techniques. The District also conducted a qualitative assessment of the breach potential of the island based on past experience and studies, site visits, beach profile data, and estuarine conditions. Finally, the District analyzed the risk of breaching using beach profile data as input into a storm-induced erosion model and an irregular wave overtopping analyses.

The BCP as it stands states:

“Under the proposed BCP, breach closure would be initiated within 72 hours of termination of a storm event that occurs along the 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, 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 provisions of this plan” (U.S. Army Corps of Engineers 1996).

The NPS Interim Breach Management Plan considered breach management in the park and in the federal wilderness area stating that:

“This Interim Breach Management Plan is intended to prevent the possibility of a storm breach becoming an unstabilized inlet, which could potentially result in further damage to private properties on Fire Island and the south shore of Long Island. However, the management requirements for the Wilderness Area, as stated previously, will dictate whether artificial closure of a breach will be immediate (72 hours after the storm subsides) or, if indicated, be allowed to close on its own.

Should a breach or an inlet occur within the Wilderness Area, inspections by the Critical Erosion Response Team and the NBS (now U.S. Geological Survey) coastal

geomorphologist would be undertaken to determine if artificial closure is indicated” (NPS 1994).

Proposed Breach Management Protocol

A breach management protocol or plan (BMP) which specifies the conditions under which the NPS would allow breach closure within the Seashore or within the Wilderness Area is necessary. The protocol should be based on the best science available and conform to the mission of the NPS and laws governing the FIIS and Wilderness Area. It should also consider other important elements such as human safety and protection of property. Similar protocols are in place to manage for possible outbreaks of disease-carrying mosquitoes and wildfires. The purpose of this plan is to propose a modified breach closure decision protocol, to allow a breach to develop naturally if it can be determined that the breach is likely to close naturally within some reasonable time frame (approximately 3 months), is not likely to lead to the development of a semi-permanent tidal inlet, and is not likely to lead to significant increased flooding damage to mainland development.

Allowing breaches to remain open for several months would allow for some ecological benefits to manifest themselves. It is also recognized; however, that allowing breaches to remain open can increase damage to mainland development and have negative effects on sediment budgets along downdrift parts of the open coast, as well as change circulation patterns and salinity gradients in Great South Bay. Secondly, if a decision is made to close a breach, the concept of the minimum tool analysis needs to be undertaken in the wilderness area with a similar approach to be proposed for other areas within the National Seashore boundary. This analysis will describe breach closure methods which will minimize impacts to physical resources and experiential qualities. In addition to the methods used to close the breach, the resulting breach closure cross section must be at an elevation to allow for future storm overwash, thus resembling the breach area if it had been allowed to close naturally. And last, if breaches are closed and ecological benefits thereby reduced, mitigation measures may be undertaken, such as sand transfer or nourishment by dredging to create washover fans and flood-tide deltas on the landward side of the barriers in Great South Bay that replicate the natural deposits that would form if the breach were allowed to remain open and allow sediment exchange to the bay. This mitigation nourishment may be done in developed parts of the FIIS at the discretion of the NPS.

Recommendations to Manage Breaches

1. The cornerstone to maintaining a stable barrier island system and reducing the risk of breaching in the face of accelerating rise in sea level and possible increases in storm activity over the next century is to preserve natural sediment transport processes and conserve sediment budgets along the entire Long Island south shore coast. This can best be accomplished by allowing natural processes to operate to the maximum extent possible, reducing all cumulative engineering alterations and obstructions to long-shore and cross-shore transport processes, and encourage sensible and safe development that is compatible with a dynamic coast and rising sea level.
2. A **Storm Response Science Team (SRST)**, consisting of at least five members will be established to offer advice and make recommendations, as to whether and when and by what means artificial closure is warranted, should a breach occur within the FIIS or Wilderness Area. At a minimum, the team will include members from the NPS, U.S. Geological Survey, Corps, New York State Department of State and the New York State Department of Environmental Conservation, and a local university, with expertise and experience in coastal geology/geomorphology and processes, coastal engineering, numerical modeling of coastal processes, and understanding storm effects on barrier islands and wetlands. The team will be chaired by the NPS and decisions will be by consensus based on the factual information available. Final decision-making authority rests with the National Park Service.
3. There is a need to define the tidal range increase and back-bay areal extent of flooding that is not to be exceeded in Great South Bay, so as to avoid excess property damage. This is expected to come from the Corps, New York District in the final FIMP report. In addition, long-term monitoring instrumentation needs to be installed by the Corps in Great South Bay to routinely measure water levels and meteorological data. The data and results should be made available in real time on the web. This data collection and monitoring should complement existing data collection by the U.S. Geological Survey/Water Resource Division, National Oceanic and Atmospheric Administration and others.
4. Once a breach has occurred, detailed Lidar surveys, aerial photography, and ground surveys of the breach areas, including the bay side, will be conducted by the Corps, U.S. Geological Survey and others, as soon as feasible. Monitoring of the breach region will continue. These data will be provided to and used by the SRST to determine if the beach is “partial” or “full” and judge how the breach is likely to evolve in the near future. A major consideration is the time of year when the breach occurs and the likelihood that ensuing storm activity might impede natural breach closure. The surveys will be used to determine when “threshold” volumes of sediment have deposited on the back side of the barrier islands and in the bay in the form of washover deposits and flood-tidal shoals.
5. Breach management activity in the federal wilderness will be conducted according to minimum impact management protocols.
6. For all breaches complete details on the beach closure will be presented to and approved by the NPS. This includes the dimensions of the breach channel based on detailed surveys, the volume of sand fill required, sediment texture and composition, source of the sand fill to be used in filling the

breach, and the size and type of dredge equipment and sand moving equipment to be used. If breach closure and filling is approved, it will be reconstructed replicating landforms as if it closed naturally, including washover fans and delta lobes protruding in Great South Bay.

7. The use of dredges and sand moving equipment will be considered to be appropriate as the minimum, as will electronic devices including but not limited to global positioning units for mapping and cell phones and portable radios for communications.

8. When using dredges, bulldozers and sand moving equipment, the NPS will indicate operational periods. Use of dredges, bulldozers, and other sand moving equipment will be kept to the minimum necessary, commensurate with meeting project objectives.

9. Breach area rehabilitation plans may be implemented under the direction of a resource advisor identified by the NPS, following significant breach management actions. Emergency breach repair will seek to restore areas impacted by breach fill operations in ways that will restore and preserve natural character and conditions especially in the wilderness area. Actions implemented under emergency conditions, as part of immediate breach management action generally do not require NEPA compliance but do require NPS approval. Proposals for long-term recovery actions will be submitted to the NPS, which will recommend and approve the appropriate level of environmental compliance required to be prepared prior to implementation.

10. Research and monitoring should be undertaken to understand and document the physical and ecological response to storm overwash, breaching and breach management actions in FIIS and wilderness areas. Scientific understanding of storm effects and coastal response is still incomplete and prediction of breach evolution has much uncertainty. Research and monitoring staff and equipment would create additional transient (short-term and infrequent) impacts. Any proposal that required the installation of long-term or permanent research or monitoring equipment in the wilderness will require a separate analysis and approval by the FIIS.

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

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