

## 4: Environmental Consequences

**INTRODUCTION** This chapter describes the probable consequences of the alternatives on natural and cultural resources, wilderness, transportation and access, visitor use and experience, park operations and the socioeconomic environment associated with Fire Island National Seashore (the Seashore). The alternatives presented in this draft document are general in nature, in that they define management objectives and outline potential actions that may result from those objectives; thus, the analysis of impacts is correspondingly general. Impact topics were selected for analysis by determining which Seashore resources or related elements would be affected by actions proposed under the three alternatives. Topics were also chosen to address planning issues and concerns. Resources and environmental concerns that would not be appreciably affected by any of the alternatives were eliminated from further consideration and are described in Chapter One.

### METHODOLOGY FOR ASSESSING IMPACTS

#### General Analysis Methods

In accordance with the Council on Environmental Quality (CEQ) regulations, direct, indirect, and cumulative impacts are described (40 CFR 1502.16) and the significance of the impacts is assessed (40 CFR 1508.27). Where appropriate, mitigating measures for adverse impacts are also described and incorporated into the evaluation of impacts. The specific methods used to assess impacts for each resource may vary; therefore, these methodologies are described under each impact topic.

#### ► GEOGRAPHIC AREA EVALUATED FOR IMPACTS

The primary area of impact for the Fire Island National Seashore General Management Plan and Environmental Impact Statement (GMP/EIS) is Fire Island, located parallel to the south shore of Long Island, including segments of Great South Bay and the Atlantic Ocean, and the William Floyd Estate with the neighboring village of Mastic Beach. The secondary area of impact includes Nassau and Suffolk counties, which together encompass most of Long Island, New York.

#### ► DIRECT, INDIRECT, AND CUMULATIVE IMPACTS

Impact analysis addresses all of the following:

#### Direct Impact

An impact that is caused by an action and occurs at the same time and place.

#### Indirect Impact

An impact that is caused by an action but is later in time or farther removed in distance, but still reasonably foreseeable.

#### Cumulative impacts

Defined as those impacts that result when the impact of the proposed action is added to the impacts of other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other actions (40 CFR 1508.7). A cumulative impacts analysis is intended to give a better picture of the additive or total impacts a given resource may experience when the impacts of unrelated actions or events are added to the predicted impacts of the GMP



alternatives being evaluated in this EIS are added to the impacts of unrelated actions or events that may also be affecting the same resource.

#### **Beneficial Impacts**

A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.

#### **Adverse Impacts**

A change that moves the resource away from a desired condition or detracts from its appearance or condition.

#### **► ASSESSING IMPACTS USING COUNCIL ON ENVIRONMENTAL QUALITY (CEQ) CRITERIA**

The impacts of the alternatives are assessed using the CEQ definition of “significantly” (40 CFR 1508.27), which requires consideration of both context and intensity:

- a. Context** – This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than on the world as a whole. Both short- and long-term effects are relevant.
- b. Intensity** – This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:
  1. Impacts that may be both beneficial and adverse. A significant effect may exist even if the federal agency believes that on balance the effect would be beneficial.
  2. The degree to which the proposed action affects public health or safety.

3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, parklands, prime farmlands, wetland, wild and scenic rivers, or ecologically critical areas.
4. The degree to which the effects on the quality of the human environment are likely to be highly controversial.
5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.
6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.
8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.
9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.
10. Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment.

Context is comparative or surrounding information that helps give impacts meaning. Comparisons can include geography, population size, uniqueness of the resource, affected individuals, agency mandates, and more. For example, the impact of a proposal to cut 10 acres of trees in a 100,000-acre lodgepole pine forest managed by an agency with a “use” mandate is different than cutting 10 acres of the only remaining 15 acres of old-growth sequoia managed by an agency with a “conservation” mandate.



The National Park Service (NPS) is an agency with a “conservation” mandate and identifies fundamental resources and values in its general management plans, defined as those resources or values that are critical to achieving a park’s purpose or maintaining its significance. These resources and values collectively capture the essence of the park and provide overall context for evaluating the relative severity of an impact; e.g., the degree to which an alternative would help or hurt these resources would be important in assessing whether impacts of that alternative are significant.

Fundamental resources identified for Fire Island National Seashore are described in Chapter 1 of this GMP/EIS.

For each impact topic analyzed, an assessment of the potential significance of the impacts according to context and intensity is provided in the “Conclusion” section that follows the discussion of the impacts under each alternative. In addition to the overall context of the park’s purpose and significance, resource-specific context is presented in the “Methods” section under each resource topic and applies across all alternatives. Intensity of the impacts is discussed by considering the relevant factors from the list above. Intensity factors that do not apply are not discussed.

## NATURAL RESOURCES:

# Impacts on Coastal Processes and FloodPlains

## Methodology

The impact analysis for coastal processes and floodplains assumes that actions conducted under each alternative would adhere to applicable federal, state, and local laws and policies including:

- Coastal Zone Management Act of 1972
- 1899 Rivers and Harbors Act
- Coastal Barrier Improvement Act of 1990
- Executive Order 11988: Floodplain Management
- Executive Order 13653: Preparing the U.S. for the Impacts of Climate Change
- Department of the Interior (DOI) Secretarial Order 3289: Addressing the Impacts of Climate Change on America's Water, Land, and other Natural and Cultural Resources
- NPS Procedural Manual 77-2: Floodplain Management
- New York State Coastal Zone Management Plan and Policies
- New York State Department of Environmental Conservation Laws and Policies
- New York State Coastal Erosion Hazard Area Act (CEHA)
- Fire Island Inlet to Montauk Point (FIMP) Reformulated Storm Damage Protection Plan
- Tidal Wetlands Land Use Regulations

Executive and departmental orders offer guidance on addressing climate change relative to both Coastal Processes and Floodplains. Executive Order 13653: Preparing the U.S. for the Impacts of Climate Change calls for the integration of climate science in policies and planning of government agencies. DOI Secretarial Order 3289: Addressing the Impacts of Climate Change on America's Water, Land, and other Natural and Cultural Resources requires that each DOI bureau and office consider and analyze potential climate change impacts when undertaking long-range planning exercises.

A few of the relevant policies, as they apply to the GMP-related actions, are summarized in the following sections along with the impact analysis methodology for the impact topic of coastal processes and floodplains.



## ► COASTAL PROCESSES

The analysis of coastal processes within the study area is based on a review of existing data for the project area, recent scientific literature, and shorelines in similar geomorphic settings.

In accordance with the federal Coastal Zone Management Act of 1972, as amended, New York State passed the Coastal Erosion Hazard Act (CEHA) (Article 34 of NYS Environmental Conservation Law) in 1981. At Fire Island, CEHA is administered by the New York State Department of Environmental Conservation (NYS DEC) in the town of Islip, and separately by the villages of Saltaire and Ocean Beach, and by the town of Brookhaven, after their local codes were approved by NYS DEC. This state law regulates activities in areas designated as coastal erosion hazard areas including construction, modification, restoration, or placement of a structure. Changes in land conditions such as grading, excavation, and dredging also are regulated under CEHA. The CEHA boundaries encompass the entire shoreline of New York State. Regulations associated with CEHA have been implemented at Fire Island since 2001.

Other relevant regulations of New York State include the Tidal Wetlands Land Use Regulations (6NYCRR part 661), which are also administered by the NYS DEC. The regulations are designed to prevent the despoliation and destruction of tidal wetlands, found extensively around the perimeter of Great South Bay and Fire Island. Projects that alter tidal wetlands, such as boat ramps, docks, erosion control measures, groins, breakwaters,



and boardwalks require authorization through the Tidal Wetlands Program. Many of these types of structures are used by the NPS at facilities such as Sailors Haven and Watch Hill and have undergone NYS DEC review and approval.

### ► FLOODPLAINS

Coastal floodplains often include a variety of habitat types found below the 100-year base flood elevation that may include estuaries, saltmarshes, mudflats, shoreline beaches, dunes, and maritime vegetated uplands. Protection of these resources helps absorb the forces of catastrophic flood events, protecting other sensitive riparian habitats and property. Executive Order 11988: *Floodplain Management* and NPS *Procedural Manual 77-2: Floodplain Management* are intended to properly conserve, manage, and protect floodplains on NPS lands. The purpose of regulating activities within the flood zone is to protect human health and the environment and prevent damage to property in the event of a catastrophic flood event.

The NPS *Procedural Manual 77-2* requires that structures and facilities within the flood zone be designed to be consistent with the intent of the standards and criteria of the National Flood Insurance Program (44 CFR 60). Structures must have professionally engineered flood-proofing measures to manage flood hazards. In addition, flood warning and evacuation plans must be designed and determined to be adequate to manage flood hazards.

*Procedural Manual 77-2* also applies to actions that are functionally dependent on locations in proximity to water and for which non-floodplain sites are never a practicable alternative. Examples of actions functionally dependent upon water include marinas, docks, piers, water intake facilities, sewage outfalls, bridges, flood control facilities, water monitoring stations, drainage ditches, debris removal, outdoor water sports facilities, and boardwalks to interpret wetlands. *Procedural Manual 77-2* requires that such structures and facilities be designed to be consistent with the intent of the standards and criteria of the National Flood Insurance Program (44 CFR Part 60). Certain Seashore functions, however, do not require adherence to *Procedural Manual 77-2* when they are located near water for the enjoyment of visitors, such as scenic overlooks, foot trails, and associated daytime parking, provided the impacts of these facilities on floodplain values are minimized. In addition, entrance, access, and internal roads to or within

units of the National Park System are exempted from the requirements of *Procedural Manual 77-2*, as are historic or archeological sites or artifacts whose location is integral to their significance.

Information on flood zones for the Seashore was gathered using FEMA mapping based on the 100-year flood event. This information was used to predict the degree of flooding as it relates to actions posed by the various alternatives. Most of Long Island is classified as Zone X by FEMA. Lands that border the edge of the Patchogue River, like the Seashore Headquarters, the ferry terminal, and portions of the maintenance area, fall within the area classified as Zone AE. At the William Floyd Estate, most of the property is above the 100- and 500-year flood zones; however, the portions of the property along the marsh shoreline are classified as Zone X by FEMA (FEMA 2009b). All other Fire Island properties fall within various flood zone designations, the majority of which are defined by FEMA as Zone AE or Zone VE. Areas on Fire Island excluded from these zones include sections of high dunes on oceanside that reach elevations exceeding 20 feet.

In general, all areas at elevation 6 feet and below in the Patchogue area and William Floyd Estate would incur flooding from a 100-year storm event, while the 100-year flood elevation on Fire Island includes wave run up and is 10 to 12 feet NGVD29. While site-specific topographic elevations are not available across the entire Seashore, relative impacts based on FEMA flood elevations can be predicted for comparison between alternatives.

Resource-specific context factors for assessing the impacts of the alternatives on coastal processes and floodplains include the following:

- Executive Order 11988 directs all federal agencies to avoid long- and short-term impacts associated with occupancy, modification, and development of floodplains when possible.
- NPS Director's Order 77-2 implements Executive Order 11988 and established NPS policy to preserve floodplain values and minimize potentially hazardous conditions associated with flooding.
- Floodplain functions and values (store floodwaters, minimize erosion of adjacent soils, provide riparian habitat, etc.) are intrinsic to floodplains and cannot be easily duplicated or replaced.

- Natural features such as beaches, bluffs, dunes, and nearshore areas, and the vegetation thereon, protect coastal areas and human lives from wind and water erosion and storm-induced high water (6 NYCRR Part 505.3a)
- Littoral drift, off-shore currents, wind, inlet formation, tidal delta growth, and occasional overwash are all essential to maintain the dynamic equilibrium that sustains the barrier island.
- A key component of the Seashore's significance is that it is a barrier island system encompassing relatively unspoiled beaches, dunes, marine environments, and other natural features and dynamic processes within closer proximity to the largest concentration of population of any national seashore in the country.
- The 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 within Suffolk County, New York which possess high values to the Nation as examples of unspoiled areas of great natural beauty in close proximity to large concentrations of urban populations (P.L. 88-587)."

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## COASTAL PROCESSES & FLOODPLAINS IMPACTS COMMON TO ALL ALTERNATIVES

### Impact Analysis

#### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Under each of the proposed alternatives, Fire Island National Seashore would continue to work with local, county, state, and federal officials to protect, restore, and emulate the natural processes of Fire Island to the greatest degree possible, consistent with the actions agreed upon by the Department of the Interior and the USACE in the Tentative Federally Supported Plan (TFSP) for FIMP. For example, the NPS would seek to enforce CEHA and other regulations consistently throughout Fire Island and to adhere to the guidelines outlined in TFSP for FIMP. Such efforts would enhance shoreline protection by ensuring that new developments support a more uniform coastal environment. Ongoing activities such as channel dredging to facilitate water access to

Seashore facilities would continue on an as-needed basis; however, a comprehensive dredge management plan would be developed to maximize opportunities to return dredged sediment to bayside sediment transport systems, thereby promoting/enhancing coastal processes, erosion buffers, and restoring coastal habitats. These actions would be accomplished in accordance with regulations administered through the state's Tidal Wetland Program (6NYCCR Part 661). In addition, one component of a shoreline management plan would be developed to promote the restoration/enhancement of degraded shorelines and associated habitats, similar to the pilot project at the Sunken Forest. These actions would be compatible with the goals of the Long Island South Shore Estuary Reserve Comprehensive Management Plan, which focuses on improving water quality and restoring natural habitats. These actions would also benefit the floodplains on Fire Island, particularly the bayside, since increased buffers and coastal habitats serve as the first line of defense against coastal storms and dampen erosional forces along Fire Island's perimeter.

Under Alternatives 2 and 3, the Seashore would encourage greater scientific and scholarly research. Specifically, NPS would develop a coordinated, comprehensive research and monitoring program to better understand and manage the broad range of natural and cultural resources within the Seashore's boundaries, particularly in the context of climate change and sea level rise. The Seashore would consider strategies for adaptive management and would work in coordination with the North Atlantic Coast Cooperative Ecosystem Studies Unit (CESU) and other appropriate CESUs within the national network, and applicable federal, state, and local agencies. Research could help identify new approaches to minimizing the effects of sea-level rise at the Seashore. In addition, as described in chapter 2, under each of the proposed alternatives, the Seashore would engage in strategies that seek to mitigate the Seashore's contributions to climate change as well as adapt to the associated changing conditions. These strategies would include educating NPS staff, its partners, and members of the communities and the general public about climate change and sea-level rise to encourage adaptive planning at a larger scale. Any future planning for Fire Island, particularly for the Seashore's cultural resources and physical infrastructure (e.g., facilities, circulation systems, utilities, etc.), would include a risk assessment and/or a scenario planning component. Sea-level rise could result in the natural development of new inlets and truncation

of cross-shore environmental gradients (NPS 2005b) as well as increase opportunities for island overwash. Although adaptive planning and mitigation techniques would reduce the potential impacts of sea-level rise and climate change on Fire Island's resources, changes to coastal landscapes such as the development of new inlets and island overwash would alter existing coastal processes and conditions within the floodplains.

Oceanside beach nourishment would continue on an as-needed basis within the residential communities, and sand by-passing (Moriches Inlet) would continue to benefit natural sand-transport processes by maintaining a local source of sand along the oceanside beaches. Beach nourishment and sand by-passing activities would help maintain the oceanside sediment budget, which in turn promotes accretionary processes such as dune building and other natural processes related to barrier island development. In addition, the current Breach Contingency Plan (BCP), that was negotiated by NPS, USACE, and NYSDEC in 1992, would remain in place until a new BCP is adopted under FIMP. Under the current BCP, inlet breaches through the barrier island would be evaluated for immediate closure to limit effects on bay tide and bay storm levels, potentially reducing the effects on the barrier island habitats, estuary, and mainland habitats, and sediment transport processes. Each breach would be evaluated as necessary, based on current science and resource conditions, to determine whether a breach of the barrier island, specifically in the Fire Island Wilderness, should be closed due to resulting effects on bay flooding and risks to properties in low-lying areas along the bay shoreline. The BCP would benefit flood zones, since unaddressed breaches could impact tide and storm levels and cause increased flooding and erosion.

Natural resource management efforts at the William Floyd Estate would include additional research on native plant and animal species, tick monitoring and management, mosquito surveillance and management, fire management planning, management of non-native invasive plants, and maintenance of the mixed habitat complex at the Estate. These efforts would have no noticeable impact on coastal processes and/or floodplains.



#### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

No impacts associated with the cultural resource management components of the Elements Common to All Alternatives were identified.

#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Under Alternatives 2 and 3, the Seashore would work to develop a Coastal Land Use and Shoreline Management Plan that would be developed in collaboration with relevant regulatory interests associated with Fire Island, and would incorporate the tenets of the TFSP for FIMP. The plan would articulate a comprehensive strategy that emphasizes the protection of coastal resources while addressing resilience in development within the coastal zone on both federal and non-federal lands within the Seashore and responding to the climate change futures and implications presented in Appendix B and other relevant scientific research. Implementation of such a plan would ensure that developments within the coastal zone incorporate elements aimed at protecting coastal resources. Protection of coastal resources could, in turn, benefit coastal processes and floodplain by helping to ensure the existing resources are maintained at or near current conditions. Implementation of the Coastal Land Use and Shoreline Management Plan and its influence on future development and land-use projects would benefit coastal processes and floodplains by promoting greater sensitivity and minimizing impacts to those resources.

The Seashore would work with state and local agencies to ensure that CEHA on Fire Island is enforced when developments that are inconsistent with CEHA are proposed. The NPS also would undertake appropriate administrative and legislative actions to allow the federal Dune District, which is currently south of the dune



toe and below the surf zone in some locations, to be adjusted in accordance with changing conditions and, if appropriate, aligned with the CEHA line. This could provide a more consistent determination of the ocean-dune line and unified policies regarding development or replacement of damaged structures and their relationship to sensitive coastal environs.

Also under Alternatives 2 and 3, NPS would work to revise land-use regulations. The revised regulations would clearly articulate how inconsistent development proposals would be addressed on a local and/or federal level. Developments that are consistent with existing regulations and policies, such as CEHA and FIMP, are likely to have a less adverse impact on coastal processes and floodplains than those that are inconsistent, due to the support of natural processes. Similar to other land-use and development policy-related components of the alternatives, this could also facilitate more uniform policies for new development or replacement of damaged structures and their relationship to sensitive coastal environs.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

The extensive network of boardwalks, designated trails, and dune crossings on federal lands and throughout the developed communities would continue to be available to visitors under all alternatives. The availability of this pedestrian network provides a measure of protection to sensitive resource areas, thus protecting vegetation and limiting the potential for erosion. In some areas, informal social trails would continue to exist. Visitor use of these existing informal social trails, or vegetated areas outside of designated trails, could degrade existing vegetation and increase the potential for erosion, mostly through wind-blown transport processes, because the degraded vegetation exposes the sand surface to wind. The areas where informal social trails are most likely are in the undeveloped federal tracts and in the Fire Island Wilderness. Because these localized soil and vegetation disturbances would be minimal in scale, they would result in a negligible impact on coastal processes and floodplains.

Under each of the proposed alternatives, the NPS would take steps to provide visitors (and other interest groups) with information about the dynamic nature of the barrier island and the potential risks associated with owning and managing property within the coastal environment. This information could be communicated

through a variety of sources including personal communication, publications, exhibits, signage, and social and digital media, and formal training and workshops. Getting this message out to the public would improve public awareness of coastal processes and floodplains and how they can be affected by human interactions. As described in the “Natural Resource Management” section above, public and educational programming related to coastal processes and floodplains would include information about climate change and sea-level rise and adaptive management techniques. Public awareness of issues related to coastal processes and floodplains could help to reduce adverse impacts from human interactions in coastal processes, such as activities that could contribute to erosion or disrupt natural sediment transport.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Under each of the proposed alternatives, transportation and access to and within the Seashore would be generally consistent with current options. Ferries would continue to operate in existing channels between Fire Island and Long Island, wherein dredging activities would continue. Continued ferry access to Seashore facilities would require maintenance of those facilities, which range from





open-pile, elevated dock facilities extended into Great South Bay to more complex landside harbors and marinas that have bulkheads, groins, wave screens, and jetties. The more complex facilities modify natural sediment transport pathways along the bay shoreline, usually resulting in increased erosion along downdrift shorelines and floodplains. Comprehensive dredge and shoreline management plans would be developed for Fire Island to help offset these impacts by placing dredged sediments along the shoreline, increasing widths of protective buffers for erosion protection, and potentially restoring lost habitats. The extent to which the Seashore marinas would impact natural processes would vary by alternative depending upon the size and number of the Seashore access facilities.

Recreational off-road driving would continue to be permitted on beaches within the Seashore along designated off-road driving routes. Off-road driving disrupts the sand, compacting it within the vehicle tracks and producing localized erosion. Off-road driving regulations would remain in place to protect designated habitats, the coastal dunes, and existing vegetation. Under the regulations, no driving is allowed within 20 feet of visible beach grass at any time of year. Further, the off-road regulations have time-of-year restrictions and limitations on the total number of driving permits issued in an effort to minimize impacts to Fire Island's natural resources and processes. The Seashore would continue to closely monitor the off-road driving routes to identify and address non-conforming activities; therefore, impacts to coastal processes and floodplains would be localized and minimal.<sup>9</sup>

Other access would include off-road driving, a permitted activity for public utility companies, year-round and part-time residents, and essential services. As noted above, off-road driving regulations would remain in place to protect designated habitats, the coastal dunes, and existing vegetation, all of which would benefit coastal processes by maintaining natural conditions to the extent practical. Under the regulations no driving is allowed within 20 feet of visible beach grass at time of year. Further, the off-road regulations have time-of-year restrictions and limitations on the total number of driving permits issued in an effort to minimize impacts to Fire Island's natural resources and processes. Any adverse impacts to coastal processes and floodplains would be

localized and would not result in noticeable changes to overall coastal processes or conditions within the floodplain.

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#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Under all alternatives, the NPS would consider modifying or relocating the existing Seashore Headquarters to address issues associated with its location in a high flood hazard area. By removing or mitigating for man-made structures in areas of active sediment transport processes, natural processes and pathways would be re-established. Wind, waves, and currents would be allowed to function naturally, and sediment would be transported in a natural manner.

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### COASTAL PROCESSES & FLOODPLAINS

## IMPACTS OF ALTERNATIVE 1

*Continuation of Current Management Practices (No Action)*

### Impact Analysis

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#### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Impacts from natural resource management efforts associated with Alternative 1 would include those described in the "Impacts Common to All Alternatives" section above. Additional elements proposed under Alternative 1 would include allowing in-kind replacement of existing bulkheads along the bay shoreline within the Seashore but not permitting the construction of any new bulkheads or the hardening of additional shoreline. Continued compliance with this bulk heading policy would prevent further degradation of the sediment transport processes along the bayside shoreline of Fire Island and would allow natural barrier island migration and development processes to occur and naturally respond to the effects of sea-level rise. Bulkhead replacement would protect the uplands and associated improvements from bayside erosion, but shoreline hardening typically results in adverse impacts on the overall sediment budget and natural sediment transport processes.

Other actions that would continue under this alternative would be the development and implementation of the Breach Response Plan and continued consideration of community beach management. The TFSP for FIMP generally allows for

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<sup>9</sup> Driving regulations are not included in the General Management Plan but are being addressed through a separate, ongoing negotiated rule making process not related to the alternatives considered in this document.

the closure of breaches within 90 days, except within the five major federal tracts, which will be monitored. In the event that a breach within the five major federal tracts does not close within 45 to 60 days, a Science Response Team would advise decision makers on the conditions for closure.<sup>10</sup> Breach repair would minimize bay flooding and coastal erosion and restore littoral transport systems. Breach management efforts, including the emergency use of sandbags, geotubes, etc., would be considered on a case-by-case basis if they meet approved regulatory and compliance requirements. These actions would result in a range of impacts from beneficial to adverse, with beach nourishment and breach closure being considered beneficial to maintaining the coastal shoreline and existing floodplain configuration. However, sandbags and geotubes, while in place, would provide temporary erosion protection to damaged dune systems, preventing natural coastal processes from occurring, but would not be considered sustainable. These structures could modify natural transport pathways and have a negative impact on floodplains and coastal processes.

#### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

The impacts associated with the cultural resource management components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts from the land-use and development components of Alternative 1 would include those described in the “Impacts Common to All Alternatives” section above. In addition, properties within the Community Development District that are damaged or destroyed by overwash could be repaired or rebuilt in accordance with local codes and zoning standards. Although strict enforcement of the NYS CEHA is proposed, current federal zoning standards and other state and local regulations would allow some damaged or destroyed private properties within the communities to be reconstructed in high flood hazard areas, which would continue to compromise dune formation and other coastal processes. Rebuilding these structures within the flood zone also would restrict the flow of floodwaters, potentially leading to additional loss of property. In addition, the continued presence of these structures would result in an adverse impact on coastal

processes, because they would continue to block natural sediment transport, thereby restricting natural coastal processes. The NPS would work closely with relevant agencies and community groups to help mitigate the loss and minimize the potential adverse impacts on coastal processes and floodplains.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts from the Seashore experience, interpretation, education, and outreach components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section above.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts from the transportation and access components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section above.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

The elements included in this alternative would maintain existing facilities, visitation, and staffing levels at the Seashore. The continued presence of the visitor facilities would continue to interrupt coastal processes, mostly along the bayside of Fire Island, where access channels and landing facilities are maintained. However, mitigation measures would be employed to minimize adverse impacts to the littoral sediment transport processes, such as reintroducing local dredged sediments into the shoreline system. In addition, dredge material could be placed at the appropriate elevations so that wetland/marsh systems could become established, thereby enhancing the shoreline’s ability to buffer Fire Island during storm events. Routine maintenance or other operations related to the upkeep of these NPS facilities could further diminish natural coastal processes if accomplished without appropriate management plans.

### Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to impact coastal processes and floodplains within the Seashore. These actions include dredging, and the New York State Coastal Zone Management Plan/ Combined Assessment and Strategy.

Routine dredging activities near the Seashore are necessary to maintain channels within the Great South Bay to accommodate ferries and other large vessels. The

<sup>10</sup> The FIMP EIS will consider all alternatives for breach management.



Long Island Intracoastal Waterway Federal Navigation Project, which is currently being undertaken by the USACE, would aid in these efforts and facilitate the use of the Great South Bay by the U.S. Coast Guard as well as a variety of recreational and commercial vessels. Channel dredging disturbs soils on the bay floor and disrupts natural sediment transport processes. Deposition of dredged sediment above the bay shoreline also would adversely impact these resources by altering natural sediment transport processes within the bay by removing nearshore sediments from the sediment budget. As with dredging activities discussed under the “Impacts Common to All Alternatives” section above, Seashore staff would work with the USACE to maximize opportunities to return dredged sediment to bayside sediment transport systems, resulting in a beneficial impact by promoting and enhancing coastal processes, erosion buffers, and restoring coastal habitats. These actions would be accomplished in accordance with regulations administered through the state’s Tidal Wetland Program (6NYCCR Part 661).

Policies associated with the New York State Coastal Zone Management Plan/ Combined Assessment and Strategy are aimed at improving coastal zones within the state and, therefore, could enhance coastal processes at the Seashore. Potential strategies included in the 2011-2016 updates to the CMP include expanding the scale at which Local Waterfront Revitalization Programs are developed to more closely align them with regional and ecosystem

planning and developing a Long Island South Shore Estuary Special Area Management Plan. These initiatives correspond with many of the objectives outlined in the “Elements Common to All Alternatives” section and Alternative 1 and would contribute beneficially to coastal processes and floodplains.

The impact of these past, present, and reasonably foreseeable future actions would generally be long-term and beneficial (improved coastal management). When combining the impacts of these projects with the impacts of Alternative 1, the cumulative impact would be beneficial. Alternative 1 would contribute a beneficial increment to the cumulative impact on coastal processes and floodplains within the Seashore.

## Conclusion

Overall, Alternative 1 would result in both beneficial and adverse impacts on coastal processes and floodplains. Natural resource management efforts such as enforcement of CEHA regulations, mitigation for replacement bulkheads, beach nourishment, and research and monitoring programs would result in beneficial impacts. The overall adverse impact would be mostly attributable to continued dredging to facilitate water access to Fire Island, the continued presence of hardened surfaces along the shoreline (such as bulkheads), and the continued presence of structures within the floodplain, including Seashore facilities and structures within the communities. Short-term adverse impacts would occur during bulkhead replacement and/or the implementation of emergency beach management efforts, and present land-use and development components of Alternative 1 would have some adverse impacts.

Seashore Experience components such as the continued use of trails, boardwalks, and dune crossovers would result in localized adverse impacts on coastal processes and floodplains. Similarly, the continued permitted use of ORVs would cause localized adverse impacts. Because these actions would be monitored and mitigation strategies are in place and employed as management tools, these adverse impacts would be negligible.

The cumulative impact would be long-term and beneficial, and Alternative 1 would contribute a beneficial increment to the overall adverse cumulative impact.

Beneficial impacts of actions associated with Alternative 1, as summarized above, would not be considered significant because the impacts from these continuing practices are too small to be noticeable. The

adverse impacts associated with the implementation of Alternative 1 would be negligible and highly localized. Impacts would be long-term and short-term, however mitigation measures in place will reduce the magnitude of any adverse impacts. Further, the key dynamic processes associated with the barrier island system would be minimally affected. Therefore, adverse impacts as a result of actions associated with Alternative 1 would not be considered significant.

#### COASTAL PROCESSES & FLOODPLAINS

### IMPACTS OF ALTERNATIVE 2

#### *Enhancing Natural Resource Values*

## Impact Analysis

#### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Impacts from the natural resource management components of Alternative 2 would include those described in the “Impacts Common to All Alternatives” section above. Under Alternative 2, greater emphasis would be placed on the protection and restoration of natural ecological systems, patterns, and resources on federal lands. A nature-based experience would be emphasized and the overall development footprint of the Seashore would be greatly reduced. Some of the specific facilities to be removed are discussed in the following sections. Reducing the overall development footprint and level of human influence would enhance natural

processes at the Seashore by allowing coastal processes to proceed uninterrupted along larger stretches of the shoreline, such as the flow of flood waters or overwash. Therefore, Alternative 2 would result in a greater beneficial impact on coastal processes and floodplains. As facilities are removed and areas are allowed to revert to natural conditions, coastal processes and floodplains could be temporarily affected due to equipment access, stockpile of demolition materials, and removal of materials from Fire Island. These actions could temporarily disturb vegetation on Fire Island and possibly along the shoreline at ingress and egress points, resulting in temporary, unstable conditions. However, mitigation techniques would be employed to restore original contours and re-establish the appropriate vegetative communities, resulting in short-term adverse impacts with a long-term beneficial impact.

#### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

The impacts associated with the cultural resource management components of Alternative 2 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts associated with the land-use and development components of Alternative 2 would include those described in the “Impacts Common to All Alternatives” section. In addition, reversion of currently developed





federal land to natural areas could restore natural coastal processes in some areas, a beneficial impact. In addition, naturalized areas would be more effective at attenuating storm events, also resulting in a beneficial effect on the floodplains. Future developments associated with this alternative would be designed to emphasize the protection of natural resources over human development potentially reducing scale of development on Fire Island over time and enabling the restoration of natural conditions in some areas. This could have a long-term beneficial impact on coastal processes and the floodplain.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts associated with the Seashore Experience components of Alternative 2 would include those described in the “Impacts Common to All Alternatives” section. However, this alternative would also include the relocation or removal of visitor facilities. In particular, modifications to the existing visitor facilities at Sailors Haven, Talisman, and the Wilderness Visitor Center could impact coastal processes and/or floodplains at Fire Island National Seashore. Facilities at Sailors Haven, for example, would be scaled back in part to allow for the restoration and regeneration of the bayside shoreline. At Talisman, the NPS would remove the restrooms, beach walk, and old hotel building at the end of their structural lifecycle. In general, removal of facilities in their entirety would enable the bayshore to return to a natural condition and provide a beneficial impact on coastal processes and floodplains. However, remaining facilities that still include navigational channels and man-made structures, such as jetties and bulkheads, would continue to influence bayside sediment transport processes, sometimes having a negative impact on coastal processes and floodplains. Lastly, the existing Wilderness Visitor Center would be removed and replaced with a smaller structure. Given the small footprint and profile of the proposed facility, it is not anticipated to have a noticeable impact on sediment transport patterns or floodplain conditions.

In addition, under this alternative, visitor access to some Seashore resources would be modified. This could include prohibiting access to some portions of the bay shoreline to facilitate naturalization. In some locations for certain periods of time, public access may be restricted to facilitate restoration of these areas to a natural state. New means of access, such as boardwalks, may be installed in sensitive areas to enable public access.

Limitations on visitor access in some areas would benefit the Seashore by supporting the protection and restoration of natural resources; however, these elements would have no noticeable impact on coastal processes or flood zones. Pedestrian use of informal trails and other areas would continue to remove vegetation and increase the potential for erosion, although these disturbances would be localized and less severe than those associated with Alternative 1, because access to many resources would be restricted.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with the transportation and access components of Alternative 2 would include those described in the “Impacts Common to All Alternatives” section. Under Alternative 2 transportation to and within Fire Island would be generally consistent with current operations. However, this alternative would reduce the size of facilities, including the removal of the Sailors Haven Marina. Removing the outer bulkhead at Sailors Haven would provide beneficial impacts by restoring sediment transport patterns to more natural conditions, which would benefit the adjacent and downdrift shoreline abutting the Sunken Forest. However, a ferry dock and landside bulkhead would remain at this location. Beneficial impacts would occur through the reduction of the overall footprint and restoration to natural conditions, such as a tidal marsh. By reducing the overall numbers of available slips, it is likely that offshore mooring of small, recreational vessels would increase. However, the offshore moorings are not anticipated to have a measurable effect on coastal processes.

Alternative 2 would also include efforts to improve water-based access to Fire Island. As described in chapter 2, NPS would work with Fire Island communities, the towns of Islip and Brookhaven, and Suffolk County to expand opportunities for water-based facilities on Fire Island that can accommodate the movement of goods and services. Boats are already used to haul trash off Fire Island and to carry cargo and materials to the east end of Fire Island. Currently, ferries also bring cargo into the western communities on Fire Island. However, expanded water-based access for hauling could require expansion of the existing channels (i.e., dredging) and/or more frequent dredging of the existing channels to accommodate the larger hauling vessels. In addition, if these facilities were to require the development of new structures, coastal processes could be adversely

impacted if the structures were to be situated in a previously undeveloped location, which would restrict natural sediment transport. Additionally, if the facilities were constructed within existing 100- or 500-year flood zones, their presence could decrease flood storage volumes, restrict natural flow patterns, and/or exacerbate catastrophic flooding in downstream areas.

Temporary adverse impacts would occur during construction of new facilities due to the presence of temporary stockpiles of demolition materials and removal processes. However, once debris is removed off-island, natural processes could quickly re-establish coastal landforms and features within the restored areas.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 2 would include those described in the “Impacts Common to All Alternatives” section. Under this alternative visitor facilities and Seashore housing facilities could be consolidated on Fire Island. Seashore housing would be removed from Talisman, and the number of housing units at Sailors Haven and Watch Hill would likely be reduced. These actions would enhance natural coastal processes and flood zones by removing man-made obstructions. Reducing the overall development footprint and enhancing natural areas would also allow coastal processes to occur uninterrupted (i.e., naturally) along larger stretches of the shoreline. By removing man-made structures, such as the Seashore housing at Talisman, Sailors Haven, and Watch Hill, from areas of active sediment transport processes, whether along the bayside shoreline or from within interior portions of Fire Island, natural processes and pathways would be re-established. This would result in a beneficial impact on coastal processes. Wind, waves, and currents would function naturally, and sediment would be transported in a natural manner. Some of the changes in coastal processes may be slightly detectable and localized, while other areas may realize larger-scale, beneficial improvements. As facilities are removed and areas are allowed to revert to natural conditions, there would be some temporary adverse

impacts on coastal processes and flood zones due to construction access, temporary stockpiles of demolition materials and removal processes. However, once debris is removed off-island, natural processes would quickly re-establish coastal landforms and features within the restored areas, an overall beneficial impact.

### Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to impact coastal processes and flood zones within the Seashore. These actions include dredging and the New York State Coastal Zone Management Plan/ Combined Assessment and Strategy as described under Alternative 1. The impact of these past, present, and reasonably foreseeable future actions would generally be long-term and beneficial due to improved coastal management. When combining the impacts of these projects with the impacts of Alternative 2, the cumulative impact would be long-term beneficial. Alternative 2 would contribute appreciably to the cumulative impact on coastal processes and flood zones within the Seashore.

### Conclusion

Although some components of Alternative 2 would result in minor adverse impacts on coastal processes and flood zones, the overall impact would be beneficial. Natural resources management efforts would focus on enhancement and restoration of natural processes, including coastal processes. Efforts such as enforcement of CEHA regulations, reductions in the overall development footprint, continued mitigation for hardened shorelines, and providing beach nourishment would enhance natural coastal processes. The land-use and development elements of Alternative 2 could benefit coastal processes and flood zones once a Coastal Land Use and Shoreline Management Plan is developed and implemented.

Overall, Seashore Experience components of Alternative 2 would result in beneficial impacts on coastal processes related to removal of some of the existing visitor facilities from the Seashore. Adverse impacts associated with visitor activities such as camping, ORV use, and use of the existing trails, would be generally negligible and would be less than in Alternatives 1 and 3, because visitor access would be restricted in some areas, decreasing visitor use. Transportation components such as ferry service to and from Fire Island would continue to require routine dredging, resulting in a range of adverse

impacts to coastal processes and floodplains. However, by removing the Sailors Haven facility and restoring much of the area to natural conditions, a notable beneficial impact would occur to coastal processes and floodplains, as natural sediment transport processes are restored and the impediments to the flow of floodwaters are removed.

The removal of selected existing facilities over time as proposed in this alternative would allow coastal processes to proceed uninterrupted along larger areas of the affected federal tracts, thereby benefiting coastal processes and floodplains. There would be some adverse impacts associated with the removal and/or replacement of existing facilities and vegetation and excavation of submerged soils during archeological investigations. These activities could temporarily disrupt coastal processes; however, the adverse impacts would be minimal because the impacts would only last a short period of time and conditions would be restored upon completion of each activity. The cumulative impact would be beneficial over the long term, and Alternative 2 would contribute an appreciable beneficial increment to the overall beneficial cumulative impact.

Beneficial impacts of actions associated with Alternative 2, as summarized above, would be considered significant because, although localized, they would result in notably improved conditions within the context of the barrier island system. Adverse impacts associated with the implementation of Alternative 2 would be short term, highly localized, and negligible in scale. Mitigation measures would reduce the magnitude and any adverse impacts. The key dynamic processes associated with the barrier island system would be minimally affected. As a result, these adverse impacts would not be considered significant.

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## COASTAL PROCESSES & FLOODPLAINS

### IMPACTS OF ALTERNATIVE 3

*Recognize the Relationship between Human Use and Nature (Preferred Alternative)*

## Impact Analysis

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### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the natural resource management components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section.

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### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Under Alternative 3, the NPS would place greater emphasis on research, documentation, interpretation, and preservation of cultural resources on Fire Island. Temporary disturbances to vegetation and sandy areas could occur as documentation projects are advanced, but measures would be employed to minimize ground disturbances and return disturbed areas to pre-existing conditions. The existing curatorial facility at the William Floyd Estate would be expanded by approximately 1,000 square feet. However, this element would have no noticeable impact on coastal processes or floodplains, as the facility would not be located within the 100- or 500-year flood zone. Impacts to coastal processes would likely be negligible given the small size of the building expansion, but more importantly, the location would not be within an area of dynamic sediment transport processes. Furthermore, floodplain impacts would be highly localized and only slightly detectable.

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### ► IMPACTS RELATED TO LAND USE AND DEVELOPMENT ACTIONS

Impacts associated with the land-use and development components of Alternative 3 would be the same as those described in Alternative 2.

### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts from the Seashore experience, interpretation, education, and outreach components of Alternative 3 would include those described in the “Impacts Common to All Alternatives” section above. Under this alternative, visitation to Fire Island National Seashore would be maintained at least at current levels. Ferry traffic and visitor use of trails, boardwalks, buildings, and dune crossovers would be generally consistent with current conditions. The total number of backcountry camping permits issued by the Seashore could increase; however, it is not anticipated that this increase would noticeably affect coastal processes or floodplains within the Seashore.

Under Alternative 3, the NPS would also explore options for redesigning the Sailors Haven marina and ferry dock to minimize the down-drift impacts that have been causing erosion and undermining portions of the Sunken Forest. If such elements are implemented in Sailors Haven, natural coastal processes would become more prevalent as human-induced erosion and undermining is reduced, further protecting the Sunken Forest.

### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts from the transportation and access components of Alternative 3 would include those described in the “Impacts Common to All Alternatives” section above. Under Alternative 3 transportation to and on Fire Island would be generally consistent with current options. If ferry service to Fire Island is improved under Alternative 3 to expand service during the shoulder seasons, dredging could be required more often, resulting in an incrementally adverse impact on coastal processes compared to the other alternatives. However, as described in the “Impacts Common to All Alternatives” section, comprehensive dredge and shoreline management plans would be developed to identify strategies that would help offset impacts associated with dredging by placing dredged sediments along the shoreline, increasing widths of protective buffers for erosion protection, and potentially restoring lost habitats.

Like Alternative 2, this alternative would also include efforts to improve water-based access to Fire Island, which could result in increased dredging and/or development within the existing 100-year flood zone. More frequent dredging would increase adverse impacts to natural coastal processes and development within high-hazard flood zones could decrease flood storage volumes, restrict natural flow patterns, and/or exacerbate catastrophic flooding in downstream areas. Again, implementation of the dredge and shoreline management plans would help mitigate and minimize potential adverse impacts.

Temporary adverse impacts would occur during construction of new facilities due to the presence of temporary stockpiles of demolition materials and removal processes. However, once debris is removed off-island, natural conditions would be restored, an overall beneficial impact on coastal processes and floodplains.

### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts from the Seashore operations, maintenance, and facilities components of Alternative 3 would include those described in the “Impacts Common to All Alternatives” section above.

Under Alternative 3, the NPS would also remove the housing unit at Talisman from in front of the CEHA line. If feasible, this structure would be relocated in a more appropriate location. This would result in a negligible beneficial impact on coastal processes and floodplains, as the flow of flood waters and overwash is only minimally restricted under current conditions.

## Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to impact coastal processes and floodplains within the Seashore. These actions include dredging and the New York State Coastal Zone Management Plan changes as described under Alternative 1. The impact of these past, present, and reasonably foreseeable future actions would generally be long-term and beneficial (i.e., improved coastal management). When combining the impacts of these projects with the impacts of Alternative 3, the cumulative impact would be long-term beneficial. Alternative 3 would contribute appreciably to the cumulative beneficial impact on coastal processes and floodplains within the Seashore.



## Conclusion

Although some components of Alternative 3 would result in some adverse impacts on coastal processes and floodplains, the overall impact would be beneficial.

Natural resource management efforts such as enforcement of CEHA regulations, beach nourishment, sediment by-pass, erosion control, and restoration of natural coastal processes would result in beneficial impacts on coastal processes and floodplains. Other cultural components like the expansion of the existing curatorial facility, which is located outside the existing 100- and 500-year flood zones, would have no noticeable impact on coastal processes or floodplains.

As in Alternative 2, the land use-and development elements of Alternative 3 could benefit coastal processes and floodplains if a Coastal Land Use and Shoreline Management Plan is developed and implemented.

Seashore Experience components of Alternative 3 would result in beneficial impacts on coastal processes related to removal of some of the existing visitor facilities from Fire Island National Seashore. The benefits would be incrementally less than those associated with Alternative 2 because fewer facilities would be removed. Adverse impacts associated with continued visitor activities such as camping (which could increase), ORV use, and use of the existing trails, would be generally negligible.

Transportation components such as ferry service to/from Fire Island would continue to require routine dredging, resulting in a range of adverse impacts to coastal processes and floodplains. If dredging activities increase under this alternative as a result of ferry service improvements and/or improvements to water-based access to Fire Island, the impacts to coastal processes from dredging would be adverse. In addition, adverse impacts to floodplains could be greater compared to the other alternatives if new facilities are constructed, in previously undeveloped areas to support water-based access improvements.

Adverse impacts associated with this alternative would be related to the removal and/or replacement of existing facilities and vegetation and excavation of submerged soils during archeological investigations. These activities could temporarily disrupt coastal processes; however, the impacts would last only a short period of time and conditions would be restored upon completion of each activity. The cumulative impact would be long-term and

adverse, and Alternative 3 would contribute a noticeable beneficial increment to the overall adverse cumulative impact.

Beneficial impacts of actions associated with Alternative 3, as summarized above, would be considered significant because although localized, they would result in notably improved conditions, within the context of the barrier island system. Adverse impacts associated with the implementation of Alternative 3 would be short term, highly localized, and negligible in scale. Mitigation measures would reduce the magnitude and any adverse impacts. The key dynamic processes associated with the barrier island system would be minimally affected. As a result, these adverse impacts would not be considered significant.

## NATURAL RESOURCES

# Impacts on Water Resources

### Methodology

The impact analysis for water resources assumes that actions conducted under each alternative would adhere to applicable federal, state, and local laws and policies including:

- Clean Water Act
- Executive Order 11990: Protection of Wetlands
- Executive Order 13158: Marine Protected Areas
- Executive Order 13547: National Ocean Policy
- Executive Order 13653: Preparing the U.S. for the Impacts of Climate Change
- Department of the Interior (DOI) Secretarial Order 3289: Addressing the Impacts of Climate Change on America's Water, Land, and other Natural and Cultural Resources
- New York State Department of Environmental Conservation Tidal Wetlands Regulations (Article 25 of the Environmental Conservation Law)
- NPS Procedural Manual 77-1: Wetlands Protection
- Suffolk County Vector Control and Wetlands Management Long-Term Plan
- Suffolk County Department of Health Services Wastewater Management Requirements

In this section the analysis of impacts on water resources includes the impacts on those resources dependent on a certain quality or condition of the water, such as vegetation and wildlife. *The NPS Management Policies 2006* state that the NPS will “take all necessary actions to maintain or restore the quality of surface waters and ground waters within the parks consistent with the Clean Water Act and all other applicable federal, state, and local laws and regulations.”

This analysis also includes a general discussion of wetlands and water quality conditions. Wetlands are “lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface” (USFWS 1979). Mapped locations of wetlands were compared with locations of proposed developments and modifications of existing facilities. Predictions about



short- and long-term site impacts were based on previous studies of impacts to wetlands from similar projects and recent scientific data.

Sensitive marine organisms, submerged aquatic vegetation, riparian areas, and wetlands are all affected by changes in water quality from direct and indirect sources. Overall, the NPS based these impact analyses and conclusions on the review of existing literature and studies of the Seashore, information provided by experts within the Seashore and other agencies, and professional judgments.

Resource-specific context factors for assessing the impacts of the alternatives on water resources include:

- Water resources affect the quality and availability of water-based recreation (e.g., swimming, fishing).
- Executive Order 11990 directs the NPS to avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative.
- NPS Director's Order 77-1 adopts a goal of “no net loss of wetlands”; in addition, the NPS will strive to achieve a longer-term goal of net gain of wetlands.
- Wetlands have unique functions and values (groundwater recharge; stormwater storage and discharge; unique habitats; etc.) that are intrinsic to wetlands and cannot be easily duplicated or replaced.

## WATER RESOURCES

**IMPACTS COMMON TO ALL ALTERNATIVES****Impact Analysis****► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS**

Under Alternatives 2 and 3, the NPS would implement a comprehensive research and monitoring program to better understand the natural resources within the Seashore, which would include water resources within the terrestrial and marine ecosystems. Building on this program, the NPS would promote cooperative stewardship of the resources with members of the public (both visitors and community residents), Seashore stakeholders, and other landowners/agencies to better protect and manage water resources. These efforts would result in a long-term beneficial impact, improving water resource conditions (both terrestrial and marine) throughout the Seashore.

The NPS would continue ongoing natural resource management programs and projects that may affect water resources, such as vegetation restoration and protection, mosquito and tick management, shoreline and beach protection, and bayside wetlands protection. Resulting human intervention in natural processes, when necessary, could have both adverse and beneficial impacts on water resources. In particular, vegetation, insect, and wildlife management, including mosquito and tick management, beach nourishment in front of the communities, and efforts to restore native plant species could adversely affect water quality if chemical or mechanical methods are used. For example, herbicides and associated chemicals used to remove invasive species from the Seashore in an effort to restore native plant species could migrate to ground or surface waters, affecting water quality and aquatic habitat for fish, shellfish, and benthic fauna. Additionally, mechanical actions could result in localized disturbances, affecting water quality from soil erosion. As these plans are developed and implemented, the NPS would work to minimize erosion, and the use of chemicals in insect management would be limited to situations where human health and safety is at risk.

Ongoing natural resource management programs under Alternatives 2 and 3 would also benefit water resources. Recent NPS initiatives call for enhanced marine resources stewardship. Efforts proposed under Alternatives 2 and 3 reflect those initiatives and would

include both research and monitoring of marine resources, including fin and shellfish populations in the Great South Bay and Atlantic Ocean, and the development of a marine resources management plan. Under all alternatives, the Seashore would take steps to monitor and protect both wetlands and marshes (freshwater and saltwater), which would benefit these resources over the long term.

One of the water quality concerns of Great South Bay is the number of individual on-site septic disposal and cesspool systems on Fire Island. Wastewater discharges from these underground systems are allowed to flow directly into the water table, causing elevated levels of nutrients, pathogens, and organic compounds that can eventually leach into surface waters of the back bay estuaries. Such elevated levels of nutrients can increase phytoplankton and macroalgae populations resulting in negative impacts to water quality and fisheries habitat (Schubert et al. 2010). Under Alternatives 2 and 3, the NPS would collaborate in efforts to evaluate and address wastewater management on Fire Island (including federal and nonfederal lands) and leaching of nutrients into the bay causing habitat degradation for marine life. Such efforts would lead to improved water quality conditions within the Seashore and adjoining marine waters, a long-term beneficial impact.

Seashore efforts to manage, protect, or restore coastal processes, such as routine dredging of existing ferry channels in the bay, could temporarily reduce water quality by increasing the disturbances to marine resources and turbidity. In addition, sea-level rise could introduce multiple physical and chemical impacts to the area's water resources. In particular, increases in the sea level would increase the water table elevation to reach individual underground cesspools and septic systems, affecting their treatment performance and increasing nutrient loads (McElroy et al. 2007). Additionally, sea-level rise would elevate tidal and wave pumping action, potentially increasing the level of saltwater intrusion into the island's groundwater, and existing wetlands would become inundated, affecting the estuaries' ability to filter pollutants seeping from the groundwater system (USGS 2004). Increase in average annual temperature (increase of 3 to 5 degrees in the 2050s) would also contribute to the physical and chemical changes to water resources (Rosenzweig et al. 2011. See Appendix B). The Seashore would take steps to monitor the marshes and groundwater, establish baselines, and assess changes resulting from potential sea-level rise. Based on

monitoring results, measures would be implemented to adapt to change and minimize the adverse effects of sea-level rise.

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► **IMPACTS RELATED TO CULTURAL RESOURCES  
MANAGEMENT ACTIONS**

Under all alternatives, Seashore efforts to identify, manage, and protect submerged archeological resources would continue. These efforts would not noticeably affect water resources conditions.

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► **IMPACTS RELATED TO LAND USE AND  
DEVELOPMENT ACTIONS**

Under all alternatives, the Seashore would collaborate with others through public outreach to emphasize the unique nature of living in the coastal environment. The Seashore would continue to implement the 1984 Land Protection Plan, which calls for the acquisition of improved properties within the Seashore District on a willing-seller basis as they become available. In most cases, as properties are acquired, structures would be removed and the land would revert to a natural state.

Under Alternatives 2 and 3, the Seashore would model ‘best practices’ in undertaking projects potentially affecting water quality. Examples of such practices include waste management, marina maintenance and dredging, or other similar actions.

These efforts would result in beneficial impacts on water quality as properties are acquired by the Seashore. Removal of existing structures would eliminate a nonpoint source of pollution and runoff within the Seashore, as well as reduce pollutant loads into the groundwater resulting from on-site septic system operation. Non-point sources of pollution are those that do not originate from pipes or other conduits; examples might include a puddle of motor oil or garden fertilizer being washed into groundwater or a creek.

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► **IMPACTS RELATED TO SEASHORE EXPERIENCE  
ACTIONS**

Under each of the alternatives, the Seashore would seek to broaden the diversity and geographic origin of visitors to Fire Island. These efforts may result in an increase in annual visitation with attendant increases in visitor needs for potable water, as well as increases in solid waste and wastewater disposal. Increases in visitor use

could also result in changes to the number of private boats at the Seashore. Impacts associated with private boats and modes of access are described below in the “Transportation and Access” section. The continued operation and use of marinas and comfort stations would continue to reduce surface and groundwater quality within the Seashore due to the potential for a release of pollutants. However, the Seashore would subscribe to NOAA’s Clean Marinas guidelines and would encourage other public and private marinas on Fire Island to do the same. As such, adverse impacts associated with the marinas would be minimal. The implementation of stricter policies could have an overall beneficial impact on water quality near the marinas. The high intensity use of the beaches, coupled with the aging onsite septic system that services those beaches results in increased opportunity for adverse impacts to water quality from wastewater. If the existing systems were to be updated by the Seashore, adverse impacts to water resources would be reduced.

Continued ORV use within the Seashore also would have the potential to continue to impact water resources where ORVs are allowed to travel along established vehicular courses bisecting wetland dunal swales and other surface water ecosystems. This would not only have direct impacts on the wetlands and any associated vegetation, but also could result in petroleum pollutants entering these systems. By continuing to strictly enforce rules for driving on the beach, the potential for these adverse impacts would be minimized.

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► **IMPACTS RELATED TO TRANSPORTATION AND  
ACCESS ACTIONS**

Under each of the proposed alternatives, water quality and other water resources within the bay, such as aquatic life and vegetation, would continue to be impacted by the presence and operation of boats, including ferries and private vessels. Specifically, the continued operation of private boats, private water taxis, and ferries would emit petroleum products into the water column and/or cause sediment disturbances in shallow waters in the bay from propeller contact with the aquatic bottom. By working with cooperators to make ferry operations sustainable (such as using alternative fuel sources), these adverse impacts could be greatly minimized.

Continued ORV use within the Seashore also would have the potential to continue to impact water resources where ORVs are allowed to travel along established vehicular courses bisecting wetland dunal swales and



other surface water ecosystems. This would not only have direct impacts on the wetlands and any associated vegetation, but also could result in petroleum pollutants entering these systems. By continuing to strictly enforce rules for driving on the beach, the potential for these adverse impacts would be minimized.

The Seashore would work with the communities, county, state, and others to keep driving to a minimum. However, land-based vehicular access would continue to alter the physical condition of surface waters such as intermittent ponded depressions. Vehicular access to the Seashore, at current levels, would continue to result in nonpoint source pollution from vehicles and impacts to ponded areas where vehicles travel through depressions and swales that fall within travel corridors, thus having a long-term, minimal, adverse impact.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Under all alternatives, infrastructure would be replaced/rehabilitated to a lesser degree than under the action alternatives. Replacements would only occur as needed, and as funding becomes available. Many of the Seashore's existing buildings were not designed as sustainable structures; therefore do not include elements to address, for example, runoff treatment and stormwater management, which would benefit water quality. The Seashore Headquarters and Patchogue Maintenance Facility would be updated, and where necessary, these facilities would be rehabilitated to address environmental concerns such as improvements to storm water drainage and increased energy efficiency. Improvements to these structures would enhance the benefits to water resources by better managing runoff and upgrading wastewater treatment facilities. Building construction and modification activities associated with this alternative could result in temporary impacts to water quality due to the soil disturbances from construction equipment and vehicles. The Seashore would ensure steps are taken to minimize impacts to surface and ground waters through silt fencing and other best management practices for water quality.

## WATER RESOURCES

### IMPACTS OF ALTERNATIVE 1

*Continuation of Current Management Practices (No Action)*

## Impact Analysis

#### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Impacts from natural resource management efforts associated with Alternative 1 would include those described in the "Impacts Common to All Alternatives" section above. Continued recreational fin and shellfishing would be permitted within the Seashore with the expectation that activity levels would be near current levels, although management and regulatory steps could be taken to modify future activity levels. This alternative would continue to reduce the number of aquatic organisms in the bay due to fishing and shellfishing, and would continue to increase the potential for pollution from recreational fishermen using motorized boats. Shellfishing, in particular, would result in a reduction of the filter feeding functions provided by shellfish which are important to the enhancement of water quality of Great South Bay. Recreational fishing would be monitored to ensure fish and shellfish population stability.

#### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

The impact of cultural resource management efforts on water resources associated with Alternative 1 would be the same as those described in the "Impacts Common to All Alternatives" section above.

#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts from the land use and development components of Alternative 1 would include those described in the "Impacts Common to All Alternatives" section above. Bay side bulkheads and docks may introduce instability to the shoreline causing erosion and sediment suspension in the water column. In addition, properties damaged or destroyed by overwash would continue to be allowed to be repaired or rebuilt after storm events. If rebuilt in-kind, some of these structures could contribute to nonpoint source pollution and runoff within the Seashore. However, if design measures are taken to manage nonpoint source pollution and runoff on these properties, water quality could be improved over current conditions.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts from the Seashore experience, interpretation, education, and outreach components of Alternative 1 would include those described in the “Impacts Common to All Alternatives” section above. Under this alternative, as funding becomes available existing Seashore facilities, including the Sailors Haven Visitor Center and the Carrington Estate, would be rehabilitated for visitor and administrative use, respectively. Depending on the nature and scale of construction activities or maintenance, water resources could be disturbed through soil disturbance or runoff. The Seashore would take the appropriate steps to minimize or mitigate runoff associated with construction activity and to prevent spills and/or migration of oil or hazardous materials resulting from operation of construction equipment.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

The impact of transportation and access components of Alternative 1 on water resources would be the same as those described in the “Impacts Common to All Alternatives” section above.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Routine operations and maintenance activities could impact water resources if activities release pollutants into neighboring surface waters from accidental spills. Disturbances at the existing maintenance facilities and trash transfer station/water management facility would be of particular concern.

The Seashore would maintain existing work and patrol boats under this alternative. The fleet storage area and maintenance area allows for existing runoff to reach Patchogue River and eventually the Great South Bay. Normal operation of these vessels would continue to reduce water quality around the Seashore via inadvertent petroleum discharges/spills from refueling and contribution to runoff from impervious surfaces of the storage and maintenance area. The NPS would use best management practices to help minimize the minor adverse impacts on water quality.

## Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to impact water resources within the Seashore. These actions include the Great South Bay Clam Restoration Project, the Brookhaven 2030 Plan, changes to the New York State CZMP, Long Island South Shore Estuary Reserve Comprehensive Management Plan, the Suffolk County Vector Control and Wetlands Management Long-Term Plan, and the Village of Patchogue Local Waterfront Revitalization Program and Harbor Management Plan.

The Great South Bay Clam Restoration Project would reestablish and protect hard clam populations within the bay, therefore, enhancing a marine resource. In addition, an increase in the clam population would benefit water quality within the bay because clams are filter feeders, which allows them to absorb and sequester nutrients, as well as remove suspended solids from the water column, a long-term beneficial impact.

Although the Brookhaven 2030 Plan would consider social, economic, and environmental factors holistically, new development could contribute to nonpoint source pollution and runoff. However, it is likely that the proposed development would be designed to incorporate measures to minimize adverse impacts on water resources, such as storm water management techniques. Overall, the plan would include both long-term minor adverse and long-term beneficial impacts on water resources.

Policies associated with the New York State Coastal Zone Management Plan changes are aimed at improving the state’s coastal zones and the associated resources, including wetlands, marine debris, and aquaculture. Many of the strategies proposed in the 2011-2016 assessment would benefit water resources such as establishing a direct permit program for activities within State-designated Significant Coastal Fish and Wildlife Habitats (including Great South Bay East, Great South Bay West, and Smith Point County Park) and updating the NYS coastal policies to explicitly address marine debris and resource impacts. Implementing the plan would result in a long-term beneficial impact on water resources.

The Long Island South Shore Estuary Reserve Comprehensive Management Plan provides the foundation for the long-term health of the Reserve’s bays, tributaries, tidal wetlands, wildlife, tourism, and economy and supports a variety of associated projects. Proposed

projects include improvements and maintenance of water quality and the protection and restoration of living resources, both of which would enhance water resources.

The goal of the Suffolk County Vector Control and Wetlands Management Long-Term Plan is to develop an effective long-term vector control program including a comprehensive wetlands management component. To control mosquitoes, the plan proposes to implement a variety of techniques such as integrated pest management, which would include the use of increased surveillance, operational improvements, and expanded public education and outreach (Suffolk County 2006). The plan specifically calls for “the establishment of additional mosquito traps at Fire Island National Seashore” (Suffolk County 2006). If vector control methods within the Seashore were also to include the use of pesticides, the quality of water resources (specifically ground and surface water) could be adversely affected. Wetland management would also be an important component of the overall pest management and would reduce the need for larvicides (which currently is used in the county for mosquito control). Wetland management associated with this plan would initially include low-impact elements such as culvert replacement to restore tidal circulation and improvement to fish habitat without significant changes to the wetlands (Suffolk County 2006). Implementing the plan would result in long-term beneficial and long-term minor adverse impacts to water quality.

The Village of Patchogue Local Waterfront Revitalization Program and Harbor Management Plan for its coastal areas, supports the village’s Riverwalk revitalization effort, including proposed land and water uses and projects. Similar to the Brookhaven 2030 Plan, new development associated with the revitalization efforts could contribute to nonpoint source pollution and runoff. As stated in relation to the Brookhaven 2030 Plan, it is likely that the proposed development would be designed to incorporate measures to minimize adverse impacts on water resources. Overall, the plan would include both long-term minor adverse and long-term beneficial impacts on water resources.

These past, present, and reasonably foreseeable future actions would result in both long-term beneficial impacts and long-term minor adverse impacts on water resources at the Seashore. When combining the impact of past, present, and reasonably foreseeable future actions with

the impacts of Alternative 1, an adverse cumulative impact would result. Alternative 1 would contribute an adverse increment to the overall adverse impact.

## Conclusion

Alternative 1 would result in both adverse and beneficial impacts on water resources. In general, natural resource management elements of Alternative 1 would result in adverse impacts due to continued shellfishing and fin fishing within the bay, routine dredging, and the use of chemical treatments to manage vegetation, insect, and wildlife populations (such as herbicides and insecticides). In addition, transportation components of this alternative such as personal vehicle use and continuation of current levels of use of marinas, private boats, water taxis, and ferries, to access the Seashore would continue to adversely impact water resources, including surface waters and marine life. Routine operations and maintenance activities also could have a temporary adverse impact on water resources, depending on the nature and location of the action. The adverse impacts of Alternative 1 also contribute an adverse increment to overall adverse cumulative impacts when combined with the adverse impacts of other past, present, and reasonably foreseeable actions that affect water resources.

On the other hand, improvements to make facilities more sustainable, the use of alternative fuels for ferries and patrol boats, “greening” the marinas, increased research and monitoring efforts, and cooperative stewardship of the resources would result in a long-term beneficial impact on water resources, which would help to offset some of the adverse impacts.

The cumulative impact would be long-term moderate adverse, and Alternative 1 would contribute an appreciable adverse increment to the overall adverse cumulative impact.

Adverse impacts on water quality would be readily apparent; however, the Seashore would continue to implement best management practices so that water quality conditions would not be degraded below relevant standards. In addition, no wetland resources would be lost, and wetlands functions and values would be minimally affected. Therefore, the adverse impacts would not be considered significant.

Impacts to water resources as a result of actions associated with Alternative 1 would also be long-term and beneficial because of on-going and proposed implementation of best management practices. However,

when considered within the context of the overall quality of water resources throughout the Seashore, these beneficial impacts would not be considered significant.

## WATER RESOURCES

### IMPACTS OF ALTERNATIVE 2

#### *Enhancing Natural Resource Values*

## Impact Analysis

### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Natural resource management efforts associated with Alternative 2 would include the components described in the “Impacts Common to All Alternatives” section above. The Seashore would increase monitoring of recreational fishing within the Seashore to evaluate impacts on the fish populations and the general marine environment. The enforcement of these restrictions and improved monitoring would result in beneficial impacts to water resources including aquatic life. Monitoring efforts could identify other potential enhancements that could be implemented in the future, resulting in further benefits to water resources. In addition, such efforts could increase the shellfish population within the bay, further enhancing water quality. In particular, an increase in the bivalve shellfish population, as filter feeders, would increase the removal of sediments and nutrients from the water column, thus improving water quality.

Efforts to restore maritime forests within the Seashore (outside of the effort at Sunken Forest, which is described in the “Impacts Common to All Alternatives”) would improve water quality conditions and minimize runoff within these localized ecosystems, a long-term beneficial impact.

### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

The impact of cultural resource management efforts on water resources associated with Alternative 2 would be the same as those described in the “Impacts Common to All Alternatives” section above.

### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts associated with land use and development would be consistent with those described in the “Impacts Common to All Alternatives” section. Removal of existing structures would reduce nonpoint source pollution and runoff within the Seashore. In addition, the emphasis on natural resources would promote the restoration of native vegetation, once facilities have been removed. Restored native vegetation could serve as riparian buffer, improve water quality in area wetlands, marshes, and open water, and help absorb energy from coastal storm events. As is common to all alternatives, other NPS structures would be evaluated and upgraded in concert with recurrent maintenance efforts over time to address elements such as stormwater management, wastewater treatment, water conservation, and risks related to climate change and sea-level rise, all of which would enhance the quality of water resources at Fire Island National Seashore.

### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts from Seashore Experience components of Alternative 2 would include those described in the “Impacts Common to All Alternatives” section above. However, under Alternative 2 the impacts would be less adverse than under the other alternatives because some infrastructure (including some restroom facilities at Sailors Haven and Talisman) would be removed or down-sized, reducing these potential sources of surface and groundwater contamination. In addition, the campground at Watch Hill would be relocated to a more suitable, less sensitive area. The existing campground facility is located between primary dunes on the ocean side and a tidal estuary on the bay side. Relocating the campground to a less sensitive area would provide more buffering distance from the estuary, reducing the risk of water quality impacts. The area of the existing campground would be allowed to revegetate into a natural ecosystem, providing a naturalized riparian buffer to the estuary.

### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

The impact of transportation and access components of Alternative 2 on water resources would be similar to those described in the “Impacts Common to All Alternatives” section above. In addition, this alternative would eliminate the marina at Sailors Haven. Boat usage within



the marinas often causes concentrated discharges of oil/petroleum from boat motors and accidental/intentional littering of human refuse (cups, cans, plastics, bottles, etc.). By shifting the concentration of boat slips within the Seashore from Sailors Haven to Watch Hill, a reduction in nearshore impacts on water quality would occur at Sailors Haven. Also elimination of the Sailors Haven marina could increase the number of boats that moor offshore resulting in boats being placed in undredged, shallow waters where propeller scarring of the bay bottom could cause negative impacts to water quality and possibly to subaquatic vegetation. Additionally, anchors from the moored boats would continue to disturb the bay bottom, resulting in increased turbidity if the number of boats increases.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Seashore operations, maintenance, and facilities components of Alternative 2 would include those described in the “Impacts Common to All Alternatives” section. However, under Alternative 2, many of the existing structures would be removed or consolidated. For example, the Seashore Headquarters and mainland maintenance facility could be consolidated into one location. However, the use of construction vehicles and associated equipment to rehabilitate or remove existing structures on Fire Island could temporarily increase the potential for groundwater and surface water contamination from petroleum products. Demolition activities associated with removal of the existing structures also could temporarily increase the potential for soil erosion from the presence of construction equipment and vehicles, which would briefly reduce

water quality in that area. However, the Seashore would employ best management practices for sediment control to minimize impacts to surface and ground waters.

### Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to impact water resources within the Seashore. These actions include the Great South Bay Clam Restoration Project, the Brookhaven 2030 Plan, changes to the New York State CZM policies, Long Island South Shore Estuary Reserve Comprehensive Management Plan, the Suffolk County Vector Control and Wetlands Management Long-Term Plan, and the Village of Patchogue Local Waterfront Revitalization Program and Harbor Management Plan. These past, present, and reasonably foreseeable future actions would result in long-term minor adverse impacts and long-term beneficial impacts on water resources at the Seashore. When combined with the impacts of Alternative 2, the overall cumulative impact would be beneficial, with Alternative 2 contributing an appreciable beneficial increment to the overall cumulative impact.

### Conclusion

Alternative 2 would focus on the removal of many existing structures and the subsequent restoration of natural conditions. Overall, Alternative 2 would result in a long-term beneficial impact on water resources. Specifically, the removal of existing facilities would enhance water quality by eliminating a source of pollutants and disturbance from boats near the coastline. Boats that have previously docked at Sailors Haven (removed) may be required to moor offshore. This would increase turbidity near the moorings, but overall, would benefit water resources. In addition, the removal or reduction of some facilities such as the restrooms at Talisman and the relocation of the campground at Watch Hill would result in an overall benefit to surface and groundwater. The monitoring and enforcement of recreational fishing restrictions also would benefit aquatic life through the protection from overfishing and improvement of water quality through a reduction in boat-related pollutants from fuel spills and littering. Construction activities, including the presence of construction vehicles and equipment, could have a temporary adverse impact on water resources depending on the nature and location of the action. The cumulative impact would be long-term beneficial, and Alternative 2 would contribute an



appreciable beneficial increment to the overall beneficial cumulative impact.

The beneficial impacts on water quality would be readily apparent due to increased monitoring and enforcement of recreational fishing, the removal of structures, reduction in non-point source pollution, revegetation of previously developed areas, and reduced potential for groundwater contamination. Although these benefits would be long term in duration, beneficial impacts as a result of Alternative 2 would not likely significantly affect the overall quality of water resources at the Seashore.

Alternative 2 would also have some adverse impacts. Water-based recreation activities could continue and reducing the number of marinas could potentially increase adverse impacts to water quality by potentially increasing the number of boats mooring offshore. Temporary adverse impacts to water quality from operations related to the removal of some structures could also occur. However, water quality conditions would not be degraded below relevant standards. In addition, no wetland sources would be lost, and wetland functions and values would be minimally affected. Therefore, due to the simultaneous implementation of best management practices and continued actions related to management policies protecting water resources, and within the context of the overall quality of water resources throughout the Seashore, these impacts would not be considered significant.

## WATER RESOURCES

### IMPACTS OF ALTERNATIVE 3

*Recognize the Relationship between Human Use and Nature (Preferred Alternative)*

## Impact Analysis

### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Natural resource management efforts associated with Alternative 3 would include the elements described in the “Impacts Common to All Alternatives” section. Continued shellfishing could reduce the quantity of shellfish in the bay. Shellfish are filter feeders and remove nutrients and suspended particles from the water column during feeding, which has the potential to reduce turbidity and increase light penetration. Deeper light penetration through the water column has the potential

to expand the range over which submerged aquatic vegetation can live on the bottom substrate. However, bay-wide restoration efforts, if implemented properly, could minimize adverse impacts and would have a beneficial impact on water resources as a whole.

### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

The impact of cultural resource management efforts on water resources associated with Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section above.

### ► IMPACTS RELATED TO LAND USE AND DEVELOPMENT ACTIONS

Land-use and development efforts associated with Alternative 3 would include the elements described in the “Impacts Common to All Alternatives” section. Similar to Alternative 2, this alternative would seek to instill new zoning standards, sustainable building designs, and stormwater management options that would result in beneficial impacts to water resources, especially water quality.

As described in the “Impacts Common to All Alternatives section,” potential land acquisitions to support the restoration of natural resources also would help to enhance water quality within the Seashore, because land acquisitions would be followed by the removal of any existing structures, thereby removing those sources of nonpoint source pollution and runoff.

### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts to water resources associated with the Seashore experience component of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section.

### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

The impact of the transportation and access components of Alternative 3 on water resources would be similar to those described in the “Impacts Common to All Alternatives” section above. In addition, the Seashore would encourage a transition from vehicle-based hauling to water-based hauling. Although this could reduce vehicles on Fire Island and the associated pollutants on land, boat use would increase. Similar to ferries and private boats, watercraft vehicles used to haul materials

to/from Fire Island would contribute petroleum products to the water column and/or cause sediment disturbances in shallow waters from propeller blades and currents. Alternative 3 could also include expanded ferry and lateral water taxi services which would result in more boat traffic in the bay. This could increase the impact to water quality from sediment disturbances and petroleum spills that could adversely affect habitat for aquatic life and aquatic vegetation.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Seashore operations, maintenance, and facilities components of Alternative 3 would include those described in the “Impacts Common to All Alternatives” section. Construction activities could result in temporary sediment disturbances and would increase the potential for petroleum spills from the presence of construction equipment and vehicles. However, the Seashore would implement best management practices to minimize impacts to surface and ground waters, such as sediment control measures.

Under this alternative, the Seashore would continue to operate their existing fleet of work and patrol boats, which would continue to have the potential to release petroleum products into the bay, increase turbidity, and disturb marine resources. Because no additions to the Seashore’s fleet are proposed, this component of Alternative 3 would have no noticeable impact on water resources compared to current conditions.

### Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to impact water resources within the Seashore. These actions include the Great South Bay Clam Restoration Project, the Brookhaven 2030 Plan, changes to the New York State CZM policies, Long Island South Shore Estuary Reserve Comprehensive Management Plan, the Suffolk County Vector Control and Wetlands Management Long-Term Plan, and the Village of Patchogue Local Waterfront Revitalization Program and Harbor Management Plan. These past, present, and reasonably foreseeable future actions would result in long-term beneficial impacts and long-term minor adverse impacts on water resources at the Seashore. When combining the impact of past, present, and reasonably foreseeable future actions with the impacts of Alternative 3, a long-term minor adverse cumulative impact would result. Alternative 3 would

contribute a noticeable adverse increment to the overall adverse impact.

### Conclusion

Like the other alternatives, impacts on water resources associated with the individual components of Alternative 3 would range from beneficial to adverse. Many of the impacts would be similar to those described for Alternative 1. Natural resource management elements of Alternative 3 would result in both beneficial and adverse impacts. Adverse impacts could result from shellfishing and fin fishing within the bay; routine dredging; and the use of chemical treatments to manage vegetation, insect, and wildlife populations (such as herbicides and insecticides). Transportation components of this alternative such as personal vehicle use and the continued use of private boats, water taxis, and ferries, to access the Seashore would continue to adversely impact water resources, including surface waters and marine life. In the short-term, cultural resource management efforts could result in temporary adverse impacts to water resources during investigations of submerged resources. Routine operations and maintenance activities also could have a temporary adverse impact on water resources depending on the nature and location of the action. The adverse impacts associated with Alternative 3 would not be considered significant because the reduction in water quality would be minimal and in most cases, would last only a short amount of time.

Benefits to water resources result from efforts to restore the bay and human intervention (such as that related to the removal of structures on acquired properties) to restore natural resources and processes. Additionally, as part of Alternative 3, water-resource-design improvements would be made to existing facilities that would benefit water resources. Beneficial impacts to water resources from Alternative 3 would not be considered significant because, in the context of the overall quality of water resources throughout the Seashore, impacts would not be noticeable.

## NATURAL RESOURCES

# Impacts on Vegetation

### Methodology

The impact analysis for vegetation assumes that actions conducted under each alternative would adhere to applicable federal, state, and local laws and policies including:

- Federal Noxious Weed Act of 1974
- Endangered Species Act of 1973, as amended
- Executive Order 13112: Invasive Species
- Executive Order 13653: Preparing the U.S. for the Impacts of Climate Change
- Department of the Interior (DOI) Secretarial Order 3289: Addressing the Impacts of Climate Change on America's Water, Land, and other Natural and Cultural Resources
- NPS Management Policies 2006
- Director's Order 18: Wildlife Fire Management
- New York State Natural Heritage Program

All available information on plants and vegetative communities potentially impacted in the Seashore was compiled and reviewed. Maps showing vegetative cover and locations of sensitive plant species (such as state-listed species), and high-value habitats (such as maritime forests) were reviewed. Predictions about short- and long-term impacts on vegetation were based on the actions proposed under each alternative, and in most cases, these actions are undefined, making the impacts very general in nature. As actions are implemented under the approved GMP, site-specific planning and compliance would be conducted, as applicable.

Resource-specific context for assessing impacts of the alternatives on vegetation includes:

- Vegetation is part of the larger, continuous, diverse ecosystem that encompasses barrier islands and bluffs stretching from New York City to the very eastern end of Long Island. Potential for impacts to the larger system are dependent on the breadth of impact (i.e., individual plant, local community, regional community) and the amount and frequency of disturbance and/or removal of vegetation.



- Vegetation is the basis of the ecological community, meaning that other important resources (such as coastal processes) depend on vegetation.
- The Sunken Forest, a maritime forest 250-300 year old, is a key natural feature of the Seashore
- Rare vegetation associations are unique, a consideration when determining whether an impact is likely to be significant according to CEQ criteria summarized at the beginning of this chapter.

### VEGETATION

## IMPACTS COMMON TO ALL ALTERNATIVES

### Impact Analysis

#### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Many of the proposed natural resource management activities are common to all alternatives and would have an overall beneficial impact on vegetation within the Seashore. These activities include:

- a comprehensive research and monitoring program
- cooperative stewardship of the resources
- increased educational programming
- regeneration of native vegetation, focusing on the Sunken Forest



- updating the threatened and endangered species management plan
- maintaining native plant and animal species
- developing and implementing an invasive species management plan
- implementing a marine resources management plan
- working with other agencies to understand vegetative changes (in particular wetland vegetation) related to climate change and sea-level rise

These actions and their beneficial impacts are generally discussed below.

Alternatives 2 and 3 would include efforts to encourage greater scientific and scholarly research. As part of these efforts, the Seashore would develop a coordinated, comprehensive research and monitoring program to better understand and manage the broad range of natural and cultural resources within the Seashore's boundaries. Studies could provide a better understanding of existing vegetative communities, which would allow for improved management of Seashore vegetation, both on land and within the marine environment. Building on this program, the NPS would promote cooperative stewardship of the resources with members of the public (both visitors and community residents), Seashore stakeholders, and other landowners/agencies to better protect vegetative communities and threatened and endangered plant species within Fire Island National Seashore. Increased educational programming focused on resource management would further promote these ideas and inform visitors and residents.

Under Alternatives 2 and 3, measures also would be taken to restore and maintain the vegetative character of the Sunken Forest and other maritime forests within the Seashore, which could include the regeneration of key canopy tree species and a variety of herbs and shrubs. These efforts would continue to improve the overall health of vegetation at the Seashore, a long-term beneficial impact that would be readily apparent as actions are implemented. The proposed actions would also improve the NPS's understanding of the impact of the Seashore's ever-changing conditions (i.e., ongoing erosion and climate change) on vegetation. Adaptive management strategies would be developed to identify and address the impacts of climate change on native vegetation, better protecting these resources as conditions change.

In addition, under Alternatives 2 and 3, the NPS would develop and implement a comprehensive marine resources management plan to enhance marine vegetation communities such as eelgrass beds. Restoring eelgrass beds within the marine environment would provide a long-term beneficial impact on other marine vegetation species that benefit from the increased productivity eelgrass provides.

Under Alternatives 2 and 3, the Seashore would enhance efforts to identify, monitor, and manage nonnative invasive plants within the Seashore's boundary (both on land and within the marine environment) and would develop a comprehensive invasive species management plan. Invasive plants species known to occur within the Seashore are described in "Chapter 3: Affected Environment." Invasive species have the ability to displace native species, adversely affecting wildlife populations reliant on native plants, and altering fire regimes. Therefore, reducing the spread and overall population of invasive plant species at the Seashore would increase the health of the native vegetation populations, a long-term beneficial impact.

At the William Floyd Estate, in addition to the management of nonnative plants, the Seashore would maintain the mixed habitat complex of field, forest, wetland, and marsh vegetation that currently exists on the property using the proposed Cultural Landscape Report and Treatment Plan (described in the "Cultural Resource Management" section below) as a guide. This would benefit both the cultural landscape at the Estate and the existing vegetation communities that would be preserved. Like Fire Island, the Seashore would also undertake additional surveys at the William Floyd Estate to obtain more information about the abundance and spatial distribution of flora. By learning more about the existing vegetation, the Seashore would be better prepared to manage the forest, shrub, and herbaceous layers as natural habitats. Additionally, at the William Floyd Estate, NPS would complete plans to address the wildland fire risk and the potential use of prescribed fire in the management of the cultural landscape. Prescribed fire would adversely impact targeted vegetation at the Estate but would have a long-term beneficial impact on the fields in the Lower Acreage.

#### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Under each of the proposed alternatives, the Seashore would continue to preserve cultural resources as funding becomes available. In general, these efforts would be focused on the William Floyd Estate, Carrington Estate, and the Fire Island Light Station. A Cultural Landscape Report and Treatment Plan would be developed for the Floyd Estate and the Light Station. These plans would include guidance for maintaining the various vegetation communities at the Estate and the Light Station to ensure their preservation, benefiting both the cultural landscape and the vegetation communities that make up these cultural landscapes. At the Estate, some plantings within the historic core may be replaced and would be in keeping with the existing vegetation communities. However, some actions, including identification and inventory of archeological resources throughout the Seashore, could require temporary disturbance of vegetation. These disturbances are not anticipated to have a noticeable impact on vegetation within the Seashore.

#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Alternatives 2 and 3 include the proposed development of a Coastal Land Use and Shoreline Management Plan in collaboration with relevant regulatory interests associated with Fire Island, and would incorporate the tenets of the Tentative Federally Supported Plan (TFSP) for FIMP. Such a plan would include measures to address shoreline protection and hazard mitigation in the context of the dynamic barrier environment and emerging trends resulting from sea-level rise and climate change. This plan could include efforts to protect and/or restore vegetation in the barrier environment.

In addition, consistent with the 1984 Land Protection Plan, the NPS would work to acquire property from willing sellers within the Seashore District as defined by the federal zoning standards. Once these areas are acquired, all structures and manmade improvements would be removed, and the area would be allowed to return to a natural state. Beneficial impacts that would come from restoring these areas include increases in vegetation to protect primary/secondary dunes from wind erosion and storm damage, as well as restoration of trees and shrubs available for wildlife on inland lots. These actions would increase the overall diversity and density of natural vegetative cover, a long-term beneficial impact on vegetation.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

All of the proposed alternatives would also continue to permit camping and recreational ORV use on the beach in front of the Fire Island Wilderness and the use of ORVs between Smith Point County Park and Moriches Inlet. ORVs would continue to occasionally travel outside designated routes through vegetated areas. ORVs have the potential to loosen soil from stabilizing plants, flatten herbaceous flora, and otherwise damage or destroy vegetation. However, the adverse impact associated with such activity would be minimal, because the Seashore strictly enforces rules for driving on the beach that preclude driving in vegetated areas. In addition, sensitive vegetation and dunal communities would continue to be fenced, where appropriate, to further minimize the adverse impacts associated with ORV use.

Continued camping in or near the Fire Island Wilderness could also result in continued, minimal human disturbances to vegetation, depending on the placement of camping equipment. However, the Seashore has taken steps to minimize adverse impacts to vegetation from camping, such as having no designated camp sites within the wilderness, establishing zones to distribute campers across the wilderness, limiting the number of camping permits issued for each night, and providing focused visitor education. As a result, it is anticipated that adverse impacts on vegetation from camping would not be noticeable when considered at the larger scale of the Seashore.

Within the Fire Island Wilderness, the facilities at Old Inlet lost during Hurricane Sandy in 2012 (including a boardwalk, vault toilet, and dock) would not be reconstructed. As the breached area fills in, a long-term beneficial impact on vegetation would occur as existing vegetation communities expand into this previously developed area.

In addition to the scholarly research described under “Natural Resource Management” above, under Alternatives 2 and 3 the Seashore would expand opportunities for public involvement in research at Fire Island National Seashore. This would include hands-on programming and activities such as “citizen science.” Programs would be designed to emphasize public education and would encompass research, monitoring, and the adoption of best practices. Activities could include assisting with ongoing research or helping to eliminate or reduce the spread of invasive species. The studies conducted as part of these programs would

contribute to the overall understanding of the Seashore's natural resource communities, including vegetation, and therefore could lead to improved management of vegetation and special-status species. Programs that involve public efforts to eliminate or reduce invasive species would directly improve the health of existing vegetation at the Seashore, an overall long-term beneficial impact.

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► **IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS**

Maintaining the roadless environment and limiting bicycle use on federal lands to those areas where vehicles are permitted would continue to protect vegetation throughout the Seashore, a long-term beneficial impact. Other transportation and access components common to all alternatives would have no noticeable impact on vegetation at the Seashore.

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► **IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS**

Under all alternatives, routine maintenance of the existing bulkheads, roads, trails, and/or boardwalks could result in temporary and localized adverse impacts on vegetation due to trimming of overhanging branches and removal of vines for pedestrian safety. The adverse impacts associated with routine maintenance would be short-term and minimal. Under Alternatives 2 and 3, the Seashore would model best practices for activities such as landscaping and any proposed development. The Seashore would work with others to encourage similar best management practices throughout Fire Island. Efforts could include more sustainable development practices, the use of native plant materials, implementation of pilot programs and demonstration projects, and raising public awareness of these practices. These efforts would result in greater understanding and sensitivity toward natural resources, including the existing vegetation, and could improve the overall health of vegetation within the Seashore by focusing on new methods to enhance and manage vegetation, a long-term beneficial impact.

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**VEGETATION**

**IMPACTS OF ALTERNATIVE 1**

*Continuation of Current Management Practices (No Action)*

**Impact Analysis**

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► **IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS**

Under Alternative 1, impacts to vegetation associated with natural resource management efforts would be similar to those described in the "Impacts Common to All Alternatives" section above. In addition, under Alternative 1, the emergency use of sandbags and geotubes seaward of communities to prevent erosion would continue to be permitted. This could temporarily prohibit or reduce vegetation growth in these areas while the sandbags and geotubes are in place, a minimal adverse impact on vegetation.

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► **IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS**

Impacts on vegetation from cultural resource management efforts would be the same as those described in the "Impacts Common to All Alternatives" section above.

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► **IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS**

In addition to the impacts discussed in the "Impacts Common to All Alternatives" section, Alternative 1 would allow for the restoration of damaged properties after a storm event consistent with applicable local and federal zoning requirements, including restoration of the vegetation damaged by winds and/or erosion. This would ensure the preservation of existing vegetation communities within the Seashore.

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► **IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS**

Impacts to vegetation associated with Alternative 1 would be the same as those described in the "Impacts Common to All Alternatives" section.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts on vegetation from transportation and access actions would be the same as those described in the “Impacts Common to All Alternatives” section above and, in general, would have no noticeable impact on vegetation at the Seashore.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts associated with the Seashore operations, maintenance, and infrastructure components of Alternative 1 would include those described in the “Impacts Common to All Alternatives” section.

### Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to affect vegetation within the Seashore. There are no related regional plans or initiatives that are expected to have a cumulative impact on Seashore vegetation beyond what is described under this alternative.

### Conclusion

Overall, Alternative 1 would result in long-term beneficial impacts on vegetation. Natural resource management components would be generally consistent with current efforts, including invasive plant management, and research and monitoring. These elements would improve the overall health of vegetation at the Seashore. From a cultural resource management perspective, there would be few long-term impacts to vegetation. A Cultural Landscape Report and Treatment Plan would be developed for the William Floyd Estate and Fire Island Light Station. The plans would include guidance for maintaining the various vegetation communities at the Estate and the Light Station to ensure their preservation, benefiting both the cultural landscape and the vegetation communities associated with them.

Under Alternative 1, visitors would have the opportunity to continue to use ORVs within the Seashore and to camp on the beach in front of the Fire Island Wilderness. Each of these elements of the Seashore experience could adversely impact vegetation at the Seashore. However, the adverse impact associated with these activities would be minimal, because the Seashore strictly enforces rules for driving on the beach that preclude driving in vegetated areas and has taken steps to minimize adverse impacts to vegetation from

camping. As such, it is anticipated that adverse impacts on vegetation from visitor use would not be noticeable when considered at the larger scale of the Seashore.

In the short term, routine maintenance efforts, the emergency use of sandbags and geotubes to prevent erosion (if needed), and efforts to inventory cultural resources could adversely impact vegetation. The use of sandbags and geotubes could prohibit vegetation growth while they are in place. Again, these adverse impacts would be minimal and undetectable when compared to the overall beneficial impacts.

Benefits to vegetation resulting from the proposals summarized above would be considered significant as the overall health of unique vegetation communities (such as Sunken Forest, a fundamental resource within the Seashore) would be noticeably improved. Adverse impacts associated with the alternative would not be considered significant because their effect would be short term and localized.

#### VEGETATION

### IMPACTS OF ALTERNATIVE 2

*Enhancing Natural Resource Values*

### Impact Analysis

#### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the natural resource management components of Alternative 2 would include those described in the “Impacts Common to All Alternatives” section. In addition, Alternative 2 would focus on restoration and enhancement of natural resources and processes. For example, the Seashore would work with its partners to pursue a proactive program of natural resource protection within the Seashore that would seek to restore degraded or damaged ecosystems, as feasible. Beyond the native vegetation restoration efforts common to all alternatives, under Alternative 2 the NPS would also develop and execute an aggressive strategy for eradication of invasive nonnative plant species and the restoration of native species on federal lands through the most effective and environmentally sound means available. NPS would collaborate with the Fire Island communities, the towns of Islip and Brookhaven, and Suffolk County to encourage similar efforts outside of the Seashore. Efforts to restore native vegetation and reduce invasive species would enhance natural vegetation communities within



the Seashore and could improve the overall health of vegetative ecosystems, a long-term beneficial impact.

#### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the cultural resource management components of Alternative 2 would include those described in the “Impacts Common to All Alternatives” section. In addition, cultural resource management efforts at the William Floyd Estate associated with Alternative 2 would have the potential to impact Seashore vegetation. Efforts to restore and rehabilitate the cultural landscape in the Lower Acreage at the William Floyd Estate would also beneficially affect vegetation. Specifically, the rehabilitation of existing features such as fields and marshlands would benefit those vegetation communities. However, some restoration efforts could minimally disturb and/or remove existing vegetation to create cultural landscape vignettes (e.g., introducing garden or cultivated areas) or during restoration of existing roads and trails. These efforts would cause both long-term (if vegetation is removed) and temporary (during restoration) disturbances to vegetation; however, they would be only slightly detectable and highly localized when compared to the overall beneficial impacts associated with Alternative 2.

#### ► IMPACTS RELATED TO LAND USE AND DEVELOPMENT ACTIONS

Impacts associated with the land-use and development components of Alternative 2 would include those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts associated with the Seashore Experience elements of Alternative 2 would include those described in the “Impacts Common to All Alternatives” section. In addition, the Seashore would encourage a visitor experience that is “lighter on the land.” Physical connections between Seashore sites and the developed communities could be reduced, lessening human impacts on vegetation in those locations, and potentially facilitating the regeneration of native vegetation. The number of visitor facilities would also be reduced under Alternative 2, including removal and/or consolidation of some of the facilities at Sailors Haven/Sunken Forest, and Talisman. At Watch Hill, the existing campground

would be relocated to a more suitable area, allowing the existing area adjacent to the marsh to return to its naturally vegetated condition. The existing Wilderness Visitor Center also would be replaced with a smaller, simpler structure. Each of these actions would reduce the footprint of manmade structures within the Seashore and provide opportunities of the regrowth of native vegetation. The net expansion of vegetation communities within these areas would result in a long-term beneficial impact.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Under Alternative 2, additional trails and boardwalks may be added to accommodate public access throughout the Seashore. At the William Floyd Estate, the boardwalk may be realigned in some locations, and a visitor observation blind or platform could be added next to an existing marsh and pond. Overall, adverse impacts on existing vegetation associated with these modifications would be localized and only slightly detectable (generally, the removal of a very minimal amount of existing vegetation). Therefore, transportation-related components of Alternative 2 would have no noticeable impact on vegetation at the Seashore.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 2 would include those described in the “Impacts Common to All Alternatives” section. In addition, under Alternative 2, many of the Seashore facilities would be removed. For example, Seashore housing would be removed from Talisman, the Fire Island Light Station/Kismet Fire House would be removed after its lease expires in 2014, and the number of housing units at Sailors Haven and Watch Hill would likely be reduced. This would allow for restoration of any underlying and surrounding vegetation, resulting in a beneficial impact on vegetation. Conversely, Alternative 2 would include the expansion of the existing maintenance shop at the William Floyd Estate to accommodate a consolidated maintenance facility for the Estate and the eastern end of the Seashore. The extent of adverse impacts on vegetation would be dependent on the size of the development and location of the expansion relative to existing vegetation. It is anticipated that the Seashore would design the expansion so as to minimize adverse impacts on vegetation.

The removal of the existing facilities and development of the consolidated maintenance facility at the William Floyd Estate would require a temporary increase in human presence and construction equipment, which could affect vegetation in those areas in the short-term. Where possible, the construction vehicles and equipment would be staged away from vegetated areas to minimize adverse impacts. Upon completion, vegetation would be restored to the extent feasible.

## Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to impact vegetation within and near the Seashore. There are no related regional plans or initiatives that are expected to have a cumulative impact on Seashore vegetation beyond what is described under this alternative.

## Conclusion

Individual components of Alternative 2 would have impacts ranging from long-term beneficial to short-term adverse. However, overall, Alternative 2 would result in a long-term beneficial impact on vegetation. The benefits would be greater than those associated with Alternative 1, as the components of Alternative 2 have been designed to emphasize protection and restoration of natural, ecological systems, patterns, and resources within the Seashore.

Natural resource management efforts would focus on restoration and enhancement of natural resources and processes, and many of the existing facilities would be removed, consolidated, or replaced with smaller structures. Similar to Alternative 1, this alternative would include many actions that improve vegetative health, such as removal of invasive species, restoration of the vegetative character on the Sunken Forest, updating the threatened and endangered species plan, and implementing a marine resources plan. However, under Alternative 2 the Seashore would also develop and execute an aggressive strategy for eradication of invasive nonnative plants species and the restoration of native plant species on federal lands.

Efforts to rehabilitate the cultural landscape at the William Floyd Estate would have both adverse and beneficial impacts on the vegetation, though the overall impact on vegetation at the Estate would be beneficial.

Visitor experience components of this alternative could minimally adversely impact vegetation due to continued use of ORVs and camping. However, the

adverse impacts would be slightly less than under Alternatives 1 and 3 because some resources/areas could be inaccessible to visitors. However, as described under Alternative 1, the adverse impact associated with these activities would be minimal because the Seashore strictly enforces rules for driving on the beach that preclude driving in vegetated areas and has taken steps to minimize adverse impacts to vegetation from camping. As such, it is anticipated that adverse impacts on vegetation from visitor use would not be noticeable when considered at the larger scale of the Seashore.

Operation and maintenance components would have an overall beneficial impact on vegetation because, despite the development of a consolidated maintenance facility at the William Floyd Estate, many structures would be removed from various locations throughout the Seashore, allowing for the regeneration of underlying and surrounding vegetation. In the short term, some components of this alternative such as efforts to enhance cultural resources, removal of existing structures, and development of new structures could adversely impact vegetation. It is anticipated that, in general, upon completion of the construction, demolition, and/or maintenance activities, vegetative conditions would be restored.

Benefits to vegetation resulting from the proposals summarized above would be considered significant as the overall health of unique vegetation communities, such as Sunken Forest, a fundamental resource within the Seashore, would be noticeably improved. This alternative also contributes to the larger barrier island system to a greater extent than Alternative 1. Adverse impacts associated with Alternative 2 would not be considered significant because their effects would be short term and localized.

## VEGETATION

**IMPACTS OF ALTERNATIVE 3**

*Recognize the Relationship between Human Use and Nature (Preferred Alternative)*

**Impact Analysis**

► **IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS**

Impacts associated with the natural resource components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section, as well as those proposed under Alternative 1.

► **IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS**

Impacts associated with the cultural resource components of Alternative 3 would include those described in the “Impacts Common to All Alternatives” section. In addition, similar to Alternative 2, cultural resource management efforts with the most potential to impact vegetation would be focused on the William Floyd Estate. Efforts to restore and rehabilitate the cultural landscape in the Lower Acreage at the William Floyd Estate would have an overall benefit on vegetation. In particular, the rehabilitation of existing features such as fields and marshlands would benefit this vegetation. However, restoration efforts could disturb and/or remove existing vegetation to create cultural landscape vignettes (e.g., introducing gardens or cultivated areas) and during restoration of existing roads and trails. These efforts would cause both long-term (if vegetation is removed) and temporary (during restoration) disturbances to vegetation. Overall, the impacts from these activities would be only slightly detectable and highly localized, when considering the long-term beneficial impacts on vegetation within the Seashore.

► **IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS**

Land-use components of Alternative 3 would include those described in the “Impacts Common to All Alternatives” section; therefore the associated impacts would be same.

► **IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS**

Impacts associated with the Seashore Experience components of Alternative 3 would include those described in the “Impacts Common to All Alternatives” section. The Seashore also would encourage greater distribution and dispersion of visitors across NPS facilities and encourage a broad range of experiences. In addition, the total number of backcountry camping permits issued by the Seashore would increase, allowing more individuals to camp on the beach in front of the wilderness. The number of backcountry camping permits within the Wilderness Area (a total of 36) would not increase. Increased camping on the beach could heighten adverse impacts on vegetation from human presence, depending on the placement of camping equipment. However, the Seashore has taken steps to minimize adverse impacts to vegetation from camping; therefore, it is anticipated that adverse impacts on vegetation from camping would not be noticeable when considered at the larger scale of the Seashore.

► **IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS**

Impacts on transportation and access components of Alternative 3 would include those described for Alternative 2. Additional trails and boardwalks may be added to accommodate public access throughout the Seashore. At the William Floyd Estate, the boardwalk may be realigned in some locations, and a visitor observation blind or platform could be added next to an existing marsh and pond. Overall, adverse impacts on existing vegetation associated with these modifications would be localized and only slightly detectable (generally, the removal of a very minimal amount of existing vegetation). Therefore, transportation-related components of Alternative 2 would have no noticeable impact on vegetation at the Seashore.

► **IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS**

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 3 would include those described in the “Impacts Common to All Alternatives” section. Like Alternative 1, this alternative would include routine maintenance of the existing bulkheads, roads, trails, and boardwalks, which could minimally disturb vegetation. Structural improvements to existing facilities could include

incorporation of sustainable elements such as enhanced energy efficiency systems, stormwater management, and alternative technologies. These efforts would substantially benefit vegetative health at the Seashore in the long term.

Like Alternative 2, this alternative would include the expansion of the existing maintenance shop at the William Floyd Estate to accommodate a consolidated maintenance facility for the Estate and the eastern end of the Seashore. The extent of adverse impacts on vegetation would be dependent on the size of the development and location of the expansion relative to existing vegetation. It is anticipated that the expansion would be designed so as to minimize adverse impacts on vegetation.

## Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to impact vegetation within and near the Seashore. There are no related regional plans or initiatives that are expected to have a cumulative impact on Seashore vegetation beyond what is described under this alternative.

## Conclusions

Overall, Alternative 3 would result in a short-term adverse and long-term beneficial impact on vegetation. Natural resource management components would be generally consistent with those described in Alternative 1, including restoration of the vegetative character of the Sunken Forest and other maritime forests at the Seashore, invasive plant management, and improved research and monitoring. These elements would improve the overall health of vegetation at the Seashore as well as expand NPS knowledge related to the existing vegetation and the ongoing processes that are impacting vegetation on Fire Island.

Cultural resource management impacts to vegetation would primarily be related to restoration of the cultural landscape at the William Floyd Estate (primarily in the Lower Acreage) and would have an overall beneficial impact on vegetation. In addition, a Cultural Landscape Report and Treatment Plan would be developed for the William Floyd Estate and Fire Island Light Station. The plans would include guidance for maintaining the various vegetation communities at the Estate and the Light Station to ensure their preservation, benefiting both the cultural landscape and the vegetation communities that make up these cultural landscapes.

Consistent with the other alternatives, the development and implementation of a Coastal Land Use and Shoreline Management Plan could include efforts to protect vegetation on Fire Island from the effects of sea-level rise and climate change.

Visitors also would have the opportunity to continue to use ORVs within the Seashore and to camp within or on the beach in front of the Fire Island Wilderness. Each of these elements could adversely impact vegetation at the Seashore. Despite the potential for increased camping in the Wilderness under this alternative, as described for the other alternatives, the adverse impact associated with camping and ORV use would be minimal, because the Seashore strictly enforces rules for driving on the beach that preclude driving in vegetated areas and has taken steps to minimize adverse impacts to vegetation from camping. Thus, it is anticipated that adverse impacts on vegetation from visitor use would not be noticeable when considered at the larger scale of the Seashore.

Seashore operations, maintenance, and facilities components would have an overall beneficial impact on vegetation, because many of the structures would be consolidated. However, expansion of the existing maintenance shop at the William Floyd Estate could have a minor adverse impact on vegetation, depending on the scale and location of construction. In the short-term, activities such as the construction and/or demolition of existing structures, routine maintenance efforts, and efforts to enhance cultural resources could adversely impact vegetation. It is anticipated that, in general, upon completion of the construction, demolition, and/or maintenance activities, vegetative conditions would be restored.

Similar to Alternative 2, benefits to vegetation resulting from the proposals summarized above would be considered significant as the overall health of unique vegetation communities, such as Sunken Forest, a fundamental resource within the Seashore, would be noticeably improved. Alternative 3 also contributes to the larger barrier island system to a greater extent than Alternative 1. Adverse impacts associated with this alternative would not be considered significant because their effects would be short term and localized.



## NATURAL RESOURCES

# Impacts on Wildlife and Wildlife Habitat

### Methodology

The impact analysis for wildlife and wildlife habitat assumes that actions conducted under each alternative would adhere to applicable federal, state, and local laws and policies including:

- Endangered Species Act of 1973, as amended
- 1918 Migratory Bird Treaty Act
- Executive Order 13186 – Protection of Migratory Birds
- Executive Order 13653: Preparing the U.S. for the Impacts of Climate Change
- Department of the Interior (DOI) Secretarial Order 3289: Addressing the Impacts of Climate Change on America’s Water, Land, and other Natural and Cultural Resources
- NPS Management Policies 2006
- 2006 Integrated Pest Management Plan
- New York State Natural Heritage Program
- Suffolk County Vector Control and Wetlands Management Long-Team Plan

NPS Management Policies 2006 for biological resource management (section 4.4 et seq.) states that “the National Park Service will maintain as parts of the natural ecosystems of parks all plants and animals native to park ecosystems.” According to NPS Management Policies 2006 (NPS 2006), the restoration of native species is a high priority. Management goals for wildlife and wildlife habitat include maintaining components and processes of naturally evolving park ecosystems, including natural abundance, diversity, and the ecological integrity of plants and animals.

Information on wildlife and wildlife habitat was taken from Seashore documents and records. The Seashore natural resource management staff, the USFWS, and the New York Natural Heritage Program also provided wildlife and wildlife habitat information. Similar to the analysis of impacts on vegetation, predictions about short- and long-term impacts on wildlife and wildlife habitat were based on the actions proposed in each alternative and in most cases, these actions are undefined. Therefore the impacts are very general in nature. As actions are implemented under the approved GMP, site-



specific planning and compliance would be conducted, as applicable. In general, impacts are described below based on the availability of suitable high-quality habitat, which is a critical factor in the abundance and diversity of wildlife species present. On the reverse side, actions that would result in the loss of suitable high-quality habitat would be considered adverse.

The resource-specific context for the evaluation of impacts on wildlife and wildlife habitat included the following:

The degree to which abundance and diversity of native species and/or the quality of their habitat are disrupted, and whether those disruptions would be within the natural range of variability.

### WILDLIFE & WILDLIFE HABITAT IMPACTS COMMON TO ALL ALTERNATIVES

### Impact Analysis

#### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Because vegetation and wildlife impacts are so intertwined, all of the proposed natural resource management activities described under “Impacts Common to All Alternatives” for Vegetation would also have an overall beneficial impact on wildlife and wildlife

habitat within the Seashore. Again, these activities include:

- a comprehensive research and monitoring program
- cooperative stewardship of the resources
- increased educational programming
- restoration of native vegetation, focusing on the Sunken Forest
- updating the threatened and endangered species management plan
- maintaining native plant and animal species
- developing and implementing an invasive species management plan
- implementing a marine resources management plan
- working with other agencies to understand habitat changes (in particular wetland vegetation) related to climate change and sea level rise

Additional natural resource management actions that would also result in a long-term beneficial impact on wildlife and wildlife habitat include the creation of beach habitat at Sailors Haven, and minimizing manmade light and noise sources. These actions and their resulting beneficial impacts are described below.

Under Alternatives 2 and 3 the Seashore would develop a coordinated, comprehensive research and monitoring program to better understand and manage the broad range of natural and cultural resources within the Seashore's boundaries. Studies conducted could provide a better understanding of existing wildlife communities as well as existing habitat areas, which would allow for improved management of the wildlife and wildlife habitat that occupy the Seashore. Using the knowledge from this program, the NPS also would promote cooperative stewardship of the natural resources with members of the public, Seashore stakeholders, and other land managers. Increased research and monitoring, as well as cooperative stewardship, would provide indirect, long-term beneficial impacts on wildlife and wildlife habitat.

Under Alternatives 2 and 3, the Seashore would make efforts to restore native vegetation in the Sunken Forest and maritime forests, and control invasive species across Fire Island and at the William Floyd Estate. If necessary, an invasive species management plan would also be developed. The removal of invasive species would benefit wildlife habitat by removing plant life unsuitable for wildlife use and providing sustainable nesting and foraging habitat for local fauna.

Under Alternatives 2 and 3, the Seashore would develop a management plan for the long-term sustainability of marine environments and the aquatic species inhabiting the Great South Bay and Atlantic Ocean. Monitoring of fin and shellfish populations would be implemented so as to detect trends and make future management decisions, which would improve long-term conditions for marine life. Under all alternatives, specific habitats important to the life cycle of marine life, such as estuaries and subaquatic vegetation, would be monitored through collaborative efforts among Seashore staff and wetland researchers.

The Seashore would continue to monitor bird species that use the Seashore through collaboration with volunteer bird-watching groups and bird enthusiasts. The Seashore would continue to sponsor bird-watching tours and actively promote wildlife recreational tourism. Data gathered would be shared with other wildlife agencies involved with overseeing the management of migratory birds.

The reduction of manmade light and noise impacts within the Seashore would promote more natural habitat conditions and beneficially impact wildlife and wildlife habitat. In general, the existing intrusions are fairly minimal, so any changes would be only slightly detectable.

In addition, each of the proposed alternatives would include continued tick and mosquito surveillance and management at the Seashore. It is not likely that these efforts would cause noticeable impacts on wildlife or wildlife habitat.

Lastly, as sea-level rise continues at an accelerated rate, coastal habitats could be reduced or eliminated. This would expand the available habitat for marine species, but limit the available habitat for terrestrial species. As described in the "Impacts on Coastal Processes and Floodplains" section of this chapter, the implementation of adaptive management approaches and mitigation techniques at the Seashore could reduce the adverse impacts of sea-level rise on Fire Island's resources, thereby increasing the potential for additional wildlife habitat within the Seashore. Further impacts on marine resources are described in the "Water Resources" section above.

#### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Under each of the proposed alternatives, the Seashore would continue to preserve cultural resources as funding becomes available. These actions would cause a temporary increase in human presence and associated noise, but overall the impacts would be highly localized and barely detectable. At the William Floyd Estate, a Cultural Landscape Report and Treatment Plan would be developed. This plan would include guidance for maintaining the various vegetation communities (and therefore habitats) within the Lower Acreage of the Estate, which include hardwood forests, open fields, marshland, and open- water ponds. Maintaining a diversity of high-quality habitat types within the Lower Acreage offers a long-term beneficial impact to a variety of wildlife species.

#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Alternatives 2 and 3 propose the development of a Coastal Land Use and Shoreline Management Plan. The plan would include measures to address shoreline protection, hazard mitigation, land-use controls, and site planning and design guidelines in the context of the dynamic barrier environment and emerging trends resulting from sea-level rise and climate change. Implementation of such a plan would help to protect the barrier environment on Fire Island, thereby preserving the existing wildlife habitat as well as the associated wildlife.

In addition, consistent with the 1984 Land Protection Plan, the NPS would work to acquire property from willing sellers within the Seashore District as defined by the federal zoning standards. Once these areas are acquired, all structures would be removed, and the area would be allowed to return to a natural state. This action would result in beneficial impacts on wildlife and wildlife habitat. Such habitat may include the restoration of primary dunal system previously occupied by houses that could be used by shorebirds and migratory passerines such as sparrows and finches. For inland lots, restoration of habitats would benefit avian species and small mammals that utilize thickets and forested habitats.

Efforts to educate community leaders and residents about the importance of wildlife management at the Seashore and the harm to wildlife caused by certain human actions would be of long-term benefit for wildlife and wildlife populations within the Seashore.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Under all alternatives, wildlife populations would continue to be minimally disturbed by the human presence. It is anticipated that Seashore visitation would be generally consistent with current levels. Guided tours, such as those at the Sunken Forest, would introduce humans into the natural environment, causing temporary, localized, and negligible wildlife disturbances, although some species of wildlife in this area are habituated to humans. Continued visitor use of the beaches, including camping on the beach in front of the Fire Island Wilderness, and ORV use on some beaches, could disrupt shorebird activity. Efforts to protect the Piping Plover, however, would reduce these impacts. Specifically, ORV use is not permitted or severely restricted during critical nesting seasons and campers are urged to respect existing enclosures, which are designed to protect threatened and endangered species.

Within the Fire Island Wilderness, the facilities at Old Inlet lost during Hurricane Sandy in 2012 (including a boardwalk, vault toilet, and dock) would not be reconstructed. The loss of these manmade facilities allows for a net increase in available wildlife habitat within the wilderness, a long-term beneficial impact.

Continued public education and outreach efforts by the Seashore could better inform the public about wildlife-related issues. For example, brochures would continue to be released related to living with wildlife and would include information related to a variety of topics including Lyme disease and ticks and feeding wildlife. This information also would continue to be provided by interpretive rangers and other Seashore staff as appropriate and would be posted on the Seashore's website and social media. Providing the public with ample information about wildlife and the potential hazards of human-wildlife interactions could support better appreciation for and protection of wildlife species within the Seashore, a long-term beneficial impact.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Under each of the proposed alternatives, land-based vehicular access to the Seashore would be generally consistent with current conditions, including the use of vehicles along the beach in some areas. As described in "Chapter 3: Affected Environment," the Seashore is within the Atlantic Flyway, a major North American migratory bird route. The beaches at the Seashore

provide important habitat for a variety of migratory and resident birds including plovers, sanderlings, red knots, and sandpipers. The recreational use of vehicles on Fire Island beaches would continue to minimally disrupt shorebirds that rely on the beach as their primary habitat for foraging and loafing. Under Alternatives 2 and 3, the Seashore would collaborate with Fire Island communities and towns of Islip and Brookhaven to develop a “driver’s manual” that would educate residents, workers, and recreational users about driving etiquette and getting around on Fire Island. If this manual includes information about beach driving, the adverse impacts summarized above could be minimized.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Each of the proposed alternatives would include some level of routine maintenance of the existing boardwalks and trails. These efforts would include clearing/trimming overhanging brush and vines, which could reduce the available nesting and foraging habitat. The overall impact is likely to be short-term, localized, and only slightly detectable, since species that previously used the low-hanging brush and vines for nesting and/or foraging purposes would likely find another location within the Seashore to serve the same purpose. Routine mowing would also continue around the Old Mastic House and at fields at the William Floyd Estate as management of the cultural landscape. This action would cause temporary disturbances to birds and small mammals during mowing but would continue to maintain field/meadow habitats important to wildlife species that prefer open field conditions.

In addition, routine maintenance of the existing bulkheads, roads, trails, and boardwalks could result in temporary and localized adverse impacts on wildlife and wildlife habitat due to the increased human presence and associated increase in noise, vehicles, and equipment. Under all alternatives, operational maintenance of existing marinas and boat docks would continue, including channel dredging and piling replacement, which would have temporary impacts to fisheries and shorebirds resulting from increased turbidity and noise. The adverse impacts associated with routine maintenance would be minimal and would likely not be noticeable in the long term.



#### WILDLIFE & WILDLIFE HABITAT

### IMPACTS OF ALTERNATIVE 1

*Continuation of Current Management Practices (No Action)*

#### Impact Analysis

##### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Long-term beneficial impacts on wildlife and wildlife habitat from natural resource management components of Alternative 1 would include those described in the “Impacts Common to All Alternatives” section above.

##### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Under Alternative 1, improvements to cultural resources that could impact wildlife and wildlife habitat include restoration of the Carrington Estate because of the increased human presence and noise associated with these activities. Improvements to cultural resources at the William Floyd Estate and Fire Island Light Station, such as routine maintenance, also could result in temporary disturbance of wildlife due to an increased human presence and associated noise. These impacts would be temporary and localized and would be unlikely to have a noticeable long-term impact on wildlife and/or wildlife habitat within the Seashore.

##### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts associated with the land-use and development components of Alternative 1 would include those described in the “Impacts Common to All Alternatives” section. In addition, Alternative 1 would support the redevelopment of properties damaged from storm



events. During redevelopment, human presence and associated noise would be concentrated on these properties, resulting in short-term (during construction) and localized disruptions to wildlife and wildlife habitat. Although they would occur in compliance with local codes, state and federal laws, and the Secretary of the Interior's zoning standards, the redevelopment(s) would also be considered a continued, long-term adverse impact on wildlife and wildlife habitat, since properties redeveloped to their original condition (i.e., structures reconstructed) would occupy space that could otherwise revert to use as available wildlife habitat. In considering the balance of available habitat throughout the Seashore, the adverse impact would be minor.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts associated with Seashore experience, interpretation, education, and outreach components of Alternative 1 would be consistent with those described in the "Impacts Common to All Alternatives" section. Under Alternative 1, it is anticipated that Seashore visitation would be generally consistent with current levels. Guided tours, such as those at the Sunken Forest, would introduce humans in to the natural environment, causing temporary, localized, and negligible wildlife disturbances, although some species of wildlife in this area are habituated to humans.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with transportation and access components of Alternative 1 would be the same as those described in the "Impacts Common to All Alternatives" section.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts associated with Seashore operations, maintenance, and facilities components of Alternative 1 would be the same as those described in the "Impacts Common to All Alternatives" section.

### Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to impact wildlife and wildlife habitat within the Seashore. These actions include dredging, changes to the New York State CZMP, Long Island South Shore Estuary Reserve Comprehensive Management

Plan, the Suffolk County Vector Control and Wetlands Management Long-Term Plan, the Great South Bay Clam Restoration Project, and the four-poster baiting stations for tick management on nonfederal lands.

Routine dredging activities near Fire Island National Seashore to maintain channels within the Great South Bay and efforts associated with the Long Island Intracoastal Waterway Federal Navigation Project would continue to periodically disrupt marine wildlife and wildlife habitat. Once dredging activities are completed, temporarily disturbed wildlife populations could return and continue to use the waterways.

Policies associated with the New York State Coastal Zone Management Plan changes are aimed at improving the state's coastal zones and the associated resources. Many of the strategies proposed in the 2011-2016 assessment would benefit wildlife and wildlife habitat, including updating the Significant Habitat Program, establishing a direct permit program for activities within state-designated Significant Coastal Fish and Wildlife Habitats, updating the NYS coastal policies to explicitly address marine debris and resource impacts, and developing phased amendments to the NYS CMP relative to habitat protection and criteria for siting wind energy generation and transmission facilities. Implementing these activities could result in a net increase in available high-quality habitat, and therefore a long-term beneficial impact on wildlife and wildlife habitat.

The Long Island South Shore Estuary Reserve Comprehensive Management Plan provides the foundation for the long-term health of the Reserve's bays, tributaries, tidal wetlands, wildlife, tourism, and economy and supports a variety of associated projects. Efforts to protect and restore living resources and their associated habitats, including water quality conditions, could enhance marine and wetland habitats within the Seashore, a long-term beneficial impact.

Suffolk County Vector Control is responsible for controlling mosquito populations that are of public health importance. The goal of the Vector Control and Wetland Management Plan is to develop an effective long-term vector control program, minimize pesticide usage while protecting public health, and to preserve and restore wetlands managed by vector control. These wetlands provide habitat for a variety of wildlife species; therefore, improvements to the wetlands would benefit wildlife and wildlife habitat.

The Great South Bay Clam Restoration working group was established by Suffolk County in 2008 to develop a sustainable management plan for the Great South Bay hard clam population. If the group's recommendations to reestablish and protect the hard clam population are implemented, then other marine wildlife resources could benefit from the improved habitat conditions within the Great South Bay, a long-term beneficial impact.

Continued approval and use of the four-poster baiting stations for tick management on non-federal lands provides a regular, introduced food source for the deer populations within the communities. These four-poster baiting stations could have a slightly detectable adverse impact on wildlife and wildlife habitat, disrupting natural conditions.

Generally, these past, present, and reasonably foreseeable future actions would result in a long-term beneficial impact on wildlife and wildlife habitat at the Seashore. The impacts of past, present, and reasonably foreseeable future actions, in combination with the impacts of Alternative 1, would result in overall beneficial cumulative impacts. Alternative 1 would contribute noticeably to the overall beneficial impact.

## Conclusion

The individual elements of Alternative 1 would result in a range of impacts to wildlife and wildlife habitat from long-term, beneficial to short-term and adverse. Natural resource management components of Alternative 1 would generally have a long-term beneficial impact on wildlife and wildlife habitat. This would primarily be related to restoration of critical habitat areas. However, some natural resource management efforts also would result in minor adverse impacts on wildlife and wildlife habitat such as continued fishing within the bay.

Adverse impacts associated with the cultural resource management efforts of Alternative 1 would be highly localized and barely detectable, lasting only as long as improvements are underway.

Impacts associated with the land-use and development components of Alternative 1 would result in both short-term adverse and long-term beneficial impacts, because although efforts would be made to increase wildlife habitat as new properties are acquired, redevelopment of structures would be allowed after storm events.

The continued human presence within the Seashore minimally disturbs wildlife, including camping and ORV use along the beaches, which are used by shorebirds

for foraging and loafing. Short-term adverse impacts on wildlife and wildlife habitat would include routine maintenance of existing facilities and infrastructure and human intervention to maintain natural resources and processes. Although continued disruptions to wildlife and wildlife habitat from infrastructure improvements and visitor presence would cause slightly detectable, localized adverse impacts, the overall impact would be long-term, beneficial due to the increase natural resource management activities.

The cumulative impact would be long-term beneficial, and Alternative 1 would contribute a noticeable beneficial increment to the overall cumulative impact.

Benefits to wildlife resulting from the proposals summarized above would not be considered significant as the overall health of the vegetation is improved but the abundance and diversity of wildlife species likely to use the habitat may not change to a noticeable degree. Adverse impacts associated with Alternative 1 would not be considered significant because their effect would be short-term and localized.

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## WILDLIFE & WILDLIFE HABITAT

### IMPACTS OF ALTERNATIVE 2

#### *Enhancing Natural Resource Values*

## Impact Analysis

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### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

In addition to the impacts described in the "Impacts Common to All Alternatives" section, Alternative 2 would focus on restoration and enhancement of natural resources and processes. For example, the Seashore would work with its partners to pursue a proactive program of natural resource protection that would seek to restore degraded or damaged ecosystems within the Seashore, as feasible. Beyond the native vegetation restoration efforts common to all alternatives, under Alternative 2 the NPS would also develop and execute an aggressive strategy for eradication of invasive nonnative plant and animal species and the restoration of native plant and animal species on federal lands through the most effective and environmentally sound means available. The NPS would collaborate with the Fire Island communities, the towns of Islip and Brookhaven, and Suffolk County to encourage similar efforts on non-federal lands within the Seashore. Efforts

to restore native vegetation and reduce invasive species would enhance natural vegetative communities within the Seashore and could improve the overall health of wildlife habitat, a long-term beneficial impact. Within the coastal environment, the eradication of mute swans, Asian shore crabs, and colonial tunicates would greatly enhance the habitat available for native species, minimizing competition for resources within the marine environment.

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► **IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS**

Cultural resource management components of Alternative 2 with the greatest potential for affecting wildlife and wildlife habitat would be those focused on the William Floyd Estate. Efforts to restore and rehabilitate the cultural landscape at the William Floyd Estate would have benefits to vegetation, which would in turn improve wildlife habitat. The rehabilitation of existing features at the Estate such as fields and marshlands would improve available habitat for some wildlife species. However, restoration efforts could also temporarily disturb and/or remove existing vegetation to create cultural landscape vignettes and restore existing roads and trails. Therefore, in addition to the impacts discussed in the “Common to All Alternatives” section, improvements to cultural resources proposed under this alternative could temporarily disrupt wildlife and wildlife habitat due to increased human presence and associated vehicles/equipment and noise. Over the long term, measures to maintain and rehabilitate the cultural landscape would result in a long-term beneficial impact on wildlife and wildlife habitat.

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► **IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS**

Impacts associated with land use and development components of Alternative 2 would be the same as those described in the “Impacts Common to All Alternatives” section.

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► **IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS**

Impacts associated with Seashore Experience components of Alternative 2 would include those described in the “Impacts Common to All Alternatives” section. It is anticipated that Seashore visitation would be slightly lower than current levels under Alternative

2. However, as part of the Seashore efforts to restore and protect existing resources, visitor access could be restricted in some areas. As such, impacts on wildlife and wildlife habitat could be slightly reduced near these resources through less human disturbances and contact.

In order to further enhance natural resource values under Alternative 2, the NPS would remove and/or consolidate some of the facilities at Sailors Haven/Sunken Forest and Talisman. At Watch Hill, the existing campground would be relocated to a more suitable area, allowing the existing area adjacent to the marsh to return to its naturally vegetated condition. The existing Wilderness Visitor Center also would be replaced with a smaller, simpler structure. Each of these actions would reduce the footprint of manmade structures within the Seashore and provide opportunities for the regrowth of native vegetation and therefore the expansion of available high-quality wildlife habitat. The net expansion of natural areas would result in a long-term beneficial impact on wildlife and wildlife habitat.

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► **IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS**

Impacts associated with transportation and access components of Alternative 2 would be the same as those described in the “Impacts Common to All Alternatives” section.

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► **IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS**

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 2 would include those described in the “Impacts Common to All Alternatives” section. In addition, Alternative 2 would reduce the number of facilities at the Seashore (as described above), thereby reducing disturbances to wildlife and wildlife habitat. The removal of existing structures could result in restoration of habitat for wildlife usage. In addition, the removal of these structures over time may result in lower visitor attendance compared to the other alternatives. The reduced human presence associated with this alternative would decrease disturbances to wildlife, including noise, pollution, and

wildlife/human interactions. The restoration of coastal processes also would enhance wildlife habitat, especially for bay-side estuaries used by wetland-dependent species and shorebirds.

At the William Floyd Estate, the existing maintenance facility would be expanded slightly, resulting in short-term, negligible adverse impacts on wildlife using the area, as wildlife may be temporarily displaced during construction activities due to increased noise and human activities.

## Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to impact wildlife and wildlife habitat within the Seashore. As described under Alternative 1, these actions include dredging, changes to the New York State CZMP, Long Island South Shore Estuary Reserve Comprehensive Management Plan, the Suffolk County Vector Control and Wetlands Management Long-Term Plan, the Great South Bay Clam Restoration Project, and the four-poster baiting stations for tick management on nonfederal lands. When combining the beneficial and adverse impacts of these past, present, and reasonably foreseeable future actions with the impacts of Alternative 2, a long-term beneficial cumulative impact on wildlife and wildlife habitat would result. Alternative 2 would contribute a noticeable beneficial increment to the overall beneficial impact.

## Conclusion

Alternative 2 would result in both adverse and beneficial impacts on wildlife and wildlife habitat; however, the overall impact would be long-term and beneficial. Beneficial impacts would primarily be related to restoration of critical habitat areas; removal of many of the existing facilities; implementation of the marine resources management plan, and updated threatened and endangered species management plan; and implementation of an aggressive invasive species management plan.

From a resource management perspective, beneficial impacts would primarily be related to the rehabilitation of the cultural landscape within the Lower Acreage at the William Floyd Estate. Rehabilitating the cultural landscape at the Estate also would result in short-term adverse impacts as landscape vignettes are installed and boardwalks/roads are rehabilitated for visitor use.

Land-use and development components of Alternative 2 would primarily be focused on the restoration and protection of wildlife habitat as new properties are acquired.

Although visitation may be slightly reduced under this alternative, access would likely be restricted in some areas to accommodate natural restoration and protection of resources. These restrictions would limit the human presence, resulting in a beneficial impact on wildlife and wildlife habitat. The benefits would be enhanced by the removal of some of the existing facilities and infrastructure, allowing those areas to be restored to their natural conditions and potentially expanding the habitat available to wildlife at the Seashore.

Transportation and Seashore experience elements such as continued use of ORVs and camping on the beaches would continue to adversely impact shorebird habitat.

Overall, Alternative 2 would result in a long-term beneficial impact on wildlife and wildlife habitat due to the increase in available high-quality habitat and the additional protections afforded through natural resource management activities.

The cumulative impact would be long-term beneficial, and Alternative 2 would contribute a noticeable beneficial increment to the overall cumulative impact.

Benefits to wildlife resulting from the proposals summarized above would not be considered significant as the overall health of vegetation is improved to a greater degree than under Alternatives 1 and 3, but the abundance and diversity of wildlife species likely to use the habitat is unlikely to change to a noticeable degree.





Adverse impacts associated with Alternative 2 would not be considered significant because they would not permanently disrupt the abundance or diversity of native wildlife species.

#### WILDLIFE & WILDLIFE HABITAT

### IMPACTS OF ALTERNATIVE 3

*Recognize the Relationship between Human Use and Nature (Preferred Alternative)*

## Impact Analysis

#### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the natural resource management components of Alternative 3 would include those described in the “Impacts Common to All Alternatives” section.

Consistent with the other alternatives, tick and mosquito surveillance and management efforts would continue within the Seashore. Although these efforts would have a negligible impact on the wildlife population under the other alternatives, under Alternative 3 the Seashore would implement low-impact techniques to minimize impacts on other resources, such as wildlife and their habitats. Vector management would be proactive, and treatment of high risk/high use areas would occur on a regular schedule to ensure visitor health and safety and make greater allowances for visitor comfort. Techniques employed would be selected to minimize impacts to wildlife.

#### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with cultural resource management actions would be the same as those described under “Impacts Common to All Alternatives” and under Alternative 2. At the William Floyd Estate, the curatorial facility would be expanded by 1,000 square feet, resulting in a temporary displacement of wildlife during construction.

#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts associated with the land-use and development components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section and under Alternative 2.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts associated with the Seashore Experience components of Alternative 3 would include those described in the “Impacts Common to All Alternatives” section. Under Alternative 3, the Seashore could experience a slight increase in visitation. The increased human presence could slightly increase disturbances to wildlife and wildlife habitat. In addition to the larger number of visitors, more opportunities would be provided for increased visitor dispersion to experience Fire Island’s natural and cultural resources. However, with more visitors having greater access across Fire Island, increased disturbances to wildlife and wildlife habitat would be expected, with more human-wildlife interactions across federal lands. In particular, the potential for human/deer interactions and disturbances to bird species would increase beyond the existing concentrated areas of human use (campgrounds, boardwalks, concessions, etc.) at Sailors Haven and Watch Hill.

In addition, the total number of backcountry camping permits issued by the Seashore would increase, allowing more individuals to camp on the beach in front of the wilderness. Increased camping on the beach could heighten adverse impacts on vegetation and wildlife from the human presence, depending on the placement of camping equipment. However, the Seashore has taken steps to minimize adverse impacts on resources from camping; therefore, it is anticipated that adverse impacts on wildlife and wildlife habitat from camping would not be noticeable when considered at the larger scale of the Seashore.

Alternative 3 could also include improvements to and/or redevelopment of some of the Seashore’s visitor facilities. Although the improvements would be designed to be sensitive and responsive to the natural environment and could benefit wildlife and wildlife habitat in the long term through sustainable planning, development activities would increase the human presence and associated noise and vehicles/equipment needed for construction and maintenance. This would cause temporary disturbances to wildlife and wildlife habitat.

Alternative 3 would integrate additional educational/interactive visitor amenities and outreach, particularly with residents and visitors within the communities, to promote the concept of responsible human use and protection of the natural environment on an ever-changing barrier island. Emphasis would be placed on the

importance of maritime wildlife habitats for resident and migratory bird species, and the importance of taking steps to improve estuarine/marine habitats and water quality for aquatic animals. This step would increase awareness of wildlife populations important to the character of the island, and could result in indirect improvements to wildlife habitats.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with the transportation and access components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 3 would include those described in the “Impacts Common to All Alternatives” section. In addition, at the William Floyd Estate, the existing maintenance facility would be expanded slightly, resulting in short-term, negligible adverse impacts on wildlife using the area, as wildlife may be temporarily displaced during construction activities due to increased noise and human activity.

### Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to impact wildlife and wildlife habitat within the Seashore. As described under Alternative 1, these actions include dredging, changes to the New York State CZMP, Long Island South Shore Estuary Reserve Comprehensive Management Plan, the Suffolk County Vector Control and Wetlands Management Long-Term Plan, the Great South Bay Clam Restoration Project, and the four-poster baiting stations for tick management on nonfederal lands. When combining the beneficial and adverse impacts of these past, present, and reasonably foreseeable future actions with the impacts of Alternative 3, a long-term beneficial cumulative impact on wildlife and wildlife habitat would result. Alternative 3 would contribute a noticeable beneficial increment to the overall beneficial impact.

### Conclusion

Overall, Alternative 3 would result in both adverse and beneficial impacts on wildlife and wildlife habitat. Similar to Alternatives 1 and 2, the overall long-term impact would

be beneficial due to restoration of critical habitat areas; implementation of the marine resources management plan, and updated threatened and endangered species management plan; and implementation of an aggressive invasive species management plan.

Cultural resource management efforts would have both adverse and beneficial impacts on wildlife and wildlife habitat. Rehabilitation of the cultural landscape at the William Floyd Estate would restore some habitat types, such as fields and marshlands, but could temporarily disturb wildlife during planting of landscape vignettes and rehabilitation of boardwalks and roads.

Land-use and development components of Alternative 3 would primarily be focused on the restoration and protection of wildlife habitat as new properties are acquired through willing sellers.

The continued human presence within the Seashore minimally and locally disturbs wildlife, including camping and ORV use along the beaches, which is used by shorebirds for foraging and loafing. Because visitors could be more dispersed under this alternative in comparison to Alternative 1, the adverse impact to wildlife and wildlife habitat could be slightly greater under Alternative 3. Short-term adverse impacts on wildlife and wildlife habitat would include routine maintenance of existing facilities and infrastructure, human intervention to restore and protect natural resources and processes, and rehabilitation of existing facilities and landscapes. Continued disruptions to wildlife and wildlife habitat from existing infrastructure and the visitor presence would cause slightly detectable, localized adverse impacts; however, due to the increased protection and restoration of natural resources, Alternative 3 would result in an overall, long-term beneficial impact.

The cumulative impact would be long-term beneficial, and Alternative 3 would contribute a noticeable beneficial increment to the overall beneficial cumulative impact.

Benefits to wildlife resulting from the proposals summarized above would not be considered significant as the overall health of vegetation is improved to a greater degree than under Alternatives 1, but the abundance and diversity of wildlife species likely to use the habitat is unlikely to change to a noticeable degree. Adverse impacts associated with Alternative 3 would not be considered significant because they would not permanently disrupt the abundance or diversity of native wildlife species.

## NATURAL RESOURCES

# Impacts on Special-Status Species

### Methodology

The National Park Service is mandated to manage and protect state and federal special-status species within the Seashore. Due to the dynamics of special-status species populations and mobility of individuals, Seashore staff routinely perform surveys to locate and document population numbers of listed plants and animals. For this assessment, all available information and mapping on special-status species potentially impacted in the Seashore was compiled and reviewed. All listed plant and animal species known to occur within Seashore boundaries are found either on the island or within the marine environment, with the exception of the state endangered dark-green sedge (*Carex vanusta*), which occurs in the upper salt marsh at the William Floyd Estate. Thus, the majority of actions potentially affecting special-status species would be those on Fire Island.

Predictions about short- and long-term impacts on special-status species were based on the actions proposed in each alternative, and in most cases these actions are undefined. Therefore the impacts are very general in nature. As actions are implemented under the approved GMP, site-specific planning and compliance would be conducted, as applicable.

The impact analysis for special-status species assumes that actions conducted under each alternative would adhere to applicable federal, state, and NPS policies including:

- Endangered Species Act of 1973, as amended
- 1918 Migratory Bird Treaty Act
- Executive Order 13186 – Protection of Migratory Birds
- Executive Order 13653: Preparing the U.S. for the Impacts of Climate Change
- Department of the Interior (DOI) Secretarial Order 3289: Addressing the Impacts of Climate Change on America's Water, Land, and other Natural and Cultural Resources
- NPS Management Policies 2006
- 2006 Integrated Pest Management Plan



- NPS Director's Order 77 – Natural Resource Management
- New York State Endangered Species Act (ECL § 11-0535)
- New York State Natural Heritage Program
- Suffolk County Vector Control and Wetlands Management Long-Team Plan

The resource-specific context for the evaluation of impacts on special-status species includes the following:

- The criteria used by all agencies to determine whether an impact is significant (CEQ criteria) include one that addresses adverse effects on listed species or their habitat.
- The CEQ criteria include whether a resource is unique; by default, a rare, threatened, or endangered animal or plant is unique.
- Because listed species are scarce, the Endangered Species Act finds that any harassment of a single individual is a "take" as defined under the Act and requires consultation and a permit before a federal action can move forward.

## SPECIAL-STATUS SPECIES

**IMPACTS COMMON TO ALL ALTERNATIVES****► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS**

Many of the natural resource management impacts described for vegetation and wildlife in previous sections would also apply for special-status species. These include:

- a comprehensive research and monitoring program
- cooperative stewardship of the resources
- increased educational programming
- restoration of native vegetation
- updating the threatened and endangered species management plan
- maintaining native plant and animal species
- developing and implementing a deer and vegetation management plan
- developing and implementing an invasive species management plan
- implementing a marine resources management plan
- working with other agencies to understand habitat changes (in particular wetland vegetation) related to climate change and sea-level rise

In addition to the natural resource management actions previously described under the wildlife and wildlife habitat section (beach creation, research and monitoring, marine and aquatic species management plan, and bird monitoring programs), the existing threatened and endangered species management plan also would be updated to include provisions to consider and address the potential effects of climate change and sea-level rise on threatened and endangered species.

Federally listed seabeach amaranth and the state-listed seabeach knotweed are found within the Seashore. Through the implementation of the threatened and endangered species management plan, these species would continue to be protected through monitoring and fencing. Additional research to understand disturbance impacts on these species may help to modify protective actions and increase population numbers in the long term.

The effects of overwash from Hurricane Sandy on Fire Island created additional expanses of open, sandy areas favorable as nesting habitat for the piping plover and least tern. The Seashore will monitor the use of these newly formed habitats by colonial nesting birds as part of the threatened and endangered species management plan.

The Seashore would also work collaboratively with public agencies and non-profit conservation organizations to protect species of special concern within the Seashore's boundaries, as appropriate and feasible. Enhanced management and protection of threatened and endangered species would have clear beneficial impacts on the species that reside (even seasonally) within the Seashore's boundaries, offering increased habitat protection through fencing and other mechanisms. All alternatives would continue efforts to preserve and monitor critical habitats and open spaces for the protection of threatened and endangered shorebirds and coastal plants. Improved monitoring also could increase knowledge and improve decision making by Seashore staff, resulting in beneficial impacts on wildlife and wildlife habitat.

**► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS**

Under each of the proposed alternatives, the Seashore would continue to preserve cultural resources as funding becomes available. These actions would cause a temporary increase in human presence and associated noise, but overall the impacts would be highly localized and barely detectable. At the William Floyd Estate, a Cultural Landscape Report and Treatment Plan would be developed focused primarily on the historic Mastic house, outbuildings, and grounds. This plan would include guidance for maintaining the various vegetation communities (and therefore habitats) within the Lower Acreage of the Estate, which include the habitats available to the dark-green sedge.

Management of cultural resources at the island, such as the lighthouse, would occur in habitats typically not associated with those special-status species found at the park. Therefore, cultural resources management actions are not anticipated to have an impact on special-status species.



#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Alternatives 2 and 3 propose the development of a Coastal Land Use and Shoreline Management Plan. The plan would include measures to address shoreline protection, hazard mitigation, land-use controls, and site planning and design guidelines in the context of the dynamic barrier environment and emerging trends resulting from sea-level rise and climate change. Implementation of such a plan would help to protect key habitat for special-status species that utilize shoreline habitats such as colonial nesting shorebirds, seabeach amaranth, and seabeach knotweed.

In addition, consistent with the 1984 Land Protection Plan, each of the alternatives would include efforts to promote the protection of wildlife habitat when new properties are acquired by the NPS, resulting in the removal of manmade structures. Natural habitats would be restored that could provide beneficial impacts on special-status species plants that rely on secondary dune habitats as their preferred habitat.

A component of the deer and vegetation management plan would be to identify and protect special-status plants from deer herbivory, particularly the seabeach amaranth and seabeach knotweed. Seashore staff would continue to monitor existing plant populations, search for new populations, and protect these plants from deer herbivory by installing enclosure screening around plant populations or protective netting over individual plants.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Because many of the special-status species found at the Seashore naturally occur in wetland or marine environments, disturbance by the public is generally not a concern. However, continued visitor use of the beaches, including camping in and on the beach in front of the Fire Island Wilderness, and ORV use on some beaches, could disrupt special-status shorebird breeding activity. Resource management efforts to protect the Piping Plover, however, would reduce these impacts. Specifically, ORV use is not permitted or severely restricted during critical nesting seasons and campers are urged to respect existing enclosures, which are designed to protect threatened and endangered species.

Within the Fire Island Wilderness, the facilities at Old Inlet lost during Hurricane Sandy in 2012 (including a boardwalk, vault toilet, and dock) would not be reconstructed. The loss of these manmade facilities

allows for a net increase in available habitat for special-status birds and plants within the wilderness, a long-term beneficial impact.

Continued public education and outreach efforts by the Seashore could better inform the public about special status species recognition and protection. For example, brochures would continue to be released related to living with wildlife and would include information related to a variety of topics including colonial nesting birds. This information also would continue to be provided by interpretive rangers and other Seashore staff, as appropriate and would be posted on the Seashore's website and social media. Providing the public with ample information about special-status species could support better protection of these species within the Seashore, a long-term beneficial impact.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Under each of the proposed alternatives, land-based vehicular access to the Seashore would be generally consistent with current conditions, including the use of vehicles along the beach in some areas. As described in "Chapter 3: Affected Environment," the Seashore is within the Atlantic Flyway, a major North American migratory bird route. The beaches at the Seashore provide important habitat for a variety of migratory and resident birds including special-status species. The recreational use of vehicles on Fire Island beaches would continue to minimally disrupt shorebirds that rely on the beach as their primary habitat for foraging and loafing. However, under Alternatives 2 and 3, the Seashore would collaborate with Fire Island communities and the towns of Islip and Brookhaven to develop a "driver's manual" that would educate residents, workers, and visitors about driving etiquette and getting around on Fire Island. If this manual includes information about beach driving, the adverse impacts summarized above could be minimized.

Transportation activities related to the bay and Atlantic Ocean within Seashore boundaries include private boats, fishing vessels, and ferries. Special-status species potentially affected by watercrafts include listed whales and sea turtles. While the deep-water aquatic habitat and reticence of marine animals makes them difficult to detect, unsuspecting impacts may occur from disturbances from motorcraft noise. These disturbances would have a negative, short-term impact on special-status aquatic species.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Seashore operations for all alternatives include a variety of actions, including construction and maintenance of facilities, monitoring of natural resources, enforcement, and visitor tours. For most of these actions, impacts to special-status species are not expected. Each of the proposed alternatives would include some level of routine maintenance of the existing boardwalks. Care would be taken to insure that special-status nesting birds are identified prior to introducing disturbances from boardwalk maintenance activities. When nests sites are known to be in close proximity to boardwalks, boardwalk maintenance activities would be restricted to the non-nesting season. In addition, to prevent potential harm to special-status birds and maritime plants, species populations would be identified with signage and fencing to prevent damage from ORV use and pedestrians. The overall impact is likely to be short-term, localized, and only slightly detectable. Maintenance activities around the Old Mastic House and at fields at the William Floyd Estate are not expected to impact special-status species.

#### SPECIAL-STATUS SPECIES

### IMPACTS OF MANAGEMENT ALTERNATIVE 1

*Continuation of Current Management Practices (No Action)*

## Impact Analysis

#### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the natural resource management components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the cultural management components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts associated with the land-use and development components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts associated with the Seashore experience components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with the transportation and access components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts associated with the Seashore operations components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

## Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to impact special-status species within the Seashore. These actions include dredging, changes to the New York State CZMP, Long Island South Shore Estuary Reserve Comprehensive Management Plan, the Suffolk County Vector Control and Wetlands Management Long-Term Plan, and the Great South Bay Clam Restoration Project.

Routine dredging activities near Fire Island National Seashore to maintain channels within the Great South Bay and efforts associated with the Long Island Intracoastal Waterway Federal Navigation Project could periodically disturb special-status shorebird feeding areas. Once dredging activities are completed, temporarily disturbed shorebirds could return and continue to use the waterways.

Policies associated with the New York State Coastal Zone Management Plan changes are aimed at improving the state’s coastal zones and the associated resources.

Many of the strategies proposed in the 2011-2016 assessment would benefit to special-status species habitat including updating the Significant Habitat Program, establishing a direct permit program for activities within State-designated Significant Coastal Fish and Wildlife Habitats, updating the NYS coastal policies to explicitly address marine debris and resource impacts, and developing phased amendments to the NYS CMP relative to habitat protection and criteria for siting wind energy generation and transmission facilities. Implementing these activities could result in a net increase in available high-quality habitat, and therefore a long-term beneficial impact on special status species.

The Long Island South Shore Estuary Reserve Comprehensive Management Plan provides the foundation for the long-term health of the Reserve's bays, tributaries, tidal wetlands, wildlife, tourism, and economy and supports a variety of associated projects. Efforts to protect and restore living resources and their associated habitats, including water quality conditions, could enhance marine and wetland habitats within the Seashore, a long-term beneficial impact to special-status species that utilize these habitats.

Suffolk County Vector Control is responsible for controlling mosquito populations that are of public health importance. The goal of the Vector Control and Wetland Management Plan, according to their mission statement, is to develop an effective long-term vector control program, minimize pesticide usage while protecting public health, and to preserve and restore wetlands managed by vector control. These wetlands provide habitat for a variety of wildlife species; therefore, improvements to the wetlands would benefit those special status species dependent on wetlands as a preferred habitat type.

The Great South Bay Clam Restoration working group was established by Suffolk County in 2008 to develop a sustainable management plan for the Great South Bay hard clam population. If the group's recommendations to reestablish and protect the hard clam population are implemented, then other marine wildlife resources could benefit from the improved habitat conditions within the Great South Bay, a long-term beneficial impact.

Generally, these past, present, and reasonably foreseeable future actions would result in a long-term beneficial impact on special-status species at the Seashore. When combined with the impacts of Alternative 1, the overall cumulative impacts would be long-term beneficial. Alternative 1 would contribute a

noticeable beneficial increment but also contributes an adverse increment to the cumulative impacts on special-status species.

## Conclusion

The individual elements of Alternative 1 would result in a range of both beneficial and adverse impacts on special-status species. Natural resource management components of Alternative 1 would generally have a long-term beneficial impact on special status species. This would primarily be related to protection of known plants and shorebird nesting areas via fencing and signage, and habitat restoration of critical habitat areas. However, some natural resource management efforts, such as land development actions also could result in adverse impacts on special-status species.

The continued human presence within the Seashore minimally disturbs wildlife, including camping and ORV use along the beaches, which is used by listed shorebirds for foraging and loafing. Short-term adverse impacts on special-status species would include disturbances from routine maintenance of existing facilities and infrastructure and human intervention to maintain natural resources and processes. Although continued disruptions to special-status species from infrastructure improvements and visitor presence would cause slightly detectable, localized adverse impacts, the overall impact would be long-term, beneficial due to the increase natural resource management activities.

The cumulative impact would be long-term beneficial, and Alternative 1 would contribute a noticeable beneficial increment to the overall cumulative impact.

Alternative 1 would have both adverse and beneficial impacts on special-status species but none of these impacts would be considered significant. Beneficial impacts would not be significant because the overall impact to vegetation (habitat) as summarized above, is small when considered within the context of the abundance and diversity of special-status species likely to use the habitat.

Land and development activities associated with Alternative 1 could cause adverse impacts to special-status species on Fire Island. These impacts could be minimized by implementing appropriate protection and conservation measures during these activities. In the context of the Seashore's mission to protect key habitat through land and natural resource management activities, the adverse impacts of Alternative 1 on special-status

species would not be considered significant because it is unlikely that impacts would affect the overall viability of the population of special-status species at the Seashore.

#### SPECIAL-STATUS SPECIES

### IMPACTS OF ALTERNATIVE 2

#### *Enhancing Natural Resource Values*

## Impact Analysis

#### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

In addition to the impacts described in the “Common to All Actions” section, Alternative 2 would focus on restoration and enhancement of natural resources and processes. For example, the Seashore would work with its partners to pursue a proactive program of natural resource protection within the Seashore that would seek to restore degraded or damaged ecosystems, as feasible. Beyond the native vegetation restoration efforts common to all alternatives, under Alternative 2 the NPS would also develop and execute an aggressive strategy for eradication of invasive nonnative plant and animal species and the restoration of special-status species on federal lands through the most effective and environmentally sound means available. The NPS would collaborate with the Fire Island communities, the towns of Islip and Brookhaven, and Suffolk County to encourage similar efforts on non-federal lands within the Seashore. Efforts to restore habitats for special-status species and reduce invasive species would enhance the survivorship and expansion of listed plants and animals within the Seashore, a long-term beneficial impact.

#### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

In addition to the impacts discussed in the “Common to All Alternatives” section, cultural resource management components of Alternative 2 with the greatest potential for affecting special-status species would be those focused on the William Floyd. The rehabilitation of existing features at the William Floyd Estate such as marshlands would improve available habitat for some species such as the dark-green sedge found in the tidal marsh. Cultural landscape restoration efforts that could temporarily disturb and/or remove existing vegetation to create cultural landscape vignettes and restore existing roads and trails are not expected to impact special-status

species at the Estate. Over the long term, measures to maintain and rehabilitate the cultural landscape would result in a long-term, beneficial impact on special-status species.

#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts associated with land-use and development components of Alternative 2 would include those described in the “Impacts Common to All Alternatives” section. However, with a stronger focus on the natural environment and sustainability, Alternative 2 would reduce the development footprint at Seashore facilities (Talisman Beach, and Sailors Haven). At the end of their structural lifespan, buildings would be removed and the natural environment would be restored promoting habitats potentially usable by special-status species. The smaller development footprints would result in lower water usage and wastewater discharges into the groundwater, thereby reducing pollutant loads from reaching adjacent surface waters and marshes through groundwater seep. These actions would have a long-term beneficial impact on special status species that utilize these areas.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts associated with Seashore experience, interpretation, education, and outreach components of Alternative 2 would include those described in the “Impacts Common to All Alternatives” section. It is anticipated that Seashore visitation would be slightly lower than current levels under Alternative 2. A reduction in visitor usage would lower the risk of visitor disturbances to special-status species nesting, feeding, and loafing habitat. Similarly, as part of the Seashore efforts to restore and protect existing resources, visitor access could be restricted in some areas, slightly reducing impacts on special-status species through direct human contact.

In order to further enhance natural resource values under Alternative 2, the NPS would remove and/or consolidate some of the facilities at Sailors Haven/Sunken Forest, Talisman, and Watch Hill. At Watch Hill, the existing campground would be relocated to a more suitable area, allowing the existing area adjacent to the marsh to return to its naturally vegetated condition. The existing Wilderness Visitor Center also would be replaced with a smaller, simpler structure. Each of these actions



would reduce the footprint of manmade structures within the Seashore and provide opportunities for the restoration of special-status species habitat. The net expansion of natural areas would result in a long-term beneficial impact on special-status species.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with transportation and access components of Alternative 2 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 2 would include those described in the “Impacts Common to All Alternatives” section. In addition, Alternative 2 would reduce the number of facilities at the Seashore (as described above), thereby reducing disturbances to special-status species’ habitat. The removal of existing structures could result in restoration of habitat for colonial nesting birds and special-status plants. In addition, the removal of these structures over time may result in lower visitor attendance compared to the other alternatives. The reduced human presence associated with this alternative would decrease disturbances to special-status birds, including noise, pollution, and wildlife/human interactions. The restoration of coastal processes also would enhance wildlife habitat, especially for bayside estuaries used by wetland-dependent plant species and shorebirds.

### Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to impact special-status species within the Seashore. As described under Alternative 1, these actions include dredging, changes to the New York State CZMP, Long Island South Shore Estuary Reserve Comprehensive Management Plan, the Suffolk County Vector Control and Wetlands Management Long-Term Plan, and the Great South Bay Clam Restoration Project. When combining the beneficial and adverse impacts of these cumulative impacts with the impacts of Alternative 2, a long-term beneficial cumulative impact on special-status species would result. Alternative 2 would contribute a noticeable beneficial increment to the overall beneficial impact.

### Conclusion

Alternative 2 would have both adverse and beneficial impacts on special-status species but none of these impacts would be considered significant. The beneficial impacts would be noticeable as the overall health of the vegetation is improved, but the abundance and diversity of special status species likely to use the habitat may not change to a noticeable degree. Adverse impacts on special status species would not permanently disrupt these species and precautions would be taken to avoid directly affecting these resources during improvements.

Land and development activities associated with Alternative 2 could cause adverse impacts to special-status species on Fire Island. These impacts could be minimized by implementing appropriate planning, protection and conservation measures to guide these activities. In the context of the Seashore’s mission to protect key habitat through land and natural resource management activities, the adverse impacts of Alternative 2 on special-status species would not be considered significant because it is unlikely that impacts would affect the overall viability of the population of special-status species at the Seashore.

#### SPECIAL-STATUS SPECIES

### IMPACTS OF ALTERNATIVE 3

*Recognize the Relationship between Human Use and Nature (Preferred Alternative)*

### Impact Analysis

#### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the natural resource management components of Alternative 3 would include those described in the “Impacts Common to All Alternatives” section.

Consistent with the other alternatives, tick and mosquito surveillance and management efforts would continue within the Seashore. Vector management would be proactive, and treatment of high risk/ high use areas would occur on a regular schedule to ensure visitor health and safety and make a greater allowance for visitor comfort. Although these efforts would have a negligible impact on the wildlife population under the other alternatives, under Alternative 3 the Seashore would

implement low impact techniques to minimize impacts on other resources, such as water quality and wetland habitats potentially used by special-status species.

#### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with cultural resource management actions would be the same as those described under “Impacts Common to All Alternatives.”

#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts associated with the land-use and development components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts associated with the Seashore experience, interpretation, education, and outreach components of Alternative 3 would include those described in the “Impacts Common to All Alternatives” section. However, under Alternative 3, the Seashore could experience a slight increase in visitation. The increased human presence could slightly increase disturbances to special-status species, particularly colonial shorebird nesting areas.

In addition, the total number of backcountry camping permits issued by the Seashore would increase, allowing more individuals to camp on the beach in front of the wilderness. Increased camping in these areas could heighten adverse impacts on habitat potentially available for special-status birds and plants. However, the Seashore would take steps to minimize adverse impacts on these resources by the installation of fencing and signage.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with the transportation and access components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section.

### Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to impact special-status species within the Seashore. As described under Alternative 1, these actions include dredging, changes to the New York State CZMP, Long Island South Shore Estuary Reserve Comprehensive Management Plan, the Suffolk County Vector Control and Wetlands Management Long-Term Plan, and the Great South Bay Clam Restoration Project. When combining the beneficial and adverse impacts of these cumulative impacts with the impacts of Alternative 3, a long-term beneficial cumulative impact on special-status species would result. Alternative 3 would contribute a noticeable beneficial increment to the overall beneficial impact.

### Conclusion

Alternative 3 would have both adverse and beneficial impacts on special-status species but none of these impacts would be considered significant. The beneficial impacts would be noticeable as the overall health of the vegetation is improved, but the abundance and diversity of special status species likely to use the habitat may not change to a noticeable degree. Adverse impacts on special status species would not permanently disrupt these species and precautions would be taken to avoid directly affecting these resources during improvements.

Land and development activities associated with Alternative 3 could cause adverse impacts to special-status species on Fire Island. These impacts could be minimized by implementing appropriate planning, protection and conservation measures to guide these activities. In the context of the Seashore’s mission to protect key habitat through land and natural resource management activities, the adverse impacts of Alternative 3 on special-status species would not be considered significant because it is unlikely that impacts would affect the overall viability of the population of special-status species at the Seashore.

## CULTURAL RESOURCES

# Impacts on Cultural Landscapes

### Methodology

Cultural landscapes are the result of the long interaction between people and the land, and the influence of human beliefs and actions over time upon the natural landscape. Shaped through time by land-use and management practices, as well as politics and property laws, levels of technology, and economic conditions, cultural landscapes provide a living record of an area's past as well as a visual chronicle of its history. The dynamic nature of modern human life, however, contributes to the continual reshaping of cultural landscapes, making them a good source of information about specific times and places, but at the same time rendering their long-term preservation a challenge.

In order for a cultural landscape to be listed on the National Register, it must possess significance (the meaning or value ascribed to the landscape) and integrity of those features necessary to convey its significance. The character-defining features of a cultural landscape include spatial organization and land patterns, topography, vegetation, circulation patterns, water features, structures/buildings, site furnishings, and objects. Cultural Landscape Inventories have been prepared for two cultural landscapes within the Seashore: Fire Island Light Station (2004) and the William Floyd Estate (2006). These inventories will provide the basis for analysis of these resource areas. Fire Island as a whole is also considered a cultural landscape, but no formal study has been completed to identify its significant and contributing features. A Historic Resource Study of Fire Island and its associated documentation completed in 1979 as well as a Community Character Analysis undertaken in 2010 will also contribute to the basis for this analysis.

Regulations and guidelines related to Cultural Landscapes include:

- Antiquities Act of 1906
- National Historic Preservation Act of 1966, as amended
- Advisory Council on Historic Preservation (ACHP) implementing regulations regarding the "Protection of Historic Properties" (36 CFR 800)
- Executive Order 11593, "Protection and Enhancement of Cultural Environment"



- Executive Order 13653: Preparing the U.S. for the Impacts of Climate Change
- Department of the Interior (DOI) Secretarial Order 3289: Addressing the Impacts of Climate Change on America's Water, Land, and other Natural and Cultural Resources
- Secretary of the Interior Standards for the Treatment of Historic Properties (1996)
- NPS Management Policies 2006
- NPS Policy Memorandum 14-02: Climate Change and Stewardship of Cultural Resources
- NPS Directors Orders (DO) #28 – Cultural Resources Management Guidelines

The resource-specific context for assessing the significance of impacts on cultural landscapes includes:

- Fire Island represents a cultural landscape that has been shaped both by human intervention and the forces of nature. In particular, the cultural landscapes associated with the Fire Island Light Station and the William Floyd Estate are considered fundamental resources of Fire Island National Seashore.
- The ability of a cultural landscape to continue to represent and convey historical events and themes determined to be fundamental to Fire Island National Seashore—these themes are related primarily to the environmental and human history of Fire Island, maritime history and economy, and Colonel William Floyd (one of New York's signers of the Declaration

of Independence) and the Floyd family's tenure as a reflection of the changing political, social and economic history of Long Island.

- The degree to which the National Register significance and integrity of the cultural landscapes that are considered fundamental resources is retained as the plan is implemented.
- The degree to which proposed management of cultural landscapes complies with section 110 of the National Historic Preservation Act regarding the preservation of historic properties to the maximum extent feasible.

#### CULTURAL LANDSCAPES

### IMPACTS COMMON TO ALL ALTERNATIVES

#### Impact Analysis

##### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Under all Alternatives, a number of natural resource management proposals are likely to have an impact on cultural landscapes at the William Floyd Estate and on Fire Island. These proposed actions and initiatives include restoration of Sunken Forest, management of non-native invasive species, and proposed efforts to evaluate and address conditions related to natural light and soundscapes. These actions are all likely to result in the greater protection and preservation (either through rehabilitation or restoration) of character-defining features associated with the Seashore's cultural landscapes. However, care would be required in the management of deer and non-native invasive species to ensure that cultural landscape values are protected while attempting to meet natural resource management objectives.

Under all alternatives, the NPS would work to monitor and evaluate the effects of climate change and sea-level rise on both terrestrial and estuarine resources and would engage in the development of adaptive management strategies to address impacts particular to cultural landscapes within the Seashore. Until a CLR is completed that provides in-depth information on the composition of the landscape and its significance, the potential long-term effects of climate change and sea-level rise on the Seashore's cultural landscapes and the potential impact of these actions remain largely unknown.

##### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Under all Alternatives, the NPS would undertake research and documentation of federal cultural properties (Fire Island Light Station, Carrington Estate, William Floyd Estate), including the preparation of historic resource studies and cultural landscape reports. These research initiatives would provide the necessary guidance to understand, interpret, and treat the Seashore's currently identified cultural landscapes. These efforts are likely to result in the greater protection and preservation of character-defining features associated with the Fire Island Light Station and the William Floyd Estate through either rehabilitation or restoration.

##### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

The NPS would collaborate with other Fire Island stakeholders to prepare a Coastal Land Use and Shoreline Management Plan. There would also be some reliance on a proposed new cooperative stewardship body to improve the process and provide a more inclusive voice in land-use and development decisions across Fire Island. To some degree, the ultimate effect of the cooperative stewardship body would depend on the model selected for implementation. However, the creation of such a body to foster collaboration, communication, and cooperation in addressing Island-wide issues would be likely to have a more beneficial impact on Fire Island's cultural landscape as a whole and would ensure a more holistic approach to its long-term protection.

Protecting the dynamic quality of the barrier island, community character, and the overall Fire Island experience would be among the underlying principles of the Coastal Land Use and Shoreline Management plan and implementation guidelines. This effort would be likely to result in enhanced awareness of cultural landscape values and greater protection and preservation of the Seashore's cultural landscape. However, some proposals necessary to make developed areas more resilient in response to sea-level rise and the threat of coastal storms could result in alterations to building design on Fire Island that would alter the historic character of some communities and NPS facilities, which could detract from the cultural landscape in certain areas.



#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

The extent and nature of impacts associated with Seashore experience, interpretation, education, and outreach would vary by alternative. Therefore, the impacts of the Seashore experience, interpretation, education, and outreach are unique to each alternative and are described in the alternative-specific sections below.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Under all alternatives, the NPS would continue to support Fire Island's roadless environment through continued efforts to maintain the character of the system of boardwalks, sand roads, and other designated trails on federal lands; encouragement of water-based access to the island; and management of permits for driving. All of these transportation and access practices would sustain important characteristics that contribute to the cultural landscape of Fire Island. The proposed creation of a cooperative stewardship body to foster collaboration, communication, and cooperation in addressing Fire Island-wide issues like transportation and access would be likely to have a more beneficial impact on the Island's cultural landscape as a whole and would ensure a more holistic approach to its long-term protection.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Under all alternatives, NPS would consider a number of approaches to foster the cooperative stewardship of Fire Island among stakeholders in a manner that relies on regular and meaningful communication among parties, coordination in issue resolution, and cooperation in action. This effort would result in a more comprehensive and holistic approach to resource management and enhance opportunities to address Fire Island-wide resources such as land use and development and Fire Island's cultural landscape.

The NPS would pursue efforts to make Seashore sites and facilities more universally accessible for the visiting public and its employees. In some cases, these efforts could alter the character of the cultural landscape (e.g., the introduction of a boardwalk).

#### CULTURAL LANDSCAPES

### IMPACTS OF MANAGEMENT ALTERNATIVE 1

*Continuation of Current Management Practices (No Action)*

#### Impact Analysis

#### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the natural resource management components of Alternative 1 would be the same as those described in the "Impacts Common to All Alternatives" section.

#### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Impacts from cultural resource management efforts associated with Alternative 1 would include those described in the "Impacts Common to All Alternatives" section above. In addition, under Alternative 1, the Carrington Estate structures would be rehabilitated for administrative use and the associated landscape would be rehabilitated to ensure safe circulation and access to the structures. This action would create conditions for the long-term preservation of the cultural landscape at the Carrington Estate, a beneficial impact. At the William Floyd Estate, cultural landscape features would be preserved, though they would continue to be impacted by encroaching vegetation. The absence of a more aggressive management strategy for addressing encroaching vegetation would have a negative effect on the William Floyd Estate's cultural landscape overtime and would compromise its protection and the ability of Seashore staff to interpret it over the long term.

#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts from land-use and development efforts associated with Alternative 1 would include those described in the "Impacts Common to All Alternatives" section above. Under Alternative 1, the NPS would continue to review applications for variances, exceptions, etc. and provide written responses indicating whether or not proposals conform to the Secretary's Standards for Zoning. Findings and recommendations are frequently not adequately considered by local authorities, and developments that are not in compliance with the Secretary's zoning standards are permitted to occur.

NPS would continue to have limited tools to respond in cases of non-compliance. In some communities, this has resulted in an erosion of community character, particularly in the form of overscale development, which cumulatively would continue to affect the overall character of Fire Island and its cultural landscape.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Under Alternative 1, the Seashore's visitor experience would continue to be segmented, with visitors to Seashore facilities largely staying within those facilities, and visitors to and local residents of the communities largely staying within their individual communities. This pattern of visitation influences how people experience Fire Island, leaving them with an incomplete understanding and appreciation of the diverse and dynamic quality of the place and the larger Fire Island landscape. This could result in limited support for its long-term preservation and ultimately the loss of important character-defining features.

At the William Floyd Estate, the core of the visitor experience would continue to be the Old Mastic House. Self-guided and guided walks of the Lower Acreage would continue to be available. Concerns about ticks and exposure to vector-borne diseases (e.g., Lyme Disease) would continue to discourage many visitors from experiencing the Estate as a whole. The lack of a comprehensive understanding and appreciation of the Estate's cultural landscape would make securing its protection more difficult and could be considered a long-term, adverse impact.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with the transportation and access components of Alternative 1 would be the same as those described in the "Impacts Common to All Alternatives" section.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS, MAINTENANCE, AND FACILITIES ACTIONS

Impacts associated with the Seashore operations, maintenance and facilities of Alternative 1 would be the same as those described in the "Impacts Common to All Alternatives" section.

## Cumulative Impacts

There are no related regional plans or initiatives that are expected to have a cumulative impact on cultural landscapes beyond what is described under this alternative.

## Conclusions

Overall, the proposed actions associated with Alternative 1 would have localized adverse effects and would have a long-term beneficial impact on cultural landscapes considered to be fundamental resources within Fire Island National Seashore. Natural resource management activities proposed under this alternative would offer substantial benefits relative to protecting the integrity of the cultural landscapes. However, some of the actions necessary to achieve natural resource management objectives could result in short-term adverse impacts to the cultural landscape such as those associated with the management of non-native invasive species. The completion of Cultural Landscape Reports for the Fire Island Light Station and the William Floyd Estate would be of long term benefit to these cultural landscapes by providing the necessary data and treatment recommendations to preserve the resource. Under this alternative, development in the Community Development District inconsistent with the Secretary's zoning standards is likely to continue, resulting in a gradual erosion of community character specific to the district, the overall character of Fire Island in general, and a long-term adverse impact to Fire Island's cultural landscape as a whole.

Based on this information, the beneficial impacts of Alternative 1 on cultural landscapes would not be considered significant. The adverse impacts on cultural landscapes considered fundamental resources within the Seashore may not be immediately apparent, however as the gradual alteration of Fire Island's character defining features continues cultural landscapes may be less able to represent and convey the Seashore's history and interpretive themes. If no mitigating action is taken, these impacts are likely to become more significant over time.

## CULTURAL LANDSCAPES

**IMPACTS OF MANAGEMENT  
ALTERNATIVE 2***Enhancing Natural Resource Values***Impact Analysis****► IMPACTS RELATED TO NATURAL RESOURCE  
MANAGEMENT ACTIONS**

Impacts on cultural landscapes from natural resource management efforts associated with Alternative 2 would include those described in the “Impacts Common to All Alternatives” section above. In addition, under Alternative 2, the NPS would engage in an aggressive strategy to eliminate non-native invasive species and to restore native plant species. In general, this would ensure their protection and would be of long-term benefit to cultural landscapes of Fire Island and the William Floyd Estate. However, care would be required to ensure that cultural landscape values are not compromised while attempting to meet natural resource management objectives.

**► IMPACTS RELATED TO CULTURAL RESOURCE  
MANAGEMENT ACTIONS**

Impacts from cultural resource management efforts associated with Alternative 2 would include those described in the “Impacts Common to All Alternatives” section above. Also under this alternative, the cultural landscape at the William Floyd Estate would be rehabilitated consistent with the recommendations of the proposed cultural landscape report and treatment plan. Relevant missing structures and features would be identified and interpreted. The existing landscape features characteristic of the Lower Acreage (e.g., fields, marsh, the vista, ponds, lopped trees, etc.) would be rehabilitated. Roads and trails would be rehabilitated to support additional recreational use. These actions would improve conditions for the long-term protection of these cultural landscapes and the Seashore’s ability to interpret them. In sum, these actions are likely to be of long-term benefit to the cultural landscape at the William Floyd Estate.

**► IMPACTS RELATED TO LAND-USE AND  
DEVELOPMENT ACTIONS**

Impacts from land use and development efforts associated with Alternative 2 would include those described in the “Impacts Common to All Alternatives” section above. Under Alternative 2, NPS would collaborate with others to encourage, support, and cooperate with Fire Island communities to assist in the identification and preservation of the distinctive character of individual Fire Island communities as well as Fire Island as a whole. Efforts to raise awareness of the cultural landscape and the character-defining features of Fire Island would contribute positively to the long-term protection of these resources. This alternative also calls for the revision of the Secretary’s zoning standards to make them clearer and better enable their consistent application and enforcement. As noted under Elements Common to All, this is one area that would benefit from the involvement of a cooperative stewardship body. In combination, they are likely to improve the management of land use and development across Fire Island and be of long-term benefit in preserving Fire Island’s cultural landscape.

**► IMPACTS RELATED TO SEASHORE EXPERIENCE  
ACTIONS**

Similar to Alternative 1, the physical connection between Seashore facilities and Fire Island communities would continue to be limited or even diminished. This perpetuation of separation would continue to have an impact on the visitor’s ability to understand and appreciate Fire Island as a whole and could result in limited support for its long-term preservation and ultimately the loss of important character defining features.

At the William Floyd Estate, the proposed introduction of landscape vignettes (reintroduction of gardens, cultivated fields) in support of interpretive objectives could foster a greater understanding and appreciation of the Estate’s history and overall cultural landscape. The introduction of landscape vignettes would be undertaken consistent with documentation provided by the proposed cultural landscape report. However, the landscape vignettes may represent different periods in the Estate’s history (e.g., cultivated fields representing the 18th-century plantation period in the midst of the 20th-century landscape) which may also disrupt the continuity of the cultural landscape and confound the visitor’s ability to understand it.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with the transportation and access components of Alternative 2 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 2 would be the same as those described in the “Impacts Common to All Alternatives” section.

### Cumulative Impacts

There are no related regional plans or initiatives that are expected to have a cumulative impact on cultural landscapes beyond what is described under this alternative.

### Conclusions

Similar to Alternative 1, the proposed actions associated with Alternative 2 would have a long-term beneficial impact on cultural landscapes within Fire Island National Seashore. The completion of Cultural Landscape Reports for the Fire Island Light Station and the William Floyd Estate would enhance management and protection of the Seashore’s cultural landscapes. Under this alternative, efforts to revise the Secretary’s zoning standards and to work with Fire Island’s communities to address the protection of community character are likely to improve the management of land use and development on Fire Island and offer a long-term benefit for Fire Island’s larger cultural landscape. Also under this alternative, greater emphasis would be placed on rehabilitation of the cultural landscapes at the Fire Island Light Station and the William Floyd Estate. These efforts coupled with those related to improved management of land use and development on Fire Island offer greater potential to protect the Seashore’s cultural landscapes than those proposed under Alternative 1.

Based on this information, the beneficial impacts of Alternative 2 on cultural landscapes would be considered significant. The rehabilitation of cultural landscapes at the William Floyd Estate and Fire Island Light Station would be readily apparent and would be of long term benefit in protecting the integrity of these resources and ensuring that they continue to represent and convey the Seashore’s history and interpretive themes.

#### CULTURAL LANDSCAPES

### IMPACTS OF MANAGEMENT ALTERNATIVE 3

*Recognize the Relationship between Human Use and Nature (Preferred Alternative)*

### Impact Analysis

#### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the natural resource management components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Impacts from cultural resource management efforts associated with Alternative 3 would include those described in the “Impacts Common to All Alternatives” section above. In addition, under this alternative, the NPS would prepare a Fire Island-wide Cultural Landscape Report (CLR) that would provide essential information for evaluating, protecting, and interpreting Fire Island’s larger landscape and place cultural landscapes like the Fire Island Light Station and the Carrington Estate in their larger context. The island-wide CLR would evaluate existing conditions and identify and analyze contributing landscape characteristics within the dynamic coastal environment. Also under this alternative, the NPS would work to strengthen its relationship with the academic community, local and regional museums, historical societies, and others to expand opportunities for collaboration in undertaking research, inventories, preservation initiatives, and interpretation. These enhanced relationships should contribute to expanded awareness of Fire Island’s cultural heritage and its relationship to its regional context. In sum, these efforts would result in a greater understanding of these cultural landscapes and would contribute to their long-term protection.

#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

The cultural landscape impacts associated with Alternative 3 are the same as those described under Alternative 2.



#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts from Seashore experience, interpretation, education, and outreach efforts associated with Alternative 3 would include those described in the “Impacts Common to All Alternatives” section above. Unlike Alternatives 1 and 2, under Alternative 3, there would be greater emphasis on experiencing Fire Island as a whole. In addition to experiencing the Seashore’s sites and facilities, visitors would also be presented with the opportunity to learn more about Fire Island’s history and development through touring the Fire Island communities and participating in community-based and/or jointly developed programs (e.g., lectures, concerts, walking tours, and exhibits). Further, visitors would be encouraged to learn more about Fire Island’s regional context by experiencing sites on Long Island such as Wertheim NWR, the Long Island Maritime Museum, and the Suffolk County Museum, to name a few. This would contribute to an increased awareness of the resource values associated with Fire Island and the defining features of the larger landscape and increased support for its long-term protection.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with the transportation and access components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section.

## Cumulative Impacts

There are no related regional plans or initiatives that are expected to have a cumulative impact on cultural landscapes beyond what is described under this alternative.

## Conclusions

Overall, the proposed actions associated with Alternative 3 would have localized adverse effects and would have a long-term beneficial impact on cultural landscapes within Fire Island National Seashore. The completion of Cultural Landscape Reports for the Fire Island Light Station, the William Floyd Estate and Fire Island as a whole would enhance management and protection of the Seashore’s cultural landscapes. As under Alternative 2, efforts under Alternative 3 to revise the Secretary’s zoning standards and to work with Fire Island’s communities to address the protection of community character would be likely to improve the management of land use and development on Fire Island and offer a long-term benefit for Fire Island’s cultural landscape. Also under this alternative greater emphasis would be placed on rehabilitation of the cultural landscapes at the Fire Island Light Station and the William Floyd Estate. The NPS would work to unify the visitor’s experience of Fire Island improving awareness of Fire Island’s larger landscape. These efforts offer the greatest potential of the three proposed alternatives to consider Fire Island’s cultural landscape holistically and ensure its protection.

Based on this information, the largely beneficial impacts of Alternative 3 on cultural landscapes would be considered significant. The rehabilitation of cultural landscapes at the William Floyd Estate and Fire Island Light Station would be readily apparent and would be of long-term benefit in protecting the integrity of these resources and ensuring that they continue to represent and convey the Seashore’s history and interpretive themes. The completion of a Fire Island-wide Cultural Landscape Report opens opportunities to support and enable others to acknowledge, protect, and interpret the contributing features associated with the island’s cultural landscape, the results of which would be readily apparent.

## CULTURAL RESOURCES

# Impacts on Historic Structures

### Methodology

In order for a structure or building to be listed on the National Register, it must be associated with an important historic context, i.e., possess significance – the meaning or value ascribed to the structure or building, and integrity of those features necessary to convey its significance (i.e., location, design, setting, workmanship, materials, feeling, and association). The Fire Island Lighthouse was listed on the National Register of Historic Places in 1981; an update and boundary expansion to include the entire Fire Island Light Station as a district was listed in 2010. The Old Mastic House at the William Floyd Estate was listed on the National Register of Historic Places in 1980. Funds are currently being sought by the Seashore to update the National Register paperwork to include the entire William Floyd Estate. The Carrington House and Cottage were listed on the National Register by the New York State Historic Preservation Office (SHPO) in January 2014. Each of the National Register nominations delineates significant and contributing features and serves as the basis for the analysis of impacts in this section. In the absence of the updated paperwork for the William Floyd Estate, the 2006 Cultural Landscape Inventory will also be used as a basis for this analysis.

Regulations and guidelines related to Historic Structures include:

- Advisory Council on Historic Preservation (ACHP) implementing regulations regarding the “Protection of Historic Properties” (36 CFR 800)
- Antiquities Act of 1906
- Historic Sites, Buildings, and Antiquities Act of 1935, as amended
- National Historic Preservation Act of 1966, as amended
- Executive Order 11593, “Protection and Enhancement of Cultural Environment,”
- Executive Order 13653: Preparing the U.S. for the Impacts of Climate Change
- Department of the Interior (DOI) Secretarial Order 3289: Addressing the Impacts of Climate Change on America’s Water, Land, and other Natural and Cultural Resources
- Secretary of the Interior Standards for the Treatment of Historic Properties (1996)



- NPS Management Policies 2006
- NPS Policy Memorandum 14-02: Climate Change and Stewardship of Cultural Resources
- NPS Directors Orders (DO) #28 – Cultural Resources Management Guidelines

The resource-specific context for assessing significance of impacts on historic structures includes:

- The historic buildings and structures associated with the Fire Island Light Station, and the William Floyd Estate are considered to be fundamental resources of Fire Island National Seashore.
- The ability of a historic buildings and structures to continue to represent and convey historical events and themes determined to be fundamental to Fire Island National Seashore: these themes are related primarily to the environmental and human history of Fire Island, maritime history and economy, Colonel William Floyd (one of New York’s signers of the Declaration of Independence) and the Floyd family’s tenure as a reflection of the changing political, social, and economic history of Long Island.
- The degree to which the National Register significance and integrity of historic buildings and structures that are considered fundamental resources is retained as the plan is implemented.
- The degree to which proposed management of historic buildings and structures complies with section 110 of the National Historic Preservation Act regarding the preservation and use of historic properties to the maximum extent feasible.

## HISTORIC STRUCTURES

**IMPACTS COMMON TO ALL ALTERNATIVES****Impact Analysis****► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS**

No impacts associated with the natural resource management components of the Elements Common to All Alternatives were identified.

**► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS**

Under all alternatives, NPS would undertake research and National Register documentation of historic properties at the William Floyd Estate, Sailors Haven, and the Carrington Estate. These efforts would serve to better inform management of the historic structures associated with these properties. At the William Floyd Estate, the Seashore would complete work on the stabilization of the Old Mastic House and continue to preserve and interpret the Estate's historic outbuildings. The historic caretaker's workshop would continue to serve as administrative space, a use consistent with its historic purpose. These actions would be of benefit to the Seashore's historic structures and would result in their long-term protection.

**► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS**

No impacts associated with the land-use and development components of the Elements Common to All Alternatives were identified.

**► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS**

No impacts associated with the Seashore experience, interpretation, education and outreach components of the Elements Common to All Alternatives were identified.

**► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS**

No impacts associated with the transportation and access components of the Elements Common to All Alternatives were identified.

**► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS**

Under all alternatives, the NPS would pursue efforts to make Seashore sites and facilities more universally accessible for the visiting public and its employees. The Seashore would also work to make Seashore facilities more energy efficient and sustainable. In some cases, these efforts could alter the character of a historic structure. The Seashore would seek alternatives to the alteration of historic structures for these purposes where possible.

## HISTORIC STRUCTURES

**IMPACTS OF MANAGEMENT ALTERNATIVE 1**

*Continuation of Current Management Practices (No Action)*

**Impact Analysis****► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS**

Impacts associated with the natural resource management components of Alternative 1 would be the same as those described in the "Impacts Common to All Alternatives" section.

**► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS**

Impacts from cultural resource management efforts associated with Alternative 1 would include those described in the "Impacts Common to All Alternatives" section above. In addition, under Alternative 1, historic structures would continue to be preserved and maintained at the Fire Island Light Station and the William Floyd Estate. The Carrington house and cottage would be rehabilitated and adaptively reused for administrative purposes. The continued maintenance and use of these structures would ensure their long-term preservation.

#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts from land-use and development efforts associated with Alternative 1 would include those described in the “Impacts Common to All Alternatives” section above. Under this alternative, in many cases historic structures located on non-federal lands within the Seashore would remain undocumented and may be affected by insensitive alterations, additions, demolition, or may be located in high-hazard areas. Such historic structures may be subject to permanent loss over time. This could gradually erode the context within which the federal historic structures exist, resulting in adverse impacts on the federal historic properties.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts from Seashore experience, interpretation, education, and outreach efforts associated with Alternative 1 would include those described in the “Impacts Common to All Alternatives” section above. In addition, under this alternative, the NPS would rehabilitate the Sailors Haven Visitor Center consistent with the findings of the proposed National Register documentation. At the William Floyd Estate, orientation and sales space would continue to be

located inside the Old Mastic House. These uses are not consistent with the historic use of the historic structure, detract from the visitor’s experience of the Old Mastic House, and could have a long-term negative impact on the historic structure.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with the transportation and access components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts from Seashore operations, maintenance, and facilities efforts associated with Alternative 1 would include those described in the “Impacts Common to All Alternatives” section above. Also under this alternative, the NPS would rehabilitate the Carrington House and Cottage and adaptively reuse them for administrative purposes. For several years, these structures had been left unused and minimally maintained. The rehabilitation and use of the structures would ensure their long-term preservation.

### Cumulative Impacts

There are no related regional plans or initiatives that are expected to have a cumulative impact on historic structures beyond what is described under this alternative.

### Conclusions

Overall, the proposed actions associated with Alternative 1 would have localized adverse impacts and would have a long-term beneficial impact on historic structures within Fire Island National Seashore. This is due to efforts to maintain and preserve the historic structures and the rehabilitation of the Carrington house and cottage. The use of spaces in the Old Mastic House for sales and orientation would continue to be inconsistent with the historic use of the structure and would have a minor, long-term impact on the structure’s historic integrity. The lack of information pertaining to the historic structures that are located throughout the Fire Island communities and the potential for their loss or alteration may gradually diminish the larger context in which the Seashore’s historic structures exist. This could have a long-term, adverse impact on historic structures within the Seashore.





Based on this information, the largely beneficial impacts of Alternative 1 on historic structures would not be considered significant. Under this alternative, the present preservation and maintenance regimens for the Seashore's historic structures and efforts to rehabilitate the Carrington house and cottage would be slightly detectable and historic structures would be minimally affected. The adverse impacts associated with continued use of the Old Mastic House for orientation and sales, and limited information about and protection of non-federal historic structures across Fire Island would not be immediately apparent and therefore would not be considered significant. Changes to the larger context of the Seashore's historic structures from loss and alteration of structures located throughout the communities would not be considered significant in the near term because of the incremental nature of the change. Over time, the continuing gradual alteration of context and setting could have a significant impact on the integrity of the Seashore's historic structures.

#### HISTORIC STRUCTURES

### IMPACTS OF MANAGEMENT ALTERNATIVE 2

#### *Enhancing Natural Resource Values*

#### Impact Analysis

##### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the natural resource management components of Alternative 2 would be the same as those described in the "Impacts Common to All Alternatives" section.

##### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Impacts from cultural resource management efforts associated with Alternative 2 would include those described in the "Impacts Common to All Alternatives" section above. At the William Floyd Estate, the orientation and sales functions would be removed from the Old Mastic House and the remaining spaces would be refurnished to reflect their historic use. This proposed action would be of long-term benefit in the preservation and interpretation of the Old Mastic House. In addition, the Estate's historic outbuildings would be rehabilitated and interpreted. This proposed preservation treatment would also be of long-term benefit to the historic structures.

##### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts from land use and development efforts associated with Alternative 2 would include those described in the "Impacts Common to All Alternatives" section above. Under this alternative, NPS would collaborate with others to encourage, support, and cooperate with Fire Island communities to assist in the identification and preservation of the distinctive character of individual Fire Island communities as well as Fire Island as a whole. Efforts to raise awareness of historic structures and recognition of their importance to Fire Island's historic use and development would contribute positively to the long-term protection of these resources. It would also benefit the federally managed historic structures by preserving some facets of their historic context.

##### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts from Seashore experience, interpretation, education, and outreach efforts associated with Alternative 2 would include those described in the "Impacts Common to All Alternatives" section above. Also under this alternative, the NPS would rehabilitate the Sailors Haven Visitor Center for continued visitor use. Documentation would also be completed to evaluate the structure's National Register eligibility. These proposed actions would support its preservation and be of long-term benefit to the historic structure. At the William Floyd Estate, tours of the Old Mastic House would be ticketed and scheduled to manage the flow and volume of visitors through the house. This proposed action would manage visitation to be consistent with the structures carrying capacity, thus minimizing impacts and being of long term-benefit to the Old Mastic House. In addition, the NPS would expand existing visitor facilities to accommodate flexible program space for visitor orientation as well as space for visitor contact and sales, moving these functions away from the historic Old Mastic House.

##### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with the transportation and access components of Alternative 2 would be the same as those described in the "Impacts Common to All Alternatives" section.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 2 would be the same as those described in the “Impacts Common to All Alternatives” section. As in Alternative 1, under this alternative the NPS would rehabilitate the Carrington House and Cottage and reuse them for administrative purposes. For several years, these structures had been left unused and minimally maintained. Rehabilitation and reuse ensures their long-term preservation.

### Cumulative Impacts

There are no related regional plans or initiatives that are expected to have a cumulative impact on historic structures beyond what is described under this alternative.

### Conclusions

The proposed actions associated with Alternative 2 would have localized adverse impacts and would have a long-term beneficial impact on historic structures considered to be fundamental resources within the Seashore. Efforts to document and rehabilitate historic structures at Sailors Haven and the William Floyd Estate would be of long-term benefit to the Seashore’s historic structures. Likewise, proposals to relocate non-historic functions from the Old Mastic House to a more appropriate location would also be considered of long-term benefit in terms of the protection of historic structures.

Based on this information, the beneficial impacts of Alternative 2 on historic structures would be considered significant. Under this alternative, proposed rehabilitation efforts, and the relocation of non-historic functions from historic buildings would be detectable and historic structures would be noticeably improved and better preserved by these actions. The proposed actions would enhance the ability of these fundamental and important resources to represent and convey historical events and themes and better ensure their historical integrity.

#### HISTORIC STRUCTURES

### IMPACTS OF MANAGEMENT ALTERNATIVE 3

*Recognize the Relationship between Human Use and Nature (Preferred Alternative)*

### Impact Analysis

#### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

There would be no impacts on historic structures as a result of natural resource management proposals under Alternative 3.

#### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Impacts from cultural resource management efforts associated with Alternative 3 would include those described in the “Impacts Common to All Alternatives” section above. In addition, under Alternative 3, the NPS would work collaboratively with the New York SHPO and interested Fire Island communities to undertake a formal inventory of historic resources on non-federal lands within the boundary of the Seashore. The proposed efforts to inventory and document other historic properties on Fire Island could ultimately improve their prospects for long-term protection and would contribute to the preservation of the larger historic context of the federally-owned historic structures. This would be of long-term, benefit to the Seashore’s historic structures.

As in Alternative 2, the orientation and sales functions would be removed from the Old Mastic house at the William Floyd Estate, and the remaining spaces would be refurbished to reflect their historic use. This proposed action would be of long-term benefit in the preservation and interpretation of the Old Mastic House. In addition, the Estate’s historic outbuildings would be rehabilitated and interpreted. This proposed preservation treatment would also be of long-term benefit to the Seashore’s historic structures.

#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts from land use and development efforts associated with Alternative 3 would include those described in the “Impacts Common to All Alternatives” section above. Also, as in Alternative 2, under this alternative the NPS would collaborate with others to encourage, support, and cooperate with Fire Island communities to assist in the identification and preservation of the distinctive character of individual Fire Island communities as well as Fire Island as a whole. Efforts to raise awareness of historic structures and their importance to Fire Island’s historic use and development will contribute positively to the long-term protection of these resources and to the preservation of the larger historic context of the federally owned historic structures. This would be of long-term benefit to the Seashore’s historic structures.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts from Seashore experience, interpretation, education, and outreach efforts associated with Alternative 3 would include those described in the “Impacts Common to All Alternatives” section above. As in Alternative 2, under this alternative, the NPS would rehabilitate the Sailors Haven Visitor Center for continued visitor use. Documentation would also be completed to evaluate the structure’s National Register eligibility. These proposed actions would support its preservation and be of long term benefit to the historic structure. At the William Floyd Estate, tours of the Old Mastic House would be ticketed and scheduled to manage the flow and volume of visitors. This proposed action would manage visitation to be consistent with the structures carrying capacity, thus minimizing impacts and being of long-term benefit to the Old Mastic House. In addition, the NPS would expand existing visitor facilities to accommodate flexible program space for visitor orientation as well as space for visitor contact and sales, thus removing these functions from the historic Old Mastic House.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with the transportation and access components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Similar to Alternative 1, under this alternative, the NPS would rehabilitate the Carrington House and Cottage and adaptively reuse them for administrative purposes. The Seashore would use one or both of these structures to host an artist-in-residence program. For several years, these structures had been left unused and minimally maintained. Rehabilitation and reuse ensures their long-term preservation.

### Cumulative Impacts

There are no related regional plans or initiatives that are expected to have a cumulative impact on historic structures beyond what is described under this alternative.

### Conclusions

Overall, the proposed actions associated with Alternative 3 would have localized adverse impacts and would have a long-term beneficial impact on historic structures considered to be fundamental resources within Fire Island National Seashore. Proposals to rehabilitate and reuse or interpret historic structures at the Carrington Estate, Sailors Haven, and the William Floyd Estate all directly support their long-term protection and preservation. Likewise, proposals to relocate non-historic functions from the Old Mastic House to a more appropriate location would also be considered to be of long-term benefit from a historic structures standpoint. Efforts to encourage the recognition and protection of historic structures on non-federal lands within the Seashore would contribute to the protection of the historic context that helps define the Seashore’s cultural resources. These efforts would result in a long-term benefit relative to the preservation of historic structures on the federal tracts.

Based on this information, the largely beneficial impacts of Alternative 3 on historic structures would be considered significant. Under this alternative, proposed rehabilitation efforts and the relocation of non-historic functions from historic buildings would be detectable and historic structures would be noticeably improved and better preserved by these actions. The proposed actions would enhance the ability of these fundamental and important resources to represent and convey historical events and themes and better ensure their historical integrity.

## CULTURAL LANDSCAPES

# Impacts on Archeological Resources

### Methodology

Certain important research questions about human history can be answered only by the actual physical material of cultural resources. Archeological resources have the potential to answer, in whole or in part, such research questions. An archeological site can be eligible for the National Register if the site has yielded, or may be likely to yield, information important in prehistory or history. An archeological site can be nominated to the National Register in one of three historic contexts or levels of significance: local, state, or national. An archeological overview and assessment was completed for the Seashore in 2005. That delineation of significant and contributing features is the basis for the analysis of impacts in this section.

Regulations and guidelines related to archeological resources include:

- Curation of Federally Owned and Administered Archeological Collections (36 CFR 79)
- Advisory Council on Historic Preservation (ACHP) implementing regulations regarding the “Protection of Historic Properties” (36 CFR 800)
- National Historic Preservation Act of 1966, as amended
- Archeological and Historic Preservation Act of 1974, as amended
- Archeological Resources Protection Act of 1979, as amended
- Native American Graves Protection and Repatriation Act of 1990
- Executive Order 13653: Preparing the U.S. for the Impacts of Climate Change
- Department of the Interior (DOI) Secretarial Order 3289: Addressing the Impacts of Climate Change on America’s Water, Land, and other Natural and Cultural Resources
- Secretary of the Interior Standards for the Treatment of Historic Properties (1996)
- NPS Management Policies 2006



- NPS Policy Memorandum 14-02: Climate Change and Stewardship of Cultural Resources
- NPS Directors Orders (DO) #28 – Cultural Resources Management Guidelines
- NPS Directors Orders (DO) # 28A – Archeology

The resource-specific context for assessing the significance of impacts under NEPA includes:

- The ability to provide meaningful information to the Seashore’s archeological record and provide opportunities for archeological research.
- The degree to which the management of archeological resources complies with the National Historic Preservation Act.
- The degree to which the management of archeological resources is consistent with the recommendations of the 2005 Archeological Overview and Assessment prepared for Fire Island National Seashore.



## ARCHEOLOGICAL RESOURCES

**IMPACTS COMMON TO ALL ALTERNATIVES****Impact Analysis****► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS**

No impacts associated with the natural resource management components of the Elements Common to All Alternatives were identified.

**► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS**

Under all alternatives, the NPS would undertake the necessary research to set priorities and formulate a strategy for archeological resource management. Research would include work related to prehistoric archeological resources, resources at risk from coastal erosion, and submerged archeological resources. These proposed initiatives would enhance efforts to protect these resources and would be of long-term benefit to the archeological resources on Fire Island and the William Floyd Estate.

**► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS**

No impacts associated with the land-use and development components of the Elements Common to All Alternatives were identified.

**► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS**

No impacts associated with the Seashore experience, interpretation, education, and outreach components of the Elements Common to All Alternatives were identified.

**► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS**

No impacts associated with the transportation and access components of the Elements Common to All Alternatives were identified.

**► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS**

Under all alternatives, the NPS would construct a solar shade structure over some or all of the Ferry Terminal parking area. This may result in the disturbance of archeological resources located beneath the parking area.

## ARCHEOLOGICAL RESOURCES

**IMPACTS OF MANAGEMENT ALTERNATIVE 1***No Action***Impact Analysis****► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS**

Impacts associated with the natural resource management components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

**► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS**

Impacts associated with the cultural resource management components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

**► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS**

Impacts associated with the land-use and development components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

**► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS**

Impacts associated with the Seashore experience, interpretation, education, and outreach components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

**► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS**

Impacts associated with the transportation and access components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

**► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS**

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

## Cumulative Impacts

There are no related regional plans or initiatives that are expected to have a cumulative impact on archeological resources beyond what is described under this alternative.

## Conclusions

As described in “Impacts Common to All Alternatives”, Alternative 1 would result in beneficial impacts to archeological resources and some localized, minimal, adverse impacts. These actions include the inventory and documentation of prehistoric and submerged archeological resources and an analysis of archeological resources that may be threatened by coastal erosion. These efforts to locate archeological resources would contribute to their long-term protection and would be considered a long-term benefit to archeological resources.

While the actions described under Alternative 1 would have a beneficial impact on archeological resources they do not represent a substantial change in how the Seashore manages its archeological resources. Therefore, these beneficial impacts would not be considered significant in the context of the Seashore’s archeological record or opportunities for research, the preservation of archeological resources, or the recommendations of the 2005 Archeological Overview and Assessment. Adverse impacts associated with construction or other ground disturbing activity would be slightly detectable and highly localized, and therefore would not be considered significant in the context of preserving archeological resources. In cases of construction or other ground disturbing activity, the Seashore would undertake standard mitigation measures such as pre-construction surveys and monitoring during construction to best protect the integrity of archeological resources. Mitigating measures would be consistent with the recommendations of the 2005 Archeological Overview and Assessment and could contribute to opportunities for research.

### ARCHEOLOGICAL RESOURCES

## IMPACTS OF MANAGEMENT ALTERNATIVE 2

### *Enhancing Natural Resource Values*

## Impact Analysis

### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the natural resource management components of Alternative 2 would be the same as those described in the “Impacts Common to All Alternatives” section.

### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Impacts from cultural resource management efforts associated with Alternative 2 would include those described in the “Impacts Common to All Alternatives” section above. In addition, under Alternative 2, the NPS would undertake a comprehensive archeological resource management plan for the William Floyd Estate. This would enhance the Seashore’s ability to consistently manage for the inventory, monitoring, protection and, as appropriate, interpretation of the archeological resources. This proposed action would be of benefit to the Seashore’s archeological resources.

### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts associated with the land-use and development components of Alternative 2 would be the same as those described in the “Impacts Common to All Alternatives” section.

### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts from Seashore experience, interpretation, education, and outreach efforts associated with Alternative 2 would include those described in the “Impacts Common to All Alternatives” section above. Under this alternative, a number of facilities would be identified for removal. At most locations (Sailors Haven, Talisman, and Wilderness), the sites were heavily affected by existing development and further activity would be unlikely to have an impact on archeological resources.

Also under this alternative, a new visitor orientation facility would be developed by expanding upon existing facilities at the William Floyd Estate, thus increasing the building footprint and possibly requiring the reconfiguration of the existing parking area. Though this is a previously disturbed site, there is still the potential to impact archeological resources. Further assessment would be required. This proposed action could have an adverse impact on the archeological resources in the project area.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with the transportation and access components of Alternative 2 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts from Seashore operations, maintenance, and facilities efforts associated with Alternative 2 would include those described in the “Impacts Common to All Alternatives” section above. At the William Floyd Estate, a consolidated maintenance facility would be developed on previously disturbed soils and would expand upon preexisting structures. This proposal may also result in adverse impacts to archeological resources.

## Cumulative Impacts

There are no related regional plans or initiatives that are expected to have a cumulative impact on archeological resources beyond what is described under this alternative.

## Conclusions

Under Alternative 2, some proposed actions may adversely impact archeological resources including the demolition of some existing structures and the rehabilitation and expansion of others, and the proposed construction of solar car ports at the Patchogue Ferry Terminal. These impacts would all be highly localized and are likely to be minor in their impact because so much of the proposed activity would occur in previously disturbed areas. The completion of a comprehensive archeological management plan at the William Floyd Estate would contribute to mitigating these impacts.

Alternative 2 would have a beneficial impact on archeological resources however the greatest benefits would be derived at the William Floyd Estate. On Fire

Island they do not represent a substantial change in how the Seashore manages its archeological resources on Fire Island. However, the completion and implementation of a comprehensive archeological management plan for the William Floyd Estate could result in beneficial impacts that are significant in the context of preserving the Seashore’s archeological record and opportunities for research, preserving archeological resources, and the recommendations of the 2005 Archeological Overview and Assessment. In cases of construction or other ground disturbing activity, the Seashore would undertake standard mitigation measures such as pre-construction surveys and monitoring during construction to best protect the integrity of archeological resources park-wide. Adverse impacts associated with construction or other ground disturbing activity would be slightly detectable and highly localized, and therefore would not be considered significant in the context of preserving archeological resources. Mitigating measures would be consistent with the recommendations of the 2005 Archeological Overview and Assessment and could contribute to opportunities for research. In addition, once completed, the Archeological Resource Management Plan for the William Floyd Estate would provide additional guidance for mitigating future impacts at the Estate.





#### ARCHEOLOGICAL RESOURCES

### IMPACTS OF MANAGEMENT ALTERNATIVE 3

*Recognize the Relationship between Human Use and Nature (Preferred Alternative)*

#### Impact Analysis

##### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the natural resource management components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section.

##### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Impacts from cultural resource management efforts associated with Alternative 3 would include those described in the “Impacts Common to All Alternatives” section above. As under Alternative 2, the NPS would undertake a comprehensive archeological resource management plan for the William Floyd Estate. This would enhance the Seashore’s ability to consistently manage for the inventory, monitoring, protection, and, as appropriate, interpretation of the archeological

resources. This proposed action would be of benefit to the Seashore’s archeological resources. In addition, under this alternative, NPS would work collaboratively with the SHPO and interested Fire Island communities to undertake a formal inventory of historic resources including archeological resources. NPS would also work with Fire Island communities to make them aware of archeological resources and encourage them to document and protect them. These actions would all be of long-term benefit to archeological resources throughout the Seashore.

##### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts associated with the land-use and development components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section.



#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts from Seashore experience, interpretation, education, and outreach efforts associated with Alternative 3 would include those described in the “Impacts Common to All Alternatives” section above. As under Alternative 2, a new visitor orientation would be developed by expanding upon existing facilities at the William Floyd Estate, thus increasing the building footprint and possibly requiring the reconfiguration of the existing parking area. Though this is a previously disturbed site, there is still the potential to impact archeological resources; further assessment would be required. This proposed action could have an adverse impact on the archeological resources in the project area.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with the transportation and access components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts from Seashore operations, maintenance, and facilities efforts associated with Alternative 3 would include those described in the “Impacts Common to All Alternatives” section above. As proposed under Alternative 2, under this alternative a consolidated maintenance facility would be developed at the William Floyd Estate on previously disturbed soils and would expand upon a preexisting structure. Likewise, the nearby curatorial storage facility would also be expanded resulting in similar impacts. This proposal could result in adverse impacts to archeological resources.

### Cumulative Impacts

There are no related regional plans or initiatives that are expected to have a cumulative impact on archeological resources beyond what is described under this alternative.

### Conclusions

Alternative 3 would result in both beneficial and adverse impacts on archeological resources. Of benefit would be the completion of a comprehensive archeological management plan at the William Floyd Estate; inventory and documentation of prehistoric and submerged archeological resources and an analysis of archeological resources that may be threatened by coastal erosion; and proposed work to support the inventory, documentation, and protection of archeological resources on non-federal lands on Fire Island. These efforts would contribute positively to the long-term protection of archeological resources at the William Floyd Estate and across Fire Island. Construction projects at the William Floyd Estate and proposed construction in the parking area of the Patchogue Ferry Terminal could result in adverse impacts to archeological resources that would require some mitigation in compliance with federal laws and policies.

Similar to Alternative 1, the actions described under Alternative 3 would have a beneficial impact on archeological resources they do not represent a substantial change in how the Seashore manages its archeological resources on Fire Island. However, the completion and implementation of a comprehensive archeological management plan for the William Floyd Estate and efforts to work with Fire Island communities to identify and protect archeological resources could result in beneficial impacts that are significant in the context of preserving the Seashore’s archeological record and opportunities for research, preserving archeological resources, and the recommendations of the 2005 Archeological Overview and Assessment. In cases of construction or other ground disturbing activity, the Seashore would undertake standard mitigation measures such as pre-construction surveys and monitoring during construction to best protect the integrity of archeological resources park-wide. Adverse impacts associated with construction or other ground disturbing activity would be slightly detectable and highly localized, and therefore would not be considered significant in the context of preserving archeological resources. Mitigating measures would be consistent with the recommendations of the 2005 Archeological Overview and Assessment and could contribute to opportunities for research.

## CULTURAL RESOURCES

# Impacts on Museum Collections

### Methodology

Museum collections (historic artifacts, natural specimens, and archival and manuscript material) may be threatened by fire, theft, vandalism, natural disasters, and environmental conditions, such as relative humidity, temperature, light, etc. The preservation of museum collections is an ongoing process of preventative conservation, supplemented by conservation treatment when necessary. The primary goal is preservation of artifacts in as stable a condition as possible to prevent damage and minimize deterioration. The Seashore's archives and collection are characterized in a 1991 Scope of Collections Statement. Recommendations for a Scope of Collections update were made in the 2006 Collection Management Plan prepared for the Seashore. The findings contained in these documents form the basis for the analysis of impacts in this section.

Regulations and guidelines related to museum collections include:

- Curation of Federally Owned and Administered Archeological Collections (36 CFR 79)
- Advisory Council on Historic Preservation (ACHP) implementing regulations regarding the "Protection of Historic Properties" (36 CFR 800)
- Antiquities Act of 1906
- Historic Sites Act of 1935, as amended
- Museum Properties Management Act of 1955, as amended
- National Historic Preservation Act of 1966, as amended
- Archeological and Historic Preservation Act of 1974, as amended
- Archeological Resources Protection Act of 1979
- Native American Graves Protection Repatriation Act of 1990
- Executive Order 11593, "Protection and Enhancement of the Cultural Environment"
- Executive Order 13653: Preparing the U.S. for the Impacts of Climate Change
- Department of the Interior (DOI) Secretarial Order 3289: Addressing the Impacts of Climate Change on America's Water, Land, and other Natural and Cultural Resources
- Secretary of the Interior Standards for the Treatment of Historic Properties (1996)
- NPS Management Policies 2006
- NPS Policy Memorandum 14-02: Climate Change and Stewardship of Cultural Resources
- NPS Director's Orders (DO) #24 – Museum Collections Management
- NPS Director's Orders (DO) #28 – Cultural Resources Management Guidelines
- NPS Director's Orders (DO) # 28A – Archeology
- NPS Museum Handbook

The resource-specific context for assessing the significance of impacts on museum collections includes:

- The Seashore maintains a museum and archival collection that includes over 100,000 items that pertain to both the William Floyd Estate and Fire Island that has been recognized as a fundamental resource.
- The degree to which the Seashore's museum and archival collections are maintained in good condition and are readily available to the public consistent with regulations and guidelines related to museum collections, as described above.
- The degree to which the management of museum collections is consistent with the recommendations of the 2006 Collections Management Plan prepared for Fire Island National Seashore, as well as the Northeast Region and service-wide Collection Management Plans.

## MUSEUM COLLECTIONS

**IMPACTS COMMON TO ALL ALTERNATIVES****Impact Analysis****► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS**

No impacts associated with the natural resource management components of the Elements Common to All Alternatives were identified.

**► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS**

Under all alternatives, the NPS would work to make the collection more readily available to the public and educational entities for research and interpretive use, including digitizing segments of the collection and making them available on-line. Increasing public awareness of the collection and making it available to the general public as well as researchers could result in both beneficial and adverse impacts. Promoting the understanding and appreciation of the collection is a benefit; on the other hand, increasing demand for its physical availability could result in increased wear on objects in the collection. The Seashore would need to update security and use procedures to address any significant changes in the pattern of use. At the William Floyd Estate, a historic furnishings implementation plan would be prepared to guide the placement and management of the furnishings on exhibit in the Old Mastic House, which would be of long-term benefit to the museum collection by ensuring its proper care and protection. Further, the NPS would continue to work with Floyd family descendants and others related to the site to enhance the Estate's collections.

**► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS**

No impacts associated with the land-use and development components of the Elements Common to All Alternatives were identified.

**► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS**

Under all alternatives, the Seashore would continue to offer special programs and temporary exhibits in support of interpretive objectives at the William Floyd Estate. Objects would continue to be displayed in secure, climate-controlled cases as required. Temporary exhibits would continue and would enable the Seashore to make segments of the collection available for viewing that otherwise would be unavailable. This would foster greater public understanding and appreciation of the Seashore's collection and could elicit greater public support for its protection.

**► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS**

No impacts associated with the transportation and access components of the Elements Common to All Alternatives were identified.

**► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS**

No impacts associated with the Seashore operations, maintenance, and facilities components of the Elements Common to All Alternatives were identified.

## MUSEUM COLLECTIONS

**IMPACTS OF MANAGEMENT  
ALTERNATIVE 1***Continuation of Current Management Practices (No Action)***Impact Analysis****► IMPACTS RELATED TO NATURAL RESOURCE  
MANAGEMENT ACTIONS**

Impacts associated with the natural resource management components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

**► IMPACTS RELATED TO CULTURAL RESOURCE  
MANAGEMENT ACTIONS**

Impacts from cultural resource management efforts associated with Alternative 1 would include those described in the “Impacts Common to All Alternatives” section above. In addition, under Alternative 1, the NPS would continue to house collections in their present locations, some of which are not climate controlled. The Seashore’s curatorial facility would continue to function at capacity. Offers of additional museum objects and archival materials may need to be declined due to inadequate storage space and conditions. Workspace for conservation and research activities would continue to be at a premium. While largely stable, current conditions make the collection less accessible and more difficult to manage which overtime could result in long-term adverse impacts to the Seashore’s museum collections.

**► IMPACTS RELATED TO LAND-USE AND  
DEVELOPMENT ACTIONS**

Impacts associated with the land-use and development components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

**► IMPACTS RELATED TO SEASHORE EXPERIENCE  
ACTIONS**

Impacts from Seashore experience, interpretation, education, and outreach efforts associated with Alternative 1 would include those described in the “Impacts Common to All Alternatives” section above. Under this alternative, the curatorial staff would continue to provide assistance and offer limited tours of the curatorial facility, as feasible. These efforts would

contribute to enhanced understanding and appreciation of the Seashore’s museum collections and overall would offer a net benefit relative to the long-term protection of the collection. Care would need to be taken to ensure that security and use protocols are in place to protect the collection. Opening up the present small curatorial space for guided tours could present a limited threat to the collection in terms of damage or theft.

**► IMPACTS RELATED TO TRANSPORTATION AND  
ACCESS ACTIONS**

Impacts associated with the transportation and access components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

**► IMPACTS RELATED TO SEASHORE OPERATIONS  
ACTIONS**

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

**Cumulative Impacts**

There are no related regional plans or initiatives that are expected to have a cumulative impact on museum collections beyond what is described under this alternative.

**Conclusions**

Under Alternative 1 impacts to museum collections would have both beneficial and adverse impacts. Perpetuating existing collections storage conditions that fail to address storage, research, and workspace needs would make it increasingly difficult to maintain the collection, resulting in noticeable adverse impacts to museum collections.

The beneficial impacts of Alternative 1 on Museum Collections would not be considered significant because only a small portion of the items would be affected. The adverse impacts would not be significant in the short term, as there would be no substantive changes to the collections; however, over time, the lack of improvement in conditions regarding storage and use of the collections could result in significant impacts to museum collections.



## MUSEUM COLLECTIONS

**IMPACTS OF MANAGEMENT  
ALTERNATIVE 2***Enhancing Natural Resource Values***Impact Analysis****► IMPACTS RELATED TO NATURAL RESOURCE  
MANAGEMENT ACTIONS**

Impacts associated with the natural resource management components of Alternative 2 would be the same as those described in the “Impacts Common to All Alternatives” section.

**► IMPACTS RELATED TO CULTURAL RESOURCE  
MANAGEMENT ACTIONS**

Impacts from cultural resource management efforts associated with Alternative 2 would include those described in the “Impacts Common to All Alternatives” section above. The existing interior space of the curatorial storage facility would be reorganized and refurnished to maximize use of the space. While this would expand and improve collections storage, workspace for conservation and research activities would continue to be at a premium. Objects from the collection would continue to appear in temporary exhibits and curatorial staff would continue to provide assistance to researchers. Care would need to be taken to ensure that security and use protocols are in place to protect the collection. These proposed actions would result in long-term benefits to museum collections in terms of their storage and protection. Long-term impacts would persist due to limitations on curatorial workspace and access for researchers.

**► IMPACTS RELATED TO LAND-USE AND  
DEVELOPMENT ACTIONS**

Impacts associated with the land-use and development components of Alternative 2 would be the same as those described in the “Impacts Common to All Alternatives” section.

**► IMPACTS RELATED TO SEASHORE EXPERIENCE  
ACTIONS**

Impacts from Seashore experience, interpretation, education, and outreach actions associated with Alternative 2 would include those described in the “Impacts Common to All Alternatives” section above. Under this alternative, the curatorial staff would continue to provide assistance to researchers and offer limited tours of the curatorial facility, as feasible. The Seashore would continue to mount temporary exhibits at the William Floyd Estate, but under this alternative, the exhibits would be housed in the proposed orientation facility. The proposed reorganization and refurnishing of the existing storage facility could improve conditions for guided tours, reducing concerns about potential theft or damage. These efforts would contribute to enhanced understanding and appreciation of the Seashore’s museum collections and overall offer a net benefit. Care would need to be taken to ensure that security and use protocols are in place to protect the collection.

**► IMPACTS RELATED TO TRANSPORTATION AND  
ACCESS ACTIONS**

Impacts associated with the transportation and access components of Alternative 2 would be the same as those described in the “Impacts Common to All Alternatives” section.

**► IMPACTS RELATED TO SEASHORE OPERATIONS  
ACTIONS**

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 2 would be the same as those described in the “Impacts Common to All Alternatives” section.

**Cumulative Impacts**

There are no related regional plans or initiatives that are expected to have a cumulative impact on museum collections beyond what is described under this alternative.

## Conclusions

Under Alternative 2, impacts to museum collections would be both beneficial and adverse. Reorganizing and refurnishing the existing interior space of the curatorial storage facility to maximize the use of the space would expand and improve collections storage; however, workspace for conservation and research activities would continue to be at a premium. While there are significant benefits to the museum collection associated with improved storage, there would also continue to be long-term adverse impacts to museum collections because of limited workspace. The reorganization and refurnishing of the curatorial storage space could also improve the environment for guided tours, reducing the risk of theft and damage to museum collections. Updating temporary exhibit furnishings would also be of long-term benefit to the protection of museum collections.

Based on this information, the largely beneficial impacts of Alternative 2 on Museum Collections would be considered significant because there would be substantive improvements in the conditions for storage and use of the collections, consistent with the recommendations and applicable policies and guidelines. Similar to Alternative 1, the adverse impacts associated with this alternative – particularly the continued lack of workspace-- would not be considered significant over the short-term, but the continued absence of suitable workspace for the conservation and care of the collection will eventually result in a significant impact because museum objects and archival materials would continue to be transported from the site in order to undergo conservation. Such actions could increase the odds of artifacts being lost or damaged in transit.

### MUSEUM COLLECTIONS

## IMPACTS OF MANAGEMENT ALTERNATIVE 3

*Recognize the Relationship between Human Use and Nature (Preferred Alternative)*

### Impact Analysis

#### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the natural resource management components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Impacts from cultural resource management efforts associated with Alternative 3 would include those described in the “Impacts Common to All Alternatives” section above. Under this alternative, the NPS would work with individual and local groups possessing relevant museum and archival collections to encourage the conservation of those collections and consider ways to make them more available to a wider audience. Such efforts could include holding educational workshops and mounting temporary exhibits. These efforts would promote an awareness of the historical importance of these Fire Island-related collections, encourage their long-term protection, and make them available to the general public and researchers. Some of these privately held collections could be temporarily displayed at Seashore facilities. While these proposed actions would not directly impact the Seashore’s present museum collection, they would enhance the protection of and public access to important related collections relevant to Fire Island. Overall, this would be of long-term benefit to the Seashore’s museum collections.

Under Alternative 3, the existing storage facility would be reorganized and expanded to meet the Seashore’s curatorial storage needs, including sufficient work and research space. This would enable the Seashore to provide climate-controlled storage to some of the objects presently stored elsewhere in the park. Appropriate work and research spaces would improve conditions for on-site curation of objects in the collection and provide a better, more secure environment for researchers. Finally, the larger reorganized space would provide an

improved environment for conducting guided tours of the collection facility. The collection would be further highlighted through the installation of exterior panels near the curatorial storage building that describe the scope and content of the collection. In sum, these proposed actions would be of long-term benefit to the Seashore's museum collections.

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► **IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS**

Impacts associated with the land-use and development components of Alternative 3 would be the same as those described in the "Impacts Common to All Alternatives" section.

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► **IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS**

Impacts from Seashore experience, interpretation, education and outreach efforts associated with Alternative 3 would include those described in the "Impacts Common to All Alternatives" section above. In addition, under Alternative 3, the curatorial staff would continue to offer limited tours of the curatorial facility, as feasible. The larger, reorganized curatorial storage space proposed under this alternative would provide an improved environment for conducting guided tours of the curatorial storage facility. The collection would be further highlighted through the installation of exterior panels near the curatorial storage building that describe the scope and content of the collection. As under Alternative 2, the Seashore would continue to mount temporary exhibits at the William Floyd Estate that would be housed in the proposed orientation facility. These activities encourage an awareness and appreciation of the Seashore's museum collection that could result in increased support for and public use of the collection. These proposed actions would be of long-term benefit to the Seashore's museum collection.

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► **IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS**

Impacts associated with the transportation and access of Alternative 3 would be the same as those described in the "Impacts Common to All Alternatives" section.

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► **IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS**

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 3 would be the same as those described in the "Impacts Common to All Alternatives" section.

## Cumulative Impacts

There are no related regional plans or initiatives that are expected to have a cumulative impact on museum collections beyond what is described under this alternative.

## Conclusions

Under Alternative 3, impacts to museum collections would be of overall benefit to the Seashore's museum collections. The expansion and reorganization of the existing curatorial storage facility would expand and improve collections storage, as well as workspace for conservation and research activities. The expanded facility would also facilitate NPS efforts to work with Fire Island communities and others to identify, document, and protect Fire Island-related collections. The expansion and reorganization of the curatorial storage space could also improve the environment for guided tours, reducing the risk of theft and damage to museum collections. Updating temporary exhibit furnishings at the William Floyd Estate would also be of benefit to the protection of museum collections.

For these reasons, the beneficial impacts of Alternative 3 on Museum Collections would be considered significant.

## Impacts on Wilderness

### Methodology

With the passage of the Otis Pike Fire Island High Dune Wilderness Act (PL 96-585) on December 23, 1980, Congress established approximately 1,363 acres of wilderness and 18 acres of potential wilderness within Fire Island National Seashore. Subsequently, in October 1999, 17 of the 18 acres designated as potential wilderness were deemed to be in full compliance with wilderness standards and officially designated as wilderness; approximately one acre within the Seashore remains designated potential wilderness. Specifically, potential wilderness encompasses the areas where the boardwalk nature trail at Smith Point now stands and the adjoining Old Inlet area. The dune crossing and outhouse formerly located at Old Inlet were lost during Hurricane Sandy in October 2012 and will not be replaced. These areas now meet the standards for wilderness designation.

Fewer than 1,400 acres, the Otis Pike Fire Island High Dune Wilderness Area (Fire Island Wilderness) is one of the smallest wilderness areas managed by the NPS and is the only federally designated wilderness in New York State (Wilderness.net 2012). Any action proposed to take place within the Fire Island Wilderness, such as research or resource management, is subject to a minimum requirement analysis as described in the Minimum Requirements Decision Guide (developed by the interagency Arthur Carhart National Wilderness Training Center) and *NPS Management Policies 2006* (section 6.3.5). This concept is applied as a two-step process that determines (1) whether or not the proposed action is appropriate or necessary for administration of the area as wilderness and does not cause significant impact on wilderness resources and character, in accordance with the Wilderness Act; and (2) the techniques and types of equipment needed to ensure that impacts on wilderness resources and character are minimized.

The Interagency Wilderness Character Monitoring Team, which represents the Bureau of Land Management (BLM), the US Fish and Wildlife Service (USFWS), the National Park Service (NPS), U.S. Geological Survey (USGS), and U.S. Forest Service (USFS), offers an interagency strategy to monitor trends in wilderness character across the National Wilderness Preservation System in the handbook *Keeping It Wild: An Interagency Strategy to Monitor Trends in Wilderness Character across the National Wilderness Preservation System* (Landres



et al. 2008). Based on the statutory language of the Wilderness Act, the interagency team identified four qualities of wilderness character that should be used in wilderness planning, stewardship, and monitoring in addition to a fifth component related to unique feature or qualities:

- Untrammeled—Wilderness is essentially unhindered and free from modern human control or manipulation
- Natural—Wilderness ecological systems are substantially free from the effects of modern civilization
- Undeveloped—Wilderness retains its primeval character and influence, and is essentially without permanent improvement or modern human occupation
- Solitude or a primitive and unconfined type of recreation—Wilderness provides outstanding opportunities for solitude or primitive and unconfined recreation (Landres et al. 2008)
- Unique qualities of a particular wilderness area are recognized as a fifth component of wilderness character that must also be considered". ([www.wilderness.net](http://www.wilderness.net))

These qualities are used in this EIS to evaluate the extent to which wilderness values are preserved, restored, or diminished under each alternative.

11 [www.wilderness.net/NWPS/documents/FS/FS\\_Wilderness\\_Character\\_Characteristics.pdf](http://www.wilderness.net/NWPS/documents/FS/FS_Wilderness_Character_Characteristics.pdf)



Regulations and guidelines related to Wilderness include:

- Wilderness Act of 1964
- National Historic Preservation Act of 1966, as amended
- Archeological and Historic Preservation Act of 1974, as amended
- Executive Order 13653: Preparing the U.S. for the Impacts of Climate Change
- Department of the Interior (DOI) Secretarial Order 3289: Addressing the Impacts of Climate Change on America's Water, Land, and other Natural and Cultural Resources
- NPS Management Policies 2006
- Director's Orders 41 – "Wilderness Preservation and Management"
- Director's Orders 28 – "Cultural Resource Management Guideline."

The resource-specific context for assessing the significance of impacts on wilderness includes the following:

- The Fire Island Wilderness is a fundamental resource of Fire Island National Seashore.
- The degree to which the wilderness management complies with the provisions of Public Law 95-585, An Act to designate certain lands of the Fire Island National Seashore as the "Otis Pike Fire Island High Dune Wilderness."
- The degree to which the wilderness qualities are preserved, restored, or diminished under each alternative.
- The degree to which the unique features and qualities of the Fire Island Wilderness are acknowledged. The Fire Island Wilderness is the only federally designated wilderness area in the State of New York and occurs in the single largest metropolitan area in the United States.

## WILDERNESS

### IMPACTS COMMON TO ALL ALTERNATIVES

#### Impact Analysis

##### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Under all alternatives, the Seashore would implement a number of activities to improve natural resource management. In particular, under Alternatives 2 and 3, the Seashore would develop a catalog of natural and cultural data and research needs and would develop a coordinated, comprehensive research and monitoring program to better understand and manage the broad range of natural resources within the Seashore boundary. Access to improved data could improve the ability of Seashore managers to maintain and/or restore ecological systems that would maintain the natural character of the Wilderness. Under all alternatives, continued management of non-native invasive species also would maintain natural character. Some natural resource monitoring and research activities may require the temporary placement of research instruments within the Wilderness area. All proposed natural resource management and research actions would be subject to the minimum requirement analysis and would be undertaken in a manner that reinforces wilderness character.

Under all alternatives, the NPS would minimize or reconfigure artificial lighting at Seashore facilities to better enable opportunities to enjoy the natural night sky. Under Alternatives 2 and 3, NPS would also undertake an evaluation of the Seashore's acoustic environment and explore opportunities to minimize the sounds associated with modern society, to the degree feasible. These proposed actions would occur on the edges of the Fire Island Wilderness and could result in maintaining or improving its natural character.

##### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Under all alternatives, the NPS would evaluate remnant structures in the Fire Island Wilderness for eligibility for listing on the National Register of Historic Places. Any culturally significant resources that are discovered would be preserved and protected. Many of the cultural resources associated with the Fire Island Wilderness could be considered unique qualities within the context

of its wilderness character. They are a reflection of the historic uses that preceded the creation of the wilderness area and are an integral part of wilderness and can contribute to wilderness character. These proposed actions would serve to preserve some of the unique qualities of the Fire Island Wilderness.

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► **IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS**

Elements common to all alternatives related to land use and development would have no noticeable impact on the Fire Island Wilderness.

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► **IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS**

Under all alternatives, the Seashore would continue to offer the opportunity for visitors to hike, collect beach plums and blueberries, hunt, and backcountry camp in the Fire Island Wilderness. Some traditional use by the federally recognized Shinnecock Indian Nation and the local, state-recognized Unkechaug tribe would continue to occur including collecting and ceremonial activities.

In addition, the Seashore would consider allowing horseback riding by permit in the Fire Island Wilderness. Although such a use has the potential to introduce nonnative invasive species (NPS 2006e), it is not anticipated that horseback riding would noticeably alter the Fire Island Wilderness ecosystem and would, therefore not detract from the natural character of the Fire Island Wilderness and would expand opportunities for unconfined recreation.

Impacts of visitor use would continue to result in foot traffic along existing pathways and dune crossings (as indicated by temporary signage) as well as through the Fire Island Wilderness independent of trails. The Seashore would continue to identify appropriate dune crossings and a through trail that in places follows the historic path of the Burma Road. The Smith Point West Nature Trail (boardwalk) would continue to be maintained, and the through trail would be minimally maintained to accommodate foot traffic. Visitor use of existing unpaved trails and/or vegetated areas outside of designated trails has the potential to reduce existing vegetation and increase the potential for erosion in those areas. Such impacts would impose a human influence on dune processes within the Fire Island Wilderness; however, such influence would be so slight that it would not noticeably detract from the untrammelled character of the Fire Island Wilderness.

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► **IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS**

Elements common to all alternatives related to transportation and access would have no noticeable impact on the Fire Island Wilderness.

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► **IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS**

The Seashore would continue the use of temporary signage to address visitor safety and resource protection needs as necessary. Although such signage may detract slightly from the sense of solitude provided by the Fire Island Wilderness, its purpose would be to minimize or eliminate any human manipulation that could diminish the untrammelled and/or natural character of the Fire Island Wilderness. The Seashore would ensure that such signage is kept to a minimum and does not permanently impact any of the factors contributing to the wilderness character of the Fire Island Wilderness.

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**WILDERNESS**

**IMPACTS OF MANAGEMENT  
ALTERNATIVE 1**

*No Action*

**Impact Analysis**

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► **IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS**

Impacts from the natural resource management components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section above.

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► **IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS**

Impacts from the cultural resource management components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section above.

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► **IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS**

Impacts from the land-use and development components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section above.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts from the Seashore experience component of Alternative 1 would include those described in the “Impacts Common to All Alternatives” section above. In addition, under this alternative, the Wilderness Visitor Center would continue to serve as the eastern gateway to the Fire Island Wilderness. The existing level of visitor use of the Fire Island Wilderness for camping would be maintained, which allows the following:

- No more than 36 people may camp in the Fire Island Wilderness zones and the Great South Beach zones combined.
- No more than 12 individuals in no larger than groups of 4 per campsite in the Eastern zone
- No more than 24 individuals in no larger than groups of 8 per campsite in the Western zone
- Camping on the beach would be permitted annually from March 15 through Labor Day

Backcountry camping would be by permit only, and the number of permits, size and distribution of groups between the two zones would be monitored to ensure that a sense of solitude is maintained. Permit holders may elect to camp in the Wilderness or on the beach in front of the Wilderness. These limits were established in 1984 when the backcountry camping policy was developed and have seldom been met or exceeded; therefore, no additional adverse impacts would be expected beyond the minimal impacts identified in “Impacts Common to All Alternatives”. Backcountry camping as currently permitted and practiced would continue to protect wilderness character and would be of long-term positive impact.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts from the transportation and access components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section above.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts from the Seashore operations components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section above.

## Cumulative Impacts

There are no related regional plans or initiatives that are expected to have a cumulative impact on the Fire Island Wilderness beyond what is described under this alternative.

## Conclusions

Alternative 1 would have a long-term beneficial impact on the Fire Island Wilderness, because improved natural and cultural resource management would either maintain or improve the character of the Fire Island Wilderness. The Seashore would continue to post temporary signage to address resource protection and public safety needs. The introduction of temporary signage would have a short-term adverse impact on the undeveloped character of the Wilderness. On the other hand, the temporary signage could also offer a beneficial impact, in that it also protects resources and the untrammelled character of the Wilderness. In addition, under Alternative 1, the continued use of existing limits on camping within the Fire Island Wilderness and on the adjoining beach would be of long-term benefit, as it would maintain the qualities of solitude and unconfined recreation that contribute to wilderness character.

Based on this information, the largely beneficial impacts of Alternative 1 on the Fire Island Wilderness would not be considered significant. The proposed actions described above would result in no substantive changes and the conditions within the Fire Island Wilderness would continue to be consistent with applicable laws, regulations, and guidelines.

## WILDERNESS

### IMPACTS OF MANAGEMENT ALTERNATIVE 2

*Enhancing Natural Resource Values*

## Impact Analysis

#### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Impacts from natural resource management components of Alternative 2 would include those described in the “Impacts Common to All Alternatives” section above. Under this alternative, greater emphasis would be placed on the protection and restoration of ecological systems, patterns, and resources on federal lands. The

more aggressive approach to eradicating non-native invasive flora or restoration of natural features described under Alternative 2 could improve the untrammeled and natural character of the Fire Island Wilderness, and could result in increased beneficial impacts to the Fire Island Wilderness over current conditions.

#### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Impacts from the cultural resource management components of Alternative 2 would be the same as those described in the “Impacts Common to All Alternatives” section above.

#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts from the land-use and development components of Alternative 2 would be the same as those described in the “Impacts Common to All Alternatives” section above.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts from the Seashore experience component of Alternative 2 would include those described in the “Impacts Common to All Alternatives” section above. In addition, under this alternative, the NPS would minimize development on the edges of the Fire Island Wilderness. The footprint of Seashore facilities at Watch Hill would be reduced, particularly, the campground would be removed from its present location. The Wilderness Visitor Center would be removed and replaced with a smaller structure. The new Wilderness visitor station would provide an outdoor orientation display and a restroom facility. These proposed actions would enhance the untrammeled and natural character and the overall sense of solitude associated with the Fire Island Wilderness and would represent a long-term beneficial impact.

Under this alternative, the existing level of visitor use of the Fire Island Wilderness for camping would be maintained, as described under Alternative 1. As noted above, these limits were established in 1984 when the primitive or wilderness camping policy was developed and have seldom been met or exceeded. Backcountry camping as currently permitted and practiced would continue to protect wilderness character and would offer a continued beneficial impact.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts from the transportation and access components of Alternative 2 would be the same as those described in the “Impacts Common to All Alternatives” section above.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts from the Seashore operations components of Alternative 2 would be the same as those described in the “Impacts Common to All Alternatives” section above.

### Cumulative Impacts

There are no related regional plans or initiatives that are expected to have a cumulative impact on the Fire Island Wilderness beyond what is described under this alternative.

### Conclusions

Alternative 2 would have beneficial impacts on the Fire Island Wilderness because the Seashore would place greater emphasis on the restoration of ecological systems. The Seashore would also work to minimize development on the edges of the Fire Island Wilderness. These proposed actions would enhance the natural and untrammeled character of the Wilderness, resulting in beneficial impacts for the Fire Island Wilderness.

For these reasons, the largely beneficial impacts of Alternative 2 on the Fire Island Wilderness would be considered significant because the enhancements would go further than Alternative 1 in improving and maintaining wilderness character, and would help the NPS to more fully meet the goals and directives regarding management of wilderness.



## WILDERNESS

**IMPACTS OF MANAGEMENT  
ALTERNATIVE 3***Recognize the Relationship between Human Use and  
Nature (Preferred Alternative)***Impact Analysis****► IMPACTS RELATED TO NATURAL RESOURCE  
MANAGEMENT ACTIONS**

Impacts from the natural resource management components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section above.

**► IMPACTS RELATED TO CULTURAL RESOURCE  
MANAGEMENT ACTIONS**

Impacts from the cultural resource management components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section above.

**► IMPACTS RELATED TO LAND-USE AND  
DEVELOPMENT ACTIONS**

Impacts from the land use and development components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section above.

**► IMPACTS RELATED TO SEASHORE EXPERIENCE  
ACTIONS**

Impacts from the Seashore experience, interpretation, education, and outreach component of Alternative 3 would include those described in the “Impacts Common to All Alternatives” section above. In addition, under this alternative, the Wilderness Visitor Center would continue to serve as the eastern gateway to the Fire Island Wilderness. The levels of backcountry camping would be increased allowing for the following:

- No more than 72 people may camp in the Fire Island Wilderness zones and the Great South Beach zones combined. Camping on the beach is permitted annually from March 15 through Labor Day.
- In addition to those permitted to camp in the Wilderness from March 15 through Labor Day, no more than 36 people may camp on the beach.
- No more than 12 individuals in no larger than groups of 4 per campsite in the Eastern Zone of the beach in front of the Fire Island Wilderness.
- No more than 24 individuals in no larger than groups of 8 per campsite in the Western Zone of the beach in front of the Fire Island Wilderness.
- No more than 36 people may camp in the Fire Island Wilderness zones year round.



- No more than 12 individuals in no larger than groups of 4 per campsite in the Eastern Zone of the Fire Island Wilderness.
- No more than 24 individuals in no larger than groups of 8 per campsite in the Western Zone of the Fire Island Wilderness.

The limits for backcountry camping within the Fire Island Wilderness as the same as those established in 1984 when the backcountry camping policy was established. The 1984 limits have seldom been met or exceeded. This alternative allows for up to 36 people to camp on the beach in front of the Wilderness by permit. Sufficient area exists to support this level of use without detracting from opportunities for solitude within the Fire Island Wilderness. Despite the greater number of possible permitted campers on any given night, the proposed distribution of campers and limitation on group size between the east and west zones of the Wilderness and the Great South Beach would sustain the quality of solitude and the natural and untrammelled character of the Fire Island Wilderness.

In addition, under Alternative 3, NPS would make improvements to the Wilderness Visitor Center including the installation of permanent exhibits orienting visitors to the Fire Island Wilderness. The proposed alterations to the Wilderness Visitor Center would improve the sense of entry to the Fire Island Wilderness and potentially increased visitor awareness of the wilderness values and their importance. The footprint of the building as currently experienced from the Fire Island Wilderness is unlikely to change and would not result in a change from current conditions. The long-term impact of these proposed actions is expected to be minimal.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS IMPACTS

Impacts from the transportation and access components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section above.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts from the Seashore operations, maintenance, and facilities components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section above.

## Cumulative Impacts

There are no related regional plans or initiatives that are expected to have a cumulative impact on the Fire Island Wilderness beyond what is described under this alternative.

## Conclusions

Alternative 3 would have beneficial impacts on the Fire Island Wilderness because improved natural and cultural resource management would either maintain or improve the character of the Fire Island Wilderness. In addition, under Alternative 3, the existing limits on backcountry camping would be increased allowing equal numbers to camp either in the Wilderness or on the beach. The number of people permitted to camp in the Fire Island Wilderness would not increase, the only increase would be on the beach. The distribution of campsites and limitations on group size would continue to be defined by eastern and western zones on both the beach and in the Wilderness. This would continue to limit any adverse impacts on campers by maintaining the overall sense of solitude and the natural and untrammelled character of the Wilderness. In addition, proposed new interpretive exhibits at the Wilderness Visitor Center would emphasize public awareness and appreciation of Wilderness values. Overall, the proposed actions under this alternative would be of benefit and would maintain the qualities of solitude and unconfined recreation that contribute to wilderness character.

Based on this information, the largely beneficial impacts of Alternative 3 on the Fire Island Wilderness would not be considered significant. Alternative 3 would continue to protect wilderness character and has some added benefits over Alternative 1 due to more emphasis on public education and awareness of wilderness values but does not substantially change the way the wilderness is managed and preserved.

## Impacts on Transportation & Access

### Methodology

Safe and efficient transportation and access in and around Fire Island National Seashore is important to an enjoyable Seashore experience, resource protection, and effective park operations. Travel to Fire Island often involves multiple forms of transportation, including some combination of private vehicle, public transportation (rail or bus transit), bicycle, private boat, or commercial ferry. The Fire Island Light Station and the Wilderness Visitor Center are both accessible by private vehicle and by bus while the Seashore's facilities at Sailors Haven, Talisman, and Watch Hill are primarily accessible by water. The vast majority of visitors to the William Floyd Estate arrive by private vehicle. On Fire Island, most people travel on foot as vehicular access is extremely limited. The Long Island roadway and transit systems are important for access to the existing ferry terminals and marinas and to the William Floyd Estate. The potential for the proposed alternatives to result in changes to transportation and access was evaluated by identifying projected increases or decreases in visitor use and the availability of the various modes of transportation, and determining whether or how these projected changes would affect overall access to and circulation within Fire Island National Seashore.

The resource-specific context for assessing the significance of impacts on transportation and access includes the following:

- The degree to which the “roadless” character of Fire Island is preserved and water-based transportation is the primary form of access to Fire Island which are among the fundamental values of the Fire Island National Seashore.
- The degree to which transportation routes to and from NPS facilities on Fire Island and Long Island are well known, well-marked, and easy and safe to navigate
- The degree to which NPS facilities are broadly accessible to all members of the public regardless of income or physical ability



#### TRANSPORTATION & ACCESS

### IMPACTS COMMON TO ALL MANAGEMENT ALTERNATIVES

#### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

No impacts associated with the natural resource management components of the Elements Common to All Alternatives were identified.

#### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

No impacts associated with the cultural resource management components of the Elements Common to All Alternatives were identified.

#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

No impacts associated with the land-use and development components of the Elements Common to All Alternatives were identified.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Under each of the proposed alternatives, NPS would improve wayfinding to and throughout Fire Island and the William Floyd Estate including signs, maps, and other information that may be located on-line as well as at real-world locations such as regional airports, train stations, ferry terminals, Fire Island communities, and Seashore destinations. These proposed actions would enhance transportation and access to NPS sites and

facilities by providing clear directional signage and other navigation tools and would have a beneficial impact on transportation and access.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Under each of the proposed alternatives, a variety of options for visitor access to Fire Island and the William Floyd Estate including bus, ferry, private boat, water taxis, and automobiles would continue to be available. Parking at Fire Island would continue to be limited to the Robert Moses State Park lot on the west side of Fire Island or the Smith Point County Park lot on the east side of Fire Island. Seashore resources near these lots are easily accessible from the parking areas; however those resources that are farther away, in the center of Fire Island, such as Talisman, Sailors Haven, and Watch Hill would only be accessible by water requiring the use of private boats, commercial ferries or water taxis. Ferry transportation to Fire Island would continue to range in cost from about \$50 to \$60 for a family of four including parking – cost prohibitive for some segments of the public.

Bicycle use on federal lands would continue to be limited to where and when vehicular access is permitted. There are currently no formal roads on Fire Island. Under all alternatives, the roadless character of Fire Island would be preserved and vehicular access would continue to be limited consistent with the Seashore's driving regulations. New York State does not permit the use of bicycles on the Robert Moses Causeway, though bicycle access is permitted on the William Floyd Parkway bridge. These practices contribute to protecting the roadless character of Fire Island; however, they limit the use of bicycles as an alternative form of transportation for accessing and traversing Fire Island. These practices would not have an appreciable impact on present transportation and access conditions at the Seashore.

Public boat docks would continue to be available at Sailors Haven, Talisman, and Watch Hill facilitating access by private boaters. The boat dock at Old Inlet was lost during Hurricane Sandy in October 2012 and will not be reconstructed. Though it represents a change, the loss of the dock at Old Inlet would not prohibit access by private boaters, as they would continue to be able to moor off shore. Sea-level rise and major storms would likely continue to interrupt access to Fire Island. Boat and dock facilities would need to be adapted over time in response to permit continued water-based access to

Fire Island. These practices do not have an appreciable impact on present transportation and access conditions at the Seashore under normal conditions. However, water-based access would need to be regularly evaluated relative to the changing conditions presented by sea-level rise and may require mitigation.

At the William Floyd Estate, the vast majority of visitors would continue to arrive by car. Limited public transportation would continue to be available by public bus, though the closest bus stop is approximately one-half mile away from the Estate's public entrance. These practices do not have an appreciable impact on present transportation and access conditions at the Seashore.

Under all alternatives, both Fire Island and the William Floyd Estate would generally continue to be well served by the existing road and public transportation systems, though transportation costs could prove to be prohibitive for some segments of the visiting public. The effects of sea-level rise and storm events could have a long-term adverse impact on some facets of the transportation infrastructure and could result in periodic interruptions of service.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Under all alternatives, the NPS would seek to improve accessibility to Seashore sites and facilities for people with disabilities. Where accessibility is not feasible, interpretive media would be employed to accommodate disabled visitors. Seashore staff would coordinate trips to Fire Island across Seashore divisions to maximize use of water-based transportation and to minimize vehicular use on Fire Island in support of Seashore goals. These practices would not have an appreciable impact on present transportation and access conditions at the Seashore.



## TRANSPORTATION &amp; ACCESS

**IMPACTS OF MANAGEMENT  
ALTERNATIVE 1***No Action***Impact Analysis****► IMPACTS RELATED TO NATURAL RESOURCE  
MANAGEMENT ACTIONS**

No impacts associated with the natural resource management components of Alternative 1 were identified.

**► IMPACTS RELATED TO CULTURAL RESOURCE  
MANAGEMENT ACTIONS**

No impacts associated with the cultural resource management components of Alternative 1 were identified.

**► IMPACTS RELATED TO LAND-USE AND  
DEVELOPMENT ACTIONS**

No impacts associated with the land-use and development components of Alternative 1 were identified.

**► IMPACTS RELATED TO SEASHORE  
EXPERIENCE ACTIONS**

Impacts associated with Seashore experience, interpretation, education, and outreach components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

**► IMPACTS RELATED TO TRANSPORTATION AND  
ACCESS ACTIONS**

Impacts associated with transportation and access components of Alternative 1 would be similar to those described in the “Impacts Common to All Alternatives” section. Under this alternative, the marinas at Sailors Haven and Watch Hill would remain open at their current capacity, supporting continued overnight access for private boaters in these locations.

At the William Floyd Estate, trails and unpaved roadways throughout the Estate would be retained and would remain unmarked. A trail map would continue to be available; however in the absence of marked trails, navigation in the Lower Acreage could be difficult for some visitors.

**► IMPACTS RELATED TO SEASHORE  
OPERATIONS ACTIONS**

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 1 would be the same as those described in “Impacts Common to All Alternatives” section.

**Cumulative Impacts**

Past, present, and reasonably foreseeable future actions have the potential to impact transportation and access within and near the Seashore. These actions include regular dredging of channels in Great South Bay, the 2011-2014 New York State Transportation Improvement Program (STIP), the New York Metropolitan Transportation Council 2010 – 2035 Regional Transportation Plan, the Long Island Comprehensive Regional Sustainability Plan 2035, and the Brookhaven 2030 Plan.

Routine dredging activities near Fire Island National Seashore are necessary to maintain channels within the Great South Bay to accommodate ferries and other large vessels. The Long Island Intracoastal Waterway Federal Navigation Project, which is currently being implemented by the USACE, would aid in these efforts and facilitate the use of the Great South Bay by the U.S. Coast Guard as well as a variety of recreational and commercial vessels. The project will expand (both in area and depth) the existing channels. Continued and enhanced dredging efforts within the Great South Bay will improve water access to Fire Island National Seashore by continuing to provide routes for ferries and other large vessels.

The NY Metropolitan Transportation Council, the Long Island Comprehensive Regional Sustainability Plan, and the Brookhaven 2030 Plan all express a region-wide desire to improve the transportation network and to expand the range of transportation options on Long Island. Depending on the transportation options implemented, this could enhance access to the William Floyd Estate and Fire Island. The 2011-2014 New York State Transportation Improvement Program (STIP) includes a variety of transportation projects throughout the state, several of which would have the potential to impact transportation and access related to Fire Island National Seashore. In particular, proposed improvements to infrastructure at the Ocean Beach Ferry Terminal on Fire Island and the Bay Shore ferry terminal on Long Island would enhance water access to Fire Island passenger services and freight; and the proposed

replacement of the William Floyd Parkway Bridge over Narrow Bay at Smith Point County Park would sustain public access and improve safety.

The impact of these past, present, and reasonably foreseeable future actions would be long-term beneficial. The cumulative impact of these actions, in combination with the long-term beneficial and the long-term adverse effects of Alternative 1, would be long-term beneficial. Alternative 1 would contribute an imperceptible beneficial increment to the overall cumulative impact.

## Conclusions

Overall, impacts to transportation and access as a result of implementation of Alternative 1 would generally be beneficial in effect. The natural and cultural resource management and land-use and development components of Alternative 1 would have no noticeable impacts on transportation and access. The Seashore experience, interpretation, and outreach; the transportation and the Seashore operations, maintenance and facilities elements of this alternative would result in beneficial impacts on access and transportation because accessibility of resources would be improved, especially for disabled visitors and wayfinding would largely be enhanced.

There would be no noticeable impacts on the “roadless” character of Fire Island, existing transportation routes, or universal accessibility (both physical and financial) of the Seashore. Based on this information and the character and extent of the overall transportation and access system throughout the Seashore as summarized above, the largely beneficial impacts of Alternative 1 would not be considered significant because although there would be some improvements, there would not be an overall change in the current transportation and access systems.

## TRANSPORTATION & ACCESS

### IMPACTS OF MANAGEMENT ALTERNATIVE 2

#### *Enhancing Natural Resource Values*

## Impact Analysis

### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Under Alternative 2, greater emphasis would be placed on the protection and restoration of ecological systems, patterns, and resources on federal lands. Some of these efforts may result in restricted access to areas undergoing restoration for limited periods of time of varying length. Other areas may be made more accessible to visitors through the introduction of boardwalks, which allow for greater immersion in the natural environment while limiting resource degradation. To meet the Seashore’s objectives for natural resource management under this alternative, greater emphasis would have to be placed on monitoring for carrying capacity to ensure that the level of public access does not negatively impact desired conditions. Efforts to address carrying capacity may result in periodic changes to what would be considered permissible in terms of public access. These actions would have a long-term adverse impact on transportation and access in some areas, particularly where existing visitor infrastructure is being removed or reduced to make way for natural resource restoration. However, the actions would also offer a long-term benefit in terms of creating new opportunities for access into the Seashore’s natural areas through the use of boardwalks and other methods that enable access while minimizing resource degradation.

### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Under Alternative 2, the NPS would retain and rehabilitate the cultural landscape of the William Floyd Estate. Consistent with the rehabilitation of the cultural landscape, the roads and trails associated with the Lower Acreage would be rehabilitated to support additional recreational use. This proposal would result in making these roads and trails more accessible for recreational as well as general public use and would thus have a long-term beneficial impact on transportation and access at the William Floyd Estate.

#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Under Alternative 2, the Seashore would develop updated master plans for Fire Island Light Station, Sailors Haven, Talisman, and Watch Hill. These master plans would include measures to address public access and site circulation. If implemented, these elements could enhance transportation and access at these locations within the Seashore and would be of long-term benefit to transportation and access at Fire Island National Seashore.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts associated with the Seashore experience, interpretation, education, and outreach components of Alternative 2 would be consistent with those described in the “Impacts Common to All Alternatives” section. In addition, under Alternative 2, the scale of Seashore visitor facilities on Fire Island would be reduced over time.

The Sailors Haven marina would be removed at the end of its structural lifecycle. This would reduce the number of slips available to accommodate extended overnight stays by private boaters. Private boaters would continue to be able to moor off-shore and would have access to boat docks at Sailors Haven and Talisman for the purposes of picking up and dropping off passengers and gear. Reducing the number of available boat slips could increase congestion at the boat docks because more boats would be forced to moor offshore and drop passengers and gear off at the dock, possibly having an adverse impact on transportation and access at the Seashore’s facilities.

Also under Alternative 2, the Seashore would explore the possibility of creating an off-site orientation exhibit related to the William Floyd Estate on the main thoroughfare within the village of Mastic Beach. The exhibit would provide a waypoint to visitors as they navigate their way through the village to the William Floyd Estate and would also raise awareness of the Estate within the surrounding community. This proposed action would be of benefit to transportation and access relative to the William Floyd Estate.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with the transportation and access components of Alternative 2 would be similar to those described in the “Impacts Common to All Alternatives” section. In addition, the Seashore would collaborate with the Long Island Railroad (LIRR) and Suffolk County to promote the use of public transportation to get to Seashore destinations. This effort could reduce overall traffic levels and vehicle miles traveled (VMT) in the vicinity of mainland ferry terminals and could reduce the demand for parking.

Under Alternative 2, the NPS would work with others to expand opportunities for water-based facilities on Fire Island that can accommodate the movement of goods and services. This effort would make it more feasible to load and deliver freight to and from the docks, thereby reducing the need for trucks to carry materials on and off Fire Island. This would reduce vehicular use and enhance the roadless character of the island.

Under Alternative 2, the NPS would improve parking and circulation at the William Floyd Estate. The expansion and rehabilitation of the existing visitor facility and other proposed physical and programmatic changes at the William Floyd Estate would be likely to increase visitation to the Estate over the long term. Under this alternative, the existing parking lot would be reconfigured and could be expanded to accommodate the potential increase in visitors. In addition, the existing boardwalk would be realigned to provide better access between the visitor orientation facility and the Old Mastic House. Both of these enhancements would benefit transportation and access at the William Floyd Estate.



### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 2 would be the same as those described in “Impacts Common to All Alternatives” section.

### Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to impact transportation and access within and near the Seashore. These actions include regular dredging of channels in Great South Bay, the 2011-2014 New York State Transportation Improvement Program (STIP), the New York Metropolitan Transportation Council 2010 – 2035 Regional Transportation Plan, the Long Island Comprehensive Regional Sustainability Plan 2035, and the Brookhaven 2030 Plan as described under Alternative 1. The cumulative impact of these actions would result in a long-term beneficial impact on transportation and access.

The cumulative impact of these actions, in combination with the long-term adverse effects of Alternative 2, would be long-term adverse. Alternative 2 would contribute an imperceptible adverse increment to the overall beneficial impact.

### Conclusions

Overall, impacts to transportation and access associated with Alternative 2 would be beneficial and adverse.

Cultural landscape restoration efforts at the William Floyd Estate including the rehabilitation of the roads and trails of the Lower Acreage would benefit transportation and access at the Seashore by improving public access as would improvements to the parking and the circulation system. Master planning proposed for the Seashore’s primary visitor facilities would also address site circulation and access making way for improvements that would have beneficial impacts on transportation and universal access. These beneficial impacts would be long-term in duration and within the context of preserving

the “roadless” character of Fire Island, enhancing existing transportation routes, and improving universal accessibility (both physical and financial) of the Seashore would be considered significant.

Natural resource restoration projects could result in short-term adverse impacts to transportation and access by temporarily limiting or prohibiting public access during site restoration. The eventual removal of the marina at Sailors Haven would represent a noticeable change and would result in reduced overnight access for private boaters. Although these adverse impacts are likely to be highly visible to some user groups, they would not noticeably affect the “roadless” character of Fire Island, existing transportation routes, or universal accessibility (both physical and financial) of the Seashore and therefore would not be considered significant.

### TRANSPORTATION & ACCESS

## IMPACTS OF MANAGEMENT ALTERNATIVE 3

*Recognize the Relationship between Human Use and Nature (Preferred Alternative)*

### Impact Analysis

#### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

No impacts associated with the natural resource management components of Alternative 3 were identified.

#### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

As under Alternative 2, under this alternative the NPS would retain and rehabilitate the cultural landscape of the William Floyd Estate. Consistent with the rehabilitation of the cultural landscape, the roads and trails associated with the Lower Acreage would be rehabilitated to support additional recreational use. This proposal would result in making these roads and trails more accessible for recreational as well as general public use.



#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Like Alternative 2, under this alternative the Seashore would develop updated master plans for Fire Island Light Station, Sailors Haven, Talisman, Watch Hill, and the Wilderness Visitor Center. These master plans would include measures to address public access and site circulation. If implemented, these elements could enhance transportation and access at these locations within the Seashore.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts associated with the Seashore experience, interpretation, education, and outreach components of Alternative 3 would be similar to those described in the “Impacts Common to All Alternatives” section. In addition, under Alternative 3, the NPS would work with others to encourage a broad range of experiences including NPS sites and facilities, Fire Island communities, and related regional attractions (e.g., Long Island Maritime Museum, Wertheim NWR, and the Manor of St. George). The increased dispersion of visitors could reduce congestion near points of interest but may also increase visitor traffic in other locations.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with the transportation and access components of Alternative 3 would be similar to those described in the “Impacts Common to All Alternatives” section. In addition, similar to Alternative 2, under this alternative the Seashore would make efforts to promote the use of public transportation, which could reduce overall traffic levels and vehicle miles traveled (VMT) in the vicinity of mainland ferry terminals and could reduce the demand for parking. As part of these efforts, the Seashore would convene an inter-community Bicycle Working Group to consider the specific benefits and impacts of expanding bicycle use as a lateral transportation option. The development of this group could result in improved transportation and access on Fire Island by further reducing reliance on motorized vehicles.

Under Alternative 3 the Seashore also would continue to maintain water access to Fire Island consistent with current conditions, as described under Alternative 1. The public docks at Watch Hill, Talisman, and Sailors Haven would be maintained, and the Sailors Haven and

Watch Hill marinas would continue to operate at current capacities. As described under the other alternatives, private boats also would continue to be allowed to moor offshore, providing another option if the marinas are full. In addition, under Alternative 3 the Seashore would take steps to improve ferry service to Fire Island by expanding service during the shoulder season to specific destinations and expand lateral water taxi service.

As in Alternative 2, the NPS would improve parking and circulation at the William Floyd Estate. The expansion and rehabilitation of the existing visitor facility and other proposed physical and programmatic changes at the William Floyd Estate would be likely to increase visitation to the Estate over the long term. Under this alternative, the existing parking lot would be reconfigured and could be expanded to accommodate the potential increase in visitors. In addition, the existing boardwalk would be realigned to provide better access between the visitor orientation facility and the Old Mastic House. Both of these enhancements would benefit transportation and access at the William Floyd Estate.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 3 would be the same as those described in “Impacts Common to All Alternatives” section.

### Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to impact transportation and access within and near the Seashore. These actions include regular dredging of channels in Great South Bay, the 2011-2014 New York State Transportation Improvement Program (STIP), the New York Metropolitan Transportation Council 2010 – 2035 Regional Transportation Plan, the Long Island Comprehensive Regional Sustainability Plan 2035, and the Brookhaven 2030 Plan as described under Alternative 1. The cumulative impact of these actions would result in a long-term beneficial impact on transportation and access.

The cumulative impact of these actions, in combination with the long-term beneficial effects of Alternative 3, would be long-term beneficial. Alternative 3 would contribute an imperceptible beneficial increment to the overall beneficial impact.

## Conclusions

Overall, impacts to transportation and access associated with Alternative 3 would be both adverse and beneficial. Cultural landscape restoration efforts and improvements to the parking and circulation system at the William Floyd Estate including the rehabilitation of the roads and trails of the Lower Acreage would benefit transportation and access at the Seashore by improving opportunities for public access and circulation. Master planning proposed for the Seashore's primary visitor facilities would also address site circulation and access, making way for improvements in that area and thus would have beneficial impacts.

Adverse impacts would also occur under this alternative. Actions related to seashore visitor experience could increase dispersion of visitors across Fire Island and to related regional destinations and could reduce congestion near points of interest but may also increase visitor traffic in other locations.

In summary, implementation of Alternative 3 would have both beneficial and adverse impacts on Transportation and Access at the Seashore. The beneficial impacts, when considered within the context of preserving Fire Island's "roadless" character, the provision of broad accessibility, and enhancing transportation routes to the Seashore, would be considered significant.

Implementation of Alternative 3 would also have long-term adverse impacts on transportation and access on the Seashore, however, within the context of preserving Fire Island's "roadless" character, providing for accessibility and enhancing transportation routes to the Seashore, they would not be considered significant because they would not be readily noticeable



# Impacts on Visitor Use & Experience

## Methodology

*NPS Management Policies 2006* states that the enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks and that the NPS is committed to providing appropriate, high-quality opportunities for visitors to enjoy the parks.

Part of the purpose of Fire Island National Seashore is to offer opportunities for the use and appreciation of the national seashore. Consequently, among the Seashore's management goals are the following:

- Through vigorous outreach and education, the Seashore will foster public understanding and appreciation of the purpose and significance of the national seashore and its natural and cultural resources, as well as the public's vital stewardship role in protecting Fire Island.
- The Seashore provides a wide variety of quality recreational and interpretive experiences for a broad range of audiences, emphasizing human interactions with the environment and the historical and cultural values of the Seashore.

Public scoping input and observation of visitation patterns combined with assessment of what is available to visitors under current management were used to estimate the impacts of the actions in the various alternatives in this document. The impact on the ability of the visitor to experience a full range of the Seashore's resources was analyzed by examining resources and objectives presented in the Seashore's foundation for planning statement and the Seashore's management goals. The potential for change in visitor use and experience proposed by the alternatives was evaluated by identifying projected increases or decreases in visitor uses and determining whether or how these projected changes would affect the desired visitor experience.

The resource-specific context for assessing the significance of impacts on visitor use and experience includes the following:

- The Seashore offers a wide range of experiences within a coastal environment to a large and diverse urban population in one of the most populous regions of the United States. Millions of people live within a day's travel to the Seashore and can experience a range of opportunities from solitude and communion



with nature to more active recreation and social environments. This is a fundamental value of Fire Island National Seashore.

- The degree to which the Seashore may foster public understanding and appreciation of the purpose and significance of the national seashore and its natural and cultural resources, as well as the public's vital stewardship role in protecting Fire Island.

## VISITOR USE & EXPERIENCE

### IMPACTS COMMON TO ALL MANAGEMENT ALTERNATIVES

#### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Under all alternatives, the NPS would also undertake the restoration of the native vegetation, the bay shoreline, and other natural features that define the Sunken Forest as well as undertake efforts to improve the night sky by minimizing or reconfiguring artificial lighting at Seashore facilities. Under alternatives 2 and 3, the NPS would encourage and promote greater scholarly and scientific research, expand opportunities for public involvement in research and scholarship, model best practices in a number of areas to foster greater stewardship of Fire Island's resources, and place greater emphasis on evaluating, interpreting, and protecting its marine resources. All of these actions offer opportunities to enhance the visitor experience and provide new opportunities for visitor engagement

through interpretation and programmatic activities resulting in long-term beneficial impacts on visitor use and experience.

Fire Island's natural environment is the primary draw for both visitors and residents who come to experience this fragile barrier beach environment<sup>12</sup>. The common actions proposed here emphasize the long term protection of these resources, which would be likely to maintain current levels of visitation rather than result in any major impact to them. Likewise, current efforts to manage visitation through the use of boardwalks, requiring permits for certain activities, and other methods would be likely to minimize any issues related to carrying capacity. In the final analysis, these proposed actions are unlikely to have a substantial impact on the current level of Seashore visitation or carrying capacity.

#### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Similar to what is described under natural resources under Alternatives 2 and 3, the NPS would encourage greater scientific and scholarly research and expand opportunities for public involvement in the research and stewardship of the Seashore's cultural resources on Fire Island and at the William Floyd Estate. The NPS would continue to preserve cultural resources on federal lands and actively interpret those associated with the William Floyd Estate and the Fire Island Light Station. All of these actions would offer opportunities to enhance the visitor experience and provide new opportunities for visitor engagement through interpretation and programmatic activities resulting in long-term beneficial impacts on visitor experience. These proposed actions are unlikely to have a noticeable impact on the current level of visitation or carrying capacity at the Seashore's cultural sites.

#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Elements common to all alternatives related to land use and development would have no noticeable impact on visitor use and experience.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Under all alternatives the NPS would continue to seek to broaden the diversity and geographic scope of its visitation. It would increase educational outreach, particularly through the use of new and developing technologies and social media. The NPS would commit to being a role model for sustainability and would consider its general practices and specific actions as opportunities to educate the public. The NPS would collaborate with others to improve directional signage to ferry terminals and park facilities on Long Island and would provide more opportunities to orient the visitor to Fire Island. Visitor research would be undertaken at regular intervals and in partnership with Fire Island communities and adjoining recreation areas. The impact of these actions on visitor numbers and composition would vary by alternative and, in some cases, would depend on how aggressively the actions were undertaken.

The common actions associated with educational outreach and on-site programming, directional signage, and park orientation would likely have a long-term beneficial effect on the composition of park visitation to Fire Island by attracting a wider audience to the Seashore, though they would be unlikely to result in a noticeable change in total visitation numbers.

At the William Floyd Estate, the NPS would work to make the Estate an educational destination for a diversity of audiences and would expand programs and events using a variety of methods and media. The NPS would engage in an outreach initiative to elevate the profile of the Estate locally, regionally, and nationally and would develop connections to related local, regional, and national sites (e.g., the Manor of St. George, Suffolk County Historical Society, and the homes of other Signers of the Declaration of Independence, etc.). As noted above, the effects of these actions proposed for the William Floyd Estate would vary in response to how aggressively they are undertaken. These actions would likely have a long-term beneficial impact on both the composition of visitation and the total visitation to the site. The NPS already has visitor management strategies (e.g., limiting the number and size of tours of the Old Mastic home) in place that enable it to adequately address carrying capacity issues at the Estate as they occur. If the frequency of carrying capacity issues were to increase, other techniques for managing visitor access to the property would need to be considered and employed.

<sup>12</sup> Forty percent of visitors surveyed in the Seashore's 2008 Visitor Use Survey indicated that their primary reason for coming to Fire Island National Seashore was the beach and over 75% indicated that they had participated in beach activities on this or a previous visit to Fire Island. (National Park Service, 2008f)



All of these proposed actions would maintain or expand upon existing visitor opportunities and would serve to further enhance interpretive and educational programming by expanding and improving program content and taking advantage of alternative methods to deliver content. They would be of long-term benefit to the visitor experience at Fire Island National Seashore.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Public transportation access to Fire Island would continue through the existing network of public transit, bus, and ferry service. Access to Fire Island by private vehicle would continue to be limited, and the NPS would continue to work with others to maintain the roadless character of Fire Island and keep driving on the island to a minimum. Parking at Robert Moses State Park on the west side of Fire Island and Smith Point County Park on the east side would continue to be available to visitors arriving by private vehicle, enabling pedestrian access to Fire Island Lighthouse and the Fire Island Wilderness and Wilderness Visitor Center. Bicycles would continue to be allowed only on federal tracts where and when vehicles are permitted but there would be no Fire Island-wide recreational bicycle trail. These continuing actions do not represent a change in the status quo.

During the scoping phase of the planning process, concerns were raised about ferry and water taxi fares, indicating that they may be cost prohibitive for some segments of the population – particularly lower-income families and local school districts. The high cost of water taxi service contributes to the difficulty of experiencing Fire Island as a whole, and may influence the composition of the Seashore’s audience. In recent years, ferry service providers have put larger ferries into service. While the larger ferries have enabled more visitor access, under some circumstances they are also generating some carrying capacity concerns, as visitors overwhelm some parts of Fire Island. This has reportedly been a concern in some of the Fire Island communities, though it has not been reported at Seashore facilities.

The vast majority of visitors to the William Floyd Estate would continue to arrive by private vehicle. A public bus stop is located within one-half mile of the main visitor entrance to the property; however, it does not appear to be a popular option. Under all alternatives, NPS would work in collaboration with the local community to ensure that directional signage guiding visitors to and from the William Floyd Estate is installed.

Other media and technologies would also be considered to improve the ease and safety of navigating to and from the Estate. Improving the travel experience to and from the Floyd Estate could have a positive effect on visitation there – particularly by encouraging repeat visitation. While visitation numbers could rise as a result of the proposed transportation and access improvements, the net impact is likely to be a minor increase in visitation.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

In all alternatives, the NPS would ensure that structures, grounds, and facilities on Fire Island and at the William Floyd Estate are made universally accessible to the greatest degree feasible. In the event that creating universal access is infeasible, other means (e.g., the use of interpretive media) would be used to accommodate visitors with disabilities. This would enable disabled visitors to have greater access to Seashore resources. Greater universal access is likely to have a minimal, though beneficial, impact on visitor numbers and composition. Carrying capacity would not be affected by this proposal. Greater universal access would expand visitor opportunities and improve access to interpretive and educational programming.

### VISITOR USE & EXPERIENCE

## IMPACTS OF MANAGEMENT ALTERNATIVE 1

### *Continuation of Current Management Practices (No Action)*

## Impact Analysis

#### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the natural resource management components of Alternative 1 would be similar to those described in the “Impacts Common to All Alternatives” section. Also under this alternative, Suffolk County Vector Control would continue to manage mosquitoes within Smith Point County Park, in private communities located within the boundaries of Fire Island, and areas adjoining but not in the William Floyd Estate on Long Island. Mosquito management on federal lands within the Seashore would emphasize public health and safety over human comfort. Some areas of the Seashore would continue to experience uncomfortable volumes of

mosquitoes during some times of the year, which would continue to influence visitation patterns to those areas.

Recreational fishing and shell fishing would continue to be permitted consistent with state and local regulations, while the federal policy prohibiting commercial fishing and shell fishing would continue. Continuing these current management practices is unlikely to result in any noticeable impacts on visitation, visitor opportunities, or interpretive and educational programming at Fire Island National Seashore, nor would they result in any impacts related to carrying capacity.

#### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the cultural resource management components of Alternative 1 would be similar to those described in the “Impacts Common to All Alternatives” section. The effort to rehabilitate the Carrington Estate house and cottage would not influence visitation in that area, as the property would not be open to the public. Under this alternative, cultural resource management actions would have no noticeable impact on visitation, visitor opportunities, or interpretive and educational programming at Fire Island National Seashore, nor would they present any impacts related to carrying capacity.

#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

No impacts associated with the land-use and development components of Alternative 1 were identified.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts associated with the Seashore experience, interpretation, education, and outreach component of Alternative 1 would be similar to those described in the “Impacts Common to All Alternatives” section. Under this alternative, on Fire Island the visitor experience would remain somewhat segmented, with visitors to Seashore facilities largely staying within those facilities and visitors to and local residents of Fire Island communities largely staying within their individual communities. Visitor facilities and the types of recreational activity would remain unchanged. The actions proposed under this alternative would not appreciably change the visitor experience and would result in negligible to no impact on the composition or total numbers associated with park visitation.

At the William Floyd Estate, the visitor experience would continue to be centered on the Old Mastic House tour, which would be available seasonally. Thematically relevant programs and nature walks would continue to be offered year-round as staffing and conditions permit. The lack of an indoor orientation space would continue to discourage visitation by school groups that have harbored concerns about exposure to Lyme Disease and other vector-borne illnesses due to the large population of deer and Lone Star ticks often present at the Estate. The actions proposed under this alternative would result in no noticeable impacts on visitation, visitor opportunities, or interpretive and educational programming at the Estate.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with the transportation and access components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

### Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to impact visitor use within the Seashore. These actions and initiatives include: the Long Island Regional Comprehensive Sustainability Plan 2035; the Long Island South Shore Estuary Reserve Comprehensive Management Plan; the Great South Bay Hard Clam Restoration Project; and the Brookhaven 2030 plan.

In the Long Island Regional Comprehensive Sustainability Plan 2035 prepared by the Long Island Regional Planning Council, one primary area of emphasis is the protection and enhancement of the quality of life on Long Island. Efforts to retain or expand upon open space, public parks and beaches, and local agriculture are highlighted as high-priority initiatives. In addition, addressing water quality, improving transportation systems, and reducing the region’s environmental footprint are also important emphases. As a major public park with diverse recreational offerings, Fire Island National Seashore would clearly contribute

to maintaining the region's quality of life. Likewise, other facets of the Long Island sustainability plan (e.g., improving water quality, regional transportation systems, and reducing the region's environmental footprint) would contribute positively to the Seashore's management goals and objectives pertaining to visitor use and experience. The early scoping documents associated with the Brookhaven 2030 plan identify priorities that are similar to the Long Island Sustainability Plan, though it particularly highlights improving the William Floyd Parkway as a gateway to Fire Island National Seashore. It would also contribute positively to visitor use and experience at the Seashore.

With its emphasis on improvements to water quality, expansion of public use and enjoyment of the South Shore Estuary Reserve (SSER), and increasing education, outreach, and stewardship, the Long Island South Shore Estuary Reserve Comprehensive Management Plan offers an agenda that supports the protection and use of the Great South Bay, a shared resource. As such, the SSER plan would also contribute positively to the Seashore's management goals and objectives pertaining to visitor use and experience.

The Great South Bay Hard Clam Restoration Working Group was convened by the Suffolk County Executive in 2008 and was tasked with: (1) Ensuring adequate enforcement of hard clam harvest laws, regulations, and codes in Great South Bay; (2) Establishing interim hard clam harvest management recommendations for the Great South Bay; and (3) Developing a long-term, science-based, sustainable management plan for the hard clam population of Great South Bay. The resulting Great South Bay Hard Clam Restoration Project calls for a multi-pronged approach to harvest management and efforts to address the environmental factors (e.g., water quality) that are negatively impacting hard clam growth and survival. Shellfishing could be limited in some areas of Great South Bay (including areas within the Seashore boundary) for the duration of the Hard Clam Restoration Project which would result in a long-term adverse impact to this type of visitor use. However, failing to constrain this type of use over the period necessary to restore sustainable populations of hard clams to the bay could result in the permanent loss of this visitor use opportunity.

These past, present, and reasonably foreseeable future actions would result in a net long-term benefit to visitor use related to Fire Island National Seashore. The cumulative impact of these actions, in combination with the long-term beneficial and the long-term minor and adverse effects of Alternative 1, would be long-term beneficial. Alternative 1 would contribute an imperceptible long-term minor adverse increment to the overall beneficial impact.

## Conclusions

Overall, impacts to visitor use associated with Alternative 1 would result in both beneficial and adverse impacts. Scientific and scholarly research initiatives related to natural and cultural resource management would be of significant benefit to visitor use through better informing resource management and interpretation. Mosquito management would continue to focus exclusively on human health and safety rather than human comfort which would result in short term, adverse impacts to visitor use in some areas of the Seashore during certain times of year. The continuing lack of an indoor program space at the William Floyd Estate would result in adverse impacts to visitation due to continued concerns about exposure to ticks.

The cumulative impact would be long-term beneficial, and Alternative 1 would contribute an imperceptible long term minor adverse increment to the overall beneficial cumulative impact.

Based on this information, the largely beneficial impacts of Alternative 1 on visitor use and experience would not be considered significant in the context of providing a wide range of experiences to a large, diverse, urban population and fostering public understanding and appreciation of Fire Island. The impacts of some proposed actions that are considered Common to All Alternatives would be readily detectable and beneficial but most actions would not result in noticeable impacts. In general, the adverse impacts on visitor use and experience would not be considered significant. Visitor use and experience would be minimally affected under this alternative. However, conditions at the William Floyd Estate that have influenced visitation as described above have resulted in impacts to visitor use and experience that could be considered significant particularly in the context of fostering public understanding and appreciation of the Seashore.

## VISITOR USE &amp; EXPERIENCE

**IMPACTS OF MANAGEMENT  
ALTERNATIVE 2***Enhancing Natural Resource Values***Impact Analysis****► IMPACTS RELATED TO NATURAL RESOURCE  
MANAGEMENT ACTIONS**

Impacts associated with the natural resource management components of Alternative 2 would be similar to those described in the “Impacts Common to All Alternatives” section. Under this alternative, greater emphasis would be placed on the protection and restoration of natural ecological systems, patterns, and resources.

The NPS would employ public education and outreach as a tool to foster stewardship of Fire Island’s resources and would provide educational programs, demonstration projects, and other efforts to engage visitors and residents. Efforts to restore native plant species would extend beyond federal lands through collaborative projects and technical assistance to Fire Island communities, state and county parks, and others. More intensive resource management activities on Fire Island may result in restrictions on visitor use in some areas. On the other hand, expansion of educational opportunities to engage in scientific research and monitoring may enable visitor access in areas that were previously inaccessible or largely unvisited.

Under this alternative, natural resource management actions may result in altering patterns of visitation but are not likely to impact overall visitor use or visitor numbers. The natural resource actions proposed in this alternative, in concert with related actions associated with visitor facilities, could have a noticeable impact on visitation. In areas identified to be restored to their natural state, the carrying capacity of that area would change, and the way in which visitors access and experience them would need to be modified in response. The overall visitor experience at Fire Island National Seashore sites and facilities would be noticeably changed, with greater opportunities for interaction with the natural environment.

**► IMPACTS RELATED TO CULTURAL RESOURCE  
MANAGEMENT ACTIONS**

Impacts associated with the cultural resource management components of Alternative 2 would be similar to those described in the “Impacts Common to All Alternatives” section. As in Alternative 1, cultural resource actions would largely emphasize the preservation and interpretation of cultural resources on federal lands, particularly the William Floyd Estate and the Fire Island Light Station. Under this alternative curatorial storage would be reorganized to allow for a greater efficiency. The reorganization of the curatorial storage facility is expected to make the Seashore’s museum and archival collection more easily accessible, but it is not expected to result in more than a minor increase in public and scholarly use of the collection. Conditions for the periodic tours of the curatorial storage facility would be improved as a result of these actions and thus improve this facet of the visitor experience.

Under Alternative 2, at the William Floyd Estate the interiors of the Old Mastic House would be reorganized, resulting in the removal of the exhibit area and the sales space from the historic structure and refurnishing those spaces for use in the interpretation of the home. Missing historic features would be marked and interpreted to help visitors better understand the history of the Estate. The Lower Acreage would be rehabilitated, and portions of the landscape would be restored as “landscape vignettes” to allow for the interpretation of different periods in the Estate’s history (e.g., planting a single cultivated field, recreating a garden).

As these changes occur, they are likely to inspire a spike in visitation at the Estate as visitors come to experience a particular new feature. This would likely be a short-term benefit to the Estate’s visitation that would expose more people to the site and possibly broaden its visitation over the long term. The Seashore has visitor management strategies (e.g., limiting the number and size of tours of the Old Mastic home) in place that enable it to adequately address carrying capacity issues at the Estate as they occur. If the frequency of carrying capacity issues were to increase, other techniques for managing visitor access to the property would need to be considered and employed.



#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts associated with the land-use and development components of Alternative 2 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts associated with the Seashore experience, interpretation, education, and outreach components of Alternative 2 would be similar to those described in the “Impacts Common to All Alternatives” section. Under this alternative, visitors would continue to enjoy access to and interpretation of cultural resources at the William Floyd Estate and the Fire Island Light Station, while the visitor experience in other areas of the Seashore would center on close contact with and immersion in the natural landscape. Clearly organized access routes would minimize the disturbance of natural resources, with access to some areas restricted and some different types of uses that are “lighter on the land” encouraged. Physical connections between Seashore sites and the Fire Island communities would continue to be limited or even diminished. These proposed actions would have a long-term impact on the visitor experience that may be perceived by some as beneficial and by others as adverse.

Orientation to Fire Island would occur using outdoor interpretive panels at the ferry terminals on Long Island and at gateway kiosks located near Robert Moses State Park on the west side and Smith Point County Park on the east side. Information on Fire Island would also be available on line and via applications (apps) for other digital media. Over time a number of visitor facilities would be removed or reduced in size, allowing their locations to be restored or to revert to a natural state. These facilities include the Sailors Haven Marina, the restrooms and beach walk on the west end of Talisman, and the Wilderness Visitor Center. These proposed actions could result in a modest decrease in visitation as the composition and diversity of facilities and related services at each affected location is altered. Private boaters would be among the most affected by the proposed changes, as the number of available boat slips would be greatly reduced. Private boats would still be permitted to moor off-shore, but the overall visitor experience would represent a noticeable departure from current conditions.

Life-guarded beaches remain at Sailors Haven and Watch Hill, though there would no longer be lifeguards posted at Talisman. A water trail would be established on the bay side of Fire Island that would offer a guide or brochure, and occasional guided experiences offered by Seashore staff. Guided canoe trips would continue to be offered from Watch Hill. As in Alternative 1, beach camping in front of the Fire Island Wilderness would be permitted so that individuals seeking a camping permit for the Wilderness could choose to camp overnight on the beach or within the Wilderness Area. The number of permits and the size of the groups would be consistent with current practices and would not have an impact on the visitor experience.

The gradual removal or reduction of facilities and rehabilitation of natural areas on Fire Island is likely to have a long-term impact on park visitation in terms of visitor numbers, which are likely to decline moderately in response to more limited facilities. The composition of visitor audience may also potentially become more homogenous, although educational outreach to different audiences, particularly underserved communities, could have a mitigating effect, potentially making the composition of the visitor audience more diverse. As the nature of the visitor experience changes, visitor access would have to be managed to protect the rehabilitated natural landscape, which could require the establishment of new standards and monitoring protocols to address carrying capacity. The proposed removal or reduction of facilities would change how visitors experience Fire Island National Seashore and could present new opportunities for interpretive, educational, and recreational engagement.

The elimination of the already-limited lifeguard protection at Talisman is likely to have negligible to no impact on visitation numbers or the composition of the visitor audience. Private boaters would continue to be the principal users of this facility, as there is presently limited public ferry service to this location. Carrying capacity is unlikely to be a major issue in terms of resource degradation, although heavy weekend visitation can mar the experience of those who come to Talisman expecting a more isolated experience. The introduction of a water trail offering both self-guided and guided experiences could attract different types of visitors and thereby have a minor impact on the composition of visitors, but it is likely to have negligible or no impact on visitor numbers. The relocation of the Seashore’s campground to a location with reduced mosquito exposure may result

in an increased demand for campsites. Finally, allowing Wilderness permittees the choice of sleeping on the beach versus in the Wilderness would not increase the numbers of people or sizes of groups presently having access to the Fire Island Wilderness area; therefore there is no anticipated impact on visitation to the beach in front of the Wilderness or to the Fire Island Wilderness. Likewise, concerns about carrying capacity in this context are expected to be negligible.

At the William Floyd Estate, the NPS would build upon existing visitor infrastructure including restrooms and an orientation kiosk to develop an indoor flexible program space and an adjoining, covered outdoor space. The NPS would work in collaboration with the village of Mastic Beach to install an orientation exhibit at an off-site, village-based location. The introduction of “landscape vignettes” – restoring segments of the landscape (e.g., a cultivated field) to help visitors understand the historic uses of the property – could occur in the Lower Acreage as well as in the historic core. Interpretive programming would emphasize regional and community connections to the Estate, and a strong emphasis would be placed on working with area school districts to tie on-site school programs to the state curriculum.

Interpretive tours of Old Mastic would be scheduled and ticketed to manage the volume and flow of visitors through the house. Visitors would also have the opportunity to explore other structures and features within the historic core, see an exhibit at the expanded curatorial facility, and walk along the historic system of roads and trails to learn about the Estate’s grounds.

These proposals for the William Floyd Estate, particularly developing indoor/ outdoor program space that separates visitors from the more tick-populated area of the open lawn and offering more opportunities for evening and year-round programming, would likely have a long-term beneficial impact on the number of visitors touring the site and participating in programs. There would likely also be a long-term benefit in the composition of visitors through encouraging the return of local school districts to the Estate and potentially attracting more local and repeat visitation to the site.

The introduction of an orientation exhibit in the Village of Mastic Beach could serve as an important way point, enabling visitors to better make their way along densely developed neighborhood streets to the Estate. The placement of the orientation exhibit within the village may also make local residents more aware of

the presence of the Estate in their own community. The off-site orientation exhibit is likely to have a beneficial impact, though the improved signage proposed under Transportation and Access is likely to have the greater impact in directing visitors to the Estate.

The introduction of new interpretive elements, like the landscape vignettes, and interpretation of other missing historic features (as described under the impacts of cultural resources actions) would be likely to inspire a spike in visitation at the Estate as visitors come to experience a particular new feature. This would likely be of short-term benefit to the Estate’s visitation but would expose more people to the site and possibly broaden its visitation over the long term. The Seashore has visitor management strategies (e.g., limiting the number and size of tours of the Old Mastic home) in place that enable it to adequately address carrying capacity issues at the Estate as they occur. If the frequency of carrying capacity issues were to increase, other techniques for managing visitor access to the property would need to be considered and employed.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with the transportation and access components of Alternative 2 would be similar to those described in the “Impacts Common to All Alternatives” section. Also under this alternative, the NPS would collaborate with the Long Island Railroad, Suffolk County Transit, and the ferry companies to aggressively promote the use of public transportation to access Fire Island and the William Floyd Estate.

As noted above, under this alternative the NPS would reduce the number of overnight boat slips that would be available for the use of private boaters as there would no longer be boat slips available at Sailors Haven. Private boaters would continue to be able to drop off passengers and gear at the dock and anchor offshore.

Efforts to promote the use of public transportation would not be likely to impact visitation directly but may increase public awareness of Fire Island National Seashore which would in turn have an impact on park visitation. As public transportation campaigns occur, Fire Island National Seashore is likely to see a short-term uptick in visitation numbers and possibly visitation composition. However, this is not likely to be sustained over the long term.

Based on the Seashore's 2008 visitor survey, 27 percent of the park's visitors arrived by private boat. Reducing the number of boat slips on Fire Island is likely to have a long-term adverse impact on visitation by private boaters and overall park visitation. The number of private boats anchoring off shore would likely increase well beyond the large numbers of boaters who currently do so on busy summer weekends. This could present a carrying capacity issue in terms of resource protection (e.g., more anchors, resulting in damage to marine resources), visitor experience (crowding), and visitor safety. The NPS would explore the creation of a formal mooring system to mitigate these issues.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 2 would be similar to those described in the "Impacts Common to All Alternatives" section. Under this alternative, an increase in staffing is proposed to address the demands presented in the implementation of this alternative including increased focus on research, monitoring, resource protection, and education related to natural resources.

### Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to impact visitor use within the Seashore. These actions and initiatives include: the Long Island Regional Comprehensive Sustainability Plan 2035; the Long Island South Shore Estuary Reserve Comprehensive Management Plan; the Great South Bay Hard Clam Restoration Project; and the Brookhaven 2030 plan as described under Alternative 1.

These actions would result in a net long-term benefit to visitor use related to Fire Island National Seashore. The cumulative impact of these actions, in combination with the long-term beneficial and the long-term moderate and adverse effects of Alternative 2, would be long-term beneficial. Alternative 2 would contribute a long-term minor adverse and beneficial increments to the overall beneficial impact.



### Conclusions

Overall, impacts to visitor use associated with Alternative 2 would result in both beneficial and adverse impacts. Proposed removal of visitor facilities and restoration of natural areas could be of long-term benefit to the visitor experience, although these proposed changes may also be viewed as adversely impacting the experience of some segments of the visiting public. Under this alternative, the way that visitors experience many of the Seashore's sites and facilities on Fire Island would change and could be viewed positively by some and negatively by others. Improvements to museum storage and rehabilitation and expansion of visitor facilities at the William Floyd Estate would be of long-term benefit to visitor use and experience.

The cumulative impact would be long-term beneficial, and Alternative 2 would contribute a long-term adverse and beneficial increments to the overall beneficial cumulative impact.

Based on this information, the beneficial and adverse impacts of Alternative 2 on visitor use and experience would be considered significant. Many of the proposed actions described above would result in readily detectable and substantive impacts. The changes proposed would be readily perceived by the public and would have an influence on how they experience the Seashore. They would in some ways alter the wide range of experiences available to the public and would have a significant impact on how the public understands and appreciates Fire Island. Visitor use and experience would be largely beneficially affected under this alternative.

## VISITOR USE &amp; EXPERIENCE

**IMPACTS OF MANAGEMENT  
ALTERNATIVE 3***Recognize the Relationship Between Human Use  
and Nature (Preferred Alternative)***Impact Analysis****► IMPACTS RELATED TO NATURAL RESOURCE  
MANAGEMENT ACTIONS**

Impacts associated with the natural resource management components of Alternative 3 would be similar to those described in the “Impacts Common to All Alternatives” section. As in Alternative 2, public education and engaging the public in resource management activities would be employed to foster stewardship of Fire Island’s natural resources and to encourage best practices among Island residents and visitors. Under this alternative, tick and mosquito management protocols would be revised to enable the Seashore to implement a proactive management strategy in areas of high use and high risk of exposure to reduce the human health risk. The natural resource actions proposed under this alternative would have negligible or no impact on visitor use and experience.

**► IMPACTS RELATED TO CULTURAL RESOURCE  
MANAGEMENT ACTIONS**

Impacts associated with the cultural resource management components of Alternative 3 would be similar to those described in the “Impacts Common to All Alternatives” section. Under this alternative, the Seashore’s primary management emphasis would remain on cultural resources associated with federal lands. However, greater emphasis is placed on cultural resources on federal lands within the Seashore – not just Fire Island Light Station and the William Floyd Estate.

This alternative also calls for collaborating with the NYSHPO and providing technical assistance to Fire Island communities to identify, interpret, and protect cultural resources on non-federal lands across the island. Greater knowledge and recognition of cultural resources and their interpretation Fire Island-wide could result in increased “heritage tourism” visitation to Fire Island communities and a greater dispersal of visitors across multiple destinations on the island. Though it presents

a new programming opportunity, it is likely to attract a fairly narrow, niche audience and should not result in any issues associated with carrying capacity.

As noted above, the Fire Island Light Station and the William Floyd Estate have protocols in place for managing visitors to their historic buildings. In Fire Island communities, particularly those with high day-use visitation, a higher profile for their heritage resources could have a long-term impact on their visitation in terms of either numbers or composition. For some of these communities, carrying capacity has been identified as a particular issue. If these changes result in an expansion of visitor numbers to these communities, an already challenging carrying capacity situation could be exacerbated. If changes result not in an expansion of visitor numbers, but in changes to the composition of their visitation, then there would likely be little impact on carrying capacity. Carrying capacity in the private communities is beyond the scope of the Seashore’s management responsibilities and authorities and would be addressed by the communities themselves.

Alternative 3 also calls for the expansion and reorganization of the curatorial storage building to provide greater workspace for researchers and enabling more opportunities for the public to view the collections. This would make the collection more accessible to the scholarly community and the public. Scholars and other members of the public seeking access to the Seashore’s collections represent a very small percentage of the Seashore’s visitation. With greater accessibility, the number of people seeking access to the Seashore’s collection would likely grow. This action would have a long-term beneficial impact on Seashore visitor use and experience. NPS museum and archival management protocols for access to and use of the collection would continue to be employed and would keep any issues related to carrying capacity at a negligible level.

The analysis for the impacts of the cultural resources components for the William Floyd Estate under this alternative would be the same as those described under Alternative 2.



#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts associated with the land-use and development components of Alternative 3 would be similar to those described in the “Impacts Common to All Alternatives” section. Under this alternative, NPS would offer technical assistance and other support to encourage the identification and preservation of the distinctive character of Fire Island’s communities. This could result in an enhanced visitor experience and more educational and interpretive opportunities for Seashore visitors. Though it presents a new programming opportunity, it is likely to attract a fairly narrow, niche audience and should not result in any issues associated with carrying capacity.

The analysis for the impacts of the land-use and development components for the William Floyd Estate under this alternative would be the same as those described under Alternative 2.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts associated with the Seashore experience, interpretation, education, and outreach components of Alternative 3 would be similar to those described in the “Impacts Common to All Alternatives” section. Under this alternative, the visitor experience would draw on regional connections to encourage visitors to seek out related resources on Long Island to enhance their understanding of Fire Island National Seashore (e.g., Wertheim National Wildlife Refuge, Long Island Maritime Museum, the Manor of Saint George, etc.).

Interpretation would explore the historical relationship of human settlement to the natural systems of Fire Island, Great South Bay, and the south shore of Long Island. The natural ecologies here have been influenced, manipulated, and changed by humans over the course of time and have likewise influenced human adaptation to this landscape. This is a relationship that will continue into the future. Seashore development, management activities, and practices would serve as educational opportunities to explore the principles of sustainability and good stewardship in a fragile, dynamic coastal environment.

Under this alternative, the major visitor service areas within the Seashore would be retained and programming opportunities would be expanded. For example, the deck at the Patchogue Ferry Transportation Center would become the venue for dockside visitor programming during the shoulder seasons; indoor and outdoor exhibits at Fire Island Light Station would be augmented to interpret the cultural landscape; and a sheltered group program area would be developed at Sailors Haven. The NPS would also work collaboratively with one or more partners to develop a residential environmental education program—a small-scale, formal program that is a destination for day-use and overnight participants of all ages and backgrounds to learn about the ecology of Fire Island. As under Alternative 2, the NPS would undertake the development of a canoe/ kayak water route that would offer a water trail guide or brochure and occasional guided experiences.

Under this alternative, the number of people permitted to camp in either the Wilderness Area or the beach would increase. No more than 72 people may camp in the Fire Island Wilderness zones and the Great South Beach zones combined. As is currently the case, no more than 36 people would be permitted to camp in the Fire Island Wilderness and group size and distribution would be dictated by zone. Up to 36 people would be permitted to camp on the beach with constraints on season, group size, and distribution by zone.

The activities proposed under this alternative that involve public outreach, collaborative programming, improvements to interpretive exhibits, and the development of new facilities that expand programming options at Seashore facilities would be likely to increase visitation numbers, broaden the visitor audience, and expand interpretive, educational, and recreational opportunities for visitors. These represent long-term beneficial impacts to visitation, visitor audience, and visitor opportunities at NPS facilities. Shorter-term benefits would likely occur at related sites on Long Island or in the Fire Island communities when occasional special events, exhibits, or programs take place. In general, NPS facilities can accommodate large volumes of visitation. However, at some related sites and in some Fire Island communities, increased visitation resulting from a special event, exhibit, or program may require that steps be taken to address carrying capacity to minimize resource degradation and ensure a high-quality visitor experience.

Permitting no more than 72 people to camp in the Fire Island Wilderness zones and on Great South Beach combined doubles the number of people who have traditionally been permitted to engage in backcountry camping in or in proximity to the Wilderness. Making more camping permits available in the Wilderness and on the beach may increase backcountry visitation. Sufficient area exists to support this level of use without detracting from opportunities for solitude within the Fire Island Wilderness. Despite the greater number of possible permitted campers on any given night, the proposed distribution of campers and limitation on group size between the east and west zones of the Wilderness and the Great South Beach would sustain Wilderness character.

The analysis for the impacts of Seashore experience, interpretation, education, and outreach components to visitor use and experience for the William Floyd Estate under this alternative are the same as those described under Alternative 2.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with the transportation and access components of Alternative 3 would be similar to those described in the “Impacts Common to All Alternatives” section. As in Alternative 2, the NPS would work with others to improve bus and non-motorized connections to Fire Island and enhance visitor awareness of train and bus connections. The NPS would also convene an inter-community Bicycle Working Group to consider the specific benefits and impacts of increasing the use of bicycles as a lateral transportation option, particularly during the shoulder seasons. The Working Group would produce recommendations on how to best accommodate cycling and what level of bicycling would be feasible on Fire Island.

The NPS would work with the ferry companies currently servicing the Seashore and others to improve ferry service to NPS sites by expanding service during shoulder season to specific destinations. The Seashore would work with ferry operators and others to explore

the possibility of providing a subsidy to reduce fares or offering a waiver – particularly for underserved schools or low-income families. The NPS would work with the ferry companies and other stakeholders to explore ways to expand lateral water taxi service and try to make it more affordable.

As in Alternative 2, efforts to promote the use of public transportation would not be likely to impact visitation directly but may increase public awareness of Fire Island National Seashore, which would in turn have an impact on Seashore visitation. As public transportation campaigns occur, Fire Island National Seashore is likely to see a short-term benefit relative to its visitation numbers and the possibly its visitation composition. However, this is not likely to be sustained. Efforts oriented toward considering expanded bicycle use during the shoulder seasons would be geared more toward their practical use as a form of transportation for Fire Island workers rather than their recreational use and would not be expected to impact visitation. Making water-based access more affordable for local school districts and low-income families would be of long-term benefit to visitor experience and use at the Seashore, as it could increase visitation to some Fire Island facilities – particularly Sailors Haven and Watch Hill-- and enable the Seashore to broaden its visitation.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 3 would be similar to those described in the “Impacts Common to All Alternatives” section. Similar to Alternative 2, a modest increase in staffing is proposed to augment educational outreach and the coordination of an expanded volunteer program. Staffing related to educational outreach and the expansion of the volunteer program would be of long-term benefit to the Seashore in its efforts to diversify visitation, improve visitor opportunities and foster stewardship.

## Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to impact visitor use and experience within the Seashore. These actions and initiatives include the Long Island Regional Comprehensive Sustainability Plan 2035, the Long Island South Shore Estuary Reserve Comprehensive Management Plan, the Great South Bay Hard Clam Restoration Project, and the Brookhaven 2030 plan as described under Alternative 1.

These actions would result in a net long-term benefit to visitor use and experience related to Fire Island National Seashore. The cumulative impact of these actions, in combination with the long-term beneficial and the long-term minor and adverse effects of Alternative 3, would be long-term and beneficial. Alternative 3 would contribute long-term minor adverse and beneficial increments to the overall beneficial impact.

## Conclusions

Overall, impacts to visitor use associated with Alternative 3 would result in both beneficial and adverse impacts. Cultural resource management actions could result in greater knowledge and recognition of cultural resources and their interpretation Fire Island-wide and increased “heritage tourism” visitation to Fire Island communities. This could also result in a greater dispersal of visitors across multiple destinations on the island. Expanding and reorganizing the curatorial storage building could be of significant benefit, as it would enable more opportunities for the public to view the collections. This would make the collection more accessible to the scholarly community and the public.

The activities proposed under this alternative that involve public outreach, collaborative programming, improvements to interpretive exhibits, and the development of new facilities that expand programming options at Seashore facilities, would be of benefit in terms of visitation numbers, a broader visitor audience, and expanded interpretive, educational, and recreational opportunities for visitors. Because of the potential network that may emerge through collaborative programming, the impacts of these proposals may actually be more regional in scope. Under Alternative 3, the existing limits on backcountry camping would be increased allowing equal numbers to camp either in the Wilderness or on the beach. The number of people permitted to camp in the Fire Island Wilderness would not increase, the only increase would be on the beach. The distribution of campsites and limitations on group

size would continue to be defined by eastern and western zones on both the beach and in the Wilderness. This would have no to negligible adverse impact on the Wilderness character.

The proposed actions related to the William Floyd Estate under this alternative are the same as those described under Alternative 2. These actions would largely be of long-term benefit to visitor use and experience at the William Floyd Estate.

The cumulative impact would be long-term beneficial, and Alternative 3 would contribute short-term minor adverse and beneficial increments to the overall beneficial cumulative impact.

Based on this information, the beneficial impacts of Alternative 3 on the visitor use and experience would be considered significant in the context of providing a wide range of experiences to a large, diverse, urban population and in fostering an understanding and appreciation of Fire Island in the visiting public. Many of the proposed actions described above would result in readily detectable and substantive impacts. Visitor use and experience would be largely beneficially affected under this alternative. The adverse impacts of Alternative 3 would be negligible and would not be considered significant relative to providing a wide range of experiences or fostering understanding and appreciation of Fire Island in the visiting public.

# Impacts on Socioeconomic Environment

## Methodology

Fire Island and Suffolk and Nassau counties serve as the affected area for socioeconomic analysis. The Seashore and its many natural, cultural, and recreational resources and visitor opportunities are an important contributor to the regional tourism industry and an integral part of the local socioeconomic environment. Visitors to the Seashore actually reside in or must travel through these areas to visit the park. The overwhelming majority of the direct and induced socioeconomic impacts due to the proposed alternatives are expected to occur within this region.

Socioeconomic impacts were determined based on literature review, analysis of available data, applied logic, and professional expertise and judgment. The factors considered to identify and assess potential socioeconomic impacts include economic data, historic visitor use data, the effects of the alternatives on expected future visitor use and visitor experience, and proposed future development and management within the Seashore. Consideration is also given to the potential effects of the proposed actions on community character and on land use and development. A mostly qualitative analysis is sufficient to compare the effects of alternatives for decision-making purposes. However, the estimated costs of development projects provide basic quantitative measures of the direct economic impacts on the affected environment. Estimated changes in the Seashore's base budget and staffing levels also provide quantitative data.

The Seashore is composed of two separate and distinct units. On Fire Island, the barrier island running parallel to the south shore of Long Island in Great South Bay, the Seashore encompasses several major sites and facilities. Fire Island is accessible by vehicle at its eastern and western-most boundaries via bridges, causeways, and roadways traversing Shirley/ Mastic and West Islip, respectively. Ferries depart for Fire Island from four Long Island locations including Bay Shore, Sayville, and two locations in Patchogue. Located on the south shore of Long Island in the town of Brookhaven, the William Floyd Estate borders the village of Mastic Beach. Most visitors traveling to the William Floyd Estate drive through the central business district of the village. These communities provide a range of goods and services for the visiting public, housing for Seashore employees and other workers employed in tourism-related businesses,



and also serve as the base of operations for construction firms, vendors, and other firms providing Seashore support functions.

The resource-specific context for assessing the significance of impacts on the socioeconomic environment includes the following:

- The degree to which NPS provides for the stewardship of the coastal environment and its cultural and natural systems, while recognizing that Fire Island is part of a larger ecological, social, economic, and cultural context.
- The degree to which land-use and development practices promote ecological health and environmental quality on Fire Island and acknowledge and respect community character and the continued presence of Fire Island's communities.
- The degree to which visitation trends, Seashore operations, and construction activities affect the local and regional economy.



## SOCIOECONOMIC ENVIRONMENT

**IMPACTS COMMON TO ALL  
MANAGEMENT ALTERNATIVES****Impact Analysis****► IMPACTS RELATED TO NATURAL RESOURCE  
MANAGEMENT ACTIONS**

Under all alternatives, the NPS would continue to engage in baseline research, inventory and monitoring, and management of natural resources in the Seashore and would expand upon existing efforts to address marine resources within the Seashore boundary. Efforts to preserve the Sunken Forest and other maritime forests on Fire Island would also continue.

The results of the Community Character analysis undertaken in 2010 indicated that the preservation of the natural environment was an important facet of community character on Fire Island. Under Alternatives 2 and 3, the NPS would seek to engage in cooperative stewardship of the Seashore's resources and encourage a holistic, multilateral approach to preserving Fire Island's natural environment. This would be of long-term benefit in preserving Fire Island's overall character as well as that of its individual communities.

There are no natural resource management actions proposed under Elements Common to All Alternatives that would have an impact on land use and development or the local and regional economy.

**► IMPACTS RELATED TO CULTURAL RESOURCE  
MANAGEMENT ACTIONS**

Elements common to all alternatives related to cultural resource management would have no noticeable impact on the socioeconomic environment.

**► IMPACTS RELATED TO LAND-USE AND  
DEVELOPMENT ACTIONS**

Under all alternatives, there are a number of proposals related to coastal land use and shoreline management that would be likely to have an impact on land use and development and on community character. These proposals are not likely to have a noticeable impact on the local or regional economy.

Under all alternatives, the NPS would adopt the Tentative Federally Supported Plan associated with the Fire Island to Montauk Point (FIMP) Reformulation Study. Under Alternatives 2 and 3, the NPS would engage

in a multilateral effort to develop a Coastal Land Use and Shoreline Management Plan and continue to pursue land protection strategies such as employing retained use and occupancy and conservation easements. Cooperative stewardship would be fundamental to the future success of these proposed undertakings, which could have a long-term benefit in preserving the character of Fire Island and promoting land-use and development strategies that would enhance the resiliency of the island communities.

**► IMPACTS RELATED TO SEASHORE EXPERIENCE  
ACTIONS**

Elements common to all alternatives related to Seashore experience, interpretation, education, and outreach would have no noticeable impact on the socioeconomic environment.

**► IMPACTS RELATED TO TRANSPORTATION AND  
ACCESS ACTIONS**

Under all alternatives, the Seashore would continue to emphasize water-based transportation to Fire Island and to maintain its roadless character. Driving on Fire Island would continue to be strictly limited. These actions would continue to be of benefit to the long-term preservation of the overall character of Fire Island and its communities. Also under all alternatives, a number of strategies would be employed to improve wayfinding to and from the William Floyd Estate. Vehicular traffic to the Floyd Estate would continue to be directed through Mastic Beach's central business district. The continuation of these actions would have a beneficial impact on the local and regional economy.

**► IMPACTS RELATED TO SEASHORE OPERATIONS  
ACTIONS**

Under Alternatives 2 and 3, the NPS would engage local and regional stakeholders in the cooperative stewardship of Fire Island National Seashore. To accomplish this, the NPS would propose the creation of a regular forum for communication, cooperation, and collaboration in managing Fire Island. The plan identifies two different proposals for creating such a forum.

The Fire Island National Seashore Advisory Commission model would be purely advisory and could make recommendations to the Superintendent relative to the application of the federal zoning standards and other Fire Island-wide matters. Under the Management Partnership model, participating stakeholders would

play a planning and advisory role, but would not have any regulatory authority except as it pertains to their individual missions and mandates.

Either of the two would have the potential to improve decision-making processes related to the application of federal zoning standards on Fire Island by making them more transparent and inclusive. They would also enhance opportunities to recognize and protect the character of Fire Island and its distinctive communities. The common denominator in each of these models is that they present an opportunity to build a multi-lateral consensus around a vision for Fire Island and better enable a collaborative approach for attaining it. These actions would be of long-term benefit in the management of land use and development on Fire Island and the protection of the island's overall character.

The proposed actions would not have a noticeable impact on the local and regional economy.

#### SOCIOECONOMIC ENVIRONMENT

### IMPACTS OF MANAGEMENT ALTERNATIVE 1

*Continuation of Current Management Practices (No Action)*

#### Impact Analysis

##### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the Natural Resource Management components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

##### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Management of the Seashore's cultural resources would remain unchanged. Under this alternative, cultural resource management activities would continue to focus exclusively on the federal lands in general, and on the Fire Island Light Station, Carrington Estate, and the William Floyd Estate in particular.

There would be no noticeable impact to land use and development, Fire Island character, or the local or regional economy.

##### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts associated with the Land-Use and Development components of Alternative 1 would be similar to those described in the “Impacts Common to All Alternatives” section. In addition, the Seashore would continue to rely on existing land-use regulations that apply to the Community Development District, including federal zoning standards. These regulatory tools have limitations and have not been evenly employed, resulting in imperiled coastal properties and a gradual yet continuous erosion of Fire Island's overall character as well as that of some of its communities. The land-use and development actions proposed under Alternative 1 would have a long-term, adverse impact on land use and development and Fire Island character. The proposed actions would not have a noticeable impact on the local or regional economy.

##### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Under this alternative, the park experience would remain somewhat segmented on Fire Island, with visitors to Seashore facilities largely staying within those facilities and visitors and local residents of communities largely staying within their individual communities. Current efforts to raise awareness of the Seashore would continue. The NPS would continue to offer a broad slate of visitor programs at selected locations on a limited schedule as funding and staffing permit. The Seashore's informational website, social media presence, exhibits, signage, and publications would continue to be available.

Under this alternative, visitation to Fire Island is expected to remain at current levels. The median for annual Seashore visitation between 2002 and 2012 was approximately 616,000. In 2012, the NPS issued a major report on the effect of visitor spending at national park units on the local, state, and national economy.<sup>13</sup> The 2012 report evaluated the impacts of visitation to Fire Island on the regional economy based on the Seashore's visitation at the time which was 483,000 recreational visits. At this level of visitation, the Visitor Spending Effects (VSE)

13 Cullinane Thomas, C., C. Huber, and L. Koontz. 2014. 2012 National Park visitor spending effects: Economic contributions to local communities, states, and the nation. Natural Resource Report NPS/NRSS/EQD/NRR—2014/765. National Park Service, Fort Collins, Colorado. ([www.nature.nps.gov/socialscience/docs/NPSVSE2012\\_final\\_nrss.pdf](http://www.nature.nps.gov/socialscience/docs/NPSVSE2012_final_nrss.pdf))

model projected total visitor spending within the region to be approximately \$19 million with the potential to directly and indirectly support about 206 jobs.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with the Transportation and Access components of Alternative 1 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts associated with the Seashore Operations, Maintenance, and Facilities components of Alternative 1 would be similar to those described in the “Impacts Common to All Alternatives” section. The Seashore’s 2012 budget was approximately \$4.9 million, a significant proportion of which was dedicated to personnel. The Seashore employs approximately 65 Full-Time Equivalents – a combination of year-round and seasonal employees that translates into approximately 109 jobs.

If level funding of the Seashore’s operating budget were to continue, staffing and expenditures related to Seashore operations, maintenance, and facilities could remain the same or decline. There would be no noticeable impact to land use and development, Fire Island character, or the local or regional economy.

### Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to impact the socioeconomic environment within and near the Seashore. These actions include the 2011-2014 New York State Transportation Improvement Program (STIP), the New York Metropolitan Transportation Council 2010 – 2035 Regional Transportation Plan, the Long Island Comprehensive Regional Sustainability Plan 2035, the Long Island South Shore Estuary Reserve Comprehensive Management Plan, the Great South Bay Hard Clam Restoration Project, and the Brookhaven 2030 plan.

The NY Metropolitan Transportation Council, the Long Island Comprehensive Regional Sustainability Plan, the Long Island South Shore Estuary Reserve Plan, and the Brookhaven 2030 Plan all express a region-wide desire to enhance the regional environment and economy and to improve the quality of life for local residents. The regional transportation plan calls for a nearly \$50 billion program to improve the transportation system in the metro New

York area – including Long Island – between 2010 and 2035. The 2011-2014 New York State Transportation Improvement Program (STIP) includes a variety of transportation projects throughout the state, several of which could affect access and circulation related to Fire Island National Seashore. In particular, proposed improvements to infrastructure at the Ocean Beach Ferry Terminal on Fire Island and the Bay Shore ferry terminal on Long Island would enhance water access to Fire Island passenger services and freight; and the proposed replacement of the William Floyd Parkway Bridge over Narrow Bay at Smith Point County Park would sustain public access and improve safety. Collectively, these improvements would cost over \$16 million to undertake.

In the Long Island Regional Comprehensive Sustainability Plan 2035 prepared by the Long Island Regional Planning Council, another primary area of emphasis is promoting economic strength on Long Island. Efforts to increase economic activity and competitiveness were highlighted among the high-priority initiatives. A 2003 Suffolk County report analyzing the impacts of Atlantic beach economy estimated over 11.3 million visits to area beaches each year with about 2.2 million (20 percent) of them being visitors to Fire Island (including the communities).

With its emphasis on improvements to water quality, expansion of public use and enjoyment of the South Shore Estuary Reserve (SSER), sustaining and expanding the estuary-related economy, and increasing education, outreach, and stewardship, the Long Island South Shore Estuary Reserve Comprehensive Management Plan offers an agenda that supports the protection and use of the Great South Bay, a shared resource. As such, the SSER plan would also reinforce the preservation of the character of Fire Island and contribute to the local and regional economy.

The Great South Bay Hard Clam Restoration Working Group was convened by the Suffolk County Executive in 2008 and was tasked with: (1) Ensuring adequate enforcement of hard clam harvest laws, regulations, and codes in Great South Bay; (2) Establishing interim hard clam harvest management recommendations for the Great South Bay; and (3) Developing a long term, science-based, sustainable management plan for the hard clam population of Great South Bay. The resulting Great South Bay Hard Clam Restoration Project calls for a multi-pronged approach to harvest management and efforts to address the environmental factors (e.g. water quality) that are negatively impacting hard clam growth and survival.

Shellfishing could be limited in some areas of Great South Bay (including areas within the Seashore boundary) for the duration of the Hard Clam Restoration Project, resulting in long-term adverse impacts to segments of the local economy.

These actions would result in a long-term beneficial impact on the socioeconomic environment related to Fire Island National Seashore. The cumulative impact of these actions, in combination with the long-term beneficial and the long-term minor and adverse effects of Alternative 1, would be long-term beneficial. Alternative 1 would contribute imperceptible minor adverse and beneficial increments to the overall beneficial impact.

## Conclusions

Overall, impacts to the socioeconomic environment associated with Alternative 1 would result in both beneficial and adverse impacts. Under Alternative 1, benefits to community character and land use and development would be derived from the preservation of natural resources and maintaining the roadless character of the island and water-based transportation. The NPS would continue current practices to address land use and development issues on Fire Island which would result in noticeable adverse impacts on the overall character of Fire Island and on land use and development over time. There are no proposed actions under this alternative that would have a noticeable impact on the local or regional economy.

The cumulative impact would be long-term beneficial, and Alternative 1 would contribute imperceptible long term minor adverse and beneficial increments to the overall beneficial cumulative impact.

Based on this information, the largely beneficial impacts of Alternative 1 on the socioeconomic environment would not be considered significant. The impacts of some actions under consideration would be readily detectable and beneficial. However, most actions would not result in substantive impacts that would change how the Seashore operates within its regional context, its protection of ecological health and environmental quality and the overall character of Fire Island, or its influence on the local or regional economy. The socioeconomic environment would be minimally affected under this alternative. The adverse impacts as described above would be considered significant over the long term relative to land use and development and the overall character of Fire Island. This would result from the failure to adequately address land-use and development

practices which could result in incremental erosion of ecological health and environmental quality as well as the overall character of Fire Island.

### SOCIOECONOMIC ENVIRONMENT

## IMPACTS OF MANAGEMENT ALTERNATIVE 2

### *Enhancing Natural Resource Values*

## Impact Analysis

### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the Natural Resource Management components of Alternative 2 would be similar to those described in the “Impacts Common to All Alternatives” section. In addition, natural area restoration efforts proposed under this alternative could alter visitation patterns and may have an impact on visitor numbers and audience composition. A reduction in visitation could have an adverse impact on the local and regional economy.

### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

As in Alternative 1, the management of the Seashore’s cultural resources within Fire Island National Seashore would remain largely unchanged. Under this alternative, cultural resource management activities would continue to focus exclusively on the federal lands in general, and on the Fire Island Light Station, Carrington Estate, and the William Floyd Estate in particular.

Under Alternative 2, at the William Floyd Estate the interiors of the Old Mastic House would be reorganized resulting in the removal of the exhibit area and the sales space from the historic structure and refurnishing those spaces for use in the interpretation of the home. Missing historic features would be marked and interpreted to help visitors better understand the history of the Estate. The Lower Acreage would be rehabilitated and portions of the landscape would be restored as “landscape vignettes” to allow for the interpretation of different periods in the Estate’s history (e.g., planting a single cultivated field, recreating a garden). These changes are likely to inspire a spike in visitation at the Estate as visitors come to experience a particular new feature. This would likely be a short-term benefit to the Estate’s visitation that would expose more people to the site and possibly broaden its



visitation over the long term. These projected changes in visitation are likely to be of long-term benefit to the local and regional economy.

There would be no noticeable impact to land use and development or Fire Island character.

#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts associated with the land-use and development components of Alternative 2 would be similar to those described in the “Impacts Common to All Alternatives” section. Under this alternative, the NPS would offer technical assistance to Fire Island communities to identify and preserve their distinctive character and that of Fire Island as a whole. This could raise awareness of the relevance of these features and may produce land-use and development guidelines or other strategies that would be of long-term benefit to protecting the overall character of Fire Island and its distinctive communities.

Also under this alternative, the NPS would work to revise land-use regulations to address inconsistencies, provide better procedural guidance, and more clearly define the role of the NPS. Alternatives to traditional zoning (performance-based measures, etc.) would also be considered. These proposed actions could improve the content and processes related to the federal zoning standards by making them more transparent and easier to use.

The NPS would also pursue the realignment of the federal dune district to make it consistent with the state-delineated CEHA district as appropriate. In effect, this would better address development proposals on Fire Island and be of long-term benefit in managing land use and development, promoting the long-term resilience of Fire Island communities and preserving the overall character of the island.

In general, these actions would have a long-term beneficial impact on managing land use and development and preserving the overall character of Fire Island.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Under Alternative 2, the number of visitor facilities on Fire Island would be reduced in most locations including Sailors Haven, Talisman, and the Wilderness Visitor Center. The Sailors Haven marina would be removed at the end of its structural lifecycle though the area would continue to be served by ferry. Lifeguarded beaches would remain at Sailors Haven and Watch Hill. In

addition, the NPS would also expand educational and interpretive outreach to a wide range of audiences and communities in the region.

As noted in the Impacts to Visitor Use & Experience section, these proposed changes would likely reduce visitation to these sites and facilities. On the other hand, the increased educational and interpretive outreach could result in periodic boosts in visitation that would offset the loss that could be attributed to the reduction of visitor facilities. A decline in visitation to Fire Island would result in a corresponding long-term adverse impact on the regional economy.

The reduction in the availability of overnight boat slips would likely drive a number of private boaters to other public and private marinas on Fire Island and on the south shore of Long Island. This could result in long-term impacts on the local economy, particularly sectors that serve the boating community.

With fewer services at these locations, adjoining communities that offer amenities like restaurants and stores (e.g., Cherry Grove) may experience more visitation. This would be likely to result in more local sales and revenue.

At the William Floyd Estate, the NPS would rehabilitate and expand existing facilities to create a visitor orientation facility that would provide a versatile and safe indoor orientation and program space for a variety of audiences. Interpretive and educational programming would emphasize regional and community connections with a strong emphasis on outreach to local schools. A variety of programs would be developed that would encourage repeat visitation. Rehabilitation of the cultural landscape and the introduction of landscape vignettes (e.g., a garden, cultivated fields) would generate visitor interest. Improvements like the visitor orientation facility, increased outreach to local schools and other audiences, and an emphasis on attracting repeat visitation could be of long-term benefit in terms of increased visitation and broader audiences. This would be of long-term benefit to the local economy.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with the transportation and access components of Alternative 2 would be similar to those described in the “Impacts Common to All Alternatives” section. Also under this alternative, the NPS would work with local and regional transit agencies to promote the use of public transportation while raising public awareness of

Fire Island as a destination. This type of public outreach could result in modest increases in visitation numbers that could offset the impacts of other actions and benefit the local tourist economy.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 2 would be similar to those described in the “Impacts Common to All Alternatives” section. In addition, under this alternative a number of facilities would be newly constructed, rehabilitated, or demolished. A proportion of the estimated construction-related expenditures would be spent on Long Island, contributing directly to local sales and resulting in short-term benefits to the local and regional economy.

In addition, up to six additional full-time equivalents (FTE) may be required to implement this alternative. Positions related to natural resource management, cultural resource management, educational outreach, and planning and community outreach would be needed.

Under this alternative, the Seashore’s operating budget would grow modestly as would staffing and expenditures related to Seashore operations, maintenance, and facilities. This would be of long-term benefit to the local and regional economy.

### Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to impact the socioeconomic environment within and near the Seashore. These actions include the 2011-2014 New York State Transportation Improvement Program (STIP), the New York Metropolitan Transportation Council 2010 – 2035 Regional Transportation Plan, the Long Island Comprehensive Regional Sustainability Plan 2035, the Long Island South Shore Estuary Reserve Comprehensive Management Plan; the Great South Bay Hard Clam Restoration Project, and the Brookhaven 2030 plan.

These actions would result in a long-term beneficial impact on the socioeconomic environment related to Fire Island National Seashore. The cumulative impact of these actions, in combination with the long-term beneficial and the long-term minor and adverse effects of Alternative 2, would be long-term beneficial. Alternative 2 would contribute minor adverse and beneficial increments to the overall beneficial impact.

### Conclusions

Overall, impacts to the socioeconomic environment associated with Alternative 2 would be largely localized though some impacts may affect the regional tourist economy and would range from long-term beneficial to long term and adverse. Under Alternative 2, long-term benefits to community character and land use and development would be derived from the preservation of natural resources; coastal land use and shoreline management planning; maintaining the roadless character of the island and water-based transportation; and pursuing a cooperative stewardship model of governance. A number of land-use and development proposals, including technical assistance to Fire Island communities seeking to identify and preserve their distinctive community character; and revisions to land-use regulations including alternatives to traditional zoning, would be of long term benefit to the overall character of Fire Island and to the management of land use and development. Proposed changes related to the Seashore experience, particularly the reduction or removal of visitor facilities and the Sailors Haven marina on Fire Island could result in a minor reduction in visitation which could have a long-term adverse impact on the regional tourist economy. On the other hand, proposed changes at the William Floyd Estate including the rehabilitation of existing buildings to create a visitor orientation facility and rehabilitation of the cultural landscape and other historic features, could increase visitation to that property with the corresponding benefits that may accrue to the local and regional economy. Proposed construction under this alternative would be of short-term benefit to the local and regional economy. Proposals to expand the park staff to meet the implementation requirements under this alternative would be of long-term economic benefit.

The cumulative impact would be long-term beneficial, and Alternative 2 would contribute minor adverse and beneficial increments to the overall beneficial cumulative impact.

Based on this information, the beneficial impacts of Alternative 2 on the socioeconomic environment would be considered significant. Many of the proposed actions described above would result in readily detectable and substantive impacts that would improve the stewardship of seashore resources with greater appreciation of their regional context. They would result in land use and development practices that better address ecological health, environmental quality, and community

character to a greater degree than under Alternative 1. Conversely, the adverse impacts of Alternative 2 on the socioeconomic environment would not be considered significant. The socioeconomic environment would be largely beneficially affected under this alternative.

#### SOCIOECONOMIC ENVIRONMENT

### IMPACTS OF MANAGEMENT ALTERNATIVE 3

*Recognize the Relationship between Human Use and Nature (Preferred Alternative)*

#### Impact Analysis

##### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the Natural Resource Management components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” and “Impacts of Alternative 1” sections.

##### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Under Alternative 3, the Seashore’s focus would expand to consider cultural resources in a greater Fire Island-wide context. The NPS would complete a Cultural Landscape Report that considers the entire area of Fire Island encompassed by the National Seashore including both federal and non-federal lands. This would not only provide important contextual information that would inform the management of cultural resources on federal lands, but it could also serve as a useful source of data for Fire Island communities, the towns, and the county in their efforts to identify and protect the features that define the overall character of Fire Island and its distinctive communities. To a similar end, NPS would collaborate with the NYSHPO and interested local communities to undertake a formal inventory of historic resources on Fire Island.

The analysis of the impacts of cultural resources components for the William Floyd Estate under this alternative would be the same as that described under Alternative 2.

These proposed actions would be of long-term benefit to identifying and protecting Fire Island’s overall character. Proposals related to the William Floyd Estate are likely to have a beneficial impact on the local and regional economy.

##### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts associated with the land-use and development components of Alternative 3 would be similar to those described in the “Impacts Common to All Alternatives” section and under Alternative 2.

##### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Under Alternative 3, the interpretive emphasis is expanded to consider the natural and cultural heritage of Fire Island as a whole as well as its regional context. Visitors would be encouraged to visit and participate in programming and events at related sites and museums on Long Island that expand upon the themes of Fire Island. The NPS would also expand programming for the shoulder season (e.g., proposed residential environmental camp). These proposed actions could result in minor growth in visitation to Fire Island National Seashore and a corresponding long-term benefit to the regional economy.

The analysis for the impacts of Seashore experience, interpretation, education, and outreach components to the socioeconomic environment for the William Floyd Estate under this alternative are the same as those described under Alternative 2.

These proposed actions would not have a noticeable impact on land-use development or Fire Island character.

##### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with the transportation and access components of Alternative 3 would be similar to those described in the “Impacts Common to All Alternatives” section. As under Alternative 2, under this alternative the NPS would work with local and regional transit agencies to promote the use of public transportation while raising public awareness of Fire Island as a destination. This type of public outreach could contribute to increases in visitation numbers and benefit the local economy.

In addition, NPS would work with ferry concessioners to expand service during the shoulder season to specific destinations on Fire Island and would also explore the possibility of providing a subsidy to reduce fares or offering a waiver – particularly for underserved school districts and low-income families. These actions could also contribute to increasing visitation numbers, which would result in a corresponding long-term benefit to the regional economy.

These proposed actions would not have a noticeable impact on land use and development or Fire Island character.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 3 would be similar to those described in the “Impacts Common to All Alternatives” section. In addition, under this alternative a number of facilities would be newly constructed or rehabilitated. A proportion of the construction-related expenditures as estimated would be spent on Long Island, contributing directly to local sales and short-term benefits to the local and regional economy.

In addition, up to two additional full-time equivalents (FTE) may be required to implement this alternative. Positions related to natural resource management, and planning and community outreach would be needed.

Under this alternative, the Seashore’s operating budget would grow modestly as would staffing and expenditures related to Seashore operations, maintenance, and facilities. This would be of long-term benefit to the local economy.

### Cumulative Impacts

Past, present, and reasonably foreseeable future actions have the potential to impact the socioeconomic environment within and near the Seashore. These actions include the 2011-2014 New York State Transportation Improvement Program (STIP), the New York Metropolitan Transportation Council 2010 – 2035 Regional Transportation Plan, the Long Island Comprehensive Regional Sustainability Plan 2035, the Long Island South Shore Estuary Reserve Comprehensive Management Plan, the Great South Bay Hard Clam Restoration Project, and the Brookhaven 2030 plan.

These actions would result in a long-term beneficial impact on the socioeconomic environment related to Fire Island National Seashore. The cumulative impact of these actions, in combination with the long-term beneficial and the long-term minor and adverse effects of Alternative 3, would be long-term beneficial. Alternative 3 would contribute a largely beneficial increment to the overall beneficial impact.

### Conclusions

Overall, impacts to the socioeconomic environment associated with Alternative 3 would largely affect the

local communities though some impacts may affect the regional tourist economy and would range from long-term beneficial to long term and adverse. Under Alternative 2 long-term benefits to community character and land use and development would be derived from the preservation of natural resources, coastal land use and shoreline management planning, maintaining the roadless character of Fire Island and water-based transportation, and pursuing a cooperative stewardship model of governance. A number of land-use and development proposals including technical assistance to Fire Island communities seeking to identify and preserve their distinctive community character, and revisions to land-use regulations including alternatives to traditional zoning would be of long-term benefit to the overall character of Fire Island and on the management of land use and development. Proposed changes related to the Seashore experience, particularly the greater emphasis on the natural and cultural heritage of Fire Island and its regional context and expanding shoulder season programming would result in increased visitation and would be of long-term benefit to the regional economy. Proposed construction under this alternative would be of short-term benefit to the local and regional economy. Proposals to expand the park staff to meet the implementation requirements under this alternative would be of long-term benefit economically.

The cumulative impact would be long-term beneficial, and Alternative 3 would contribute a beneficial increment to the overall cumulative beneficial impact.

Based on this information, the beneficial impacts of Alternative 3 on the socioeconomic environment would be considered significant. Many of the proposed actions described above would result in readily detectable and substantive impacts that would improve the stewardship of seashore resources with greater appreciation of their regional context. They would result in land use and development practices that better address ecological health, environmental quality, and community character to a greater degree than under either Alternative 1 or Alternative 2 because of their emphasis on a more holistic approach to resource management and interpretive outreach to related sites and museums on Long Island. The adverse impacts of Alternative 3 on the socioeconomic environment would not be considered significant. The socioeconomic environment would be largely beneficially affected under this alternative.



# Impacts on Seashore Operations

## Methodology

For the purposes of this analysis, Seashore operations refers to the quality and effectiveness of the administrative and physical infrastructure and the ability to maintain the infrastructure used in the operation of the Seashore. The recognition of the need for a practical approach to cooperative stewardship – the communication, collaboration, and cooperation among the many stakeholders having management responsibilities on Fire Island -- has led to the exploration of several organizational models. The potential impacts of the proposed organizational models on Seashore operations are also considered in this analysis. This analysis also considers staffing proposed under each alternative.

The resource-specific context for assessing the significance of impacts on the seashore operations includes the following:

- Degree to which the NPS partners with the public, Fire Island communities, state and local government, and others in the stewardship and preservation of Fire Island's natural and cultural resources and its distinctive character.
- Degree to which the Seashore would operate within the constraints of the unit-specific budget and number of staff positions that have been allocated by Congress and the NPS Director's Office.
- Degree to which facilities are developed to be environmentally sensitive and sustainable and can be adapted to the changing environment as influenced by climate change and sea-level rise.
- Degree to which the Seashore provides a safe, healthy, and accessible environment for visitors, residents, and NPS employees.



## SEASHORE OPERATIONS

### IMPACTS COMMON TO ALL MANAGEMENT ALTERNATIVES

## Impact Analysis

### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Under all alternatives, the NPS would also continue to engage in research initiatives, planning, monitoring, public education, and public outreach. Under Alternatives 2 and 3, NPS would expand its management emphasis to include the marine areas within the Seashore boundary to be consistent with recent NPS initiatives calling for enhanced marine stewardship. These efforts would require staff time and oversight that exceeds the Seashore's current capacity and could have a long-term adverse impact on park-wide operations and management.

### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Under all alternatives, the impacts associated with cultural resource management proposals would be similar to those described under natural resource management. The NPS would also continue to engage in research initiatives, planning, public education, and public outreach. These efforts would require staff time and oversight that exceeds the Seashore's current capacity and could have a long-term, adverse impact on park-wide operations and management.

Also, under all alternatives, the Carrington House and Cottage would be rehabilitated and adaptively reused for administrative purposes. The house and cottage would be placed on the Seashore's List of Classified Structures and would be managed as a cultural resource. Although already part of the Seashore's inventory of structures, the Carrington House and Cottage had previously received little attention. These structures would be returned to the inventory of structures requiring regular maintenance and utility services, creating a long-term impact on the Seashore's budget and operations.

#### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Under all alternatives, the NPS would continue to be engaged in planning and management proposals related to FIMP. Public education and outreach would also continue to be important relative to land-use and development proposals. All of these continuing and proposed initiatives would require substantial involvement of Seashore staff and may require the addition of specialized staff or consultants. Requirements for staff time could exceed the Seashore's current capacity and could have a long-term adverse impact on park-wide operations and management.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Under all alternatives, educational outreach, collaboration with sites related to the William Floyd Estate, and the increased use of social media for public information, orientation, and wayfinding would be elements common to all alternatives. These proposed actions would require staff time and oversight that exceeds the Seashore's current capacity and could have a long-term adverse impact on park-wide operations and management.

Under Alternatives 2 and 3, the NPS would pursue development of solar shade structures over some or all of the Ferry Terminal parking area. This action would be consistent with the clean energy objectives proposed in the Seashore's Climate Friendly Park Action Plan. This proposed action could expand the Seashore's inventory of structures and may require specialized maintenance, but these impacts could be offset by the long-term benefits of reduced energy costs and a smaller carbon footprint.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Under Alternatives 2 and 3, the Seashore would coordinate the transportation of seashore personnel to encourage the use of water-based transportation and reduce the use of vehicles on Fire Island. This proposed action could result in benefits in terms of operational costs and energy efficiency.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Under Alternatives 2 and 3, the NPS would foster cooperative stewardship to improve communication, coordination, and cooperation among those responsible for the management of Fire Island. To that end, two organizational models are proposed for consideration as ways to institute and support cooperative stewardship. They include:

- Fire Island National Seashore Advisory Commission
- Fire Island Management Partnership.

These organizational models are described in greater detail in Chapter Two. From an operations and management standpoint, each model would require the commitment of some additional Seashore staff time. The level of staff involvement could vary appreciably based on which model advances and how it is finally structured. All staff support to the Fire Island National Seashore Advisory Commission would be provided by the Seashore. In the case of the Management Partnership, the administrative structure could vary significantly as would the degree of Seashore staff involvement. The creation of a cooperative stewardship organizational structure would have a long-term impact on the Seashore's administration and could exceed its current staffing capacity in terms of FTE and required skill sets.

It is important to note that even in the absence of a formal organizational structure, a commitment to cooperative stewardship would have a similar impact on the Seashore's administration. However, the returns derived from the practice of cooperative stewardship in terms of more firmly established and collaborative approach to protecting Fire Island would be of long-term benefit relative to Seashore operations.

In that vein, under all alternatives, the Seashore would continue to work through partners, cooperators, and concessioners to advance its management objectives. The NPS would continue to participate in the Fire Island Law Enforcement, Safety, and Emergency Council (FILSEC).

It would also continue to work with the Fire Island Lighthouse Preservation Society to preserve and interpret Fire Island Light and would seek to develop a similar working relationship with a future partner at the William Floyd Estate. The Seashore would prepare a Commercial Services Plan to establish priorities and guide decision making as it pertains to seeking out partners and concessioners to operate and manage visitor facilities. These practices would enable the Seashore to manage a diversity of resources and serve a broader public while reducing direct impacts to the Seashore's operations and maintenance functions. The continuation of these practices would be of long-term benefit to the Seashore's operations and maintenance.

Under all alternatives, the NPS would take advantage of recurrent maintenance schedules to opportunistically evaluate and upgrade Seashore facilities to address any issues related to sustainability, operational efficiency, or universal accessibility. Overtime, this would enable the Seashore to achieve the objectives outlined in its Climate Friendly Parks Action Plan and reduce its carbon footprint, realize operational cost savings, and provide greater universal access. This proposed strategy would be of long-term benefit to the Seashore's operation and maintenance.

Also under all alternatives, the NPS would continue to provide some staff housing, though the number of units could vary per alternative. Fire Island National Seashore operates within one of the most expensive housing markets in the country. In 2010, the median home value in Suffolk County was \$424,000 and the median rent was \$1,461. Opportunities for affordable seasonal housing on Long Island and Fire Island are limited. This is coupled with the fact that transportation access to Fire Island can be restrictive particularly when accommodating regularly scheduled work hours. The continued provision of staff housing would make it possible to attract qualified seasonal labor and to address operational needs and efficiencies. This would be of long-term benefit to Seashore operations.

Finally, under all alternatives, the NPS would work to ensure that the Seashore's landward and marine boundaries are properly delineated and marked using physical markers, analog maps, and digital media (e.g., NOAA's digital charts and GPS). Clarifying the Seashore's boundary would better enable the park to address jurisdictional issues pertinent to a number of management initiatives and collaborative opportunities. This proposed action would be of long-term benefit to the Seashore's operation and maintenance.

## SEASHORE OPERATIONS

### IMPACTS OF MANAGEMENT ALTERNATIVE 1

*Continuation of Current Management Practices (No Action)*

#### Impact Analysis

##### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the Natural Resource Management components of Alternative 1 would be the same as those described in the "Impacts Common to All Alternatives" section.

##### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the Cultural Resource Management components of Alternative 1 would be the same as those described in the "Impacts Common to All Alternatives" section.

##### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts associated with the land-use and development components of Alternative 1 would be the same as those described in the "Impacts Common to All Alternatives" section.

##### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts associated with the Seashore experience, interpretation, education, and outreach components of Alternative 1 would be the same as those described in the "Impacts Common to All Alternatives" section.

##### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with the transportation and access components of Alternative 1 would be the same as those described in the "Impacts Common to All Alternatives" section.

##### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 1 would include those described in the "Impacts Common to All Alternatives" section. In addition, under

Alternative 1, the William Floyd Estate maintenance area, which also serves the east end of Fire Island, would continue to consist of a collection of small sheds located in the park support area of the property. In their current configuration, the sheds do not offer sufficient indoor workspace to complete many maintenance and preservation tasks. The continued reliance on this poorly configured maintenance facility results in operational inefficiencies (e.g., tasks that require an indoor space must be transported to and from the primary maintenance facility located 30 minutes away) and would continue to have an adverse impact on Seashore operations.

Also under this alternative, the Kismet Fire House, an NPS-owned structure, would be returned to the Seashore's inventory upon the expiration of its lease in 2014. The structure would then have to be maintained by the Seashore. This proposed action would have a long-term, adverse impact on Seashore operations.

The proposals described under Elements Common to All Alternatives, added to the current management responsibilities described under this alternative, would exceed the current capacity of the Seashore staff.

## Cumulative Impacts

There are no related regional plans or initiatives that are expected to have a cumulative impact on Seashore operations, maintenance, and facilities beyond what is described under this alternative.

## Conclusions

Overall, impacts associated with Alternative 1 would be highly localized, long-term, and adverse relative to Seashore operations, maintenance, and facilities. In general, most of the impacts are associated with the combined effects of proposals found under common to all alternatives and under Alternative 1 in that they would be likely to have a long-term impact on the capacity of the Seashore staff in terms of FTE, knowledge, and skills. Also under Alternative 1 the inventory of buildings that must be maintained by the Seashore grows with the rehabilitation of the Carrington House and cottage and the expiration of the lease on the Kismet Fire House. There would be no corresponding increase in operating funds to address the long term maintenance of these facilities. Finally, the continued reliance on the maintenance sheds at the William Floyd Estate would continue to impact operational efficiencies at the Seashore.

Based on this information, the beneficial impacts of Alternative 1 on the Seashore operations would not be considered significant. The adverse impacts would be considered significant because of the degree to which they are likely to exceed existing park budget and staffing constraints. They would also be unable to provide for efficient indoor work space at the William Floyd maintenance complex.

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### SEASHORE OPERATIONS

## IMPACTS OF MANAGEMENT ALTERNATIVE 2

### *Enhancing Natural Resource Values*

## Impact Analysis

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### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the natural resource management components of Alternative 2 would include those described in the "Impacts Common to All Alternatives" section. Under this alternative, the NPS would focus management efforts on the restoration of the natural landscape as feasible. The Seashore would undertake a more aggressive program to eradicate non-native species, and increase educational outreach and programming. These efforts would require the support of additional staff, cooperators, and/or volunteers and could have long-term impacts on Seashore operations.

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### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the cultural resource management components of Alternative 2 would include those described in the "Impacts Common to All Alternatives" section. At the William Floyd Estate, the cultural landscape would be rehabilitated with the possible reintroduction of some cultivated fields. There would be no noticeable impact to the Seashore's operations, maintenance and facilities.

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### ► IMPACTS RELATED TO LAND-USE AND DEVELOPMENT ACTIONS

Impacts associated with the land-use and development components of Alternative 2 would include those described in the "Impacts Common to All Alternatives" section. In addition, under this alternative, the NPS would engage in community outreach and technical



assistance in support of identifying and preserving the distinctive character of Fire Island communities. The NPS would also revise land-use regulations to address inconsistencies, provide better procedural guidance, and more clearly define the NPS role. The implementation of these proposed actions would require substantial staff involvement and would have a long-term impact on Seashore operations.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts associated with the Seashore experience, interpretation, education, and outreach components of Alternative 2 would include those described in the “Impacts Common to All Alternatives” section. In addition, under this alternative a number of visitor facilities would be removed to make way for restoration of natural areas, including structures at Talisman, Sailors Haven, and the Wilderness Visitor Center. The Wilderness Visitor Center would be replaced with a smaller -scale, multi-function structure and a covered outdoor program space would be constructed at Sailors Haven. An electronic vehicle entrance gate would be installed near the Wilderness visitor facility to manage vehicular access at the east end of Fire Island National Seashore.

Also under this alternative, lifeguards would continue to staff the ocean beaches at Sailors Haven and Watch Hill; however there would no longer be lifeguards at Talisman. The Seashore would delineate a bayside water trail along the shore of Fire Island. Seashore staff would offer periodic water trail excursions and would oversee the development and distribution of brochures, guides, and digital media regarding the trail.

Under Alternative 2, the NPS would also develop and install orientation panels at the Long Island ferry terminals. An orientation panel specific to the William Floyd Estate would also be installed at an off-site location within the Village of Mastic Beach. Also at the William Floyd Estate, existing visitor facilities would be rehabilitated and expanded to create an indoor flexible program space and an adjoining covered outdoor space.

The proposed removal of a proportion of the infrastructure and facilities on Fire Island could result in savings relative to labor, energy, transportation costs, and materials, but those savings would be somewhat offset by the smaller structures proposed in their stead and the modification of facilities proposed for the William Floyd Estate. Likewise, while Talisman would no longer

be protected as a life-guarded swimming beach, the proposed water trail would require additional staff time. In effect, these proposals would result in a long-term impact on Seashore operations.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTION

Impacts associated with the transportation and access component of Alternative 2 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 2 would be the same as those described in the “Impacts Common to All Alternatives” section.

In addition, under Alternative 2, the NPS would build upon the existing maintenance shop at the William Floyd Estate park support area to develop a consolidated preservation maintenance facility. Maintenance functions would now be consolidated in a single building that would enable indoor work to be performed on site. This maintenance facility would continue to serve the east end of Fire Island as well as the William Floyd Estate. The development of this consolidated facility would address the operational inefficiencies associated with the current maintenance scenario and would be of long-term benefit to park operations, maintenance, and facilities.

Also under Alternative 2, the NPS would reduce the number of available Seashore housing units on Fire Island. In general, the rents charged to park tenants cover the cost of maintenance and utilities so this would not necessarily result in a noticeable impact to the Seashore’s maintenance costs. However, the reduction in available housing units could have an impact on the Seashore’s ability to attract and retain qualified seasonal and year-round staff which could have a long-term adverse impact on Seashore operations.

Under this alternative, the NPS would narrow the number of services provided by private concessioners on Fire Island and would assume responsibility for the management of the campground at Watch Hill. The NPS would expand the Seashore staffing to meet operational needs in areas of resource management, educational outreach, planning and community outreach, and visitor and resource protection. The Seashore would also work to expand its corps of volunteers to perform a wide

variety of functions. Within the context of Alternative 2, these proposed actions would enable the Seashore to improve the delivery of services, retain and reinvest the proceeds derived from campground operations, and provide the level of staffing necessary to meet the requirements of the plan. These proposals would largely be of long-term benefit to Seashore operations.

## Cumulative Impacts

There are no related regional plans or initiatives that are expected to have a cumulative impact on Seashore operations, maintenance, and facilities beyond what is described under this alternative.

## Conclusions

Overall, operations impacts associated with Alternative 2 would largely be localized and would have both beneficial and adverse impacts on Seashore operations, maintenance, and facilities. Most of the adverse impacts related to Alternative 2 would be associated with changes to staffing composition and workloads. In terms of benefits, the improvements to the maintenance facility at the William Floyd Estate and the proposed additions to the Seashore staff would address operational needs and improve operational efficiencies. As noted previously, there would be some benefits to Seashore operations, maintenance, and facilities associated with Elements Common to All Alternatives including the proposed installation of solar shade structures at the Patchogue Ferry Terminal parking area, and the coordination of personnel transportation to and from Fire Island.

Based on this information, the beneficial impacts of Alternative 2 on the Seashore operations would be considered significant and would result in expanded use of partners to achieve objectives, and facility improvements making them more ecologically sensitive and sustainable. In the case of improvements to the William Floyd Estate maintenance facility, maintenance activities requiring indoor workspace could be carried out with much greater efficiency. The adverse impacts would be considered significant as they are likely to exceed existing park budget and staffing constraints to a greater degree than under Alternative 1.

### SEASHORE OPERATIONS

## IMPACTS OF MANAGEMENT ALTERNATIVE 3

*Recognize the Relationship between Human Use and Nature (Preferred Alternative)*

## Impact Analysis

### ► IMPACTS RELATED TO NATURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the natural resource management components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section.

### ► IMPACTS RELATED TO CULTURAL RESOURCE MANAGEMENT ACTIONS

Impacts associated with the cultural resource management components of Alternative 3 would include those described in the “Impacts Common to All Alternatives” section. Also under Alternative 3, the NPS would expand the existing curatorial storage facility to address workspace and storage needs for the Seashore’s collections. This would nearly double the size of the existing facility, but the installation of energy efficient lighting and heating would mitigate the impact to the Seashore’s budget and operations.

### ► IMPACTS RELATED TO LAND USE AND DEVELOPMENT ACTIONS

Impacts associated with the land use and development components of Alternative 3 would include those described in the “Impacts Common to All Alternatives” section. As in Alternative 2, under this alternative, the NPS would engage in community outreach and technical assistance in support of identifying and preserving the distinctive character of Fire Island communities. The NPS would also revise land-use regulations to address inconsistencies, provide better procedural guidance, and more clearly define the NPS role. The Seashore would also offer trainings for its management partners and relevant local boards regarding the application of the Secretary’s zoning standards. The implementation of these proposed actions would require substantial staff involvement and would have a long-term minor impact on Seashore operations.

#### ► IMPACTS RELATED TO SEASHORE EXPERIENCE ACTIONS

Impacts associated with the Seashore experience, interpretation, education, and outreach components of Alternative 3 would include those described in the “Impacts Common to All Alternatives” section and similar to many of those identified under Alternative 1. In addition, under this alternative, the NPS would expand its programming during the shoulder season to include dockside programming at the Patchogue Ferry Terminal and the reintroduction of a residential environmental education program that would make use of existing park housing and facilities. The residential environmental education program would be operated by a cooperator. These proposed actions would require additional staff involvement and would have a long-term impact on Seashore operations.

Similar to Alternative 2, the NPS would develop covered outdoor program areas at the Patchogue Ferry Terminal and at Sailors Haven. The NPS would also develop and install an orientation panel specific to the William Floyd Estate at an off-site location within the Village of Mastic Beach. Also at the William Floyd Estate, existing visitor facilities would be rehabilitated and expanded to create an indoor flexible program space and an adjoining covered outdoor space. These proposed structures would be in addition to the Seashore’s existing inventory and would require additional time, labor and materials to maintain and would have a long-term impact on Seashore operations, maintenance, and facilities.

Also similar to Alternative 2, the NPS would develop a water trail along the bayside of Fire Island. Under this alternative, the trail would be managed by a concessioner or cooperator that would offer water trail excursions and develop related brochures, guides, and digital media. Under this alternative, this proposal would not have a noticeable impact on Seashore operations.

#### ► IMPACTS RELATED TO TRANSPORTATION AND ACCESS ACTIONS

Impacts associated with the transportation and access components of Alternative 3 would be the same as those described in the “Impacts Common to All Alternatives” section.

#### ► IMPACTS RELATED TO SEASHORE OPERATIONS ACTIONS

Impacts associated with the Seashore operations, maintenance, and facilities components of Alternative 3 would include those described in the “Impacts Common to All Alternatives” section and would also include those described under Alternative 1.

Also under this alternative, the NPS would expand the Seashore staffing to meet operational needs in areas of resource management, and planning and community outreach. The Seashore would also work to expand its corps of volunteers to perform a wide variety of functions. Under Alternative 3, these proposed actions would enable the Seashore to provide the level of staffing necessary to meet the requirements of the plan and would largely be of long-term benefit to Seashore operations.

As in Alternative 2, the NPS would build upon the existing maintenance shop at the William Floyd Estate maintenance area to develop a consolidated preservation maintenance facility. Maintenance functions would now be consolidated in a single building that would enable indoor work to be performed on site. This maintenance facility would continue to serve the east end of Fire Island as well as the Floyd Estate. The development of this consolidated facility would address the operational inefficiencies associated with the current maintenance scenario and would be of long-term benefit to park operations, maintenance, and facilities.

### Cumulative Impacts

There are no related regional plans or initiatives that are expected to have a cumulative impact on Seashore operations, maintenance, and facilities beyond what is described under this alternative.

### Conclusions

Overall, the impacts on Seashore operations associated with Alternative 3 would range from long-term and beneficial to long-term and adverse. Most of the impacts related to Alternative 3 would be associated with changes to staffing composition and workloads. Benefits would be realized from the improvements to the maintenance facility at the William Floyd Estate, the reconfiguration of Seashore housing, and the proposed additions to the Seashore staff would address operational needs and improve operational efficiencies, as well as the proposed installation of solar shade structures at the Patchogue Ferry Terminal parking area, and the coordination of personnel transportation to and from Fire Island.

Based on this information, the beneficial impacts of Alternative 3 on the Seashore operations would be similar to Alternative 2 and would be considered significant. Proposed actions would result in expanded use of partners to achieve objectives, and facility improvements that make them more ecologically sensitive and sustainable. In the case of improvements to the William Floyd Estate maintenance facility, maintenance activities requiring indoor workspace could be carried out with much greater efficiency. The adverse impacts would be considered significant as they are likely to exceed existing park budget and staffing constraints to a slightly greater degree than under Alternative 1.

## UNAVOIDABLE ADVERSE IMPACTS

Unavoidable adverse impacts are defined as moderate to major impacts that cannot be fully mitigated or avoided.

### Management Alternative 1

Under Alternative 1 (No Action), existing conditions may have resulted in unavoidable adverse impacts. The location of the Seashore's headquarters and primary maintenance facility on the edge of the Patchogue River would continue to impact the floodplain, as would most facilities on Fire Island. On non-federal lands within the Seashore boundary, cultural resources would remain undocumented and unprotected. Under this alternative, these resources could be exposed to unavoidable adverse impacts associated with natural processes including climate change and sea-level rise, as well as land use and development actions.

### Management Alternative 2

Under Alternative 2, although the number of facilities on Fire Island would be reduced, the remaining facilities would continue to impact the floodplain resulting in an unavoidable adverse impact. The location of the Seashore's headquarters and primary maintenance facility on the edge of the Patchogue River would also continue to impact the floodplain.

### Management Alternative 3

Under Alternative 3, existing conditions may have resulted in unavoidable adverse impacts. The location of the Seashore's headquarters and primary maintenance facility on the edge of the Patchogue River would continue to impact the floodplain, as would most facilities on Fire Island.

## IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES

Irreversible commitments of resources are actions that result in the loss of resources that cannot be reversed. Irretrievable commitments are actions that result in the loss of resources but only for a limited period of time.

### Management Alternative 1

Under Alternative 1 no actions would be taken that would result in the consumption of nonrenewable natural resources or in the use of renewable resources that would preclude other uses for a period of time. Thus, there would be no irreversible or irretrievable commitments of natural resources in the park by the NPS.

No actions would be taken that would result in irreversible or irretrievable effects on historic properties. The park would continue to conduct appropriate cultural resource management in accordance with the Secretary's Standards and NPS policies.

### Management Alternative 2

Under Alternative 2, no actions would be taken as a result of this alternative that would result in the consumption of nonrenewable natural resources or in the use of renewable resources that would preclude other uses for a period of time. Thus, there would be no irreversible or irretrievable commitments of natural resources in the park by the National Park Service.

No actions would be taken that would result in irreversible or irretrievable effects on historic properties. The park would continue to conduct appropriate cultural resource management in accordance with the Secretary's Standards and NPS policies.

### Management Alternative 3

Under Alternative 3, no actions would be taken that would result in the consumption of nonrenewable natural resources or in the use of renewable resources that would preclude other uses for a period of time. Thus, there would be no irreversible or irretrievable commitments of natural resources in the park by the NPS.

No actions would be taken that would result in irreversible or irretrievable effects on historic properties. The park would continue to conduct appropriate cultural resource management in accordance with the Secretary's Standards and NPS policies.