



# Assateague Island National Seashore

## Flexible Design Strategy for Relocating Oceanside Campground Environmental Assessment

2018



**FLEXIBLE DESIGN STRATEGY FOR  
RELOCATING OCEANSIDE CAMPGROUND**  
Environmental Assessment

**Assateague Island National Seashore**  
Maryland

Summary

Established by Congress in September 1965 as a unit of the national park system, Assateague Island National Seashore is composed of the 37-mile Assateague Island in Maryland and Virginia and the surrounding marine and estuarine waters extending up to one-half mile from the island's shore. NPS is responsible for managing the seashore to protect Assateague Island and its adjacent waters and small islands and to make available those resources for public outdoor recreation use and enjoyment.

NPS currently offers opportunities for visitors to Assateague Island to camp at two campgrounds in Maryland. Oceanside Campground, located within and west of the secondary dune adjoining the Atlantic Ocean beach, has 41 drive-in campsites, 63 walk-in campsites, five group campsites, and two equestrian campsites. On the west side of the island, Bayside Campground has 49 drive-in campsites; the campsites are located north of Bayside Drive, on the man-made peninsula developed in Sinepuxent Bay prior to the seashore's establishment.

The campsites at Assateague's Oceanside Campground are extremely vulnerable to coastal storms and are constantly threatened by the westward movement of sand as natural coastal processes continually influence and shape the island. In recent years, moving sand has overtaken campsites on the eastern edge of the secondary dune.

Recognizing the vulnerability of the Oceanside Campground campsites and the high value that seashore visitors place on Assateague's beach camping experience, the National Park Service (NPS) is developing a flexible design strategy for relocating Oceanside campsites incrementally, as they are damaged or lost. The strategy will enable NPS to maintain the beach camping experience at Assateague Island for years to come as coastal processes continue to shape the barrier island.

This environmental assessment evaluates two alternatives for the flexible design strategy: the no action alternative and the proposed action (preferred). It analyzes the potential impacts that the alternatives would have on the natural and human environment. The EA is consistent with requirements of the National Environmental Policy Act of 1969 and its implementing regulations (40 CFR 1500-1508), and with NPS Director's Order #12 (DO-12), Conservation Planning, Environmental Impact Analysis, and Decision-Making (NPS, 2011) and accompanying DO-12 Handbook (2015b). Both alternatives would result in adverse and beneficial impacts on floodplains and the visitor experience. These impacts would be associated with changes to facilities located within the 100-year floodplain, changes to the location and mix of campsite types, loss of some campsites, and addition of campground facilities for persons with disabilities.

***Note to Reviewers and Respondents***

If you wish to comment on this environmental assessment, you can post your comments electronically at <http://parkplanning.nps.gov/ASIS> within 30 days of release of this document. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, could be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

# Contents

<b>1. Purpose and Need</b>	
Introduction .....	1
Project Area.....	1
Purpose of the Proposed Action .....	3
Need for the Proposed Action.....	3
Project Goals and Objectives .....	6
Impact Topics .....	7
<b>2. Alternatives</b>	
No Action (continuation of current management) .....	9
Proposed Action (preferred) .....	11
Mitigation Measures .....	13
Alternatives Considered but Dismissed .....	14
<b>3. Affected Environment and Environmental Consequences</b>	
General Methodology for Analyzing Impacts.....	16
Floodplains .....	17
Visitor Experience .....	20
<b>4. Consultation and Coordination .....</b>	<b>23</b>
<b>References.....</b>	<b>24</b>
<b>Appendix A—Campground Facility Prototypes</b>	
Figure A.1 Standard Drive-in Campsite Prototypes .....	A-1
Figure A.2 Accessible Drive-in Campsite Prototypes .....	A-2
Figure A.3 Accessible Walk-in Campsite Prototype .....	A-3
Figure A.4 Mobile Comfort Station and Dump Station Prototypes .....	A-4
Figure A.5 Group Campground Parking Prototype .....	A-5
<b>Appendix B—Floodplains Statement of Findings .....</b>	<b>B-1</b>
<b>Figures</b>	
Figure 1.1 Flexible Design Strategy—Project Area .....	2
Figure 1.2 2040 Projected Beach and Dunes .....	4
Figure 1.3 Sand Movement (2005 to 2016) .....	6
Figure 2.1 No Action (continuation of current management) .....	10
Figure 2.2 Proposed Action (preferred) .....	12
Figure 3.1 Floodplains.....	18

## Acronyms

CFR	Code of Federal Regulations
DO	National Park Service Director's Order
EA	environmental assessment
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
GMP	general management plan
MD DNR	Maryland Department of Natural Resources
NEPA	National Environmental Policy Act
NGVD	National Geodetic Vertical Datum (of 1929)
NPS	National Park Service
SHPO	state historic preservation officer
U.S. FWS	U.S. Fish and Wildlife Service



# 1. PURPOSE AND NEED

## INTRODUCTION

Each year thousands of visitors to Assateague Island National Seashore enjoy one of the highest quality beach camping experiences in the eastern United States. For many visitors, this has been a life-long experience. Many enjoyed camping at Oceanside Campground at Assateague Island as young children on family vacations. As adults, many continue to share the experience year after year with their children and grandchildren.

NPS currently offers opportunities for visitors to Assateague Island to camp at two campgrounds in Maryland. Oceanside Campground, located within and west of the secondary dune adjoining the Atlantic Ocean beach, has 41 drive-in campsites, 63 walk-in campsites, five group campsites, and two equestrian campsites. On the west side of the island, Bayside Campground has 49 drive-in campsites; the campsites are located north of Bayside Drive, on the man-made peninsula developed in Sinepuxent Bay prior to the seashore's establishment.

Located within and just west of the secondary dune on the narrow barrier island, the campsites at Assateague's Oceanside Campground are extremely vulnerable to coastal storms. Natural coastal processes including the action of tides, wind, waves, currents, and sea level rise continually influence and shape the island. As the sand moves, the island moves westward. The most rapid island changes occur during intense storm events that—while lasting only a day or a few days—can dramatically alter the physical characteristics of the landscape. Recent evidence indicates that coastal storms are becoming more frequent and more intense, increasing and accelerating the rate and magnitude of island changes. In recent years, the sand has overtaken campsites on the eastern edge of the secondary dune.

Recognizing the vulnerability of the Oceanside Campground campsites and the high value that seashore visitors place on Assateague's beach camping experience, the National Park Service (NPS) is developing a flexible design strategy for relocating Oceanside campsites incrementally, as they are damaged or lost. The strategy will allow for anticipated dune migration westward through 2040 and will enhance dune stabilization while maintaining a safe and enjoyable camping experience for visitors and protection of infrastructure and facilities.

This environmental assessment evaluates two alternatives for future relocation of Oceanside campsites: the no action alternative and the proposed action (preferred). It analyzes the potential impacts that these alternatives would have on the natural and human environment. The EA is consistent with requirements of the National Environmental Policy Act of 1969 and its implementing regulations (40 CFR 1500-1508), and with NPS Director's Order #12 (DO-12), Conservation Planning, Environmental Impact Analysis, and Decision-Making (NPS, 2011) and accompanying DO-12 Handbook (2015b).

## PROJECT AREA

Established by Congress in September 1965 as a unit of the national park system, Assateague Island National Seashore is composed of the 37-mile Assateague Island in Maryland and Virginia and the surrounding marine and estuarine waters extending up to one-half mile from the island's shore. NPS is responsible for managing the seashore to protect Assateague Island and its adjacent waters and small islands and to make available those resources for public outdoor recreation use and enjoyment.

The project area for the flexible design strategy EA is within the seashore's Maryland Developed Area. Figure 1.1 shows the limits of the project area.



Existing Bayside Campground  
(campsites likely to be added)

Existing Oceanside Campground  
(campsites to be relocated as they are  
lost or damaged)

site under consideration for relocation  
of lost or damaged campsites

Existing Bayside  
Parking and  
Picnic Area

NPS Entrance Station/  
Visitor Contact Station

Chincoteague  
Bay

Atlantic  
Ocean

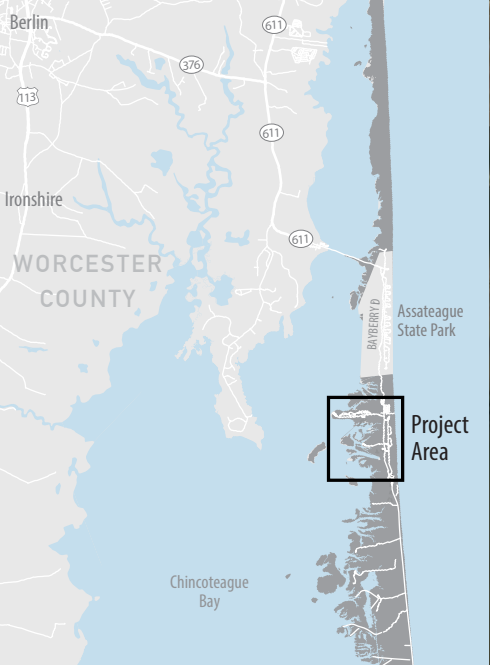


Figure 1.1  
Flexible Design Strategy Project Area





## PURPOSE OF THE PROPOSED ACTION

The purpose of the flexible design strategy is to provide a decision-making framework that will enable seashore managers to minimize or avoid the damaging effects of natural coastal processes by evolving visitor use infrastructure to more sustainable designs and shifting them to new, more stable locations. The flexible design strategy will provide the guidance to make these management choices, consistent with the overall seashore management framework found in the *Assateague Island National Seashore General Management Plan* (GMP) (NPS 2017).

The GMP recognizes that natural coastal processes are the dominant force shaping the character of the seashore. Long-term monitoring of the shoreline position at Assateague Island indicates that there is an average western movement of the shoreline adjacent to the Oceanside Campground of four to six feet per year. As the shoreline retreats, the dunes adjoining the shoreline also move inland. Predictions are that by 2040, the foredune and secondary dune will shift to the west (figure 1.2), burying many of the existing Oceanside Campground campsites with several feet of sand. Beach and dune elevation measurements reveal that in the past fifteen years (2006 to 2015) the sand elevation in the Oceanside Campground has risen from 18 inches to more than 3 feet (figure 1.3). This has buried several of the campsite asphalt pads, making them unusable and increasing maintenance costs.

Many campsites at Oceanside Campground are not sustainable in the face of the natural westward movement of Assateague island and the observed more intense, more frequent, and more damaging coastal storms of the past few decades. Recurring maintenance, needed because of the island's westward movement, has become a burden for NPS staff and increased the costs of seashore operations. Some examples include:

- **Oceanside Campground Drive-in Campsites (Loops 1 and 2)**—In Loop 1, the primary and secondary dune lines have moved west so that the paved parking spaces for the eastern sites are currently lower than the surrounding landscape. Sand must be moved from these sites regularly to expose the asphalt, requiring approximately eight man hours, twice per month. Three sites have been converted to “tent only” because it is no longer possible to remove sand in the frequency required, which is approximately eight man hours, four times per month. In addition to this regular maintenance, eight man hours are required after significant wind events. The frequency of wind events is such that during the winter months, most or all sites are inaccessible.
- **Oceanside Group Campground**—The primary and secondary dune line has moved westward to the point that any significant wind event causes sand to cover a portion of the parking lot. The dunes are also beginning to overtake the restroom facilities, which need to be frequently cleared of sand, requiring approximately eight man hours after any significant wind event.
- **Oceanside Walk-in Campsites**—Restroom and shower facilities in the southern walk-in campground are currently being relocated because the dunes have overtaken them. Prior to relocation, it was taking 8 to 16 man hours after each storm event to clear sand away. Every year, staff must survey dune changes and move walk-in campsites that have become buried or unsafe, remap the sites, and relocate the campsite infrastructure.
- **Oceanside Boardwalks**—Throughout the Oceanside Campground boardwalks are frequently covered with sand. Several sections will need to be raised to accommodate movement of the primary dune. Several others will need to be shortened where the primary dune has moved out from under them. Approximately eight man hours of maintenance are required after each storm event to clean and repair these boardwalks.

## NEED FOR THE PROPOSED ACTION

Seashore managers need a flexible design strategy so that they know how to respond when storms damage the Oceanside Campground campsites and campground infrastructure. Following a damaging storm, managers must make quick and frequently difficult decisions about how to repair, replace or relocate campground facilities. Many factors influence these decisions such as preservation of the seashore's natural and cultural resources, public desires and expectations regarding camping at the seashore, competing demands for limited resources, priorities for using available funds and staff, and differing local and nationwide interests and views of what is most important at the seashore. The strategy will direct how damaged campground facilities will be repaired, shift to more sustainable designs and/or be relocated to more stable locations, while at the same time seeking to retain the current number of campsites in proximity to the ocean for as long as conditions allow.





Figure 1.2  
**2040 Projected Beach and Dunes**

- 2040 Shoreline (neap high tide swash line)
- 2040 Beach
- 2040 Foredune
- 2040 Secondary Dune





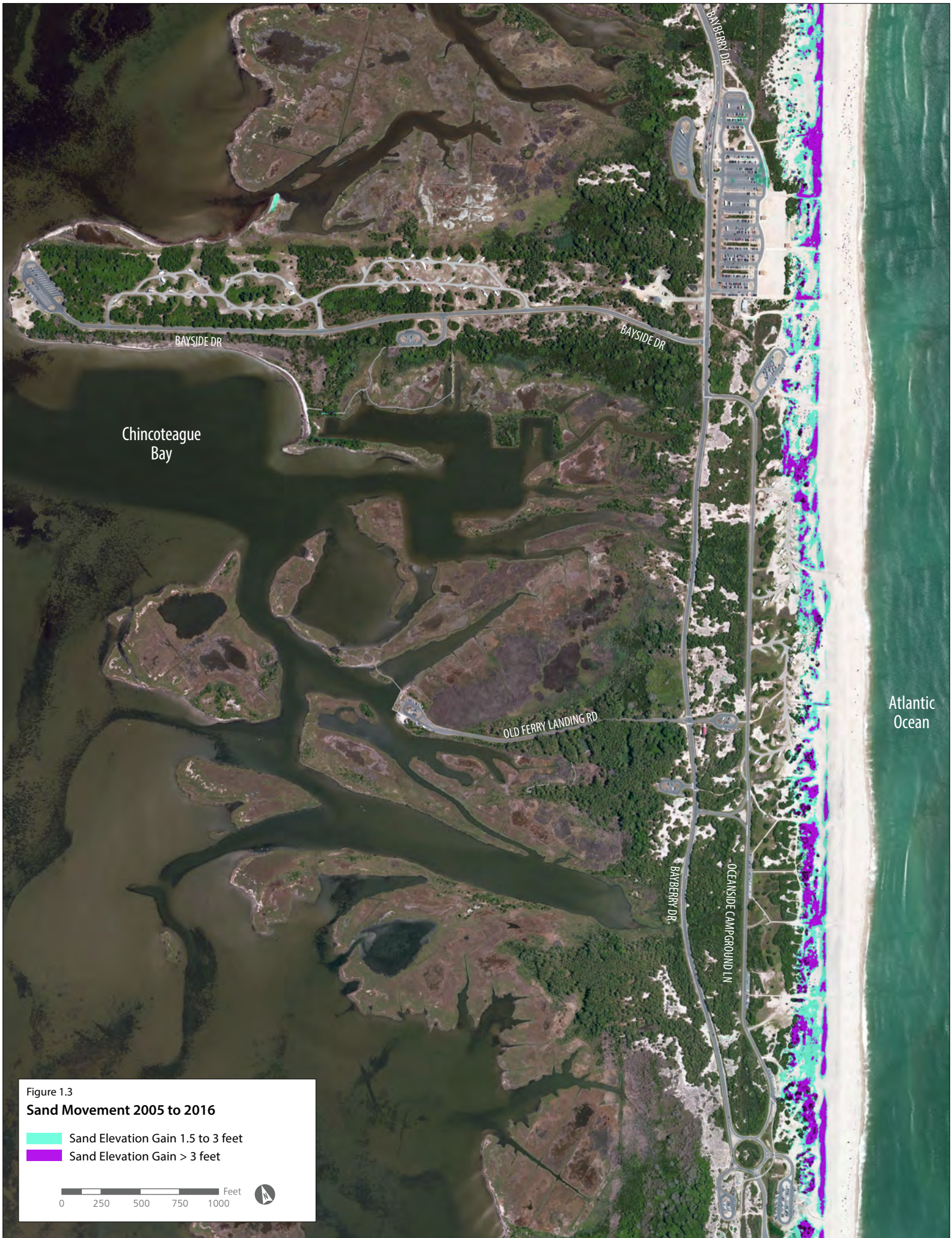


Figure 1.3  
**Sand Movement 2005 to 2016**

- Sand Elevation Gain 1.5 to 3 feet
- Sand Elevation Gain > 3 feet





## PROJECT GOALS AND OBJECTIVES

Goals and objectives for the flexible design strategy project include the following:

**Goal 1:** Assateague Island National Seashore offers a high quality sustainable camping experience in proximity to the beach as long as conditions allow.

Maintain the total number of campsites within the Maryland Developed Area (defined in the seashore's GMP) as there are today, adjusting the location and mix of campsite types (drive-in and walk-in), as needed, by relocating campsites to more sustainable locations and/or converting drive-in campsites to walk-in campsites.

- Identify the conditions that would trigger relocation or reconfiguration of campsites threatened by coastal storms.
- Develop and implement a phasing plan to relocate campsites subject to the following guiding principles:
  - based on research undertaken by NPS, define a zone that could accommodate the westward movement of the shoreline and dunes for the next 20 to 25 years (see the red dashed line in figure 1.2, delineating the "2040 secondary dune" – the land between the 2040 projected shoreline and 2040 secondary dune is the 2040 accommodation zone)
  - relocate drive-in campsites and campground infrastructure to alternative locations within the project area that are west of the 2040 accommodation zone
  - during the phasing in of relocated campsites, allow a temporary slight increase or decrease in the total number of campsites at the seashore
  - once all relocation phases are complete, provide approximately the same number of campsites as the seashore had in 2017 (153), but allow flexibility to change the ratio of walk-in to drive-in campsites, as needed to avoid or minimize impacts to natural and cultural resources and to maintain a quality visitor camping experience
  - accommodate the planned future relocation of the Bayside Picnic and Parking Area in the campsite relocation phasing plan, but allow the flexibility to reconsider specific campsite relocations to reduce potential adverse impacts to Sinepuxent Bay and other campers
  - adhere to federal "freeze the footprint" policies

**Goal 2:** Camping facilities at the seashore offer all visitors access to a safe quality camping experience.

- Comply with current NPS guidance for accessibility, including the number of accessible campsites as well as accessible campsite and campground facility design.
- Retain group campsites in the general vicinity of their current location.
- Use moveable structures anywhere structures are threatened with loss prior to the end of their expected lifespan.
- Utilize prefabricated concrete vault toilets for new toilets.
- Continue to offer cold showers only, utilizing the existing mobile shower structures found in the Oceanside Campground.
- Use asphalt paving for campground roads.
- Limit extension of electrical service to new campground host sites on the Bayside Peninsula.
- Encourage walking and biking as alternative means of access within the seashore by providing multi-use trails that connect to relocated campsites.

**Goal 3:** Adverse impacts on natural and cultural resources associated with camping facilities at the seashore are avoided or minimized.

- Retain a 100' setback from tidal wetlands and a 25' setback from non-tidal wetlands.
- Use stormwater management measures that reduce potential for ponding that can lead to wetland creation.
- Minimize disturbance to vegetation communities.

## IMPACT TOPICS

Impact topics are resources of concern that could be affected by the range of alternatives presented in this EA. The NPS identified these topics based on the environmental issues that were raised during scoping and agency coordination.

### Impact Topics Retained for Analysis

**Floodplains.** The entire project area is located within the 100-year floodplain (FEMA 2015). As a result, all proposed relocated campsites and campground infrastructure associated with the three action alternatives will be located within the 100-year floodplain. Because there is potential for impacts to floodplain values and risks to human safety associated with these actions, the floodplain impact topic was retained for analysis.

**Visitor Experience.** Camping is one of the seashore's most popular visitor experiences. The campgrounds are full throughout the summer season and during spring and fall weekends. The flexible design strategy would ensure that visitors continue to have a quality camping experience at the seashore in proximity to the beach. However, while the total number of campsites would be the same, over time there would be fewer campsites available for visitors seeking a drive-in camping experience because some drive-in campsites would be converted to walk-in campsites. Depending on the timing and extent of future storm damage, and the availability of funding to implement the flexible design strategy, there could be some temporary loss of campsite inventory during part or all of a peak camping season. These changes would affect the seashore experience for some visitors. Therefore, the visitor experience was retained for analysis.

### Impact Topics Considered but Dismissed From Further Analysis

- **Federally-listed Threatened, and Endangered Species**

At least five federally-listed rare, threatened or endangered species are present on Assateague Island or have been sighted within nearshore waters within the seashore boundary. The piping plover (*Charadrius melodus*) is designated a threatened species; it is a shorebird that nests on the beach, utilizing early-successional, disturbance habitats that are created and maintained by washover during major storms. Seabeach amaranth (*Amaranthus pumilus*) is designated a threatened species; it is an annual vascular plant that inhabits upper beaches and overwash areas. The U. S. Fish and Wildlife Service, Chesapeake Bay Field Office determined that the project is not likely to adversely affect these species. Four species of sea turtles have been documented in waters offshore of Assateague Island. Atlantic Loggerhead turtles (*Caretta caretta*) (designated threatened) occasionally nest at the seashore (primarily at the southern end), and single event nests of leatherback (*Dermochelys coriacea*) (designated endangered) and green sea turtles (*Chelonia mydas*) (endangered) have been documented. Most observations are from strandings, 90 percent of which involve loggerheads (*Caretta caretta*) (NPS 2008).

No occurrences of the five federally designated species have been documented within the project area. Therefore, the federally-listed designated species impact topic was dismissed from further analysis.

- **State-listed Rare, Threatened, and Endangered Species**

Coordination with the Maryland Department of Natural Resources (MD DNR) identified occurrences of several plant species of concern within the project area, including:

**Oceanside Campground**

Low nutrush (*Scleria verticillate*)

Beaked spikerush (*Eleocharis rostellata*)  
Dwarf umbrella-sedge (*Fuirena pumila*)  
Carolina fimbry (*Fimbristylis caroliniana*)  
Seabeach sedge (*Carex siliacea*)  
Seabeach amaranth (*Amaranthus pumilus*)

**Bayside Campground**

Puerto Rican sea-purslane (*Sesuvium maritimum*)  
Three-ribbed arrow grass (*Triglochin striatum*)

**Other Sites under Consideration**

Beach knotweed (*Polygonum glaucum*)

As the flexible design strategy is implemented, NPS would conduct a field reconnaissance to identify occurrences of these species in each area where campsites are to be relocated. Final design would avoid or minimize impacts to these species. Two species identified in the Bayside vicinity are typically found within or along the edges of tidal wetlands and would likely be protected by the 100' buffer from all tidal wetlands retained in the flexible design strategy. Therefore, the impact topic of state-listed species was dismissed from further analysis.

- **Wetlands**

The area affected by the proposed action in the flexible design strategy avoids direct impact to wetlands and provides for a minimum buffer of undisturbed land 100 feet wide adjoining tidal wetlands and 25 feet wide adjoining non-tidal wetlands, as required by MD DNR regulations for protecting wetlands and the Maryland Coastal Bays. Therefore, the wetlands impact topic was dismissed from further analysis.

- **Wildlife and Wildlife Habitat (including vegetation).**

The area affected by the proposed action is within the primary and secondary dune. Nesting, resting, and foraging habitat for species inhabiting the dunes would be enhanced once the area is cleared of developed visitor facilities and left to revegetate naturally. Disturbance and mortality associated with operation of vehicles would be eliminated and the disturbance associated with 24-hour human activity would be significantly reduced by replacement of 41 drive-in campsites with a small number of walk-in campsites. Therefore, the wildlife and wildlife habitat impact topic was dismissed from further analysis.

- **Archeological Resources**

To identify potential archeological resources within the project area, the NPS conducted a phase IA assessment of archeological potential (Seiter et al 2017). The assessment incorporated documentary and archival research, analysis of historic maps and aerial photographs, cultural landscape analysis, and pedestrian inspection of the project area, in compliance with federal and state historic preservation legislation and applicable Maryland standards and guidelines for archeological investigations. Five areas of archeological sensitivity were recorded and mapped.

The area proposed for development of campground facilities in the flexible design strategy alternatives under consideration avoids the five areas of archeology sensitivity recorded and mapped within the project area. For this reason, the archeological resources impact topic was dismissed from further analysis.

- **Environmental Justice**

During the scoping process, no issues or concerns specific to minority/low income populations were identified. No management actions under any of the alternatives evaluated in environmental assessment are directed at minority/low income populations nor are any of the potential effects of the alternatives believed to have disproportionate effects on minority/low income populations. For these reasons, the environmental justice impact topic was dismissed from further analysis.

- **Indian Trust Resources**

There are no Indian Trust resources within the seashore boundaries. None of the land within the seashore is held in trust by the Secretary of the Interior for the benefit of Indians due to their status as Indians. Therefore, the Indian Trust Resources impact topic was dismissed from further analysis.

## 2. ALTERNATIVES

This section of the EA describes two alternatives for the flexible design strategy for relocating the Oceanside Campground campsites damaged by storms. The alternatives include: the no-action alternative and the proposed action. NPS has identified the proposed action as the preferred alternative. Two additional alternatives that were considered are briefly described, along with the reasons for their dismissal.

### **NO ACTION ALTERNATIVE (CONTINUATION OF CURRENT MANAGEMENT)**

In the No Action Alternative, NPS would continue to manage the Oceanside Campground as it does today, offering a mix of individual drive-in and walk-in campsites, group campsites, and equestrian campsites. Following damaging storms, maintenance staff would remove sand and repair facilities as quickly as possible to maintain the campsite inventory. Once the individual drive-in campsites can no longer be maintained, individual drive-in camping would be eliminated from the Oceanside Campground. Overall, the total number of campsites at the seashore would decrease to 116 and the ratio of drive-in campsites to walk-in campsites would decrease from 59 percent to 46 percent.

#### **Oceanside Individual Drive-in Campsites**

The 41 existing drive-in campsites in Oceanside Loop 1 and Oceanside Loop 2 would remain as long as possible. As campsites are damaged by storms or overtaken by sand, NPS would continue to seek to maintain the loop 1 and loop 2 campsites as drive-in campsites. As sand levels rise, it would become necessary to convert more drive-in campsites to tent only campsites, and eventually to eliminate drive-in campsites. At some point, when maintenance of a minimum number of drive-in campsites becomes impractical, the drive-in camping loops would be shut down and the paved roads and campsite parking areas removed. At that point, all 41 existing Oceanside drive-in campsites would be lost.

#### **Oceanside Individual Walk-in Campsites**

The existing 63 walk-in campsites would remain in the primary and secondary dunes as long as possible. As the foredune moves west, sites at the eastern edge of the walk-in campground would be relocated west within the existing walk-in campground. Over time the walk-in campground would become more crowded. However, once the Oceanside drive-in campsites are lost, some walk-in campsites would be relocated north to the previous drive-in camping areas.

The three existing parking areas serving the walk-in campground would be maintained as long as possible. The four existing mobile comfort stations serving the walk-in campground (each including 2 toilets, 2 cold-water showers, and a dumpster) would remain where they are as long as possible.

The two mobile comfort stations at the existing Oceanside Loops 1 and 2 would be relocated as needed within the walk-in campground but would likely remain in place to serve relocated walk-in campsites.

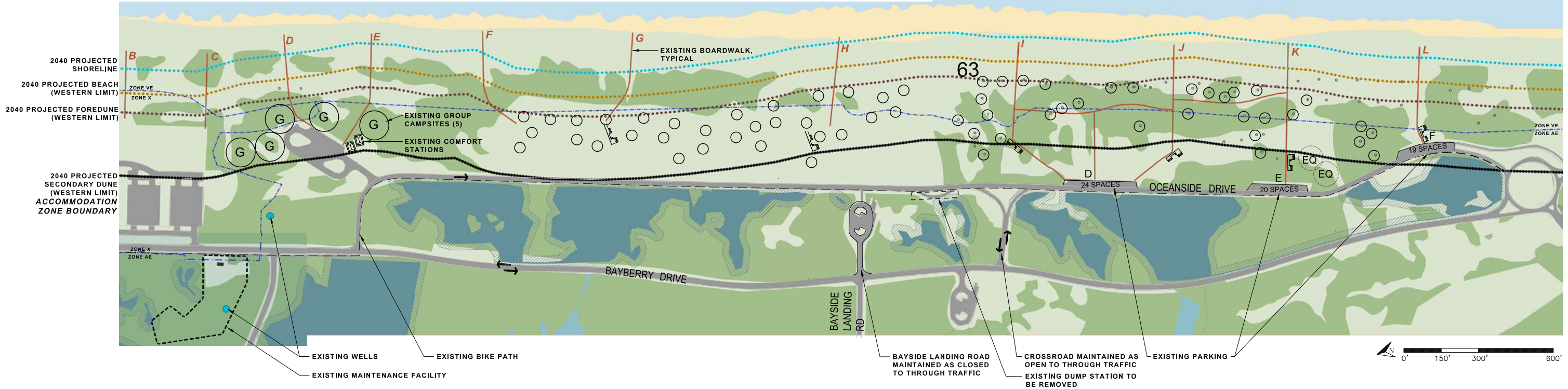
#### **Group Campsites**

Group campsites would remain where they are. NPS would continue to have chronic maintenance issues at the comfort stations and parking area due to shifting sand, with major repairs required following most coastal storms.

#### **Equestrian Campsites**

The seashore's two equestrian campsites would remain where they are.

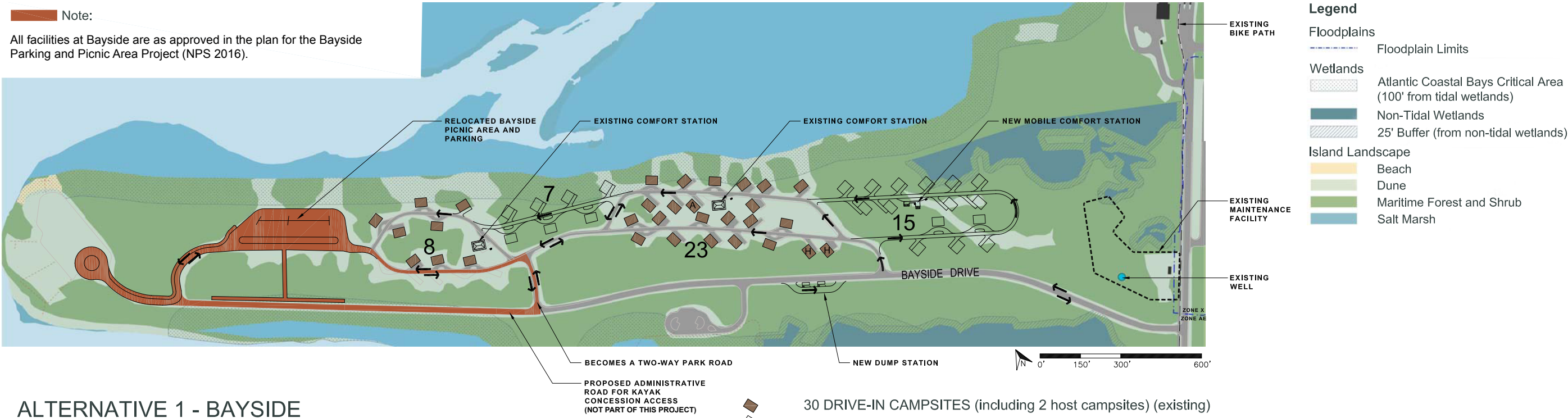
FIGURE 2.1 - NO ACTION ALTERNATIVE



ALTERNATIVE 1 - OCEANSIDE

- 63 WALK-IN CAMPSITES (relocated as needed due to loss or damage)
- 5 GROUP CAMPSITES (relocated as needed due to loss or damage)
- 2 EQUESTRIAN CAMPSITES (existing)
- 2 COMFORT STATIONS WITH COLD SHOWERS AT GROUP CAMPSITES (existing)
- 6 MOBILE COMFORT STATIONS WITH COLD SHOWERS (existing)

Note:  
All facilities at Bayside are as approved in the plan for the Bayside Parking and Picnic Area Project (NPS 2016).



ALTERNATIVE 1 - BAYSIDE

- 30 DRIVE-IN CAMPSITES (including 2 host campsites) (existing)
- 22 DRIVE-IN CAMPSITES (relocated)
- 1 ACCESSIBLE DRIVE-IN CAMPSITE
- 2 COMFORT STATIONS WITH COLD SHOWERS (existing)
- 1 MOBILE COMFORT STATION (relocated)
- 1 DUMP STATION (two tanks) (relocated)
- 1 MAINTENANCE FACILITY (existing)



## **PROPOSED ACTION (PREFERRED)**

The proposed action (preferred) assumes that in the future, NPS would gradually relocate campground infrastructure—including roads, parking areas, comfort stations, and drive-in campsites—west of the projected 2040 secondary dune (see figure 1.2). As facilities are damaged or lost to storms, some Oceanside drive-in campsites would be converted to walk-in campsites and the remaining drive-in campsites at Oceanside (exclusive of the two host campsites) would be relocated to the Bayside Campground. Overall, the total number of campsites at the seashore would be retained, but the ratio of drive-in campsites to walk-in campsites would decrease from 59 percent to 49 percent. Appendix A provides prototypes for drive-in campsites, accessible drive-in campsites and walk-in campsites, comfort stations (toilets and cold-water showers), and the group campsite parking area.

### **Oceanside Individual Drive-in Campsites**

Oceanside Loops 1 and 2 are almost entirely within the projected 2040 secondary dune, where storm damage will continue to occur. In the proposed action (preferred), as storm damage occurs, NPS would remove the existing 41 drive-in campsites and related campground infrastructure. Two drive-in campsites would be relocated along the eastern edge of Oceanside Drive to serve as the Oceanside Campground host campsites. Twenty-four drive-in campsites would be relocated to the Bayside Peninsula, of which five would be constructed to be accessible.

### **Oceanside Individual Walk-in Campsites**

Fifteen Oceanside drive-in campsites would be replaced with walk-in campsites, increasing the number of walk-in campsites at Oceanside from 63 to 78. Over time walk-in campsites would be relocated, as needed, so that all would be west of the projected 2040 foredune. Initially, the easternmost walk-in campsites that are now in the existing foredune would likely be relocated to the area previously occupied by the Oceanside Loop 1 and Loop 2 drive-in campsites.

Four relocated walk-in campsites would be constructed to be accessible campsites.

Two relocated parking areas (with 18 and 21 spaces) would serve the relocated walk-in campsites. The southernmost existing walk-in campsite parking area (F) with 19 parking spaces would be removed, as the sites that it now serves would be relocated to the north. Boardwalk L would be removed, and boardwalks G and H would be relocated.

Of the six existing mobile comfort stations (each including two toilets, two cold-water showers, and a dumpster), four would be relocated to the edge of the walk-in campsite parking areas, one would remain where it is, and one would be relocated to Bayside. Potable water service would be extended to the relocated comfort stations; water lines serving existing sites would be abandoned in place.

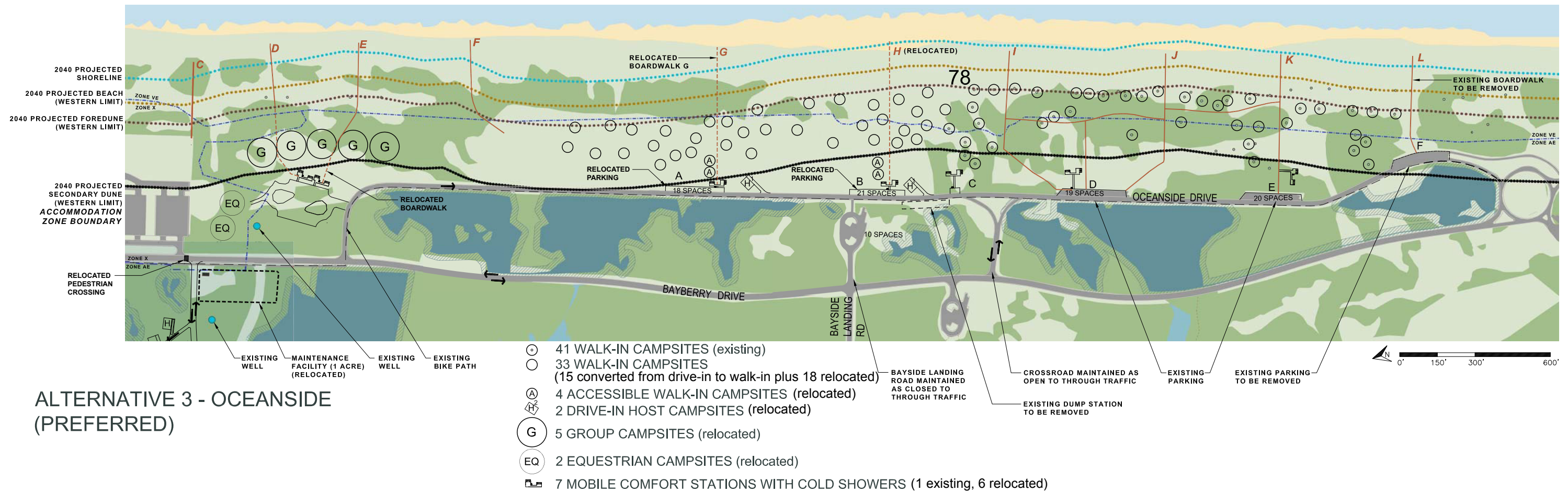
### **Group Campsites**

The seashore's five group campsites would be relocated from the existing foredune to the projected 2040 secondary dune. The existing vault toilets and cold-water showers, access road, and parking area would be relocated west of the projected 2040 secondary dune. The relocated parking area would have the same footprint and capacity as the existing group parking area, which is adequate to meet demand when all five group campsites are occupied. Traffic would enter from and exit to Oceanside Drive.

### **Equestrian Campsites**

The seashore's two equestrian campsites would be relocated from their existing location near parking area E to sites west of the projected 2040 secondary dune, adjacent to the relocated group campsites. The two campsites would be located next to one another, just west of the relocated group campsite parking area. The campsites would be accessed through the group campsite parking area. Each campsite would have a stabilized area for parking and turning around a horse trailer. Campers using the equestrian campsites would use the relocated comfort station at the group campsite. Potable water would be extended to each campsite.

## FIGURE 2.2 - PROPOSED ACTION (PREFERRED)

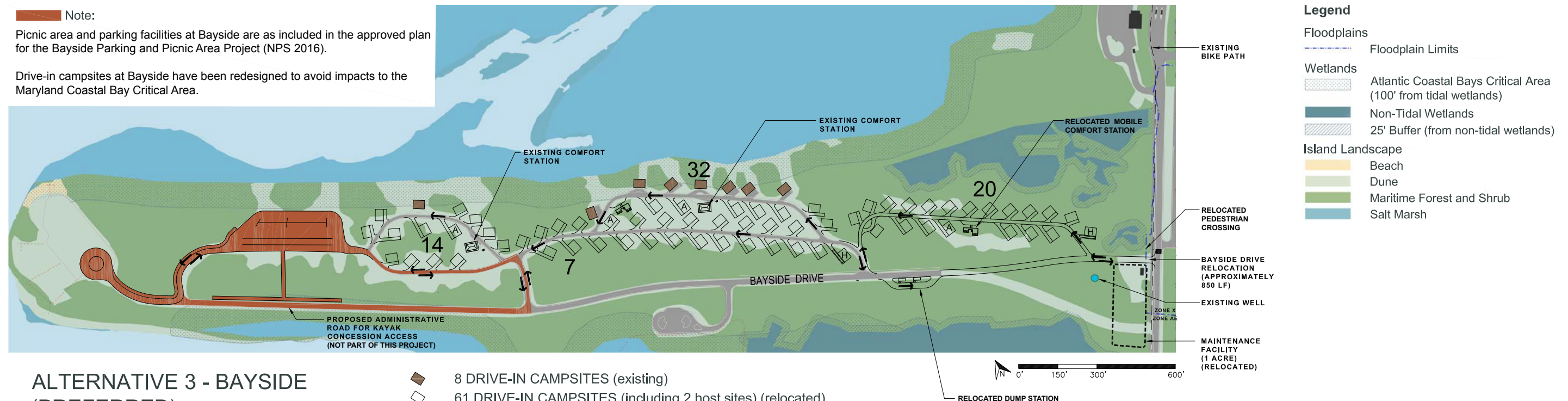


### ALTERNATIVE 3 - OCEANSIDE (PREFERRED)








**Note:**

Picnic area and parking facilities at Bayside are as included in the approved plan for the Bayside Parking and Picnic Area Project (NPS 2016).

Drive-in campsites at Bayside have been redesigned to avoid impacts to the Maryland Coastal Bay Critical Area.



### ALTERNATIVE 3 - BAYSIDE (PREFERRED)

- |   |  |
|---|--|
|  | 8 DRIVE-IN CAMPSITES (existing)                            |
|  | 61 DRIVE-IN CAMPSITES (including 2 host sites) (relocated) |
|  | 4 ACCESSIBLE DRIVE-IN CAMPSITES (relocated)                |
|  | 2 COMFORT STATIONS WITH COLD SHOWERS (existing)            |
|  | 2 MOBILE COMFORT STATIONS WITH COLD SHOWERS (relocated)    |
|  | 1 DUMP STATION (two tanks) (relocated)                     |
|  | 1 MAINTENANCE FACILITY (relocated)                         |

### **Accessibility**

New campground facilities would comply with U.S. Access Board standards for outdoor developed areas (U.S. Access Board 2013). The flexible design strategy calls for eight accessible campsites, as required for a campground that includes from 151 to 200 campsites (the total number of campsites at the seashore in the proposed action is 153). There would be a mix of drive-in campsites and walk-in campsites, with the numbers of each reflective of the ratio of drive-ins to walk-ins in the total campground program for each alternative. Boardwalks would connect accessible parking areas to accessible campsites and accessible campsites to accessible restrooms. Accessible beach access via boardwalks and/or mobility mats would be provided from accessible walk-in campsites.

### **Reuse and Removal of Campground Facilities**

Existing campground facilities such picnic tables, fire rings, and mobile comfort stations and showers would be reused at relocated campsites. Asphalt paving would be removed and transported from the island to a local asphalt company for recycling.

## **MITIGATION MEASURES**

NPS would implement mitigation measures to avoid, prevent, or minimize adverse impacts during implementation of the flexible design strategy components. The following mitigation measures would be included in the two action alternatives, as needed.

### **NPS Final Design Measures**

- Conduct a field reconnaissance of areas where campsites would be relocated to identify state-listed plant species. Avoid impacts to these species during final design of relocated facilities. Identify specific measures to protect each species following construction, as needed.
- Maintain wetland buffers equal to 100 feet from tidal wetlands and 25 feet from non-tidal wetlands.
- Protect mature trees and shrub/scrub habitat wherever possible to provide shade, to protect birds and other species, and to generally enhance the visitor experience.
- Leave disturbed areas to regenerate naturally. Replant upland vegetation only where screening is needed to enhance the visitor experience or as needed for erosion control. Treat non-native invasive plants as needed.
- Time construction seasonally to avoid impacts to wildlife, particularly migratory and shoreline bird populations.
- Identify and implement measures to minimize adverse effects on normal movement, migration, reproduction, or health of terrestrial fauna.
- Utilize best management practices for stormwater management and water quality protection, including non-structural stormwater management measures. Use structural stormwater management practices only if determined absolutely necessary.
- Restore natural hydrology in areas where paved campground roads and drive-in campsites are removed.

### **NPS Mitigation Measures during Construction**

- Develop and enforce a traffic and pedestrian control plan for use during construction that would minimize disruption to visitors and seashore operations and that would ensure safety of the public, seashore employees, and contractors.
- Share information with the public regarding the flexible design strategy and its effects on seashore access, parking, and circulation, including but not limited to distribution/posting of information at entrance stations, on the seashore's website and social media, in parking areas, at trailheads, at other visitor sites, and through press releases.
- Clearly state mitigation measures in construction specifications, including but not limited to the following:
  - Coordinate with seashore staff to minimize disruption of normal seashore activities.

Inform construction workers and supervisors about the special sensitivity of seashore values, regulations, and appropriate housekeeping measures to be used.

- Limit parking of construction and construction worker vehicles to designated staging areas or existing roads and parking lots.
- Define construction zones that limit the area of activity to the minimum required for construction and to protect wetlands. When establishing the limits of construction zones, retain undisturbed buffers adjoining wetlands of 25' from tidal wetlands and 100' feet from non-tidal wetlands. Identify the perimeter of all construction zones using construction tape, temporary fencing, or other material prior to construction.
- During construction, protect areas of mature forest and shrub/scrub vegetation that are to be retained on site.
- Implement stormwater management and water quality protection measures, as appropriate, in advance of construction of new campground facilities, such as infiltration trenches around new parking areas.
- Use soil erosion best management practices such as sediment traps, erosion check screen filters, and hydro mulch to prevent entry of sediment into waterways.
- Develop and implement an NPS approved dust control plan prior to construction.
- Backfill excavated areas with appropriate native material and contour them so that, after settling, they blend with the surrounding terrain. Ensure that any recycled concrete or road base used for backfill is free of waste metal products, debris, toxic material, or other deleterious substances and that it meets gradation and aggregate test requirements.
- Ensure that construction equipment uses the best available technology for sound dampening muffler and exhaust systems.
- Develop and implement a plan that prevents excessive idling of all vehicles used in construction.
- Require good housekeeping practices such as placing debris in refuse containers daily, emptying containers regularly, and prohibiting the burning or burying of refuse in the seashore.
- Comply with federal and state regulations for storage, handling, and disposal of hazardous material and waste. If hazardous materials are used on site, make provisions for storage, containment, and disposal.
- Minimize onsite fueling and maintenance.
- Inspect equipment for leaks of oil, fuels, or hydraulic fluids before and during use to prevent soil and water contamination.
- Require provisions for the containment of spills and the removal and safe disposal of contaminated materials, including soil.
- Take care to avoid any rutting caused by vehicles or equipment.

The analysis of environmental consequences summarized in chapter 3 assumes that NPS would implement these mitigation measures. Federal and state environmental permits that NPS might be required to obtain during final design and prior to construction, could require additional mitigation measures.

## **ALTERNATIVES CONSIDERED BUT DISMISSED**

### **Alternative Sites for Campground Relocation within the Maryland Development Zone**

The seashore's general management plan (NPS 2017) establishes a development zone in Maryland which NPS manages to provide traditional recreational and educational opportunities that support moderate to high density visitor use. Developed campgrounds with visitor facilities are restricted to this zone within the seashore.

The Planning Team considered all remaining undeveloped areas within the Maryland Development Zone for potential relocation of the Oceanside Campground campsites that are lost or severely damaged by coastal storms. Existing

developed visitor use areas were eliminated from consideration, as were areas of extensive natural dunefields and areas within 100 feet of tidal wetlands along the Chincoteague Bay shoreline. The project area considered in this EA (figure 1.1) encompasses land within the Maryland Development Zone that the Planning Team identified through this analysis with potential for campsite relocation.

Subsequent wetland delineation within the project area revealed areas where campground uses would not be permitted because of federal and state law and NPS policy to protect wetlands and the Maryland Coastal Bays. The Planning Team eliminated these areas from further consideration, retaining only the upland areas within the project area as potential sites suitable for relocation of campsites.

#### **Relocation of Oceanside Campground Drive-in Campsites to Areas between Oceanside Drive and Bayberry Drive**

A third alternative flexible design strategy considered but dismissed by the Planning Team would relocate the 41 Oceanside drive-in campsites across Oceanside Drive from the existing campground, to the area between Oceanside Drive and Bayberry Drive. Site investigations revealed that wetlands and potential for archeological resources constrain much of the area between the two roads. Upland areas suitable for campground development occur only in small pockets adjoining wetlands. This precludes efficient campground design by requiring dispersal of the 41 drive-in campsites among four small pods, each accommodating from 8 to 13 drive-in campsites. Overall, the total number of 153 campsites would be retained, with the existing mix of 63 walk-in campsites and 90 drive-in campsites.

The Planning Team dismissed this alternative based on several considerations. Bayberry Drive is the primary travel corridor at the seashore and is currently largely free of developed visitor facilities. The four new campground pods would be highly visible from Bayberry Road, disturbing the natural forested setting and adversely impacting the visitor experience for most seashore visitors who drive the corridor. Traffic entering and exiting the campground pods would slow traffic and contribute to congestion during summer months, also adversely impacting the visitor experience as well as posing a safety hazard for visitors biking or hiking along Bayberry Drive. The camping experience for visitors would be diminished by proximity to the seashore's main travel corridor and vehicle noise and lights. Park operations would be inefficient given the spread-out nature of the four small pods, which would increase staff time needed for routine maintenance and patrols. Finally, approximately 5.1 acres would have to be cleared of mixed forest that has not been recently disturbed, resulting in loss of wildlife habitat and impacts to wildlife.

#### **Relocation of Oceanside Campground Drive-in Campsites to the Bayside Peninsula**

A fourth alternative flexible design strategy considered but dismissed by the Planning Team would relocate the 41 Oceanside drive-in campsites to the Bayside Campground. The enlarged Bayside Campground would offer 88 drive-in campsites, accommodated by infilling vacant areas of the existing Bayside Loops A and B, and by adding two new campground loops, one with 27 campsites and one with 13 campsites. To accommodate one of the new loops, NPS would relocate the seashore maintenance facility to a site further south along Bayberry Drive. Overall, the total number of 153 campsites would be retained, with the existing mix of 63 walk-in campsites and 90 drive-in campsites.

The Planning Team dismissed this alternative because of adverse impacts to the visitor experience. The Bayside Peninsula camping experience would become much more crowded due to near doubling of the number of campsites from 49 today to 88 in the future. There would be a significant increase in traffic and noise in the campground, raising the potential for visitor conflicts. Placement of a new loop south of Bayside Drive would be highly visible from Bayside Drive, detracting from the undeveloped setting, affecting both campers and day-use visitors.



### 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the resources that the flexible design strategy could impact within the Oceanside Campground. Topics selected for analysis include floodplains and visitor experience, as summarized in section 1. The analyses address both beneficial and adverse impacts that would result from implementing the two alternatives at the Oceanside Campground.

Impacts associated with the two alternatives at the Bayside Campground are not addressed in this environmental assessment because:

- Impacts at the Bayside Campground associated with the No Action Alternative were previously addressed in the *Bayside Picnic and Parking Area Relocation Environmental Assessment* (NPS2015a). The project was approved in the *Finding of No Significant Impact Bayside Picnic and Parking Area Relocation* (NPS 2016).
- Impacts at the Bayside Campground associated with the Proposed Action (preferred) will be addressed as an amendment to the approved plan for the Bayside Picnic and Parking Relocation. The impacts of the changes to the approved plan would cause no or only minimal environmental impact in previously disturbed or developed areas of the seashore. Impact analysis findings will be documented in a categorical exclusion.

#### GENERAL METHODS FOR ANALYZING IMPACTS

In accordance with CEQ regulations, direct, indirect, and cumulative impacts are described under each impact topic (40 CFR 1502.16), and the impacts are assessed in terms of context and intensity (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. For all resource topics, the area evaluated for impacts is the area delineated as the project area.

#### Cumulative Impacts

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, or reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative impacts were determined for each impact topic by combining the impacts of the alternative being analyzed and other past, present, and reasonably foreseeable actions that would also result in beneficial or adverse impacts. These actions were identified through the internal and external project scoping processes and are summarized below.

#### Past, Present, and Reasonably Foreseeable Future Actions

**Bayside Picnic and Parking Area Relocation.** In the future, NPS plans to relocate the Bayside Picnic and Parking Area when funding is available. The project includes relocation of the existing Bayside Parking Area to the current site of Bayside Campground Loop C, relocation of the parking area access road, demolition of all campsites in Bayside Loop C and five campsites in Bayside Loop B, relocation of demolished campsites through a combination of infill within the existing campground and development of a new campground loop within a previously disturbed area, and development of a new consolidated dump station serving both the Bayside and Oceanside Campgrounds. Project impacts were addressed in the *Bayside Picnic and Parking Area Relocation Environmental Assessment* (NPS2015a) and the project was approved in the *Finding of No Significant Impact Bayside Picnic and Parking Area Relocation* (NPS 2016).

**Assateague State Park Campground Improvement Project.** MD DNR is currently implementing actions to increase the resiliency of Assateague State Park’s visitor facilities to coastal storm events. These include relocation of five campground loop roads away from the base of the primary dune and relocation or elimination of several campsites located at the eastern-most part of the loop. This will allow for dune migration westward over time and enhance dune stabilization while maintaining a safe and enjoyable camping experience for visitors and protection of infrastructure and facilities.

## FLOODPLAINS

### Affected Environment

The majority of Assateague Island within Maryland is within the 100-year floodplain, as shown on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps for Worcester County, Maryland (FEMA 2015). The entire project area is within the 100-year floodplain, as mapped on FEMA Map Number 24027C0285H. The beach and dune areas along the ocean side of the island are within the V-7 zone, where flooding is influenced by wave action and flood waters rise to 9 to 11 feet. The Bayside Peninsula is within the AE-5 zone, where flooding is not influenced by wave action and flood waters rise only to 5 feet. Most facilities within the project area are in the AE-5 zone; only a few walk-in campsites in the Oceanside Campground are within the V-7 zone.

Flooding on Assateague Island 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 barrier island. Major storms can drive ocean storm surges completely across the island, dramatically changing habitats and the entire landscape. High waves and water have periodically swept entirely over Assateague Island and flowed into Chincoteague Bay and Sinepuxent Bay (immediately adjacent to the project area). As demonstrated by Tropical Storm Isabel in 2003 and Hurricane Sandy in 2012, NPS facilities on Assateague Island are extremely vulnerable to coastal flood events.

Natural resource conditions on the barrier island help to mitigate some flooding and impacts of flooding. Estuarine wetlands along the western shoreline island provide various ecological functions, such as flood flow storage and sediment retention. Dunes along the seashore impede storm surge, and interdunal wetlands and other depressions also function to store water during overwash or large precipitation events. Protected shores and nearby salt marshes along the Sinepuxent Bay, reduce the rate of erosion when compared to the beaches along the Atlantic Ocean.

### Impacts of the No Action Alternative (Continuation of Current Management)

**Analysis.** In the no action alternative, there would be no new construction within the floodplain. Initially, the quantity and quality of stormwater would be the same as it is under existing conditions. Approximately 2.9 acres of impervious asphalt roads, parking, and campsite pads would continue to convey sheetflow into surrounding areas during precipitation events at a relatively faster rate than natural highly permeable, sandy ground cover. This would continue to have a slight adverse impact to floodplains due to reduced temporary storage of floodwaters, dissipation of stormwater runoff, moderation of peak flows, groundwater recharge, and maintenance of water quality.

Over time, impervious cover would gradually decrease to 1.1 acres as parking areas, loop roads, and campsite pads would be removed as they are damaged by storms. As sites are left to revegetate naturally, this would gradually reduce adverse impacts to floodplains. The ecological functions of the floodplain, including temporary storage of floodwaters, dissipation of stormwater runoff, moderation of peak flows, groundwater recharge, prevention of erosion, and maintenance of water quality would be minimally enhanced resulting in a slight beneficial impact to floodplains. The natural buffers (sandy beach, wetlands, and vegetation) in the vicinity would continue to help maintain the natural ecological functions and values of the floodplain and reduce flooding and erosion severity.

Stormwater management features at existing parking areas include drainage ditches on the perimeter of parking areas and several culverts. In the no action alternative, these stormwater management features would be left in place and cleaned and repaired on an as needed basis.

**Cumulative Impacts.** Past, present, and reasonably foreseeable actions that have the potential to impact floodplains include relocation/reconstruction of visitor use facilities within the 100-year floodplain on the Bayside Peninsula and within the state park. These actions would generally enhance floodplain functions and values by utilizing stormwater management measures that encourage on-site recharge and reduce peak flows during storm events, offsetting the potential for adverse impacts associated with minimal increases in impervious surfaces. These past, present and future actions would minimally improve floodplain functions values in the area, with benefits to NPS, FWS, and local communities.



Existing Bayside Campground  
(campsites likely to be added)

Existing Oceanside Campground  
(campsites to be relocated as they are  
lost or damage)

site under consideration for relocation  
of lost or damaged campsites

Figure 3.1  
**Floodplains**  
2015 FEMA Floodplain  
Zone VE (coastal flood zone with velocity hazard [wave action])  
Zone AE  
Zone X  
0 250 500 750 1000 Feet

When the slight beneficial impact of the no action alternative is combined with the beneficial cumulative impact associated with past, present, and future plans and activities affecting floodplains at the seashore, the overall cumulative impacts would be beneficial. The no action alternative would contribute a slight beneficial increment to the overall beneficial cumulative impact on floodplains.

**Conclusions.** The project area is entirely within the 100-year floodplain. The impact to floodplains associated with the no action alternative would be slight and beneficial due to a 1.8-acre net reduction in impervious cover at the Oceanside Campground that would generally enhance floodplain functions and protect floodplain values within the project area. The no action alternative would contribute a slight beneficial increment to the overall beneficial cumulative impacts on floodplains.

### **Impacts of the Proposed Action (preferred)**

**Analysis.** In the proposed action (preferred) there would be some minor new construction within the floodplain. Initially, the quantity and quality of stormwater would be the same as it is under existing conditions. As in the no action alternative, approximately 2.89 acres of impervious asphalt roads, parking, and campsite pads would continue to convey sheetflow into surrounding areas during precipitation events at a relatively faster rate than natural highly permeable, sandy ground cover. This would continue to have a slight adverse impact to floodplains due to reduced temporary storage of floodwaters, dissipation of stormwater runoff, moderation of peak flows, groundwater recharge, and maintenance of water quality.

Over time, impervious cover would gradually decrease to 1.51 acres as parking areas, loop roads, and campsite pads would be removed as they are damaged by storms. As sites are left to revegetate naturally, this would gradually reduce adverse impacts to floodplains. The ecological functions of the floodplain, including temporary storage of floodwaters, dissipation of stormwater runoff, moderation of peak flows, groundwater recharge, prevention of erosion, and maintenance of water quality would be minimally enhanced resulting in a slight beneficial impact to floodplains. The natural buffers (sandy beach, wetlands, and vegetation) in the vicinity would continue to help maintain the natural ecological functions and values of the floodplain and reduce flooding and erosion severity.

The relocated parking areas would be constructed either with asphalt and/or a clay base with clam shell aggregate. If constructed with asphalt, surface materials would continue to convey sheetflow into surrounding areas during precipitation events. If constructed with a clay base and clam shell aggregate, though not permeable, surface roughness of the parking areas would increase. Roughness is an important variable in measuring a surface's ability to convey water across the surface. A smoother surface, such as asphalt would convey water faster than a rough surface. Therefore, the proposed aggregate surface materials would continue to convey sheetflow into surrounding areas during precipitation events, but at a much slower rate than a paved asphalt surface. In addition, reduced sheetflow rates would reduce the risk of sedimentation and erosion.

Stormwater management measures would be implemented pending coordination with the Maryland Department of Environment and identification of appropriate measures. Site specific stormwater design features would likely include an infiltration trench around the perimeter of relocated parking areas. NPS would use best management practices to address stormwater and water quality. Permitting requirements would be addressed with the state of Maryland, as appropriate, in advance of any construction activity.

**Cumulative Impacts.** Past, present, and reasonably foreseeable actions that have the potential to impact floodplains in the project area are summarized above for the no action alternative. When the slight beneficial impact of the proposed action (preferred) is combined with the beneficial cumulative impacts associated with past, present, and future plans and activities affecting floodplains at the seashore, the overall cumulative impact would be beneficial. The proposed action (preferred) would contribute a slight beneficial increment to the overall beneficial cumulative impact on floodplains.

**Conclusions.** The project area is entirely within the 100-year floodplain. The impact to floodplains associated with the proposed action (preferred) would be slight and beneficial due to a 1.38-acre net reduction in impervious cover at the Oceanside Campground that would generally enhance floodplain functions and protect floodplain values within the project area. The proposed action (preferred) would contribute a slight beneficial increment to the overall beneficial cumulative impact on floodplains.



## VISITOR EXPERIENCE

### Affected Environment

Each year approximately one million people visit the Maryland District at Assateague Island National Seashore, mostly during the summer and early fall. Visitors seek a variety of experiences at the seashore, such as beachcombing, swimming, surfing, viewing horses, driving on the beach, camping, fishing, shellfishing, shell collecting, hiking, bicycling, birding, boating, horseback riding, and hunting.

Seashore camping at Assateague has been the focus of a family vacation experience for many visitors since the seashore was established. NPS operates campgrounds within the Maryland Developed Area at Oceanside and Bayside, with some sites available year-round.<sup>1</sup> Annually, an average of approximately 82,000 visitors camp at NPS campgrounds, of which 72 percent camped in tents and 28 percent camped in recreational vehicles. Oceanside Campground offers 41 drive-in campsites for tents, trailers, or recreational vehicles (no hookups) and 63 walk-in campsites located 100 to 200 feet from centralized parking areas; each site has a picnic table and a fire ring. Bayside Campground offers 49 drive-in campsites for tents, trailers, or recreational vehicles (no hookups)<sup>2</sup>; each campsite has a picnic table, and a fire ring. All drive-in campsites also have a paved parking space; sites accommodate a variety of maximum vehicle lengths ranging from 25 feet to 62 feet. Other camping facilities in the drive-in and walk-in campgrounds are “primitive,” including vault toilets, cold-water showers, and drinking water. Organized clubs and affiliated groups can use the five group campsites at Oceanside. Group campsites are designed for tent-only use and are walk-in, with a centralized parking area, vault toilets, and cold-water showers located 100 to 200 feet from each campsite. A reservation system is in place for all campsites from April 15<sup>th</sup> through October 15<sup>th</sup>. During summer months, the campgrounds are typically full every night.

### Impacts of the No Action Alternative (Continuation of Current Management)

**Analysis.** In the no action alternative, 41 drive-in campsites would be removed over time from loop1 and loop 2 as campsites are overtaken by moving sand or destroyed by storms. Overall, the capacity of the Oceanside Campground for individual drive-in and walk-in campers would be reduced by 39 percent. These campsites are typically fully occupied from Memorial Day through Labor Day. As a result, as many as 246 people per night would be deprived of a camping experience at the seashore during the summer. In addition, visitors would no longer be able to experience drive-in camping within in or adjoining the secondary dune during any time of the year. Many visitors to the seashore have enjoyed this experience for decades and would no longer be able to do so.

Walk-in campsites and related parking and comfort stations would initially remain as they are today. The same number of visitors would be able to walk in to campsites adjacent the beach and the experience would remain as it is today. Over time, once the drive-in campsites are gone, the 63 existing walk-in campsites would be redistributed within the dune. At that time the same number of visitors would still be able to walk in to campsites within the secondary dune, but the sites would be further apart. This would result in a more primitive atmosphere with less crowding and noise, a generally desirable condition for visitors seeking a walk-in camping experience. This would enhance the quality of the camping experience for those visitors.

The five group campsites (for groups of 7 to 25 people) would remain in their current location, highly susceptible to recurring storm damage, with the potential for complete loss of the campsites and supporting visitor infrastructure. Overall, the capacity for camping in proximity to the beach at group campsites could disappear as a result of a single catastrophic storm. As these campsites are typically fully occupied from Memorial Day through Labor Day, a large number of visitors would be deprived of a camping experience at the seashore.

Over the short-term, there would continue to be only one accessible drive-in campsite available at the Oceanside Campground. Eventually there would be no accessible camping opportunities at Oceanside for visitors with disabilities.

**Cumulative Impacts.** Past, present, and reasonably foreseeable actions that have the potential to impact visitor experience in the project area include development/rehabilitation of visitor use facilities at the seashore that improve

---

<sup>1</sup> Additional camping facilities are available at the seashore at Assateague State Park, which is owned and operated by MD DNR.

<sup>2</sup> The approved plan for the Bayside Picnic and Park Area Relocation (NPS 2016) would increase the total number of drive-in campsites at the Bayside Campground to 53.



the visitor experience at the Bayside Campground and at the state park. These past, present and future actions would generally improve the visitor experience within the Maryland Developed Area of the seashore. When the adverse impact of the no action alternative is combined with the beneficial cumulative impacts associated with past, present, and future plans and activities affecting the visitor experience at the seashore, the overall cumulative impact would be beneficial. The no action alternative would contribute a moderate adverse increment to the overall beneficial cumulative impact on visitor experience.

**Conclusions.** In the no action alternative, over the short-term NPS would continue to offer a camping experience in proximity to the beach at the Oceanside Campground at individual campsites, group campsites, and equestrian campsites. Over time facilities would be overcome by moving sand or irrevocably damaged by coastal storms. The lost drive-in campsites would not be replaced, eliminating a decades long traditional experience for many seashore visitors. Conversely, visitors who are willing to walk into campsites, who are generally seeking a more primitive camping experience, would be beneficially impacted by an increased number of walk-in campsites and more dispersed campsites with less crowding. The current limited opportunity for accessible camping in proximity to the beach would be eliminated over time. Overall, only 61 percent of the visitors who today use the individual campsites at the Oceanside Campground would continue to be able to do so. The proposed action (preferred) would contribute a moderate adverse increment to the overall beneficial cumulative impact on visitor experience.

### **Impacts of the Proposed Action (preferred)**

**Analysis.** As in the no action alternative, in the proposed action (preferred), 41 drive-in campsites would be removed over time from loop1 and loop 2 as campsites are overtaken by moving sand or destroyed by storms. Unlike the no action alternative, in the proposed action (preferred), the drive-in campsites would be replaced with 15 walk-in campsites and two drive-in host campsites would be added on Oceanside Drive. Overall, the capacity of the Oceanside Campground for individual drive-in and walk-in campsites would be reduced by 23 percent. These campsites are typically fully occupied from Memorial Day through Labor Day. As a result, as many as 144 people per night would be deprived of a camping experience at the seashore during the summer. In addition, as in the no action alternative, visitors would no longer be able to experience drive-in camping within in or adjoining the secondary dune during any time of the year. Many visitors to the seashore have enjoyed this experience for decades and would no longer be able to do so. However, some of these sites would move to Bayside. Although the experience would change, there would be more opportunity for drive in-camping within the Maryland Developed Area in comparison with the no action alternative, which would be generally beneficial.

Walk-in campsites and related parking and comfort stations would initially remain as they are today. The same number of visitors would be able to walk in to campsites adjacent the beach and the experience would remain as it is today. Over time, once the drive-in campsites are gone, the 63 existing walk-in campsites and 15 additional walk-in campsites would be redistributed within the dune. At that time, as many as 90 more visitors per night could have a primitive camping experience, representing a 20 percent increase when compared to the existing condition. In general, the walk-in campsites would be spread over a bigger area, but they would be slightly closer together when compared to the no action alternative. This would still result in a more primitive atmosphere with less crowding and noise, a generally desirable condition for visitors seeking a walk-in camping experience. The quality of the camping experience for those visitors would be greatly improved.

The five group campsites (for groups of 7 to 25 people) would eventually be moved west and their supporting infrastructure relocated outside of the 2040 secondary dune. The campsites would no longer be highly susceptible to recurring storm damage. The capacity for camping in proximity to the beach at group campsites would remain as it is today. As these campsites are typically fully occupied from Memorial Day through Labor Day, a large number of visitors would continue to have the opportunity for a beach camping experience.

Over the short-term, there would continue to be only one accessible drive-in campsite available at the Oceanside Campground. Eventually there would be four accessible walk-in campsites at Oceanside, resulting in a significant beneficial impact on the visitor experience for visitors with disabilities.

**Cumulative Impacts.** Past, present, and reasonably foreseeable actions that have the potential to impact visitor experience in the project area are summarized above for the no action alternative. When the beneficial impact of the proposed action (preferred) are combined with the beneficial cumulative impacts associated with past, present, and

future plans and activities, the overall cumulative impact would be beneficial. The proposed action (preferred) would contribute a slight adverse increment to the overall beneficial cumulative impact on visitor experience.

**Conclusions.** In the proposed action (preferred), NPS would continue to offer a camping experience in proximity to the beach at the Oceanside Campground at individual campsites, group campsites, and equestrian campsites, although there would be fewer individual campsites. Overall, 77 percent of visitors who today use the individual campsites at the Oceanside Campground would continue to be able to do so. The character of the experience at individual campsites would also change from a mix of drive-in camping and walk-in camping to all walk-in camping. Drive-in camping would no longer be possible at the beach, eliminating a decades long traditional experience for many seashore visitors. Conversely, visitors who are willing to walk into campsites, who are generally seeking a more primitive camping experience, would be beneficially impacted by an increased number of walk-in campsites and more dispersed campsites with less crowding. Accessible campsites would accommodate up to 24 visitors with disabilities per night, four times what is accommodated today. The proposed action (preferred) would contribute a slight adverse increment to the overall beneficial cumulative impact on visitor experience.

## 4. CONSULTATION AND COORDINATION

### Local Elected Officials

- Mayor, Town of Berlin, Mayor
- Mayor, Town of Ocean City
- Commission, Worcester County

### Local Government Agencies

- Worcester County, Department of Development

### Maryland Elected Officials

- Ben Cardin, U.S. Senate
- Chris Van Hollen, U.S. Senate
- Andrew P. Harris, U.S. House of Representatives
- Charles J. Otto, Worcester County State Delegate
- Mary Beth Carozza, Worcester County State Delegate

### Maryland Government Agencies

- Assateague State Park
- Maryland Critical Areas Commission
- Maryland Department of Environmental Quality
- Maryland Department of Natural Resources, Coastal Zone Management Program
- Maryland Department of Natural Resources, Maryland Park Service
- Maryland Department of Natural Resources, Secretary
- Maryland Department of Natural Resources, Wildlife and Heritage Service
- Maryland Department of the Environment, Wetlands and Waterways Program
- Maryland Department of Transportation
- Maryland State Department of Planning, Maryland Historical Trust, State Historic Preservation Office (SHPO)

### Federal Government Agencies

- Federal Emergency Management Agency
- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service, Chincoteague National Wildlife Refuge
- U.S. Fish and Wildlife Service, Chesapeake Bay Ecological Services Field Office

### Indian Tribes

- The Delaware Nation
- Delaware Tribe of Indians

## REFERENCES

### **EA Engineering, Science, and Technology, Inc.**

- 2017a Final wetland delineation report Assateague Island National Seashore Oceanside Campground Redesign. (Prepared for National Park Service, Assateague Island National Seashore.) Hunt Valley, MD.
- 2017b Final wetland delineation report Assateague Island National Seashore Oceanside Campground Redesign—Bayside Peninsula. (Prepared for National Park Service, Assateague Island National Seashore.) Hunt Valley, MD.

### **Psuty, N.P., M. Duffy, J.F. Pace, D.E. Skidds, and T.M. Silveira**

- 2010 Northeast Coastal and Barrier Network geomorphological monitoring protocol: part I—ocean shoreline position. Natural Resource Report NPS/NCBN/NRR–2010/185. Fort Collins, CO: Natural Resource Program Center, National Park Service.

### **Seiter, Jane I. and Elizabeth A. Comer**

- 2017 Phase IA Assessment of Archaeological Potential in Advance of the Propose Relocation of the Oceanside Campgrounds at Assateague Island National Seashore, Worcester County, Maryland (PMIS #224772). (Prepared for Assateague Island National Seashore, National Park Service.). Berlin, MD: Assateague Island National Seashore.

### **U.S. Access Board**

- 2013 Architectural Barriers Act guidelines; outdoor developed areas. Washington, D.C.: Architectural and Transportation Barriers Compliance Board.

### **U.S. Department of Homeland Security, Federal Emergency Management Agency**

- 2015 Flood Risk Report Worcester County, Maryland Coastal Study, City of Pocomoke, Town of Ocean City, Worcester County (unincorporated areas), FEMA Report Number 001. Washington, DC.

### **U.S. Department of the Interior, National Park Service**

- 2017 Assateague Island National Seashore final abbreviated general management plan/environmental impact statement. Berlin, MD: Assateague Island National Seashore.
- 2016 Finding of no significant impact Bayside Picnic and Parking Area Relocation. Philadelphia, PA: Northeast Region Office.
- 2015a Bayside picnic and parking area relocation environmental assessment. Berlin, MD: Assateague Island National Seashore.
- 2015b National Park Service NEPA handbook. Washington D.C.: Office of the Director.
- 2011b Director's order #12: conservation planning, environmental impact analysis, and decision-making. Washington, D.C.: Office of the Director.
- 2006 Management policies—the guide to managing the national park system. Washington, D.C.: Washington Office.

### **U.S. Department of Transportation**

- 2012 Assateague Island National Seashore—alternative transportation systems planning study and business plan for alternative transportation. Cambridge, MA: John A. Volpe National Transportation Systems Center.

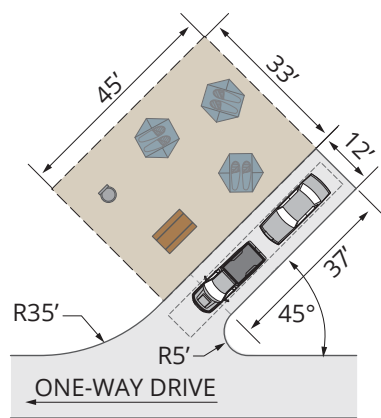
## **APPENDIX A**

### **Campground Facilities Prototypes**

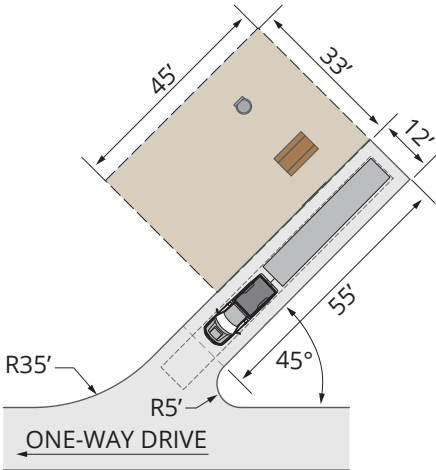


Assateague Campground Redesign  
STANDARD DRIVE-IN CAMPSITE PROTOTYPES

*BACK-IN TO RIGHT*

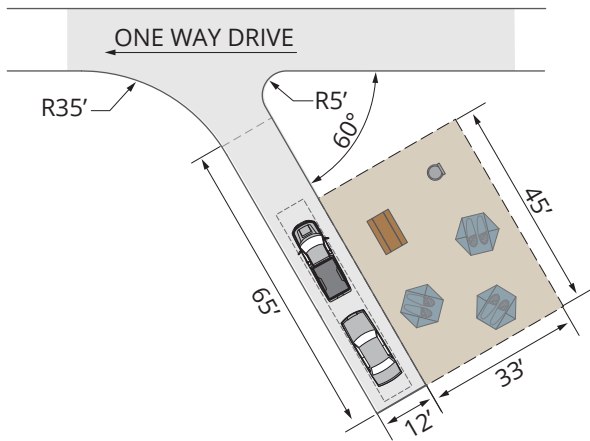


**DRIVE-IN CAMPSITE**  
**45' MAX VEHICLE LENGTH**  
(1485 SF + 714 SF DRIVEWAY)

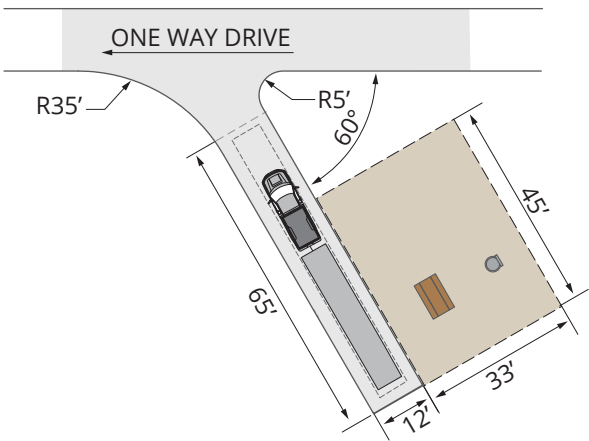


**DRIVE-IN CAMPSITE**  
**62' MAX VEHICLE LENGTH**  
(1485 SF + 927 SF DRIVEWAY)

*BACK-IN TO LEFT*



**DRIVE-IN SITE**  
**45' MAX VEHICLE**  
(1485 SF + 1030 SF DRIVEWAY)

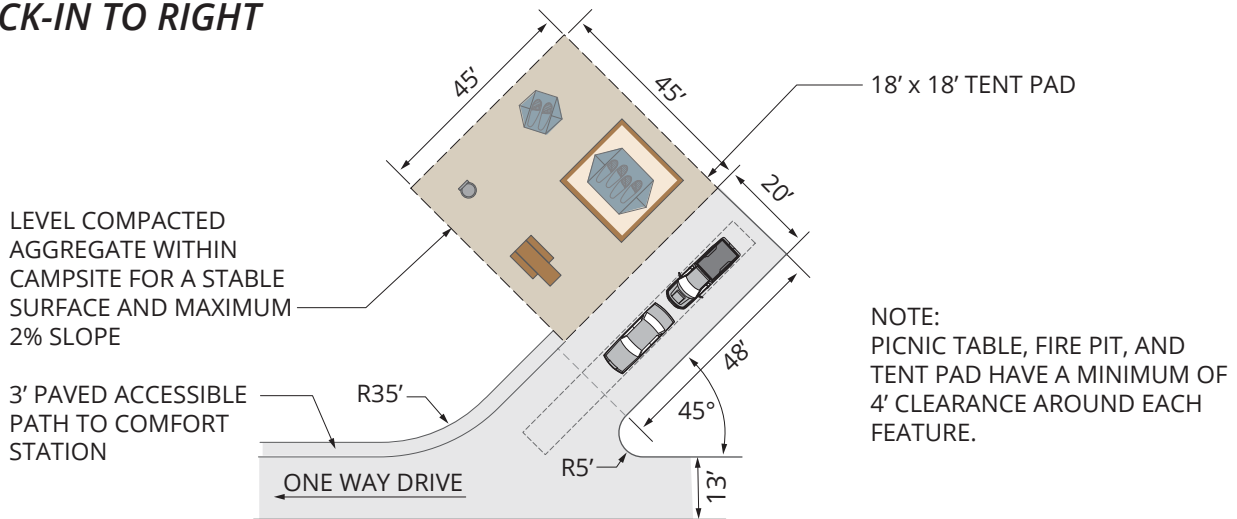


**DRIVE-IN SITE**  
**62' MAX VEHICLE**  
(1485 SF + 1030 SF DRIVEWAY)

# Assateague Campground Redesign

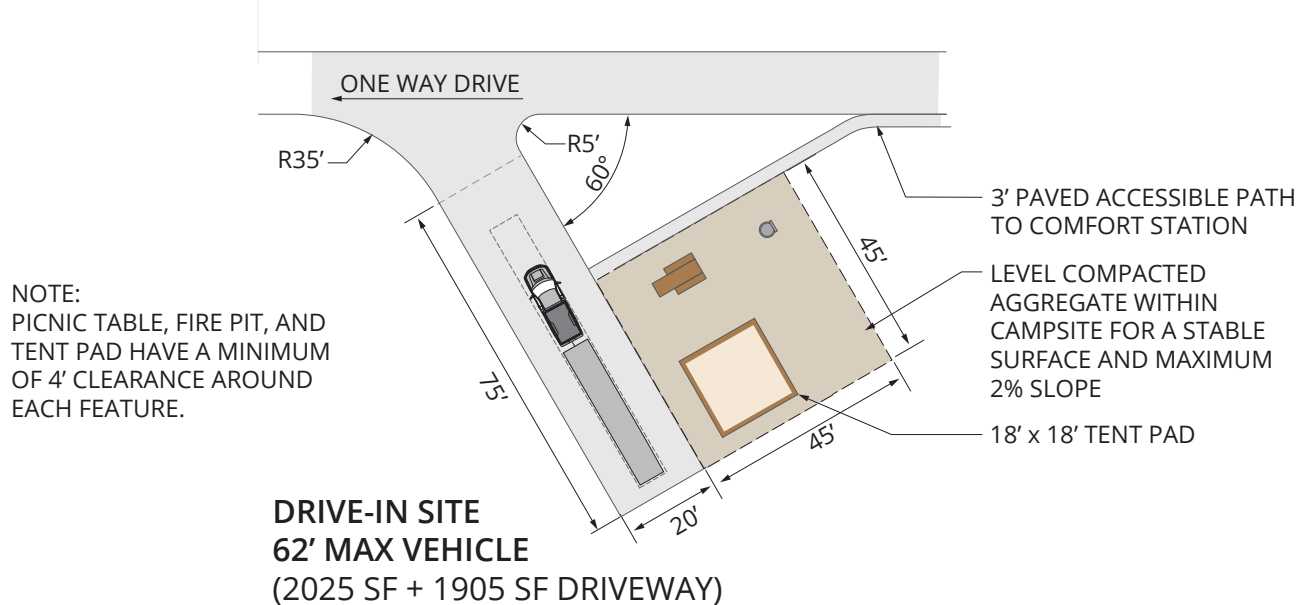
## ACCESSIBLE DRIVE-IN CAMPSITE PROTOTYPES

### BACK-IN TO RIGHT



**DRIVE-IN SITE**  
**62' MAX VEHICLE**  
 (2025 SF + 1895 SF DRIVEWAY)

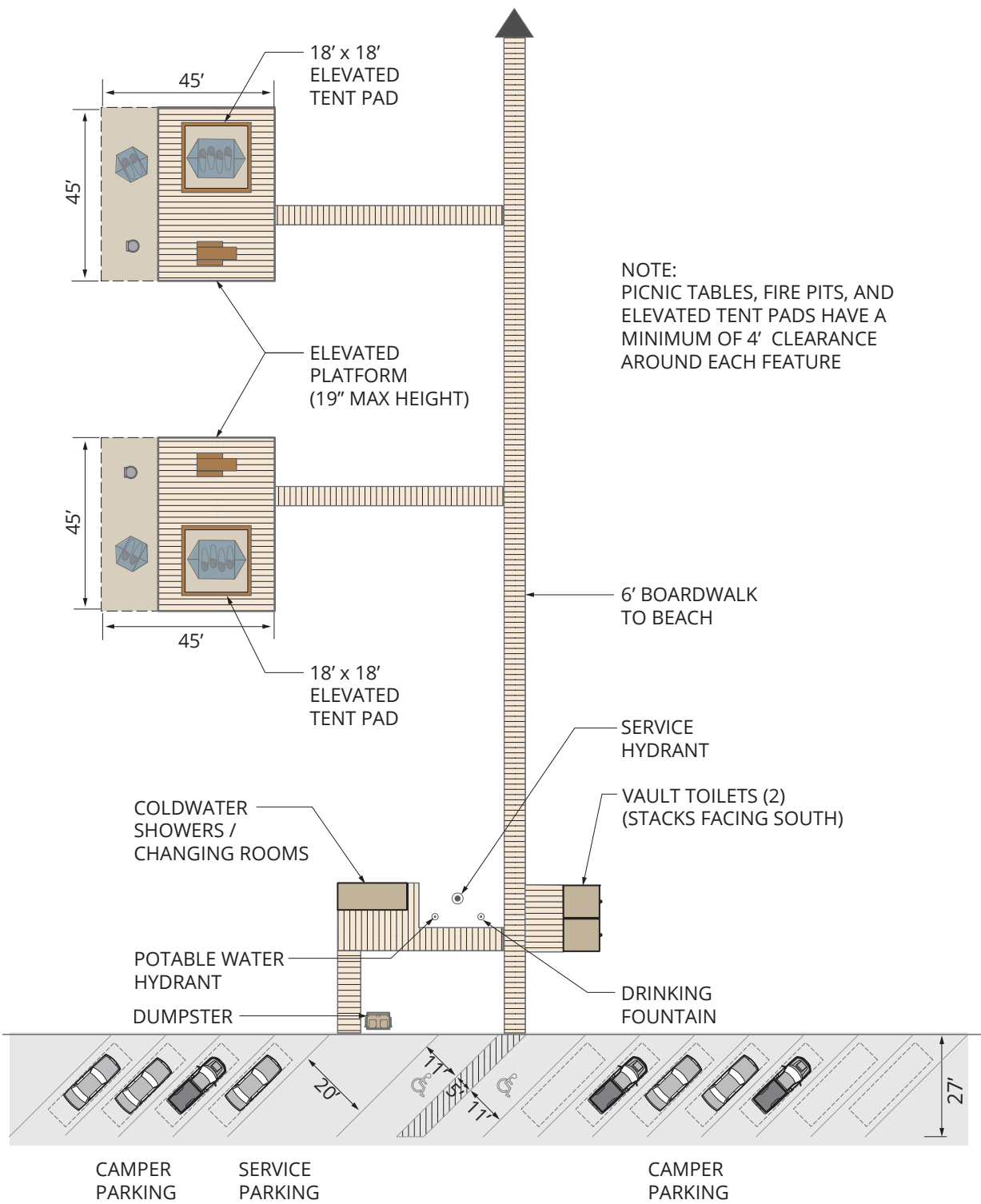
### BACK-IN TO LEFT



**DRIVE-IN SITE**  
**62' MAX VEHICLE**  
 (2025 SF + 1905 SF DRIVEWAY)

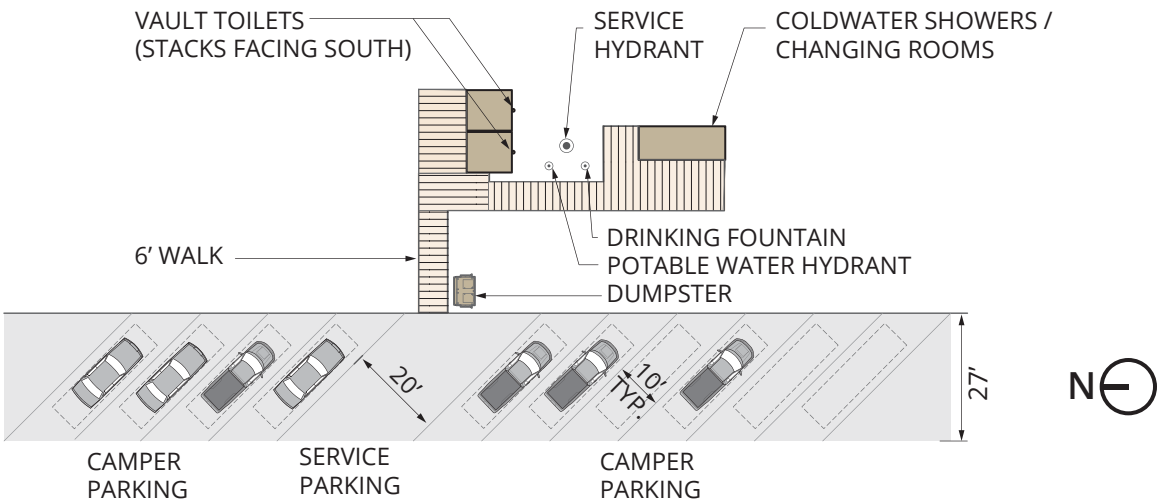
# Assateague Campground Redesign

## ACCESSIBLE WALK-IN CAMPSITE PROTOTYPE

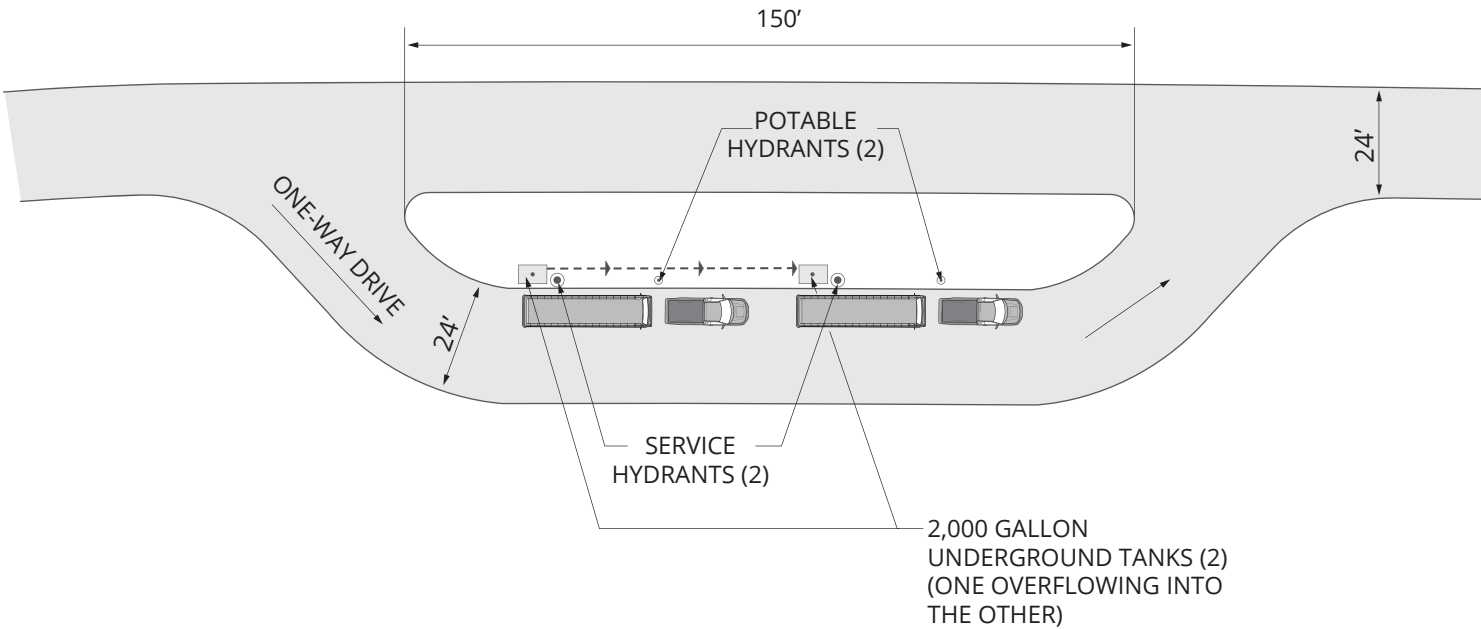


Assateague Campground Redesign

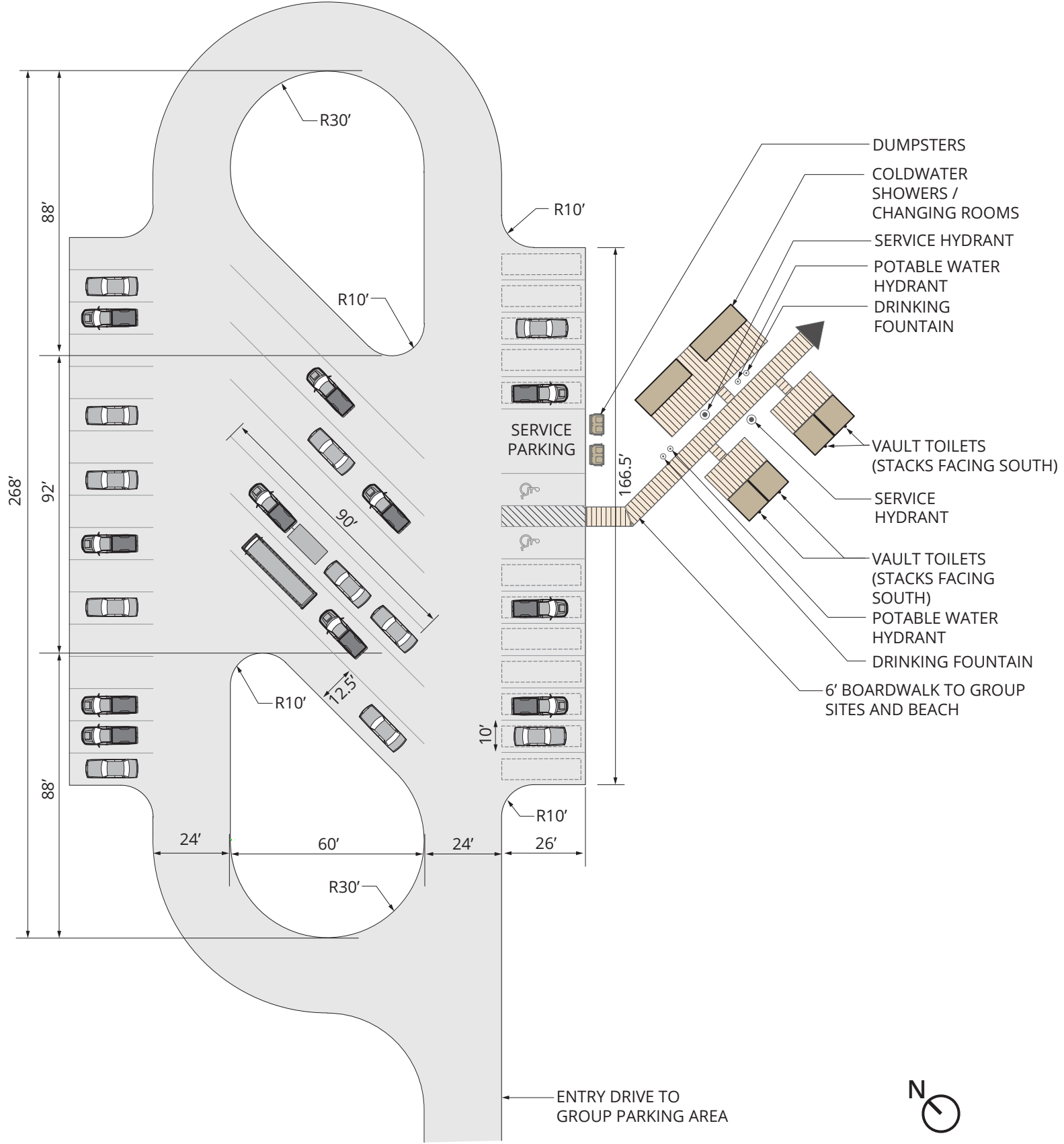
MOBILE COMFORT STATION



DUMP STATION



Assateague Campground Redesign  
GROUP PARKING PROTOTYPE





## **APPENDIX B**

### **Statement of Findings for Floodplains**

# **Statement of Findings for Floodplains**

## **Flexible Design Strategy for Relocating Oceanside Campground**

### **Environmental Assessment**

#### **Assateague Island National Seashore Maryland and Virginia**

**Recommended:**

\_\_\_\_\_  
Superintendent, Assateague Island National Seashore

Date

**Certification of Technical  
Adequacy and  
Servicewide Consistency:**

\_\_\_\_\_  
Chief, Water Resources Division

Date

**Approved:**

\_\_\_\_\_  
Northeast Regional Director

Date

*This page intentionally left blank*

## Contents

Introduction .....	1
Site Description .....	2
Description of the Floodplain.....	2
Proposed Action.....	2
Oceanside Campground .....	5
Bayside Campground.....	5
Group Campsites .....	6
Equestrian Campsites .....	6
Wastewater Dump Stations .....	6
Maintenance Facility .....	6
Seashore Roads .....	6
Pedestrian/Bicycle Circulation.....	7
Justification for Use of the Floodplain .....	7
Why Action Must Be in the Floodplain.....	7
Investigation of Alternative Sites .....	7
Flood Risks .....	9
Mitigation Measures.....	10
Summary .....	10
References .....	11

## Figures

Figure 1. Project Area..... **Error! Bookmark not defined.**

Figure 2. Floodplains within the Project Area..... **Error! Bookmark not defined.**

## Acronyms and Abbreviations

EA	Environmental Assessment
NPS	National Park Service
Seashore	Assateague Island National Seashore
SOF	Statement of Findings

# INTRODUCTION

Pursuant to Executive Order 11988, “Floodplain Management,” Executive Order 13699, “Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input,” and Director’s Order 77-2: *Floodplain Management*, flooding hazards have been evaluated related to the proposed alternatives for the project. It is National Park Service (NPS) policy to preserve floodplain values and minimize potentially hazardous conditions associated with flooding. This statement of findings (SOF) describes the proposed project, project site, floodplain determination, use of floodplain, investigation of alternatives, flood risks, and mitigation for the continued use of facilities within the floodplain.

Established by Congress in September 1965 as a unit of the national park system, Assateague Island National Seashore (the seashore) is composed of the 37-mile Assateague Island (a barrier island off the eastern coast of the Delmarva Peninsula) in Maryland and Virginia and the surrounding marine and estuarine waters, extending up to one-half mile from the island’s shore. NPS is responsible for managing the seashore to protect Assateague Island and its adjacent waters and small islands and to make available those resources for public outdoor recreation use and enjoyment. Each year thousands of visitors to the seashore enjoy one of the highest quality beach camping experiences in the eastern United States. For many visitors, this has been a life-long experience.

Located within and just west of the secondary dune on the narrow barrier island, the campsites at the Oceanside Campground at the seashore are extremely vulnerable to coastal storms. Natural coastal processes including the action of tides, wind, waves, currents, and sea level rise continually influence and shape the island. As the sand moves, the island moves westward. The most rapid island changes occur during intense storm events that while lasting only a day or a few days can dramatically alter the physical characteristics of the dunes and land immediately behind them that are home to the campsites. Recent evidence indicates that coastal storms are becoming more frequent and more intense, increasing and accelerating the rate and magnitude of island changes and in turn requiring increasing demands for maintenance to keep the campsites open. In recent years, as the sand has overtaken campsites on the eastern edge of the secondary dune, the NPS has abandoned many and replaced them with new campsites on the western edge of the advancing secondary dune.

Recognizing the vulnerability of the Oceanside Campground campsites and the high value that seashore visitors place on Assateague’s beach camping experience, NPS is developing a flexible design strategy for relocating Oceanside campsites incrementally, as they are damaged or lost. The strategy will enable NPS to maintain the camping experience at Assateague Island in years to come, as coastal processes continue to shape the barrier island and the island moves westward, rolling over on itself.

This SOF describes the proposed action, the project site, the floodplain determination, the justification for use of floodplain, the investigation of other alternatives, the flood risks, and the mitigation for the proposed action within the floodplain.



## **SITE DESCRIPTION**

NPS offers opportunities for visitors to Assateague Island to camp at 2 campgrounds in Maryland. Oceanside Campground, located within and west of the secondary dune adjoining the Atlantic Ocean beach, offers 41 drive-in campsites, 63 walk-in campsites, 5 group campsites, and 2 equestrian campsites. Bayside Campground on the Bayside Peninsula adjoining Sinepuxent Bay on the west side of the island, offers 49 drive-in campsites.

The project area for the flexible design strategy environmental assessment (EA) encompasses the 2 existing NPS campgrounds plus land between Oceanside Drive and Bayberry Drive, as well as land adjoining Bayberry Drive located east of the Bayside Campground (figure 1).

## **DESCRIPTION OF THE FLOODPLAIN**

The project area is entirely within the 100-year floodplain (FEMA 2015). The areas west of the dunes are within Zone AE, which is the 100-year floodplain that is not subject to wave action. The area east of the dunes and adjacent to the ocean shore is within Zone VE, or 100-year floodplain where the elevation is known to be influenced by wave action. A small portion of the project area that surrounds the parking lot associated with the lifeguarded beach is excluded from these zones. Figure 2 depicts the floodplain designations of the project area.

Zone AE of the 100-year floodplain encompasses nearly all of the features of both the Oceanside and the Bayside Campgrounds. Under alternative 3, the impervious surfaces removed and added from relocating roads, parking areas, and camping pads would be located within Zone AE. Some walk-in campsites would be located within Zone VE; however, these sites would not require installation of any impervious surfaces.

## **PROPOSED ACTION**

Under the proposed action (Alternative 3 – Some Drive-In Campsites Relocated to Bayside/Some Drive-In Campsites Converted to Walk-In Campsites), as facilities are damaged or lost to storms, the flexible design strategy would focus on relocating some Oceanside drive-in campsites to more stable locations on the Bayside Peninsula and converting some Oceanside Campsites to walk-in campsites. Overall, the total number of 153 campsites would be retained, but the ratio of developed campsites to walk-in campsites would decrease.



Existing Bayside Campground  
(campsites likely to be added)

Existing Oceanside Campground  
(campsites to be relocated as they are lost or damaged)

site under consideration for relocation  
of lost or damaged campsites

Existing Bayside  
Parking and  
Picnic Area

NPS Entrance Station/  
Visitor Contact Station

Chincoteague  
Bay

Atlantic  
Ocean

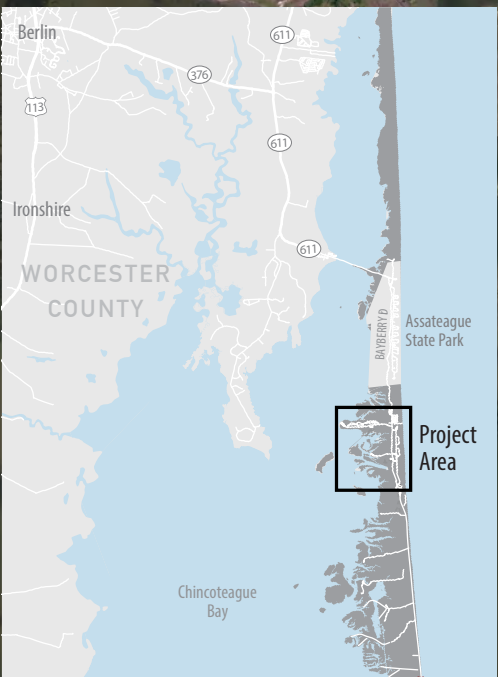


Figure 1.1  
Flexible Design Strategy Project Area







Existing Bayside Campground  
(campsites likely to be added)

Existing Oceanside Campground  
(campsites to be relocated as they are  
lost or damage)

site under consideration for relocation  
of lost or damaged campsites

Figure 3.1  
**Floodplains**  
2015 FEMA Floodplain  
Zone VE (coastal flood zone with velocity hazard [wave action])  
Zone AE  
Zone X  
0 250 500 750 1000 Feet

## **OCEANSIDE CAMPGROUND**

The 41 existing drive-in campsites in Oceanside Loop 1 and Oceanside Loop 2 would gradually be removed. Two drive-in campsites would be relocated along the eastern edge of Oceanside Drive to serve as campground host campsites. Twenty-four drive-in campsites would be relocated to the Bayside Peninsula. Fifteen drive-in campsites would be converted to walk-in campsites (increasing the number of walk-in sites at Oceanside from 63 to 78). The existing paved loop roads and camping pads in Oceanside Loop 1 and Loop 2 would be removed.

The 73 walk-in campsites would be relocated the area west of the projected 2040 primary dune. The easternmost campsites now in the existing foredune would be relocated to the area now occupied by the Oceanside Loop 1 and Loop 2 drive-in campsites. Four walk-in campsites would be accessible. Two new parking areas (with 18 and 21 spaces) would serve the relocated walk-in campsites. The southernmost existing walk-in campsite parking area (F) with 19 parking spaces would be removed, as the sites that it now serves would be relocated to the north.

Four of the 6 existing mobile comfort stations (each including 2 toilets, 2 cold-water showers, and a dumpster) would be relocated to the edge of the walk-in campsite parking areas. One would be relocated to a new campground loop at Bayside. Potable water service would be extended to the relocated comfort stations; water lines serving existing sites would be abandoned in place.

## **BAYSIDE CAMPGROUND**

In the Bayside Campground, the drive-in campsites demolished by the Bayside Picnic and Parking Area Relocation Project (12 campsites in Bayside Loop C and 5 campsites in Bayside Loop B) would be relocated elsewhere within the Bayside Campground, but in locations different from those of the approved plan. This would be accomplished through a combination of infill within the existing Bayside Campground Loop A and Loop B, and addition of a new campground loop road east of Bayside Loop A. Each alternative would relocate 17 drive-in campsites, but the site plan for relocating the campsites would differ between alternative 2 and alternative 3.

NPS would replace the lost Bayside Campsites and the relocated Oceanside Campsites by adding a new campground loop in the area east of the existing maintenance facility and by redesigning the existing Bayside Campground Loop A and Loop B. The new campground loop would include 20 new campsites. Redesign of Loop A and Loop B would retain the existing roads and comfort stations, but most of the existing campsite pads would be removed and reconfigured to fill in areas along the loop roads that are now vacant. The redesign would provide 32 campsites in Loop A and 14 campsites in Loop B. An additional 7 campsites would be located on the existing connector road between Loop A and Loop B.

The total number of drive-in campsites in the Bayside Campground would remain at 49, of which 3 would be accessible drive-in campsites.

A new comfort station with a double vault toilet and 2 cold-water showers would serve the new campground loop. Potable water service would be extended to the new comfort station.

## **GROUP CAMPSITES**

The seashore's 5 group campsites would be relocated from the existing foredune to the projected 2040 secondary dune. The existing vault toilets and cold-water showers, access road, and parking area would be removed. Replacement facilities would be located west of the projected 2040 accommodation zone. Two new comfort stations would be installed, each including 2 double vault toilets and 2 cold-water showers. The new parking area would have the same footprint and capacity as the existing group parking area, which is adequate to meet demand when all 5 group campsites are occupied. Traffic would enter from and exit to Oceanside Drive.

## **EQUESTRIAN CAMPSITES**

The seashore's 2 equestrian campsites would be relocated from their existing location near parking area E to sites adjacent to the relocated group campsites. The 2 campsites would be located next to one another, just west of the relocated group campsite parking area. The campsites would be accessed through the group campsite parking area. Each campsite would have a stabilized area for parking and turning around a horse trailer. Campers using the equestrian campsites would use the relocated comfort station at the group campsite. Potable water would be extended to each campsite.

## **WASTEWATER DUMP STATIONS**

A new wastewater dump station would be constructed to serve all drive-in campsites. The existing dump station at the Bayside Campground would be removed as part of the Bayside Picnic and Parking Area Relocation Project. Also, the existing dump station on Oceanside Drive would be removed as part of the flexible design strategy. The new dump station would be located on Bayside Drive (at a location east of the location proposed for the new dump station in alternative 1).

## **MAINTENANCE FACILITY**

The existing maintenance facility would move south of Bayberry Drive to a new site approximately 1 acre in size. Much of the outdoor storage now on the island would be relocated and consolidated within the existing seashore maintenance facility on the mainland.

## **SEASHORE ROADS**

New campground loop roads would serve relocated drive-in campsites in the Oceanside and Bayside Campgrounds. Approximately 900 feet of Bayside Drive, at and just west of its intersection with Bayberry Drive, would be realigned. By straightening the road, adequate land area would be made available south of Bayside Drive for relocation of the seashore maintenance facility.



## PEDESTRIAN/BICYCLE CIRCULATION

A new multi-use trail would connect the Bayside Campground loops to the relocated Bayside Parking Area, North Beach, and the existing seashore bike path along Bayberry Drive and Oceanside Drive. A pedestrian crossing at Bayberry Drive would enable visitors to safely cross to the North Beach area.

## JUSTIFICATION FOR USE OF THE FLOODPLAIN

### WHY ACTION MUST BE IN THE FLOODPLAIN

The actions associated with relocating the Oceanside Campground campsites damaged by coastal storms through a flexible design strategy include removal of asphalt roads and campsite pads, addition of new roads, parking areas, and campsite pads, and relocating comfort stations. These actions within the 100-year floodplain are necessary for the following reasons:

- Almost all of the land with the seashore is within the 100-year floodplain. The relatively small area that is above the 100-year floodplain is already fully developed with day-use visitor facilities. Thus, all proposed relocated campsites and campground infrastructure will be located within the 100-year floodplain.
- The flexible design strategy will provide the guidance necessary to make management choices with the overall seashore management framework found in the Assateague Island National Seashore General Management Plan (NPS 2017).
- Providing recreation experiences is one of the seashore's purposes, and beach camping is one of the most popular recreation visitor experiences. Due to the demand for camping at the seashore, managers must be ready to implement campsite repairs and/or relocations as quickly as possible. The flexible design strategy will outline how this will be accomplished incrementally, maintaining the total inventory of campsites from year-to-year, as campsites are lost to moving sand and storm damage.
- The maintenance of the drive-in, walk-in, and campsites and the boardwalks on the oceanside following storm events places a burden on park operations.

### INVESTIGATION OF ALTERNATIVE SITES

Although it would be impossible to relocate Oceanside Campground campsites outside of the floodplain, NPS considered a full range of alternatives during scoping. The EA fully considered two action alternatives (alternatives 2 and 3) that would meet the purpose and need of the project and the no-action alternative (alternative 1). Additionally, two other alternatives were considered but dismissed from full analysis. As previously stated, alternative 3 was selected as the NPS preferred alternative.

**No-Action Alternative:** Under alternative 1, NPS would continue to manage the Oceanside Campground as it does today, offering a mix of drive-in and walk-in campsites. Following damaging storms, maintenance staff would remove sand, repair facilities as quickly as possible to maintain the campsite inventory. Once the drive-in campsites can no longer be maintained, drive-in camping would be eliminated. At Bayside, modifications would be made to the campground as proposed in the approved



plan for the Bayside Parking and Picnic Area Relocation (NPS 2016). Over time, once the Oceanside Drive-in campsites can no longer be maintained, the seashore would offer 116 campsites, including 63 walk-in campsites and 53 drive-in campsites. This alternative was not selected as the preferred alternative because retaining the campsites at the Oceanside Campground is not feasible in the face of the natural westward movement of Assateague Island and the observed more intense, frequent, and damaging coastal storms of the past few decades.

**Alternative 2, All Drive-In Campsites Relocated between Oceanside Drive and Bayberry Drive:** Under alternative 2, the flexible design strategy would focus on shifting Oceanside Campground facilities to more stable locations as they are damaged or lost to storms. Oceanside Campground drive-in campsites would be relocated west of Oceanside Drive. The 63 walk-in campsites would be relocated west of the projected 2040 foredune, with many sites relocated to the area now occupied by Oceanside Loop 1 and Loop 2. Bayside Campground would continue to offer 49 drive-in campsites. Overall, the total number of 153 campsites would be retained, with the existing mix of 63 walk-in campsites and 90 drive-in campsites. Alternative 2 would eliminate drive-in camping on the beach, which is a decades-long traditional experience for many seashore visitors. Although this alternative meets the purpose and need, the adverse impacts on visitor experience would be significant. Therefore, this alternative was not selected as the preferred alternative.

**Alternative Sites for Campground Relocation within the Maryland Development Zone:** The scoping process for the EA considered relocating the Oceanside Campground campsites that are lost or severely damaged by coastal storms to another location within the Maryland Development Zone, an area NP manages to provide traditional recreational and educational opportunities that support moderate to high density visitor use. However, after eliminating existing developed visitor use areas, areas of extensive natural dunefields areas within 100 feet of tidal wetlands along the Chincoteague Bay shoreline, and wetland areas protected by federal and state laws and NPS policy, NPS determined that the only upland areas suitable for relocation of campsites were those within the project area.

**Relocation of Oceanside Campground Drive-in Campsites to the Bayside Peninsula:** NPS also considered relocating the 41 Oceanside Drive-in campsites to the Bayside Peninsula. The enlarged Bayside Campground would offer 88 drive-in campsites, accommodated by infilling vacant areas of the existing Loop A and Loop B, and by adding 2 new campground loops, one with 27 campsites and one with 13 campsites. To accommodate one of the new loops, NPS would relocate the seashore maintenance facility to a site further south along Bayberry Drive. This alternative would have large adverse impacts to the visitor experience for both campers and day-use visitors, thus not meeting the purpose and need of the project. For this reason, this alternative was dismissed.

## FLOOD RISKS

Flooding on the seashore can range from minor flooding with inundation of the fore dunes and minor erosion to major flooding from hurricanes. Major storms can drive storm surges across the island, removing large sections of the dune line and completely changing the landscape, particularly along the shoreline. Hurricanes can cause severe flooding, wind damage, and extensive beach erosion. Heavy surf and high tides can breach dunes, and inlets may be cut by flood tides trapped in bay areas. Facilities may be severely damaged or destroyed, roads and bridges washed out, and utilities damaged. As previously stated, recent evidence indicates that coastal storms are becoming more frequent and more intense, increasing and accelerating the rate and magnitude of island changes.

The seashore supports a number of natural features that reduce flooding severity. Portions of the project area that are not currently used for camping or other seashore facilities are characterized by a mix of upland and non-tidal wetland vegetation. Although sparse, the vegetation reduces shoreline erosion. Non-tidal wetlands border the project area along its western and northern edges and occur as small isolated pockets within upland areas. Fifteen non-tidal wetlands are present, encompassing approximately 27 acres (EA Engineering 2017a and 2017b). These wetlands provide various functions, such as flood flow storage and sediment retention. Dunes impede storm surge, and interdunal wetlands and other depressions also function to store water during overwash or large precipitation events. Beach dunes are typically formed through the trapping of sand by dune vegetation, and in the absence of vegetation, dunes may “migrate,” moving with the prevailing wind direction. Dunes are present along the length of the oceanside portion of the study area.

**Construction within the Floodplain:** The proposed action would result in a net decrease of 4.33 acres of impervious surfaces. Activities would include removal of some roads, parking areas, and camping pads and installation of these features in other areas of the project area that are west of the estimated location of the foredune in the year 2040. Impacts on the natural floodplain values include removal of some vegetation and construction of new permanent features. These actions could have a small adverse impact on floodplain values – previously vegetated areas would have less capacity to store rainfall, new impervious surfaces may result in a reduction of water storage and infiltration of water into the ground. However, these impacts would be slight and would not cause an increase in flooding at the seashore.

**Capital Investment:** The seashore has evaluated a full range of alternatives for relocating the Oceanside Campground campsites, considering the best placement of new features while also protecting natural and cultural resources. The proposed action would require installation of approximately 5.29 acres of impervious surface in the form of roads, parking areas, and camping pads. Although these features could be damaged by flooding, the impact to capital investment would be minimal.

**Opportunity for Evacuation:** The proposed locations for campsites within the project area would be located within a high-risk area for flooding. As such, there would be potential impacts to human health and safety of the visitors and employees under the proposed action. Flood events could occur while visitors are camping, resulting to risks to life and property. The relocated campsites would be situated west of the proposed 2040 foredune; therefore, the campsites (and visitors/property) would be less subject to inundation and storm surge effects, and risks to life and property from flooding would be reduced.

## MITIGATION MEASURES

Mitigation measures would reduce hazards to human life and property and to the natural resources of the floodplain. Several mitigation measures would be used during construction that would reduce direct impacts to the floodplain, including:

- Defining construction zones that limit the area of activity to the minimum required for construction and to protect wetlands by retaining undisturbed buffers adjoining wetlands of 25' from tidal wetlands and 100' from non-tidal wetlands and identifying the perimeter of all construction zones using construction tape, temporary fencing, or other material prior to construction.
- Protecting areas of mature forest vegetation that are to be retained on site.
- Using soil erosion best management practices such as sediment traps, erosion check screen filters, and hydro mulch to prevent entry of sediment into waterways.

As described in the previous section, the greatest potential impacts during flood events would be to human health and safety of the visitors and employees within the project area. Assateague Island National Seashore has a hurricane and flooding plan that would direct emergency actions and evacuations in the event of flooding. At the appropriate times visitors would be removed from the site and the site would be closed until potentially hazardous conditions subsided.

## SUMMARY

The actions for relocation of Oceanside Campground campsites at Assateague Island National Seashore are essential for public use and safety. The campsites would be located within the floodplain and could present a risk to life and property; however, this is unavoidable, as the entire seashore is within the 100-year floodplain. By locating the campsites west of the predicted 2040 foredune, NPS would be reducing the risks of flooding on visitors and employees. Life and property would be further protected by efforts to close and/or evacuate the seashore in the event of flooding. By removing impervious surfaces from existing features and reducing the amount of vegetation removed during construction, NPS would be reducing the impacts on the natural and beneficial floodplain values as much as possible. For these reasons, NPS considers this project is consistent with the policies and procedures of Executive Order 11988, "Floodplain Management" and NPS Director's Order #77-2: *Floodplain Management*.

## REFERENCES

EA Engineering, Science, and Technology, Inc.

2017a Final wetland delineation report Assateague Island National Seashore Oceanside Campground Redesign. (Prepared for National Park Service, Assateague Island National Seashore.) Hunt Valley, MD.

2017b Final wetland delineation report Assateague Island National Seashore Oceanside Campground Redesign—Bayside Peninsula. (Prepared for National Park Service, Assateague Island National Seashore.) Hunt Valley, MD.

US Department of Homeland Security, Federal Emergency Management Agency (FEMA)

2015 Flood Insurance Rate Map (FIRM) Panel 24047C0285H: Worcester County, Maryland and Incorporated Areas. Federal Emergency Management Agency, National Flood Insurance Program. Effective Date July 16, 2015.

U.S. Department of the Interior, National Park Service (NPS)

2016 Finding of no significant impact Bayside Picnic and Parking Area Relocation. Philadelphia, PA: Northeast Region Office.

2015 *Bayside picnic and parking area relocation environmental assessment*. Berlin, MD: Assateague Island National Seashore.

2017 *Assateague Island National Seashore final abbreviated general management plan/environmental impact statement*. Berlin, MD: Assateague Island National Seashore.



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.