National Park Service
U.S. Department of the Interior
Cape Hatteras National Seashore
Bodie Island District

Construct Accessible Hunt Blind/Wildlife Viewing Platform

Environmental Assessment

December 2018

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TABLE OF CONTENTS

TABLE OF CONTENTS i

CHAPTER 1: PURPOSE AND NEED 1

Proposal 1

Need for the Proposal 1

Impact Topics Retained for Further Analysis 3

Impact Topics Dismissed from Further Analysis 3

CHAPTER 2: ALTERNATIVES 10

Alternatives Carried Forward 10

Alternative A - No Action Alternative 10

Alternative B – Construct a New Accessible Hunt Blind and Wildlife-Viewing Platform and Boardwalk (NPS Preferred) 10

Alternatives Considered and Dismissed 14

Best Management Practices for Action Alternative 15

CHAPTER 3: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES 19

Wetlands and Floodplains 20

Affected Environment 20

Impacts of Alternative A—No Action 23

Impacts of Alternative B— (NPS Preferred) 23

Visitor Use and Experience 24

Affected Environment 24

Impacts of Alternative A—No Action 27

Impacts of Alternative B— (NPS Preferred) 27

CHAPTER 4: CONSULTATION AND COORDINATION 30

List of Agencies and Persons Contacted 30

REFERENCES 31

Appendix A: Floodplains Statement of Findings 1

Figure 1: Location of project area within Cape Hatteras National Seashore 2

Figure 2: Alternative B Conceptual Diagram 11

Figure 3: Boardwalk Conceptual Section View 12

Figure 4: Considered but Dismissed Locations for 15

Figure 5: Emergent Freshwater Marsh within Project Area 21

Figure 6: Monthly Recreation Visitors to Cape Hatteras National Seashore 25

Figure 7: Annual Number Hunters to Bodie Island Hunt Area 26

Table 1: Amount of total disturbance for Alternative B 13
Table 2: Suggestion and alternative locations dismissed from further consideration . 14

CHAPTER 1: PURPOSE AND NEED

Proposal

Cape Hatteras National Seashore (Seashore) is proposing to construct a new accessible waterfowl hunt blind/wildlife viewing platform and boardwalk for new visitor experiences and additional access the ponds at Bodie Island (Figure 1). This project would provide two different visitor use opportunities; 1) it would provide an ABA (Architectural Barrier Act) accessible hunting blind for waterfowl hunting on Bodie Island in the designated hunt area during the waterfowl season and 2) it would provide wildlife viewing, educational and photography opportunities from this new structure for the other half of the year. This project would meet the agency mission of providing outdoor recreation and enjoyment for the public. It will also address the initiative of Secretary Zinke to expand outdoor experiences on parklands, including hunting.

The construction of this new boardwalk and platform would be developed and constructed in collaboration with NPS partners, within an authorized waterfowl hunting area on Bodie Island.

Need for the Proposal

This project was first proposed by park managers in 2016 to identify new actions that would inspire and connect visitors to the Seashore for the next century. This project met the Call to Action theme Connecting People to Parks as it would develop and nurture lifelong connections between the public and parks.

Federal statutory law, Title 36 of the Code of Federal Regulations, Section 7.58, authorizes waterfowl hunting within the Seashore in three specific locations: (i) Ocracoke Island (except the Village); (ii) 500 acres on Hatteras Island and; and (iii) 1,500 acres on Bodie Island. This law also states permanent blinds must be constructed exclusively by the Seashore and would only be built on Bodie Island (36 CFR Section 7.58).

This project would provide an accessible hunt blind that meets the guidelines for the Architectural Barrier Act (ABA) of 1968 and Section 504 of the Rehabilitation Act of 1973 (P.L. 93-112). ABA requires that federal agencies are responsible for ensuring compliance with the law, the Uniform Federal Accessibility Standards, when funding the design, construction, alteration, or leasing of facilities (ABA 1968). Section 504 requires program accessibility in all services provided with Federal dollars. This Act requires the NPS to do everything feasible to enable visitors with disabilities to receive as close to the same benefits as those received by other visitors. This also means the Seashore's obligation extends to individuals with mobility impairments and includes visual impairments, hearing impairments, and cognitive impairments, as well.

Figure 1: Location of project area within Cape Hatteras National Seashore

Secretarial Order 3356, signed September 15, 2017, directs bureaus within the Department of the Interior, to expand and improve access for hunting, fishing and outdoor recreation on Bureau of Land Management (BLM), United States Fish and Wildlife Service (USFWS) and National Park Service (NPS) land. This secretarial order also directs these agencies to improve wildlife habitat. Constructing a new accessible hunt blind/wildlife viewing platform and boardwalk the Seashore would work towards the goals described in this Secretarial Order.

The National Park Service Act of 1916 established the NPS, an agency of the U.S. Department of the Interior. The act declared the fundamental purpose of the national park system as to conserve the scenery, the natural and historic objects, and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations (NPS 2006). In order to minimize impacts, the Seashore must consider the placement and construction of a new accessible hunt blind/wildlife viewing platform and boardwalk to and evaluate the resources to minimize impacts.

The proposed area for constructing an accessible hunt blind and boardwalk is within a designated State Heritage Natural Area called the Bodie Island Ponds, Marshes, and Dunes. In 2014, 2,320 acres of Bodie Island, along with sound side lands, was recognized by the State of North Carolina to possess outstanding natural resources, must be preserved, and protected (NCDENR 2014). Creating an accessible boardwalk into an outstanding marsh habitat, the Seashore would provide park visitors an opportunity to view the wildlife and vegetation in this distinctive habitat. By developing an EA for constructing a new boardwalk for an accessible hunt blind, the NPS analyzing project actions with the intent to avoid sensitive ecological features in determining a preferred alternative.

Summary of Project Objectives

- Construct an ABA accessible hunt blind with a location that would avoid or minimize impacts to sensitive ecological features.
- Enhance the Seashore's visitor opportunities by providing an ABA accessible hunt blind and wildlife-viewing platform within a wetland environment for all visitors.
- Work towards providing permanent hunt blinds within the Seashore's federally authorized hunting area

Impact Topics Retained for Further Analysis

The following topics are carried forward for further analysis in this EA:

- Floodplains and Wetlands
- Visitor Use and Experience

Impact Topics Dismissed from Further Analysis

The following topics are dismissed from further analysis in this EA for the reasons provided below. Unless otherwise noted, no impacts are associated under the no action alternative.

Soils

In accordance with NPS 2006 *Management Policies*, parks must strive to understand and preserve soil resources and to prevent or minimize accelerated erosion or other impacts that degrade soil functions and contribution to park natural systems (NPS 2006).

The majority of the soils within the project sites are Carteret, a hydric soil consisting of sandy fluviomarine deposits and eolian sands (NRCS 2018). These locations are at a 0-2% slope and can be frequently flooded. The water table depth within the project sites are high and are about 0-12 inches throughout the project areas. The sites also contain a hydric Duckston fine sand that can be occasionally flooded. In the proposed action, the site where a parking area would be constructed contains fill material from the construction of Highway 12 and a pull-off area and impacts to soils here would be negligible. The soils found within the work zone and area where the pilings would be installed would be compressed during construction activities temporarily from the placement of timber matting and use of equipment. However, timber matting would reduce rutting and long-term impacts to soils from heavy equipment. Permanent impacts to soils would be minor due to the small scale of the proposed action, approximately 30 ft^2 (0.0007 acres) due to the installation of 80-120 6"x6" pilings and 1,500 ft^2 (.0344 acres) from the construction of the parking area. Bodie Island district consists of 4,667 acres of land and this project would only affect 0.0351 acres of soil within this district. Although project actions would have negative and long-term impacts to the soils of the site, overall impacts would be less than minor due to the small scale of the project within the Seashore. For these reasons, soils were dismissed from further analysis in this document.

Vegetation

According to NPS's 2006 *Management Policies*, NPS strives to maintain all components and processes of naturally evolving park unit ecosystems, including the natural abundance, diversity and ecological integrity of plants (NPS 2006).

Vegetation within the project area is within a tidal freshwater marsh community and is dominated by large expanses of narrowleaf cattail (*Typha angustifolia*). Marsh fern (*Thelypteris palustris*), saltmeadow cordgrass, (*Spartina patens*), big cordgrass (*Spartina cynosuroides*), black needle-rush (*Juncus roemerianus*), and other sedges are abundant as well as native herbs and woody vines typical of this community. Patches of exotic *Phragmites australis* are present, though not extensive. There are some evergreen shrubs including yaupon holly (*Ilex vomitoria*), wax myrtle (*Morella cerifera*), and red bay (*Persea palustris*) on the site as well.

The construction of a boardwalk and parking area would have adverse but temporary impacts to the vegetation within the project site. Vegetation would be manually cut to ground level within the project work zone. The boardwalk would be designed to reduce

the removal of any herbaceous shrubs as much as reasonably possible. Timber matting would be placed over the vegetation to reduce uprooting vegetation and rutting on site. Most impacts to the native vegetation within the site would be temporary with the exception of the parking area. This area would permanently remove grasses within a 1,500 ft^2 (.0344 acres) area but much of this area has been previously impacted by the construction of Highway 12 and in some areas, the pull off within the site. This project would create an opportunity to identify, treat and monitor the patches of exotic *Phragmites* since access to the pond area would be improved. Removal of *Phragmites* would enhance the natural vegetation within the project site and be a long-term benefit to reducing exotics within the project site. Bodie Island district consists of 4,667 acres of land and this project would only affect 0.0622 acres of vegetation (including shading impacts from the elevated boardwalk) within this district. Although project actions would have both negative and positive long-term impacts within this vegetative community, overall impacts would be minor due to the small scale of the project within the Seashore. For these reasons, vegetation was dismissed from further analysis in this document.

State Listed and Special Status Plant Species

The project area lies within the North Carolina registered natural area called Bodie Island Ponds, Marshes and Dunes. In 2014, Cape Hatteras National Seashore and the NC Natural Heritage Program signed an agreement as a mutual understanding to protect outstanding examples of natural diversity occurring in the state and preserve unique and unusual natural features. The agreement recommended that any new trails, access boardwalks, and similar facilities with low impact should be sited to avoid the most sensitive ecological features. A Natural Heritage ecologist completed a site survey in June 2018 to identify state listed or special status species that may be present within the project area. The site contained two state rare species, a patch of beaked spikerush (*Eleocharis rostellata)* is present as well as a *Ludwigia* species that may be *Ludwigia alata.* Since this species did not have flowers, it was difficult to be sure. The ecologist recommended that the path of the boardwalk should be rerouted around the rare plant patches with only small changes to the original route (Schafele 2018). Shifting the boardwalk slightly southward would also reduce resource impacts, bringing its footprint into the *Phragmites* patch rather than being in natural marsh vegetation. Since the state rare species could be avoided in the design and construction of the boardwalk, state listed and special status plant species was dismissed from further analysis in this document.

Archeological Resources

The proposed undertaking takes place within some of the existing road shoulder which should consist entirely of fill brought in to construct the road. The proposed parking area would be on a land mass composed of road fill, and the boardwalk would extend out into estuarine marshland. The likelihood of affecting buried cultural resources is considered low.

In accordance with Sections 110 and 106 of the National Historic Preservation Act, the Archeological Investigations and Compliance division of the NPS Southeast Archeological Center (SEAC) in November 2017 at the proposed site conducted archeological testing and a no adverse effect determination was submitted to the State Historic Preservation Office (SHPO) on September 5, 2018. SHPO concurred with the Seashore's determination on October 4, 2018.

The Seashore's Cultural Resources staff would be notified and additional consultation with the State Historic Preservation Office (SHPO) would occur in accordance with federal legislation, regulations, and NPS policy if cultural resources were discovered during construction activities.

Historic Structures

Section 106 of the NHPA of 1966, as amended (54 USC 306108, et seq.) and its implementing regulations under 36 CFR 800 require all federal agencies to consider the effects of federal undertakings on historic properties, including historic structures eligible for or listed in the National Register of Historic Places. In order for a structure to be listed in the National Register, it must be associated with an important historic event, person(s), or embody distinctive characteristics or qualities of workmanship. Cultural resource investigations found no historic structures within the area of potential effect eligible for listing on the National Register (NPS 1985; Prentice, 2006).

Cultural Landscapes

According to the NPS Directors Order 28: *Cultural Resource Management Guideline (*NPS 1998) , a cultural landscape is a reflection of human adaptation and use of natural resources, and is often expressed in the way land is organized and divided as patterns of settlement, land use, systems of circulation, and in the types of structures that are built. A cultural landscape inventory has not been conducted for the project area; however, as previously described, there are no historic structures in the vicinity. Due to the absence of historic structures, which limit the potential for a landscape, cultural landscapes were dismissed from further analysis in this document.

Ethnographic Resources

The NPS defines ethnographic resources as any "site, subsistence, or other significance in the cultural system of a group traditionally associated with it" (NPS 1998). According to NPS Cultural resource staff and the general management plan (NPS 1984) to date no ethnographic resources within the Seashore have been determined eligible for listing in the National Register.

Soundscapes

Natural sounds (e.g. water, wind blowing through trees, birds calling) predominate the Seashore, where visitors have opportunities throughout most of the Seashore to

experience natural sounds in an unimpaired condition. The sounds of civilization (mechanical and other human-created sounds) are generally confined to developed areas of the Seashore. Within the project area, traffic sounds of vehicles from the adjacent Highway 12 corridor interfere with the natural sounds of the Seashore. Although this project would cause temporary and intermittent additional negative impacts to natural soundscapes during construction, these sounds would not be much more than those already experienced in the project area. Periodic use (i.e. hourly) of various types of equipment (e.g. backhoes, trucks, power equipment, etc.) over the construction period would produce sounds that are comparatively isolated to those produced from visitor developed areas within the Seashore, and would make a minor contribution to the Seashore's overall soundscape profile. Any increase in construction noise would cease once construction or maintenance activities are complete; therefore, no long-term significant impact to the soundscape would occur under Alternatives discussed in this document. Occasionally, minor negative sound impacts would occur from firearms discharge (gunshots) from hunting within the project area, however this is already occurring in 20 adjacent hunting blinds so this noise would be negligible in the context of existing gunfire noise.

Viewshed

An elevated boardwalk, larger parking area and signage would be visible from Highway 12. During summer months when cattail vegetation is high (~3-8 feet tall) the boardwalk may be mostly obscured. The platform would be designed to be offset from the trailhead as to reduce the visual impacts of the facility from the parking area and sit over the water. During the winter months when the dead foliage is still present, the boardwalk would be more visible to visitors driving down the highway. The boardwalk and platform would have a long-term adverse impact on the natural viewshed but due the size of the project, the fairly low profile and design, overall impacts would not be substantial. To offset the minor adverse impacts of the boardwalk, parking area and signage, then invasive exotic plant species *Phragmites australis*, which is negatively impacting the natural ecosystems of the wetlands in this area, would be mapped, treated and monitored in order to reduce this invasive species and enhance the natural viewshed of this area. The Bodie Island district has very few facilities that impact the natural viewshed. Majority of the facilities are historic structures, which enhance the view within this district, such as the Bodie Island Lighthouse, Double Keepers Quarters, Lifesaving Station and US Coast Guard Station. A low profile boardwalk that occupies 1,180 ft^2 would have barely measureable effects to the natural viewshed due to the small scale of the project. Therefore, the topic of viewshed was dismissed from further analysis in this document.

Wildlife including Federal and State Species of Special Concern

Common wildlife within the project area includes white-tailed deer, common grey fox, red fox, mink, raccoon, river otter, feral cat, marsh rabbit, Virginia opossum, marsh rice rat, nutria; bird species such as Cooper's hawk, harrier, bald eagle, osprey; wading

birds, various duck species that are hunted included scoters, eiders, long-tailed ducks, mallards, wood ducks, scaup, redheads, pintail, canvasback, mergansers, black duck, mottled duck and fulvous whistling duck; various geese including snow, blue, Ross' geese, Canada geese and white-fronted geese and tundra swan; amphibians such as salamanders, frogs and toads can be found within the project area (NPS 2018). Wildlife species that may be present during project activities may be temporarily impacted from mechanized sounds and slight habitat modifications and may avoid the area. However, upon the completion of the project, these species would most likely return to the project area and impacts to these species would not be measurable. The project area is already within a federally authorized hunt area and hunting occurs annually near this site. Effects to non- game species from hunting would not be appreciatively greater than current actions if project actions were to be implemented.

An official federal species list (consultation code 04EN2000-2018-SLI-0364) was obtained from the U.S. Fish and Wildlife (USFWS) Information for Planning and Conservation (IpaC) website (https://ecos.fws.gov/ipac/) on June 28, 2018. The list identified 14 threatened, endangered, or candidate species and 27 migratory bird that warrant special attention due their probability to be present within the project area. There were no critical habitats identified in the project area.

Habitat for the federally threatened piping plover (*Charadrius melodus)*, red knot (*Calidris canutus rufa)*, roseate tern *(Sterna dougallii dougallii)*, green (*Chelonia mydas)* and loggerhead (*Caretta caretta*) sea turtles and seabeach amaranth *(Amaranthus pumilus)*; the federally endangered West Indian manatee (*Trichechus manatus)*, Hawksbill (*Eretmochelys imbricate*), Kemp's Ridley (*Lepidochelys kempii*) and Leatherback (*Dermochelys coriacea*) sea turtles and experimental red wolf (*Canis rufus*), do not occur within the project area and project actions would have no effect on these special species of concern.

The federally endangered Red-cockaded woodpecker (*Picoides borealis*) occurs in Dare County, however, there are no records for this species on the Outer Banks. The proposed project would likely have no effect on the Red-cockaded woodpecker.

There are recent element occurrences for the federally threatened northern long-eared Bat (*Myotis septentrionalis)* in Dare County within Alligator River National Wildlife Refuge. However, there are no known hibernation or roost sites in Dare County. The proposed project would have no effect on the northern long-eared bat.

Only six out of the 27 migratory birds species listed on the USFWS Birds of Conservation Concern list for the project area have been found within the project area based on data retrieved from eBird, an online database of bird observations (eBird. 2017). The following species may be present during construction activities: Clapper rail (*Rallus crepitans*), King rail (*Rallus elegans*), Prairie Warbler (*Setephaga discolor*),

Prothonotary Warbler (*Protonotaria citrea*), Seaside Sparrow (*Ammodramus marimus*), Willet (*Tringa semipalmata*) breeding seasons range from April 1 through October 31 and may be adversely impacted during this period. Best management practices (page 20) state that construction should occur between November 1 and April 1 to reduce or eliminate impacts to these migratory species during the periods when these species are most vulnerable. Bird species that may be present during project activities may be temporarily adversely impacted from mechanized sounds and slight habitat modifications. However, upon the completion of the project, these bird species most likely would return to the pond near the project area where the vegetation has been restored and impacts to these species would not be measurable. Because of all of these determinations, wildlife including federal and state species of special concern was dismissed from further analysis in this document.

Water Quality

National Park Service policies require protection of water quality consistent with the Clean Water Act (NPS 2006). The purpose of the Clean Water Act is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." This act also provides an enforcement procedure for water pollution abatement and requires conformance to a permit required under Section 404 for actions that may result in discharge of dredged or fill material into a tributary, a wetland, or to an associated water source for a navigable river. Section 4.6 of 2006 *Management Policies* addresses water resource management including the protection of surface waters and ground water, water rights, water quality, and watershed and stream processes. Project actions would minimally affect water resources within the project area. The boardwalk would be constructed at an elevation 3 feet above the ground and water surface and temporary matting would be placed in the construction zone. The Army Corp of Engineers (ACOE) was consulted to determine if a Section 404 permit would be required for this project. They determined that project actions are not considered an impact to jurisdictional wetlands and therefore this project would not require a 404 permit (Pelletier 2018).

Although the project is within an estuarine marine wetland, project actions would have negligible effects to ground water levels and water quality from the construction of a new accessible boardwalk due its small footprint and the requirement of best management practices (page 20). Project actions would have an appreciable effect to wetlands and floodplains are fully analyzed in Chapter 3.

CHAPTER 2: ALTERNATIVES

Two alternatives, one action and the no action, are carried forward for evaluation in this EA. Several suggestions and alternate designs were also considered and dismissed (see the Alternatives Considered and Dismissed section).

Alternatives Carried Forward

Alternative A - No Action Alternative

The no-action alternative is analyzed in the NEPA process for the review and comparison of feasible alternatives to the existing baseline conditions. Under the no-action alternative, the Seashore would not construct an ABA accessible hunt blind/ wildlife-viewing platform and boardwalk within the federally authorized hunting area on Bodie Island. The Seashore would continue with current management and no changes would occur to the proposed project area. Hunting blinds within the federally authorized hunting area would continue to be constructed and be used by hunters during hunting season as consistent with CFR. However these, blinds would not be ABA accessible or provide easy access to wildlife watchers or the general public.

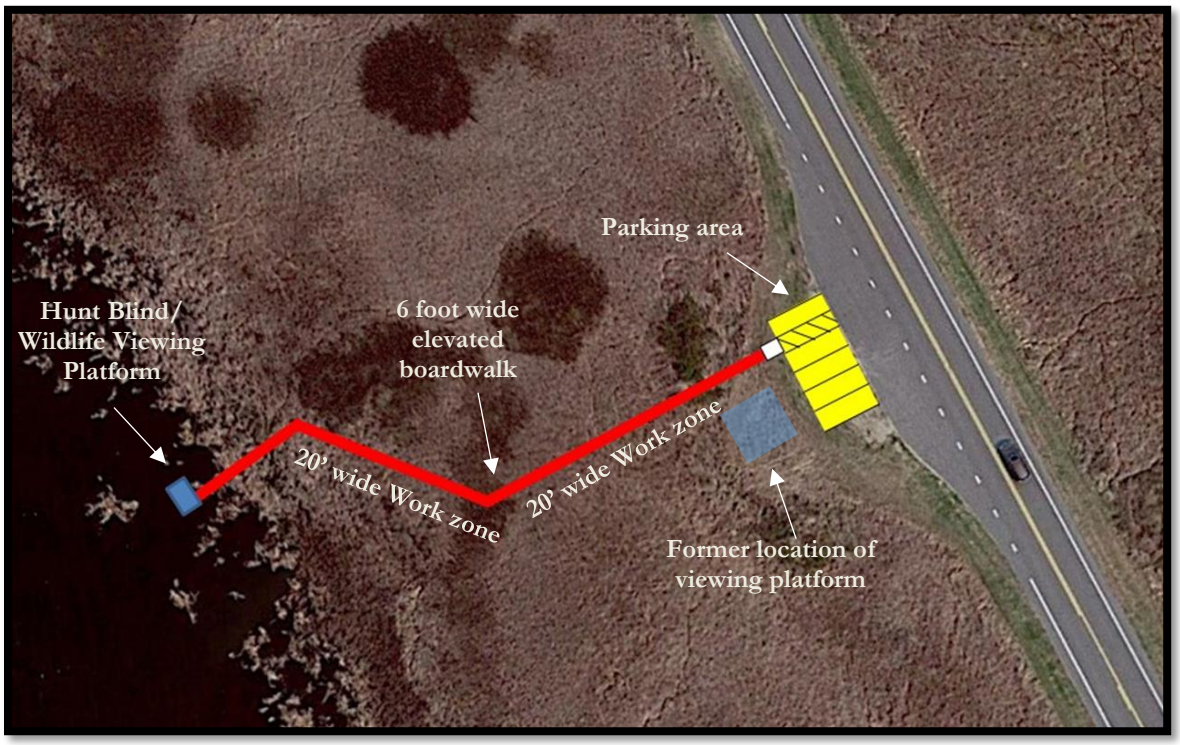
A permanent hunt blind as required would not be constructed in the manner proposed in this alternative with an accessible boardwalk and parking area. Accessibility compliance would not be met as required by Section 504 Rehabilitation Act and the Architectural Barriers Act for a waterfowl hunt blind under this alternative. An easily accessible wildlife watching platform would not be constructed for the general public to access and opportunities for in-marsh wildlife observation and photography would be limited to a site at the Bodie Island lighthouse.

Alternative B – Construct a New Accessible Hunt Blind and Wildlife-Viewing Platform and Boardwalk (NPS Preferred)

The proposed action under Alternative B would construct a new 250-265 foot long accessible boardwalk from a paved pull-off area along Highway 12 to open water (Figure 2). This proposed action would be located within the federally authorized hunt area on Bodie Island. The Seashore would provide another hunt blind under the Seashore's federal requirement. This site was selected as the preferred alternative this area was near the location where a former wildlife viewing platform had been previously constructed and therefore the area had been previously disturbed. The viewing platform was removed several years ago after many storms damaged the facility. Currently the site has a paved pull-off area and the grass is regularly mowed around the pull off to maintain the road shoulders along the highway.

A concrete parking area (25 feet x 60 feet) would be constructed in the upland area adjacent to the current pull- off area to accommodate five vehicles, including one accessible parking space.

Figure 2: Alternative B Conceptual Diagram

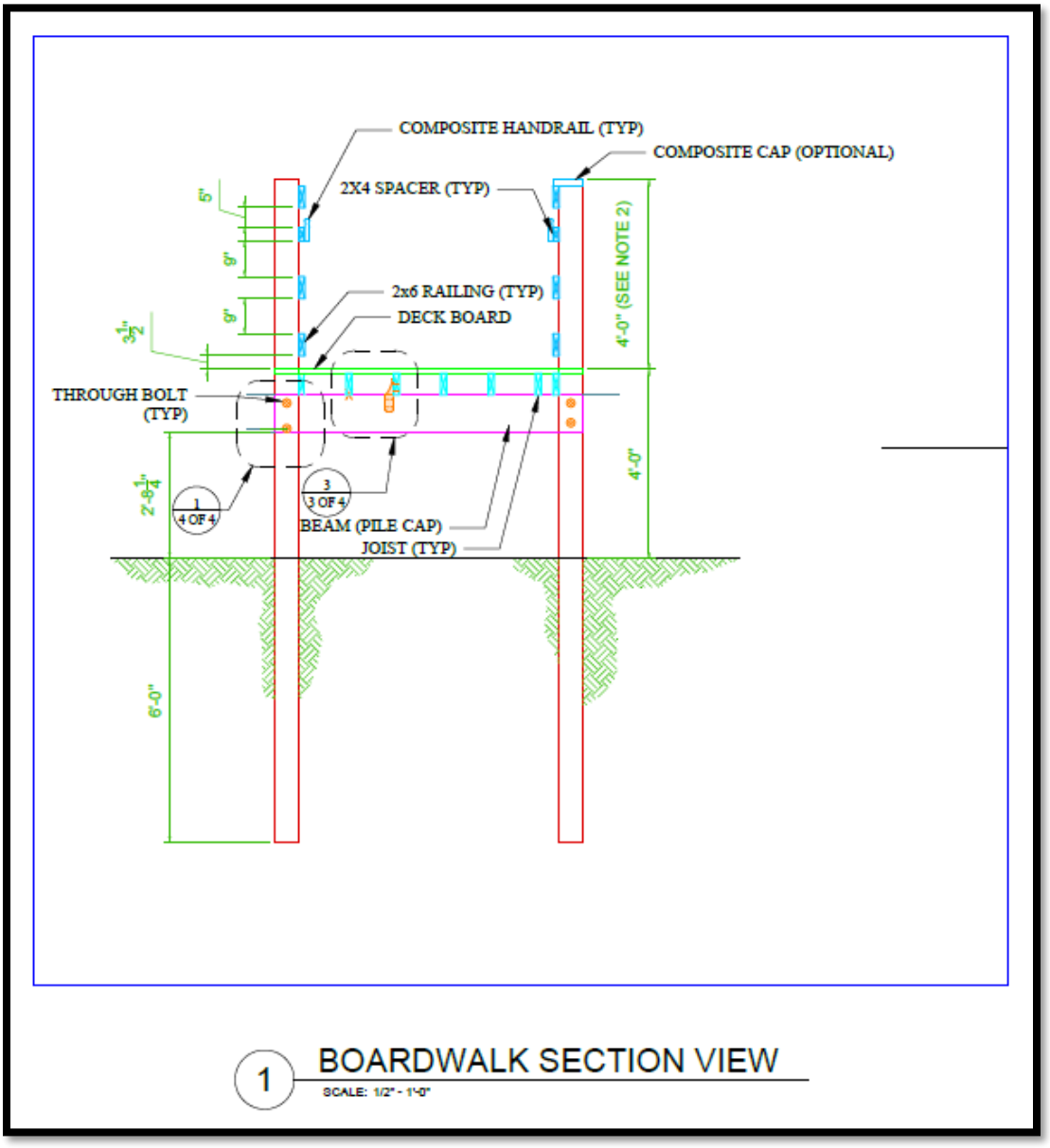


The elevated walkway, or boardwalk, would be composed of timber, composite or concrete decking, and support joists supported by 6"x 6" piles/piers. The boardwalk would be 72 inches in width for the entire length to accommodate various sized groups and meet minimum accessible passing requirements (Figure 3). The pilings would be driven or jetted six feet into the ground with at least four feet remaining above ground and water for the construction of the walkway. Driven/jetted actions would be performed by a backhoe or excavator with a compressor and water jet.

The pilings would be the foundation upon which the boardwalk would be constructed. The elevation of the boardwalk would be approximately three feet above the ground and water and constructed to allow future floodwaters to raise and lower through the structure. Support brackets would be added to the cut pilings for the beams and the timber boardwalk would be built upon these beams. The boardwalk would end at the pond where the eight foot by 14 foot covered platform would be constructed eight to ten feet from the edge of the vegetation and approximately 3 feet above the open water (Figure 2).

The platform would be open to allow for a 180-degree view of the open pond and marsh area. A 20-foot wide construction corridor would be created temporarily along one side of the boardwalk only to allow for a work zone during the 90-120 day construction period. The number of passes would be strategically limited to as few as possible.

Figure 3: Boardwalk Conceptual Section View



Benches would be installed inside the covered platform along with stairs to access to the water from the platform. Interpretive wayside signs/ panels would also be installed near the parking area and on the completed boardwalk or covered platform.

Construction of the boardwalk, platform and parking area would be performed in the winter months. Prior to construction activities, the majority of the site would be cleared

with weed eaters or other appropriate power tool to cut back the tall grasses and small shrubs to identify the limits of the work zone. The minimal removal of a couple of woody shrubs may be required depending on the final design of the boardwalk. State rare plant species are within the project area and would be avoided to the extent practicable. Staging of material and equipment would be within the site where the parking area is proposed to go and along the previously mowed areas. Ingress and egress for the construction of the boardwalk would only occur on one side of the boardwalk within the 20 foot wide work zone.

Timber mats, or other suitable materials would be placed directly on the herbaceous vegetation to adequately support the expected construction vehicle loads within the work zone. At the conclusion of the project, the materials used to construct the work zone (e.g., timber mats) would be removed to allow the area to naturally re-seed and return to pre-construction conditions.

Total amount of disturbance from the temporary construction of the facilities and the permanent installation of the boardwalk, platform and parking area are described in the following table:

Table 1: Amount of total disturbance for Alternative B

Facility	Square Feet	Acres	Type of disturbance
Pilings	30	.0007	Permanent
Boardwalk (shading)	1,180	.0271	Permanent
Parking Area	1,500	.0344	Permanent
Construction Work Zone	10,863	.2493	Temporary

During the hunting season(s), the boardwalk and hunt blind would be available to permitted hunters Monday through Saturday. The boardwalk would have a chain or gate installed that would only be accessible to permitted hunters. Since North Carolina does not allow waterfowl hunting on Sundays during the hunt season(s), the boardwalk and hunt blind would be open and available to all visitors for wildlife viewing and photography.

Proposed actions under Alternative B would be constructed by a contractor. Completion of the project would take approximately 3-4 months, depending on the weather.

Under this alternative, the treatment and monitoring of *Phragmites australis* (Common reed) would occur within the newly established boardwalk area and around the open pond area to enhance and restore any degraded wetland habitat from the establishment or spread of *Phragmites* from project activities.

The construction of this new accessible hunt blind would not modify current hunting areas, regulations or seasons. This alternative is located further away from other existing hunt blind locations than other alternative locations considered.

Alternatives Considered and Dismissed

As described in Table 2 below, the following suggestions and alternative locations (Figure 4) for the project were considered but dismissed from further consideration. These include suggestions from public scoping, as well as from the project planning team.

Table 2: Suggestion and alternative locations dismissed from further consideration

Suggestions/Alternative Locations Dismissed	Reason for Dismissal
Location 1	This site is an undisturbed site adjacent to Highway 12. The project area would be approximately .33 acres. The construction of a new parking area and 425 foot long boardwalk with an 8' x 14' platform requires the permanent removal of .20 acres of standing woody vegetation such as trees and shrubs. This alternative was determined to be significantly more impactful due to the amount of vegetation that is required to be removed permanently and the amount of wetland habitat (.10 acres) that would be impacted. This alternative is located closer to nearby existing hunt sites than Alternative B (NPS preferred). This alternative would also be more expensive than Alternative B (NPS preferred), due to the amount of fill and supplies required for the construction of the project.
Location 2	This site is an undisturbed site adjacent to Highway 12. The project area would be approximately .16 acres. The construction of a new parking area and 175 foot long boardwalk with an 8' x 14' platform requires the permanent removal of .08 acres of standing woody vegetation such as trees and shrubs. Impacts to wetland habitat would be .07 acres. Although is this location had minimal impacts to the natural environment just as Alternative B (NPS preferred), the platform would be the closest to the highway which was not desired for hunting nor birdwatching. This alternative is also located closer to nearby existing hunt sites than Alternative B (NPS preferred).

Figure 4: Considered but Dismissed Locations (with the exception of NPS Preferred) for Accessible Hunt Blind/Wildlife Viewing Platform

Best Management Practices for Action Alternative

The following best management practices would minimize the degree and/or extent of adverse impacts and would be implemented if the action alternative were selected.

General Construction

- The NPS would ensure the contractor would comply with all local, state, and federal laws, and regulations.
- All designs, including proposed materials and placement of temporary matting, would be reviewed and approved by NPS staff prior to construction.
- The project would include a pre-construction meeting and a final inspection meeting, in addition to regularly scheduled project meetings and site visits throughout the project.
- All construction generated debris (excluding vegetation) would be removed from the Seashore to an approved landfill.
- Equipment would be free of any fluid leaks (fuel, oil, hydraulic fluid, etc.) upon arrival to the work site and would be inspected at the beginning of each shift for leaks. Leaking equipment would be removed off site for necessary repairs before the commencement of work.
- All construction equipment that would leave paved roads would be pressure-washed prior to entering the Seashore and shall be clean of any soil, plant matter, or other materials. NPS natural resource specialists or the project manager shall inspect the vehicles prior to entry into the project area.
- Fueling of any type, whether equipment or vehicles, would be done either on impervious surfaces such as concrete or asphalt, or deploy a spill containment pad.
- Equipment, material, and supply storage would be within approved areas only.
- Parking of personal vehicles would be within designated areas only.
- Construction zone would be clearly marked. Fencing or other type of NPS approved temporary barriers would be installed prior to work commencing. At completion of action/project all temporary marking/fencing/flagging would be removed.
- To reduce noise and pollution emissions, construction equipment would not idle any longer than is necessary for safety and/or mechanical reasons.
- Construction activities would be restricted to daylight hours to reduce impacts from noise and eliminate impacts from artificial lighting.

Archeological Resources

- In the unlikely event activities unearth cultural resources, work would be stopped in the area of discovery and the Seashore would consult with the Seashore Cultural Program Manager, State Historic Preservation Office (SHPO) in accordance with §36 CFR 800.13, Post Review Discoveries.
- In the unlikely event that human remains are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (1990) would be followed.

Floodplains and Wetlands

- Heavy equipment used in wetlands would be placed on timber mats, or other measures would be taken to minimize soil and plant root disturbance and to preserve preconstruction elevations.

- The number of passes within the work zone would be strategically limited to as few as possible.
- Care would be taken to avoid any rutting caused by vehicles or equipment.
- Measures would be employed to prevent or control spills of fuels, lubricants, or other contaminants from entering the wetland.
- Alternatives to standard pressure treated lumber for the boardwalk would be researched, as treated lumber could leach contaminants into the environment. If a suitable alternative is identified, it would be incorporated into the design of the boardwalk.
- Appropriate erosion and siltation controls (i.e. silt fencing, coir logs, etc.) would be installed and maintained during construction, and all exposed soil or fill material would be permanently stabilized at the earliest practicable date.
- Any water vessels used for construction (i.e., barge or powered boat for platform construction) would be decontaminated prior to use in the open pond so they are free of any vegetation, animals, mud, and any other organic material that is not native to the pond.
- Where plantings or seeding may be needed, native plant material would be obtained and used in accordance with NPS policies and guidance. Management techniques would be implemented such as reseeding with native plants to foster rapid development of target native plant communities and to eliminate invasion by exotic or other undesirable species.
- Minimizing shade impacts, to the extent practicable, should be a consideration in designing boardwalks and similar structures.
- Action would be consistent, to the maximum extent practicable, with state coastal zone management programs.

Soils and Vegetation

- To eliminate impacts on special-status plant species *(Eleocharis rostellata and Ludwigia alata)* the boardwalk would be designed or realigned to avoid these species, to the extent practicable.
- Construction zones would be identified (i.e. flagging, construction tape, etc.) to confine activity to the minimum work area required.
- All construction vehicles (including tires, chassis, etc.) would be washed prior to entry into the Seashore and project area to reduce the spread of invasive and exotic plants.
- Soil disturbance shall be minimized to the greatest extent possible to reduce disturbance to native plants and reduce the potential for the introduction or spread of invasive non-native plant species.
- Vegetation material removed during the project that is unusable for revegetation efforts shall be cut and shredded onsite for use as mulch in the project area.
- Southeastern Coastal Network Inventory and Monitoring (SECN I&M) Program would begin mapping, monitoring and treatment of *Phragmites australis.*

Wildlife

- Construction personnel would be oriented on appropriate behavior in the presence of wildlife and the proper handling and disposal of food and/or other attractants.
- Daily site inspections should be performed prior to construction activities to ensure reptiles and amphibians (e.g. snakes, freshwater turtles, frogs) or other wildlife species who may be in the project area are not harmed. A resource management staff member should be consulted, if wildlife are present during project activities.
- Construction activities should occur after November 1 and before April 1 to reduce impacts to breeding migratory bird species.

CHAPTER 3: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the affected environment (existing setting or baseline conditions) and analyzes the potential environmental consequences (direct, indirect, and cumulative impacts or effects) that would occur as a result of implementing the alternatives.

Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). In order to determine the cumulative impacts it was necessary to examine past, present, and reasonably foreseeable future actions at Cape Hatteras National Seashore. Cumulative impacts are considered for the no action and the preferred alternative. The following projects were identified for the purpose of conducting the cumulative effects analysis:

Past Actions

- Designation as a hunting area in 1940
- Construction of Highway 12 in 1963
- Construction of the elevated wildlife viewing platform prior to 1990
- Construction of hunt blinds (8' x4' x 4') within the hunting area in 1993
- Construction of drainage ditches across Bodie Island
- Hurricane Irene in 2011 removed all the existing hunt blinds within the hunt area
- Hurricane and winter storms causing sound side flooding

Present Actions

- Installation of hunt blinds and maintenance of trails and structures. NPS staff maintain trails to current hunt blind sites. Staff use weed eaters to cut a trail through the high wetland vegetation.
- The NPS mows the segment of Highway 12 from Whalebone Junction to Lighthouse road. Approximately 16 feet width is mowed on each side of the road.
- Town of Nags Head maintenance of drainage ditches near Seashore boundaries.
- Creation of new visitor accessible facilities (trails, parking areas, boardwalks) and maintenance of these facilities throughout the Seashore for beach access.
- Hurricane and winter storms causing sound side flooding

Foreseeable Future Actions

- Federal Highway Division to repave Highway 12 including paved pull offs and parking areas in Cape Hatteras.
- All boardwalks requiring major repair or replacement would meet new accessible standards as required by the Accessible Barriers Act of 1968.
- Hurricane and winter storms causing sound side flooding

Wetlands and Floodplains

Affected Environment

Executive Order 11990 Protection of Wetlands requires federal agencies to avoid, where possible, adversely impacting wetlands. NPS policies for wetlands, as stated in 2006 Management Policies and Director's Order 77-1 Wetlands Protection, strive to prevent the loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. In accordance with DO 77-1 Wetlands Protection, proposed actions that have the potential to adversely affect wetlands must be addressed in a Statement of Findings for wetlands.

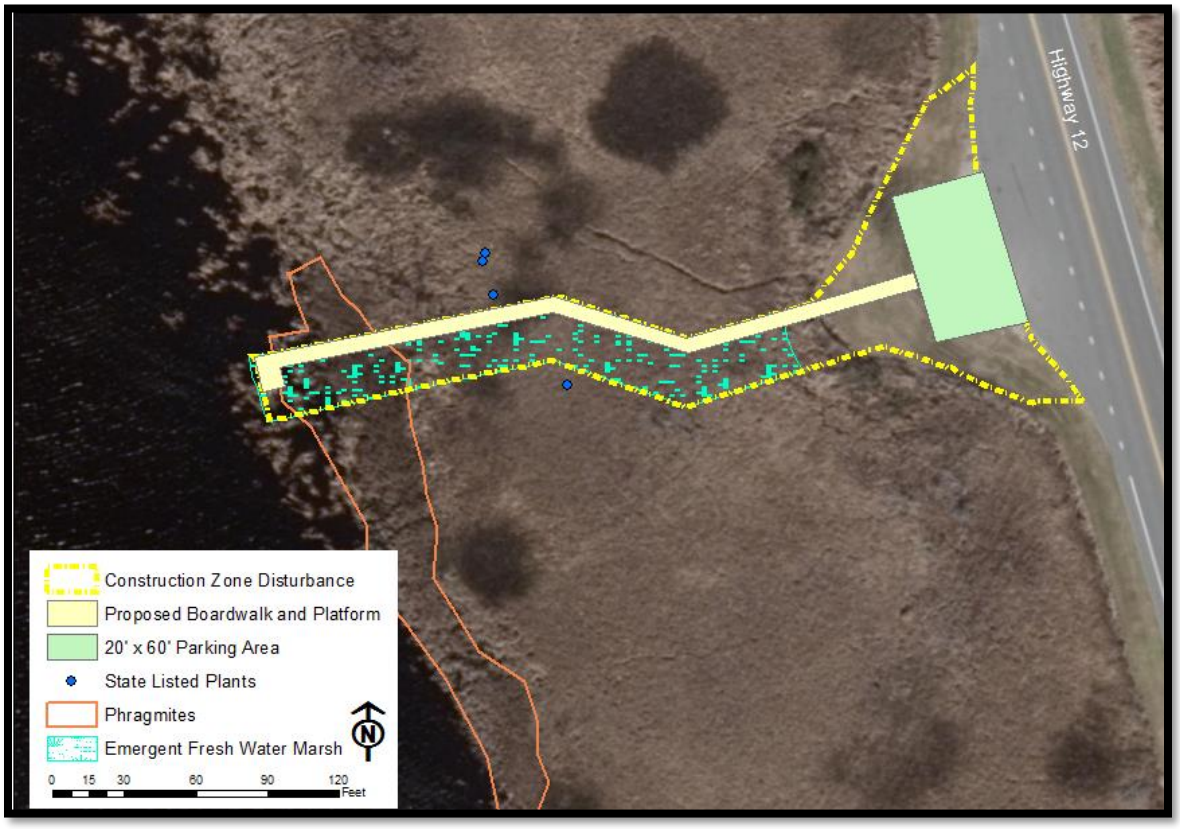
Bodie Island consists of relatively flat, low-lying topography. Sand and soil was removed from portions of the island to create a roadbed for Highway 12, and to develop Nags Head. This created depressions in the topography, and drainage channels, which became wetland complexes. The fill material placed for Highway 12 and to develop the town of Nags Head, raised the topography in those areas and removed vegetation, and altered the hydrology. The Town of Nags Head Flood Control projects include the extension of detention ponds, which may create additional open water wetlands, or convert existing wetlands.

Characterization of the wetlands within the study area of the Seashore came from several sources, including National Wetlands Inventory (NWI) maps, aerial photography, and a field survey conducted in June 2018 (USFWS 2018b). The USFWS NWI produces information on the characteristics, extent, and status of the nation's wetlands and deep-water habitats. Wetlands on the maps are based on the Cowardin wetland definition and classification system (Cowardin et al. 1979). Wetlands depicted on NWI maps were verified during the field survey, and areas that appeared to be wetlands from aerial photography or were areas of known wetlands within the study area were visited in the field. At the time of the field survey, the area of review consisted of 1.3 acres of land, in a rectangular shape, located in the northern extent of the Seashore.

Site surveys identified one wetland within the study area. This wetland is an emergent freshwater marsh (E2EM1/SS3P) and extends throughout the project area directly to the fresh water un-named open pond. The vegetation at the site is predominantly herbaceous. It is dominated by large expanses of narrow leaf cattail (*Typha*

angustifolia). Marsh fern (*Thelypteris palustris*) and climbing hempvine (*Mikania scandens*) are abundant. Other species noted include rose mallow (*Hibiscus moscheutos*), false nettle (*Boehmeria cylindrical*), little evening primrose (*Oenothera perennis*), bushy beardgrass (*Andropgon glomeratus*), bighead rush (*Juncus megacephalus*), broadleaf cattail (*Typha latifolia*), saltgrass (*Distichlis spicata*), Persicaria sp., Phyla sp., and salt marsh mallow (*Kosteletzkya virginica*). A patch of beaked spikerush (*Eleocharis rostellata*) is present as well as *Ludwigia alata* within the project site (Schafele 2018).

Figure 5: Emergent Freshwater Marsh within Project Area



The pond shore is lined with the invasive and exotic giant reed (*Phragmites australis*) along much of its length, including immediately south of the proposed hunt blind site, and along most of the opposite (west) shore.

A small patch dominated by Black needle-rush (*Juncus roemerianus*) is also present within the project area. Very small patches of Maritime Shrub community are scattered in the northern part of the site, between the marsh and the highway. These areas are dominated by evergreen shrubs including yaupon holly (*Ilex vomitoria*), wax myrtle (*Morella cerifera*), and red bay (*Persea palustris*) and are not in the path of the proposed boardwalk.

Executive Order 11988 requires federal agencies to avoid to the extent possible the long- and short-term, adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. In the absence of such alternatives, agencies must modify actions to preserve and enhance floodplain values and minimize degradation. The project area is within a 100-year floodplain, as shown on Federal Emergency Management Agency Flood Insurance Rate Map (FIRM) Panel: 375356 for Dare County, NC (Appendix A). The Federal Emergency Management Agency defines geographic areas as flood zones according to varying levels of flood risk. The zone reflects the severity or type of flooding in the area, as depicted in Appendix A. The zone, labeled "AE" on the Federal Emergency Management Agency map, is within the 100-year floodplain and ranges in elevation from 8-10 feet on the National Geodetic Vertical Datum of 1988. This zone encompasses the project area. The major source of flooding in this area would be flooding from storm surge or overwash from the direction of the Roanoke sound.

The National Park Service under 2006 Management Policies and Director's Order 77-2 Floodplain Management will strive to preserve floodplain values and minimize hazardous floodplain conditions. Certain construction, such as a boardwalk, within a 100-year floodplain requires preparation of a floodplains statement of findings (FSOF). The entire project area is considered to be within the floodplain therefore a FSOF was prepared for this project and can be found in Appendix A.

Floodplains within the Seashore perform important natural functions, including temporary storage of floodwaters, dissipation of stormwater runoff, moderation of peak flows, groundwater recharge, prevention of erosion, and maintenance of water quality. In general, natural buffers, such as the sandy beach, dunes, and vegetation in the vicinity of the project area help maintain the natural functions of the floodplain. In the project area, the wetland vegetation along the sound acts as natural barriers to dissipate wave energy and protect the back dune area from flooding and erosion. The more vegetation and less impervious surface that is present within the floodplain, the better the floodplain can serve to protect the surrounding area from soil erosion and flooding. The ecological value of a heavily vegetated floodplain also increases because it provides more suitable habitat for wildlife (EMI 2008). The dynamic Bodie Island floodplain provides habitat for migrant water birds and helps reduce soundside wind and wave impacts from storm effects. As a benefit when the sound floods, it brings an abundance of invertebrates, fish, and plants into the fresh water pond adjacent to the project area which then provides food for resting and feeding waterfowl (FEMA 1992).

Impacts of Alternative A—No Action

Under Alternative A, there would be no action and therefore no change to wetlands and floodplains within the project area. The natural wetlands and floodplain function would continue to exist in their present state with no new impacts. This alternative would avoid the long-term and short-term environmental effects associated with the occupancy and modification of wetlands and floodplains; and, avoid the direct and indirect support of floodplain development and actions that could adversely affect the natural resources and functions of wetlands and floodplains or increase flood risks.

Cumulative Effects

Past actions such as the construction of the ditches, continued routine maintenance of Highway 12, the establishment of the hunt area, and the federally authorized requirement to provide hunt blinds within the Seashore, within the wetlands and 100-year floodplains have had adverse impacts. The ditching and draining of the wetlands, lack of island overwash due to dune construction, and non-native plant infestations in the area have had the most substantial adverse effects on the wetland ecosystem. However, under this alternative there would be no additional effect to the project site. Continued maintenance along the highway and at current hunting sites would collectively have local adverse impacts to wetlands and floodplains. Future projects such as repaving Highway 12 and construction of new accessible boardwalks within the floodplains would not change the current elevations of the area but could potentially add fill. Because Alternative A results in no new disturbance to wetlands or floodplains in relation to project related activities, it would not incrementally add to the overall adverse cumulative effect when included with other past, present, and reasonably foreseeable future actions.

Impacts of Alternative B— (NPS Preferred)

The area impacted under Alternative B is less than 0.10 acres (4,356 square feet). Therefore; the proposed actions, an elevated boardwalk and small parking area, are excepted from developing a Wetlands Statement of Findings and compensation requirements according to section 4.2.1 of Procedural Manual #77-1: Wetland Protection. All portions of the boardwalk would occur within the 100-year floodplain due to the project's proximity to Roanoke Sound. The permanent concrete elements of the parking area would result in minor impacts to the 100-year floodplain due to the increase in impervious surface area. Approximately 1,500 square feet (ft^2) (0.0344 acre) of concrete would be constructed within the floodplain, although this concrete construction would occur in previously disturbed road shoulder area. However, the proposed parking area would not alter the current elevations of the area and is not anticipated to reduce flood storage capacity; thus, no specific floodplain mitigation would be required.

As stated previously, the boardwalk would be elevated approximately three feet about the surface of the ground to maintain natural wetland hydrology, including fluctuating water levels that may occur from typical to extreme storm events. The boardwalks would be located away from rare or endangered vegetation and routed around large trees in order to avoid removal. A total of .0007 acres (30 ft^2) of fill would occur within the wetland and floodplains due to the installation of the pilings. Other impacts from the boardwalk and platform would be in the form of some shading of plants. Elevating the boardwalk and platform almost 3 feet above the ground and water would allow plants to still receive some natural light, particularly those on the edges of the shading. Plants completely under the structure would receive less light. Due to the small scale of the structure, impacts would be negligible but long-term, for the life of the plant.

This alternative would create long-term and short-term environmental effects associated with the occupancy and modification of wetlands and floodplains; but avoid the direct and indirect support of floodplain development and actions that could adversely affect the natural resources and functions of wetlands and floodplains or increase flood risks. Wetlands and floodplains would be protected during construction from extra sediments and other issues by the use of in water-construction management practices, such as silt curtains, so adverse impacts would be limited. Staging areas and work zone would be allowed to revegetate naturally after construction is complete.

Cumulative Effects

Cumulative effects are similar to those under Alternative A. However, implementation of Alternative B would contribute an imperceptible, adverse increment to the cumulative long-term and adverse impacts to wetlands from the placement of posts into the wetlands. Effects on wetland plant and animal populations, soils, or hydrology would be measurable or perceptible. Mortality of individual plants and animals might occur, but the viability of wetland populations and habitats would not be affected and the community, if left alone, would recover. Conditions associated with normal flooding at this location are not considered particularly hazardous to people or property and weather/marine warnings in conjunction with a Severe Storm Plan and associated closure/evacuation procedures are currently in place for protection of human life for more extreme flooding events. The design of the proposed action would allow natural surface water flows and natural and beneficial floodplain values to continue.

Visitor Use and Experience

Affected Environment

The Seashore is managed according to NPS Management Policies, which state that the Seashore's resources and values are to be enjoyed presently and in the future by the people of the United States, and that the NPS is committed to providing appropriate high-quality opportunities for all visitors (NPS 2006). As such, there are a number of

visitor use opportunities at the Seashore. Recreational activities include shelling, birding, kayaking, canoeing, windsurfing, camping, fishing, hunting, swimming, auto touring, biking, hiking, horseback riding, stargazing, surfing, kite boarding, and wildlife viewing. Access to these recreational activities is primarily done by driving on North Carolina State Highway 12 and parking at a designated lots along the road or along unmarked pull off areas; or by using an off road vehicle (ORV) to drive along the beach or sound to the designated recreation spot. Visits are highest in the months of June, July, and August with over 300,000 visitors in each of those months in 2017 (Figure 2). Over the past ten years, visitors to the Seashore have ranged from 1.9 million to 2.4 million, with the lowest count occurring in 2011 and highest last year in 2017 (NPS 2017).

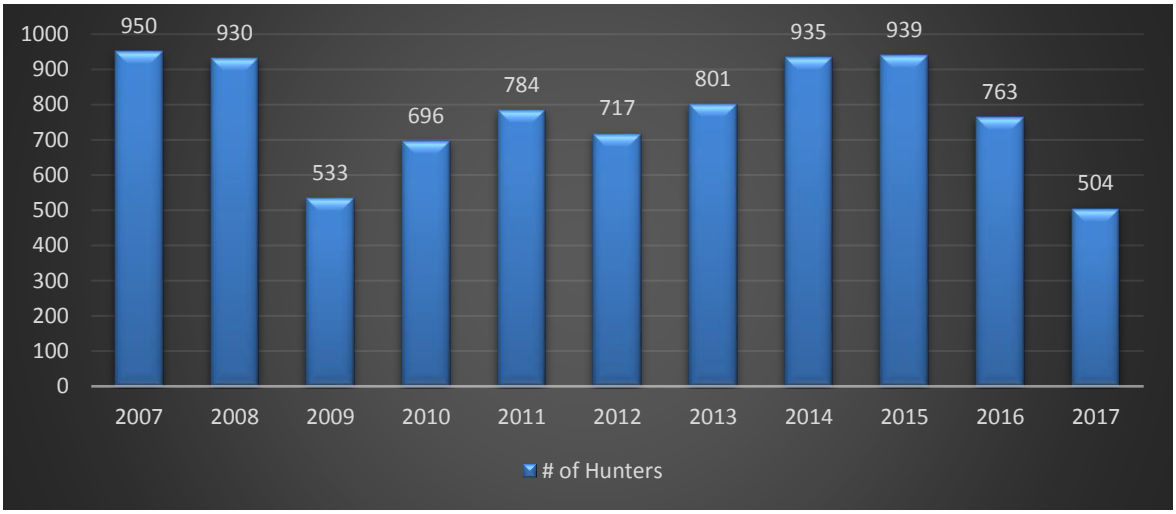
Figure 6: Monthly Recreation Visitors to Cape Hatteras National Seashore

This project would interest the general traveler along Highway 12, hunters, birders, photographers and educational groups. Besides, the boardwalk and viewing platform at Bodie Island Lighthouse, there are no other boardwalks over wetland areas in the Seashore that allow visitors to get out and "in" a wetland habitat. Although there is no hunting within the Bodie Island Lighthouse pond area, there are copious amount of visitors who enjoy walking along the boardwalk out to the viewing platform for wildlife viewing and photography.

In 1940 Congress amended Cape Hatteras' enabling legislation to authorize hunting within 1,500 acres of the Bodie Island wetland areas where the project area is located. The Seashore is also authorized to provide hunt sites within this federally authorized hunt area for hunters. Hunters are permitted to hunt ducks, mergansers and coots,

swan and geese. To hunt legally in the Seashore, hunters must have on their person while hunting a valid North Carolina hunting license with North Carolina waterfowl privilege, a Federal Harvest Program (HIP) certification, and a Federal Duck Stamp. In the past 10 years, the Seashore issued hunting permits to an average of 855 hunters a year within the Bodie Island designated hunt area (Figure 3).

Figure 7: Annual Number Hunters to Bodie Island Hunt Area



The Seashore conducts daily hunt drawings for sites during the hunt season, in early October and only is open for four days. Then the dates for the hunt season vary in November to January. Hunting is authorized from Monday through Saturday with no hunting on Sundays. Reservations are available for specific dates and hunting areas are only open to permitted hunters during hunt seasons and closed to the general public.

As noted in the Purpose and Need section, it is important to create a location in which hunters and wildlife enthusiasts who require accessible facilities are able to hunt and view waterfowl within this project area. The estimated number of Americans with a disability is one in five (United States Census Bureau 2012). Because the National Park Service draws from a global visitor base, the Seashore could conservatively estimate that, a minimum of 380,000 visitors (20% of 1.9 million visitors) with disabilities could potentially would visit the Seashore annually.

Wildlife watching and photography are important visitor use experiences in the Seashore. According to the U.S. Fish and Wildlife Service (USFWS), 45.1 million Americans identify as birdwatchers (USFWS 2018c). The Outer Banks area produces unexpected sightings year-round of a variety of birds and wildlife to watch and photograph. Its proximity to the Gulf Stream, its effect on weather along the coast in every month, and the amazing variety of habitats within a few miles of the coast provide

the setting for the large daily bird counts available to all. Several birding clubs such as the Audubon Society and Carolina Bird Club coordinate meet ups within the Seashore throughout the year. Each October and December, the Seashore is a partner with the USFWS, Carolina Bird Club, Coastal Wildlife Refuge Society and Kitty Hawk Kayak to host the Wings over Water Wildlife Festival to offer wildlife and wildland interpretation and educational opportunities and experiences to visitors.

Impacts of Alternative A—No Action

Under Alternative A, there would be no action and negative impacts on visitor use and experience. A boardwalk and accessible hunt blind would not be constructed and visitors would only have the one boardwalk at Bodie Island Lighthouse to view a marsh habitat and associated wildlife. Hunters requiring accessible facilities would not be able to hunt within the Seashore. Under the no action alterative, the impact would involve those visitors, including hunters, who require this type of accessible facility. Currently within Bodie Island, only one accessible boardwalk within a wetland environment exists but is outside the designated hunt area. Not constructing this facility may affect less than 20% of visitors to the Seashore, but the visitor could express an opinion about the need for more hunting accessible facilities.

Cumulative Effects

Past actions such as the establishment of the hunt area, and the federally authorized requirement to provide hunt blinds within the Seashore, continued routine mowing of Highway 12 road corridor and routine maintenance to the road and pullout area would have no measureable effect to this project area under the no action alternative. Future projects, such as the repaving of the highway and pull-off area and the construction of new accessible facilities throughout the Seashore, ultimately would have a beneficial effect on visitor use and experience overall because they are long-term enhancements to the functionality of the Seashore, visitor experience, interpretive opportunities and ease of visitor use. Not constructing the improvements to the project area would have readily measureable adverse effects on hunters requiring accessible facilities. Under this alternative, visitor functions in the project area are not expected to change, and not constructing the improvements to the project area would not have measurable adverse effects to visitors requiring accessible facilities for hunting when included with other past, present, and reasonably foreseeable future actions within the project area.

Impacts of Alternative B— (NPS Preferred)

Under Alternative B, constructing a new accessible boardwalk would have a beneficial, readily measureable change in use and would have a long-term impact to visitor use and experience. A new accessible boardwalk within a federally designated hunt area would allow hunters requiring this accommodation to be able to hunt within the Seashore during hunting seasons. On Sundays or when hunting season is closed, all other visitors would have access to this new boardwalk to enjoy the sights and sounds of a wetland

habitat which would be an improvement compared to the current experience along Highway 12 on Bodie Island. The boardwalk would also have interpretive signage to provide all visitors with educational information on the wildlife and vegetation within the project area and would have a long-term benefit to visitors within the project area.

Construction of the boardwalk and parking area would occur in winter months when park visitation is lower. During the construction phase, noise from construction may effect hunters who may be hunting in adjacent sites, but the sound from construction would be slightly elevated to that of vehicles driving along Highway 12, resulting in minimal adverse impacts to hunters. Park staff would most likely not assign nearby hunt sites to hunters during construction as to not adversely affect hunting success or create a safety situation. The construction of the boardwalk would not likely effect the safety of construction workers or visitors during hunt season since other hunt sites are located more than 350 feet away and hunters shoot away from the highway.

The addition of a boardwalk would increase the number of visitors to this area of Bodie Island. Although it is a low possibility, some visitors seeking solitude within the Seashore could be adversely impacted by this project. Fortunately, there are other areas of the Seashore where visitors can find solitude. For other Seashore visitors, the new boardwalk would be a beneficial experience to conduct photography, wildlife viewing or just an experience in the wetland. New visitors to the Seashore would benefit from the experience and availability provided by this action alternative and would likely express an opinion about the changes. It is important to note that both short-term and long-term impacts of this project on park visitors would be localized to one area of the Seashore, approximately less than a half an acre within the project area. Visitors would experience both positive and negative impacts as they enter the project area. Negative impacts may occur during construction of the project due to noise and equipment, but since this area is not currently used by visitors, effects to visitors would be trivial. Those visitors, both hunters and non-hunters using the boardwalk would experience a measureable positive effect from the use of the accessible facility during their visit to the Bodie Island district. Potentially 380,000 Seashore visitors each year requiring accessible facilities would appreciate this new accessible facility.

Cumulative Effects

Cumulative effects are similar to those under Alternative A. However, under Alternative B, visitor functions in the project area are expected to change, and some past actions have had long-term beneficial impacts on visitor use and experience for the most part. Of course, construction activities have the potential to affect visitor use and experience negatively temporarily. Ultimately, these actions would have a beneficial effect on visitor use and experience because this alternative would create a long-term enhancement to the functionality of the area, visitor experience, interpretive opportunities and ease of visitor use within this area. Because Alternative B results in long-term and measurable beneficial impacts to visitor use and experience in relation

to project related activities, it would only incrementally add to the overall beneficial cumulative effect when included with other past, present, and reasonably foreseeable future actions.

CHAPTER 4: CONSULTATION AND COORDINATION

List of Agencies and Persons Contacted

Name	Title, Agency
Renee Glehill-Earley	Environmental Review Coordinator, North Carolina Department of Natural and Cultural Resources/State Historic Preservation Office
John Hammond	Biologist, US Fish and Wildlife Service
Michael Schafale	Biologist, North Carolina Department of Natural and Cultural Resources, Natural Heritage Program
Josh Pelletier	Project Manager, US Army Corp of Engineers
Mark Ford	Regional Wetlands Ecologist, NPS Southeast Regional Office
Mike Martin	Hydrologist, WASO Water Resources Division
Daniel Govoni	Policy Analyst, Division of Coastal Management, NC Department of Environmental Quality
Jami Hammond	Regional Environmental Reviewer, NPS Southeast Regional Office, Planning and Compliance Division
Beth Byrd	Regional Section 106 Coordinator, NPS Southeast Regional Office,
David Hallac	Superintendent, Cape Hatteras National Seashore
Mark Dowdle	Deputy Superintendent/Acting Chief of Resource Management, Cape Hatteras National Seashore
John Kowlok	Chief of Maintenance, Cape Hatteras National Seashore
William Pendleton	Engineer, Cape Hatteras National Seashore
Lynne Edwards	Bodie Island District Ranger, Cape Hatteras National Seashore
Paul Doshkov	Lead Biological Science Technician, Cape Hatteras National Seashore
Jami Lanier	Cultural Program Manager, Cape Hatteras National Seashore
Sabrina Henry	Environmental Protection Specialist, Cape Hatteras National Seashore

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Appendix A: Floodplains Statement of Findings

Environmental Assessment to Construct an Accessible Hunt Blind and Wildlife Viewing Platform

FLOODPLAINS STATEMENT OF FINDINGS

for

Executive Order 11988: Floodplain Management

Directors Order 77-2 Floodplain Management

Recommended:

_____

David E. Hallac, Superintendent Date
Cape Hatteras National Seashore

Certification of Technical Adequacy and Servicewide Consistency:

_____

Forrest Harvey, Chief Date
Water Resources Division

Approved:

_____

Robert Vogel, Southeast Regional Director Date

INTRODUCTION

The National Park Service (NPS) has prepared this Floodplain Statement of Findings (FSOF) in compliance with Executive Order 11988 *Floodplain Management* and Directors Order 77-2. NPS would undertake a federal action for the construction of a new accessible boardwalk and hunt blind/ wildlife viewing platform within the legislated boundary of Cape Hatteras National Seashore (Seashore) along State Highway 12 on Bodie Island.

The purpose of the proposed project is to construct an accessible hunt blind that would have minimal impacts to the Seashore's natural and cultural resources, including natural and beneficial floodplain values. This boardwalk would enhance the Seashore's visitor opportunities by providing an accessible hunt blind and wildlife viewing platform for all visitors. This project would meet the federal requirement of providing permanent hunt blinds within the Seashore's federally authorized hunting area and would enhance the Seashore's visitor use experiences by creating a wildlife-viewing platform within a wetland environment.

These objectives are consistent with the enabling legislation for the Seashore, which authorizes hunting within the Seashore (U.S. Public Law 40 Stat. 755). The proposed project represents a key opportunity to meet the Secretarial Order 3356, signed September 15, 2017, directs bureaus within the Department of the Interior, to expand and improve access for hunting, fishing and outdoor recreation on Bureau of Land Management (BLM), United States Fish and Wildlife Service (USFWS) and National Park Service (NPS) land. This secretarial order also directs these agencies to improve wildlife habitat. By constructing a new accessible hunt blind/wildlife viewing platform and boardwalk the Seashore would comply with this Secretary Order.

Brief Site Description

In 1937, Cape Hatteras became the first national seashore. It was designated to preserve dynamic barrier islands and its unique vegetation, wildlife and coastal processes, and to provide recreation and enjoyment for the public. Stretching over 70 miles from north to south, Cape Hatteras National Seashore crosses three islands: Bodie, Hatteras, and Ocracoke. The islands are linked by North Carolina Highway 12 and by the Hatteras Inlet Ferry. Although not part of the Seashore, the islands are also inhabited by eight villages predating the Seashore that reflect the history of the Outer Banks region. The project area is located on Bodie Island, the northern most district of the Seashore. The district incorporates approximately 5,714 acres and 1,500 acres have been designated for waterfowl hunting. This district consists of six miles of shoreline and encompasses a large expanse of low-lying interior land compromised of marsh lands with many medium to large ponds. This district incorporates one of the Seashores three historic lighthouses as well as a day use area, 120-site campground, a public boat ramp and a concession operated marina.

Brief Description of the Proposed Action

Under Alternative B (the alternative preferred by the National Park Service) of the Environmental Assessment to Construct a New Accessible Hunt Blind and Wildlife Viewing Platform, the Seashore would construct a new 250-265 foot long accessible boardwalk from a paved pull-off area along Highway 12 to open water (Figure 1). A concrete parking area (25 feet x 60 feet) would be constructed adjacent to the current pull- off area for five vehicles, including one accessible parking space. Total permanent disturbance of the project area would be .0622 acres.

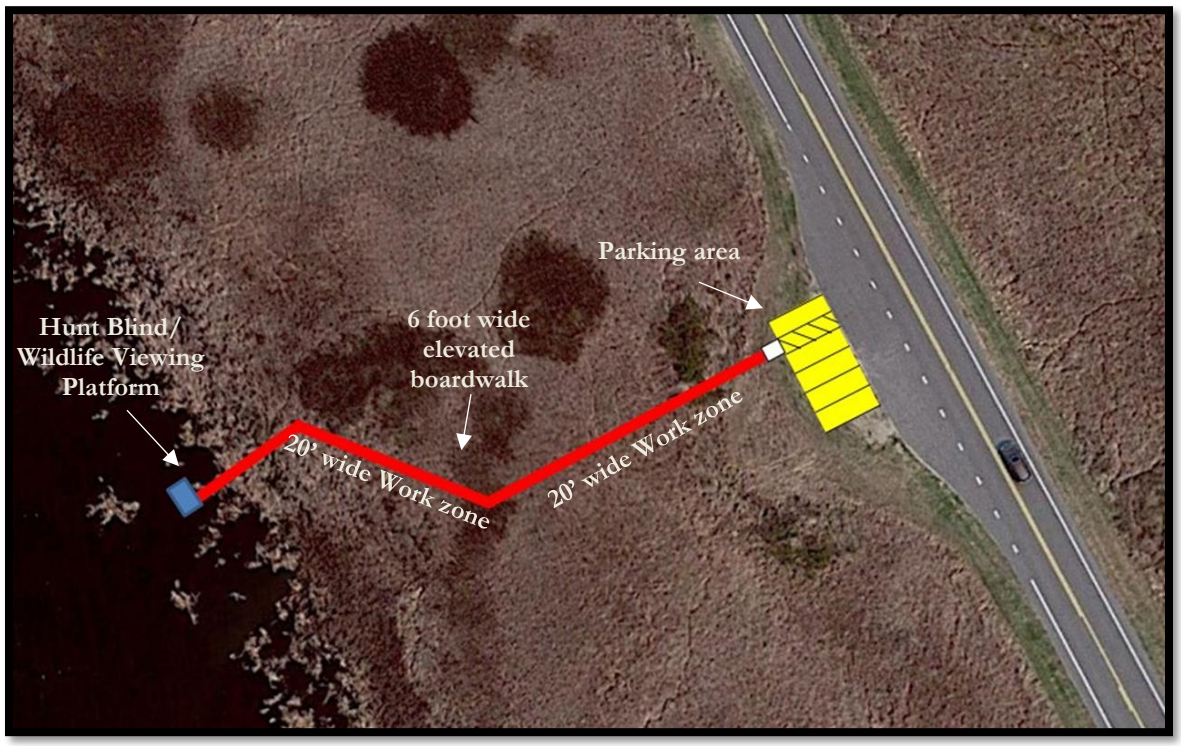

Figure 1: Alternative B Conceptual Diagram

The elevated walkway, or boardwalk, would be composed of timber, composite or concrete decking, and support joists supported by 80-120 6"x 6" piles. The boardwalk would be 60 inches in width for the entire length to accommodate various sized groups and meet minimum accessible passing requirements (Figure 3). The pilings would be driven or jetted six feet into the ground with at least four feet remaining above ground for the construction of the walkway. Driven/jetted actions would be performed by a backhoe or excavator with a compressor and water jet.

The pilings would be the foundation upon which the boardwalk would be constructed. The elevation of the boardwalk would be 2-3 feet above the ground and water and constructed to allow future floodwaters to raise and lower through the structure causing minimal to no damage to the structure. Support brackets would be added to the cut pilings for the beams and

the timber boardwalk would be built upon these beams. The boardwalk would end at the pond where the eight foot by 14 foot covered platform would be constructed (Figure 2).

The platform would be open to allow for a 180 degree view of the open pond and marsh area. A 20-foot wide construction corridor would be created temporarily along one side of the boardwalk only to allow for a work zone during the 90-120 day construction period.

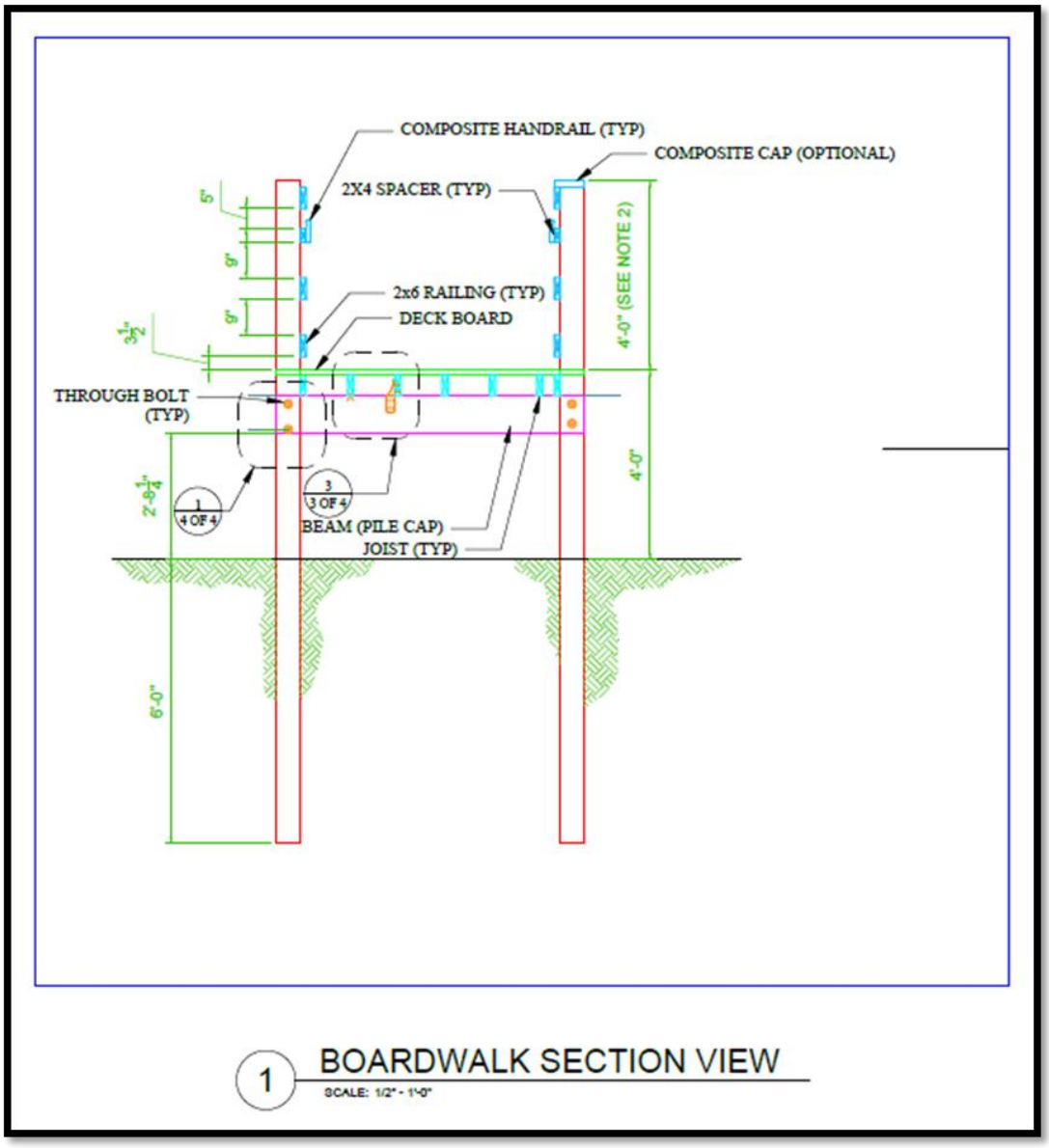

Figure 2: Proposed Boardwalk Section View. Note the 2' 8"-foot freeboard of the boardwalk deck above natural grade.

Benches would be installed inside the covered platform along with stairs to access to the water from the platform. Interpretive wayside signs/ panels would also be installed near the parking area and along the completed boardwalk.

Construction of the boardwalk, platform and parking area would be performed in the winter months. Prior to construction activities, the majority of the site would be cleared with weed eaters or other appropriate power tool to cut back the tall grasses and small shrubs to identify the limits of the work zone. The minimal removal of a couple of woody shrubs may be required depending on the final design of the boardwalk. State rare plant species are within the project area and would be avoided to the extent practicable.

Timber mats, or other suitable materials would be placed directly on the herbaceous vegetation to adequately support the expected construction vehicle loads within the work zone. At the conclusion of the project, the materials used to construct the work zone (e.g., timber mats) would be removed to allow the area to naturally re-seed and return to pre-construction conditions.

Under this alternative, the treatment and monitoring of *Phragmites australis* (common reed) would occur within the newly established boardwalk area to enhance and restore any degraded wetland habitat from project activities.

Under this alternative, the improvements proposed would encourage visitor use of this area of Bodie Island, enhancing recreational opportunities and public exposure to the natural environment.

General Characterization of Floodplain Values and of the Nature of Flooding and Associated Floodplain Processes in the Area

Floodplains with the Seashore perform important natural functions, including temporary storage of floodwaters, dissipation of stormwater runoff, moderation of peak flows, groundwater recharge, prevention of erosion, and maintenance of water quality. In general, natural buffers, such as the sandy beach, dunes, and vegetation near the project area help maintain the natural functions of the floodplain. In the project area, the wetland vegetation along the sound acts as natural barriers to dissipate wave energy and protect the back dune area from flooding and erosion.

The Seashore supports a number of natural features that reduce flooding severity. For example, dunes along the seashore impede storm surge, and ponds and other depressions also function to store water during overwash or large precipitation events. Flooding on the Seashore can range from minor overwash events during high tides to major flooding from hurricanes and other coastal storms. Excessive precipitation can also flood low elevation areas across the Seashore. Major storms can drive ocean storm surges completely across the island, dramatically changing habitats and the entire landscape. As storm winds and waves scour sand away from the ocean beaches, sediments are deposited along the sound side. Many of the

highest points on the islands are within the relict dune fields. Soils are sandy and the vegetation cover is often incomplete. The amount of natural vegetation cover present and the amount of impervious surface within a floodplain influences the degree of retention or effective function a floodplain can provide. The more vegetation and less impervious surface that is present within the floodplain, the better the floodplain can serve to protect the surrounding area from soil erosion and flooding. The ecological value of a heavily vegetated floodplain also increases because it provides more suitable habitat for wildlife (EMI 2008). The dynamic Bodie Island floodplain provides habitat for migrant water birds and helps reduce soundside wind and wave impacts from storm effects. As a benefit when the sound floods, it brings an abundance of invertebrates, fish, and plants into the fresh water pond adjacent to the project area which then provides food for resting and feeding waterfowl (FEMA 1992).

JUSTIFICATION FOR USE OF THE FLOODPLAIN

Description of Why the Proposed Action Must be Located in the Floodplain

The entire island is within the 100-yr floodplain; therefore, any development on the island would have a floodplain location. This proposed study area is the only practicable location for the proposed action as the focus of this particular NPS site is the national seashore and protection measures are prescribed rather than relocation. Further, the proposed action will not significantly affect natural surface water flows or natural floodplain functions of the project area. The purpose of the project is to improve visitor access with minimal impacts to the natural and cultural environment.

The project area is within the 100-year floodplain, as shown on Federal Emergency Management Agency Flood Insurance Rate Map (FIRM) Panel: 375356 for Dare County, NC (Figure 3). The Federal Emergency Management Agency defines geographic areas as flood zones according to varying levels of flood risk. The zone reflects the severity or type of flooding in the area, as depicted on Figure 3. The zone, labeled “AE” on the Federal Emergency Management Agency map, is within the 100-year floodplain and ranges in elevation from 8-10 ft. National Geodetic Vertical Datum of 1988 (NAV88). This zone encompasses the project area. The major source of flooding in this area would be flooding from storm surge or overwash from the direction of the Roanoke sound.

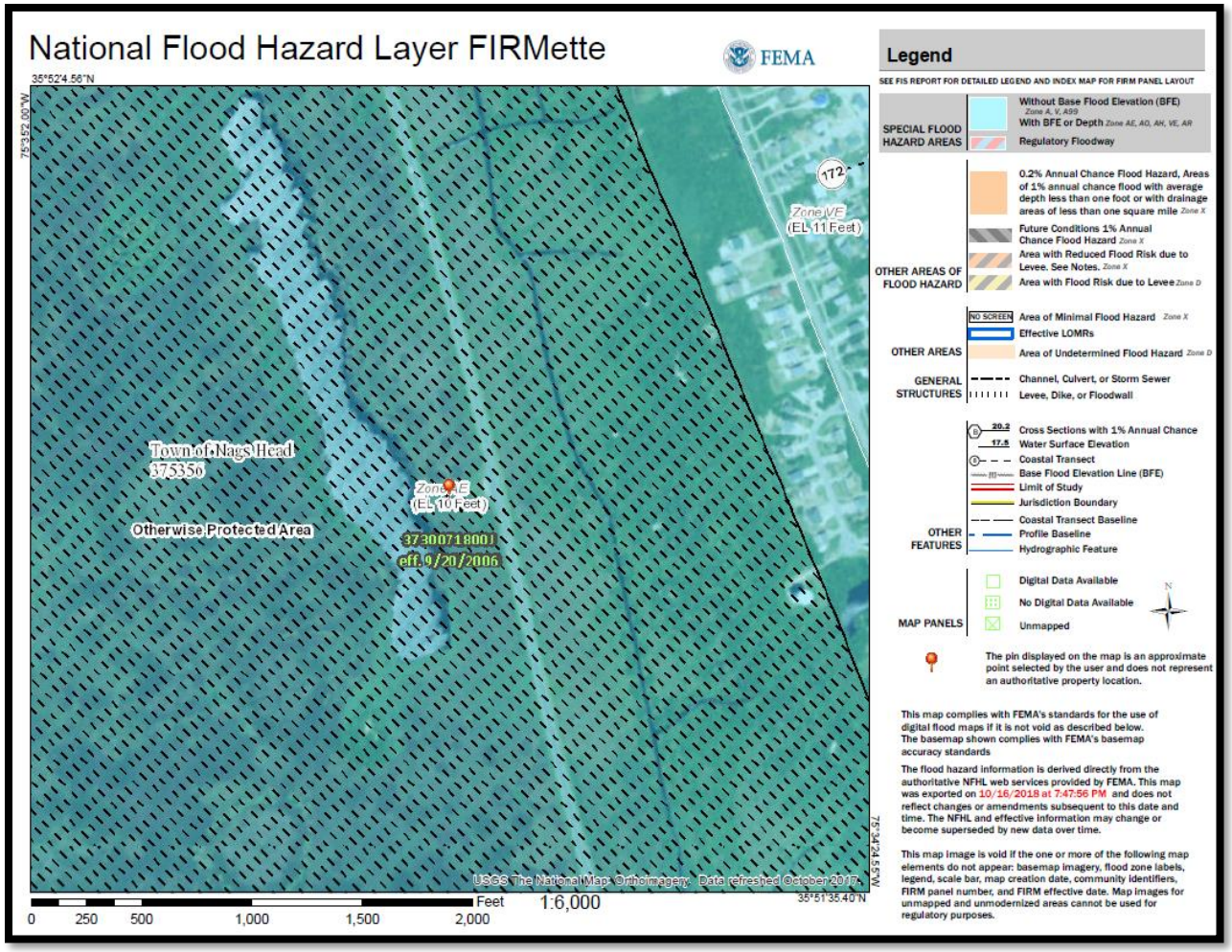

Figure 3: FIRM panel for Project Site

Measures to mitigate flood Hazard to Human Life, Property, natural/beneficial floodplain values

Conditions associated with normal flooding at this location are not considered particularly hazardous to people or property. Extreme flooding generally occurs in the project area because of hurricanes and storm surge making weather/marine warnings and evacuation a practical option for protection of human life. A Severe Weather Plan is in place for the Seashore and is updated annually. The mitigation provided in the project scope in elevating the boardwalk and removing exotic plant species in order to amending adverse impacts from the construction of new infrastructure within wetland and helps restore natural and beneficial floodplain values. The minimal infrastructure associated with this action is sacrificial with an expected life of 20 years, and intended only to support the mission of the National Seashore. As such, loss of the capital investments (property) resulting from a severe flood event would be considered an acceptable loss.

All portions of the boardwalk would occur within the 100-year floodplain due to the project's proximity to Roanoke Sound. The permanent concrete elements of the parking area would result in minor impacts to the 100-year floodplain due to the increase in impervious surface area. Approximately 1,500 square feet (ft^2) (0.0344 acre) of concrete will be constructed within the floodplain. However, the proposed parking area would not alter the current elevations of the area and is not anticipated to reduce flood storage capacity; thus, no specific mitigation would be required.

As stated previously, the boardwalk would be elevated 2-3 feet about the surface of the ground to maintain natural wetland hydrology, including fluctuating water levels that may occur from typical to extreme storm events. The boardwalks would be located away from rare or endangered vegetation and routed around large trees in order to avoid removal. A total of .0007 acres (30 ft^2) of fill would occur within the wetland due to the installation of the pilings.

SUMMARY

The National Park Service finds that the efforts to construct an accessible hunt blind and wildlife viewing platform is essential for public use and wildlife habitat, despite the fact that the actions would be located in flood-prone areas. The National Park Service also finds that in constructing this facility, there are no practicable alternatives to locate the project outside of the floodplain since the entire study area is within the 100-year floodplain. Conditions associated with normal flooding at this location are not considered particularly hazardous to people or property and weather/marine warnings in conjunction with a Severe Storm Plan and associated closure/evacuation procedures are currently in place for protection of human life for more extreme flooding events. The design of the proposed action would allow natural surface water flows and natural and beneficial floodplain values to continue. To mitigate risks to property, the design elements are minimal and utilize sacrificial infrastructure. This project is consistent with the policies and procedures of NPS Director's Order #77-2 (Floodplain Management) and Executive Order 11988.

REFERENCES

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