FLOODPLAINS STATEMENT OF FINDINGS

Environmental Assessment for Oregon Inlet Marina Building and Site Improvements

FLOODPLAINS STATEMENT OF FINDINGS

for

Executive Order 11988: Floodplain Management

Director's Order 77-2: Floodplain Management

Recommended:

DAVID HALLAC Digitally signed by DAVID HALLAC
Date: 2021.05.26 19:20:06 -04'00'

David E. Hallac — Date
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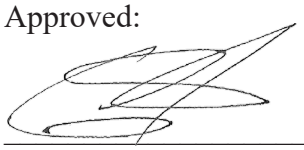
Certification of Technical Adequacy and Servicewide Consistency:

FORREST HARVEY Digitally signed by FORREST HARVEY
Date: 2021.06.04 13:32:45 -06'00' 6/4/21

Forrest (Ed) Harvey — Date
Chief, Water Resources Division, National Park Service

Approved:



6/11/21

Pedro M. Ramos — Date
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INTRODUCTION

The National Park Service (NPS) has prepared this Floodplain Statement of Findings (FSOF) in compliance with Executive Order 11988 *Floodplain Management* and Directors Order 77-2. NPS would undertake a federal action at Oregon Inlet Marina, within Cape Hatteras National Seashore, in order to replace vulnerable, deteriorating buildings with resilient and sustainable structures and in order to conduct associated site improvements to modernize the marina premises.

Oregon Inlet Marina (also known as Oregon Inlet Fishing Center) is a commercial charter fishing marina located within Cape Hatteras National Seashore (Seashore) in Nags Head, North Carolina in the region of barrier islands known as the Outer Banks. Fishing operations and a marina in some form have been in place at Oregon Inlet for several decades. The National Park Service (NPS) has permitted or contracted fishing center and marina operations at Oregon Inlet since 1953 and the marina has been in operation in its current location since December 1956. While some of the facilities and operations have changed over the years, the marina operation has continuously provided charter fishing and associated services.

Oregon Inlet Marina (marina) is operated by Oregon Inlet Fishing Center, LLC (OIFC) under a 20-year lease with the NPS (2018 – 2038). In general, OIFC provides the following services at the marina: slip rentals for charter fishing boats, headboats and tour boats; booking services for charter fishing and other boats; retail sales; fuel sales; and food & beverage sales. OIFC is also authorized to provide: non-motorized watercraft rentals (such as kayaks and canoes); special events, such as fishing tournaments; and a children's play area. Under the terms of the lease, the lessee is required to fund and conduct all maintenance on the marina premises, as well as fund and undertake improvements and alterations to the premises as approved by the NPS.

The marina premises (also referred to as the “project area”) is +/- 11.3 acres and consists of a retail building (6,577 sf), marina basin (~ 1,580 linear ft with 61 existing wet slips), maintained landscape area (~ 1 acre), four (4) storage buildings (496 sf), an exhibit building (168 sf), asphalt parking area (~ 197 spaces), automobile fuel station booth (128 sf), waste water systems, and a fuel system consisting of three 10,000 gallon ConVault above ground storage tanks and six dispensers providing marine and vehicle fuel. All of the current development includes a total impervious area of 144,484 square feet or 3.32 acres.

The proposed action includes demolishing and replacing all the existing marina buildings within the project area and conducting other site improvements, including: formalizing informal parking areas and adding a driveway for air pump stations; upgrading the fuel system with in-slip fueling, a new transient fuel dock (including associated dredging) and placing the vehicle fuel area in a new location with a new driveway; adding pedestrian paths including a boardwalk near the transient fuel dock; maintenance dredging of the existing marina basin; formalizing stormwater management infrastructure to handle runoff from impervious surfaces; and adding a new wastewater pump station and drainfield (~ 1,600 gallons per day).

Brief Site Description

In 1937, Cape Hatteras became the first national seashore. It was designated to preserve dynamic barrier islands and its unique vegetation, wildlife and coastal processes, and to provide recreation and enjoyment for the public. Stretching over 70 miles from north to south, Cape Hatteras National Seashore crosses three islands: Bodie, Hatteras, and Ocracoke in the region known as the Outer Banks.

Oregon Inlet Marina is a commercial charter fishing marina located in the Bodie Island District of the Seashore. The marina is located just south of the town of Nags Head, North Carolina, just north of the Marc Basnight Bridge, adjacent to United States Coast Guard Station Oregon Inlet and an NPS public boat ramp, and across NC-12 from the NPS Oregon Inlet Campground.

Fishing operations and a marina in some form have been in place at Oregon Inlet for several decades. According to the Seashore's administrative history, a fishing center was in existence at Oregon Inlet prior to government ownership and NPS management of this area of Bodie Island. The NPS has permitted or contracted fishing center and marina operations at Oregon Inlet since at least 1953 and the marina has been in operation in its current location since December 1956. While some of the facilities and operations have changed over the years (for example, the facilities have previously housed a full-service restaurant and the main marina building has been added-on to meet operational needs), the marina operation has continuously provided charter fishing and associated services since the 1950's.

The lease premises, which is also the project area, is shown in red on Figure 1. The majority of the project area is mapped within Firm Zone (AE 5') with a small portion, where the existing septic drain fields are located, mapped as Shaded X (Panel 3730072600K). The mapped Federal Emergency Management Agency (FEMA) flood zones are shown on the attached Figure 2.

Brief Description of the Proposed Action

The proposed action is the action alternative and preferred alternative described in the Oregon Inlet Marina Improvements Site Plan and Environmental Assessment (EA). The purpose of the proposed action is to replace vulnerable, deteriorating structures with sustainable structures adapted to sea level rise and storm surge, and to conduct other site improvements to modernize the marina premises and to support the replacement buildings.

The proposed action includes the following activities (shown on Figure 1):

- Demolish all buildings currently in the project area (retail building - 6,577 sf., four (4) storage buildings – totaling 496 sf, an exhibit building - 168 sf, and automobile fuel station booth - 128 sf)
- Replace buildings with sustainable and resilient buildings with a first-floor elevation of 11-feet (exceeding Dare County Flood Damage Prevention Ordinance [hereafter "Dare County requirements"] by 3 feet and the Federal Emergency Management Agency (FEMA) requirement to participate in the National Flood Insurance Program [hereafter "FEMA requirements"] by 6 feet) as follows:
    - Main marina building (retail, food & beverage, and marina operations) approximately 6,393 sf first floor footprint
    - Fish cleaning building approximately 1,880 sf
- Increase formal parking infrastructure to accommodate up to approximately 293 automobiles
- Enhance vehicular and pedestrian circulation within in the lease premises and between adjacent uses (NPS Boat Ramp and Recreational Vehicle (RV) pump out) by adding secondary vehicular egress in the vehicle fuel area, constructing pedestrian paths and wooden boardwalks, and adding a driveway for air pump stations
- Replace existing marine fuel docks and aged fuel infrastructure with the following:
    - An approximately 900 sf fuel dock with two (2) fueling stations for transient boats in Motts Creek (outside of marina basin)

  - Seven (7) in-slip fueling stations located throughout the marina
- Replace existing fuel docks with up to six (6) boat slips
- Replace existing vehicle fuel in a new location with a new driveway
- Construct new on-site wastewater treatment and disposal system (+/- 1,600 gpd) to accommodate replacement buildings, including food and beverage services
- Enhance stormwater management by constructing formal Stormwater Control Measures (SCMs)
- Perform maintenance dredging of marina basin and portions of Motts Creek
- Place a removable, open-air events pavilion (approximately 3,400 sf) on the lease premises, which will be the personal property of the lessee (not real property of NPS)

Some detailed information depicted in Figure 1 and as described above, such as locations of driveways and operational areas, and square footage of buildings or facilities, could be slightly modified during future project planning and as a result of final design, but will not measurably change what was analyzed in this EA. The following actions will be implemented by the NPS, lessee, and/or contractor/s engaged by either party.

All the activities in the proposed action would take place within the already-developed marina area in order to support continued marina operations at Oregon Inlet. As the marina premises are located within a floodplain, all the activities under the proposed action are also within in a floodplain. As demonstrated in the associated EA and this FSOF, the proposed actions have been intentionally designed to mitigate risks associated with the project's location in a floodplain and to mitigate anticipated sea level rise and storm surge.

The existing marina buildings are vulnerable, deteriorating, have significant deferred maintenance, and do not meet elevation standards for the flood zone in which they are located (Firm Zone (AE 5')). The proposed replacement structures would exceed finished floor elevation (FFE) requirements and the structures would be designed for sustainability.

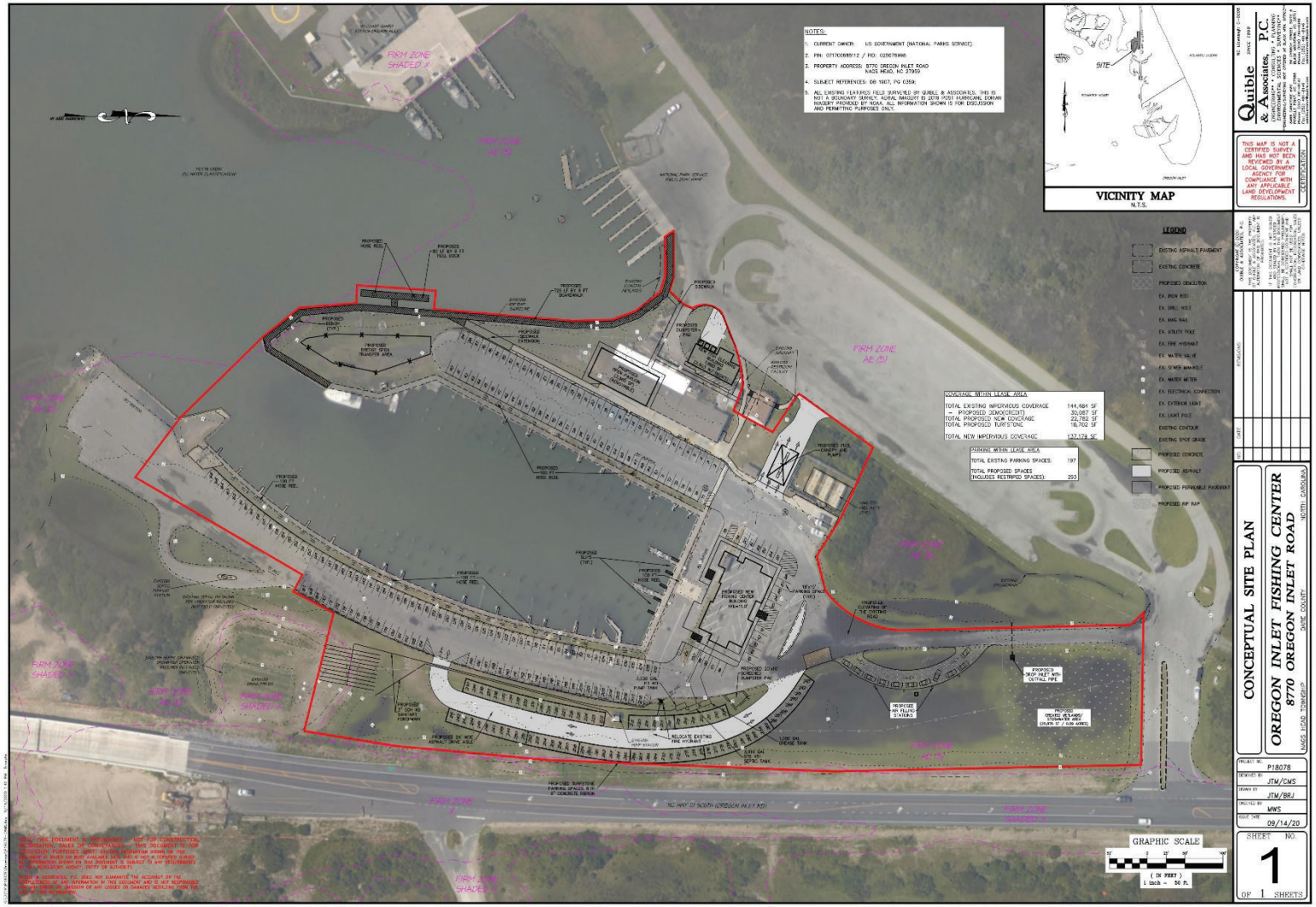
The main marina building (replacement structure, including retail, food & beverage and marina operations with a first floor footprint approximately 6,393 sf and approximately 10,166 sf in total air-conditioned space spread over two floors) would be a pile-supported structure and elevated so that the finished floor elevation (FFE) would be at least 11.0 feet (relative to NAVD 88), which is three feet higher than the local (county) first floor requirement of 8.0 feet (NAVD 88) and six feet higher than the FEMA requirement of 5.0 feet (NAVD 88). Currently, the FFE of the retail structure and fish cleaning building (one unit) are at an elevation of 5.95 feet (NAVD 88). The 100-year flood elevation based on the current FEMA Flood Maps and a comparison of site topography is approximately 5.0 feet (NAVD 88). The fish cleaning building (replacement structure for fish cleaning services and operations, approximately 1,880 sf air conditioned footprint) would be a pile-supported or block foundation structure located on an area of fill with a proposed fill grade elevation of 8.5 feet (NAVD 88) which would bring the structure above the 100 year flood plain. The fill is beneficial fill sourced from the proposed dredge of Motts Creek. Filling would allow for service vehicles, hand carts and pedestrians to directly access the fish cleaning building with their catch without the need for extensive wooden ramps or other mechanical means. The fish cleaning building would be elevated to a first floor elevation of 11.0 feet (NAVD 88), which is six feet higher than the 100-year flood plain elevation FEMA requirement (5.0 feet NAVD 88) and three feet higher than the county first floor requirement of 8.0 feet (NAVD 88). The fish cleaning operation requires that large volumes of fish and ice be able to be delivered and offloaded quickly and directly to the fish cleaning building.

The proposed site improvements to support the replacement buildings and to modernize the marina would also be designed for sustainability and resilience in a floodplain. The proposed additional formal parking infrastructure and other improvements related to vehicle and pedestrian circulation would include mitigations such as the use of permeable pavement. The improvements to the fuel system would include appropriate mitigative actions to protect the loss of fuel in the case of a 500-year flood such as: hurricane straps on the fuel tanks (already in place) and steel and double-walled fuel pipes. The drainfield of the proposed wastewater system will be elevated above the 100-year floodplain. Stormwater control measures will function normally during regular rainfall events and offer stormwater retention and treatment. In general , stormwater control measures are situated lower than the areas of the property that they are designed to serve.

The proposed approximately 900 sf transient fuel dock would be elevated a minimum of three feet above normal water level (NWL) at an elevation of approximately 3.5 feet (NAVD 88). In order to function as a fuel dock for boats in the water, the dock cannot be elevated above the 100-year or 500-year flood plain.

The proposed removable, open-air events pavilion (approximately 3,400 sf) will be the personal property of the lessee, thus not real property of NPS or of NPS consideration with regards to constructing capital improvements in a floodplain. However, by design, water will be able to freely flow through the open pavilion structure thus presenting little to no risk associated with flooding.

Figure 1: Conceptual Diagram of Proposed Action



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

Floodplains within the Seashore perform important natural functions, including temporary storage of floodwaters, dissipation of storm water runoff, moderation of peak flows, groundwater recharge, prevention of erosion, and maintenance of water quality. In general, natural buffers, such as the sandy beach, dunes, and vegetation in the vicinity of the project area help maintain the natural functions of the floodplain. The proposed project/preferred alternative would occur within areas that are currently developed and have been developed since the early 1950's.

The park supports several natural features that reduce flooding severity. For example, dunes along the seashore impede storm surge, and ponds and other depressions also function to store water during over wash or large precipitation events. Flooding on the Seashore can range from minor over wash events during high tides to major flooding from hurricanes and other coastal storms. Excessive precipitation can also flood low elevation areas across the park. Major storms can drive ocean storm surges completely across the island, dramatically changing habitats and the entire landscape. As storm winds and waves scour sand away from the ocean beaches, sediments are deposited along the sound side. Many of the highest points on the islands are within the relict dune fields. Soils are sandy and the vegetation cover is often incomplete. The amount of natural vegetation cover present and the amount of impervious surface within a floodplain influences the degree of retention or effective function a floodplain can provide. The more vegetation and less impervious surface that is present within the floodplain, the better the floodplain can serve to protect the surrounding area from soil erosion and flooding. The ecological value of a heavily vegetated floodplain also increases because it provides more suitable habitat for wildlife (EMI 2008). The dynamic Bodie Island floodplain provides habitat for migrant water birds and helps reduce sound-side wind and wave impacts from storm effects. As a benefit when the sound floods, it brings an abundance of invertebrates, fish, and plants into the freshwater pond adjacent to the project area which then provides food for resting and feeding waterfowl (FEMA 1992).

JUSTIFICATION FOR USE OF THE FLOODPLAIN

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

The proposed action (outlined above and described in the associated EA) must occur within the floodplain, because the proposed replacement buildings and associated site improvements must be located within proximity to the marina basin and associated infrastructure in order to support ongoing marina operations. However, the proposed action will reduce the square footage of solid structures located in the floodplain by elevating the replacement buildings and reducing the overall footprint currently located withing the floodplain.

The project area lies at elevations below the 100-year floodplain (100-year flood elevation 5 feet), as shown on Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel: 3730072600K for Dare County, NC (Figure 2).
FEMA defines geographic areas as flood zones according to varying levels of flood risk. In the proposed action, all of the physical structures would be located within areas mapped as AE (5') on the FEMA flood maps, with the exception of the proposed wastewater drainfield, which would be filled to match the existing drainfields (7.0 feet or greater) in order to provide separation from the seasonal high water table. The proposed drainfield would be elevated above the 100-year

floodplain into the 500-year floodplain at an elevation of approximately 7.0 feet (NAVD 88). The existing drainfields are located in a Shaded X Flood Zone and the new drainfield would be designed to match the existing drainfields. The zone AE (5') indicates that these areas have a 1 in 100 or 1% annual chance of flooding at elevations of 5.0 feet or less. Based on topographic surveys of the property and using the FEMA Flood Zone Maps, the 100-year flood zone includes portions of the project area that occur at elevations of 5 feet (NAVD 88) or less. The 500-year flood zone is defined as areas with a 0.2% annual chance flood hazard or 1% annual chance flood with an average depth of one foot or less or with a drainage area of less than one square mile. The major sources of flooding in this area would be flooding from storm surge or over wash from the direction of the Roanoke Sound and heavy rainfall events that are commonly associated with tropical events.

Description of Site-Specific Flood Risk

According to the United States Department of the Interior (DOI) NPS Procedural Manual #77-2, it is NPS policy to preserve floodplain values and minimize potentially hazardous conditions associated with flooding. To implement NPS floodplain policy, proposed actions are classified into of three action classes. Depending upon the action class, one of three "regulatory floodplains" applies (100-year, 500 year, or Extreme).

Action classes are divided into three categories: Class I Actions, Class II Actions and Class III Actions.

Class I Actions include location or construction of administrative, residential, warehouse, and maintenance buildings: non-excepted parking lots or other human-made features which, by their nature, entice or require individuals to occupy the site, are prone to flood damage, or result in impacts to natural floodplain values. Class I Actions are subject to the floodplain policies and procedures if they lie within the 100-year floodplain (The Base Floodplain). The 100-year floodplain occurs at elevations of 5.0 feet (NAVD 88) and less, within the project area.

Class II Actions include any activity for which even a slight chance of flooding is too great. Class II Actions are subject to the floodplain policies and procedures if they lie within the 500-year floodplain. The entire project area lies within the mapped 500-year floodplain. Examples of Class II Actions are the location or construction of:

- Schools, hospitals, clinics, or other facilities occupied by people with physical or medical limitations;
- Emergency services;
- Fuel storage facilities, 40,000 gallons per day or larger sewage treatment plants, and storage of toxic or water-reactive materials, including hazardous materials; and
- Irreplaceable records, museums, and storage of archaeological artifacts.

Class III Actions include Class I and Class II Actions in high hazard areas, which include coastal high hazard areas and areas subject to flash flooding. There are no Class III Actions associated with this proposed action.

Class I Actions associated with the proposed action that will occur within the 100-year floodplain include the replacement of all buildings and associated infrastructure (plumbing mechanical and electric), parking improvements, and wastewater treatment and disposal (less than 40,000 gpd) that would occur at elevations of 5 feet (NAVD 88) or less. The proposed wastewater disposal

field will be likely be filled approximately 24 inches, which would bring the elevation above 5 feet (NAVD 88) and above the 100-year floodplain. Class II Actions associated with the proposed action are limited to the storage of fuel on site in three 10,000 gallon above-ground storage tanks, which are currently sited at elevations of 4-5 feet (NAVD 88). However, it should be noted that the above-ground fuel storage tanks are all existing, serve the marina, and there is not a practicable alternative to place the tanks outside of the 100-year floodplain within the project area.

Measures to Mitigate Flood Hazard to Human Health/Life, Property (Capital Investment), and Natural/Beneficial Floodplain Values

Through project planning for the proposed action, including the EA associated with this FSOF, as well as day-to-day operations, both the NPS and marina lessee (OIFC) have and will continue to take measures to mitigate flood hazards. Normal flooding events, such as those caused by heavy rain, are not considered particularly hazardous to people or property at the marina (project area). More extreme flooding events, such as those caused by hurricanes, tropical storms, or nor'easters, pose hazards to human health/life and property. The purpose of the proposed action is to replace vulnerable, deteriorating structures with sustainable structures adapted to sea level rise and storm surge, and to conduct other site improvements to modernize the marina premises and to support the replacement buildings. The replacement structures and associated site improvements would be specifically designed to mitigate flood hazards that currently exist at the marina due to aging, deteriorated infrastructure that does not meet construction standards for this flood zone. Additionally, the NPS and marina lessee will continue current best practices associated with operating and maintaining a coastal marina in a flood plain.

Protection of Human Health/Life

The marina does not provide, and the proposed action does not include, any overnight accommodations or housing, so there are no hazards to human health or life associated with living or overnight occupancy of the project. While those hazards do not exist due the property use, the NPS and the lessee are and would continue to mitigate potential hazards to human health and life associated with marina operations in a floodplain.

To mitigate flood hazards to human health and life, the NPS and lessee will continue best practices for associated with operating and maintaining a coastal marina in a flood plain, which include maintaining and following storm preparedness / severe weather plans and a Spill Prevention, Control and Countermeasure (SPCC) plan specific to the marina's fuel system. The Seashore maintains and follows a Severe Weather Plan, which is implemented when certain hazardous conditions are expected (such as Tropical Storm force winds), and includes Seashore coordination with the marina lessee. The lessee also maintains and follows its own Storm Preparedness Plan that has been reviewed and approved by the NPS and describes procedures for preparing for and recovering from severe weather events at the marina, including flooding. These plans and associated actions help protect human health and life in the floodplain by ensuring that the Seashore and lessee prepare facilities well-ahead of storm events, which helps prevent humans from being present at the marina during a storm event (including associated flooding). The SPCC plan and associated actions also help protect human health and life in the floodplain by setting standards fuel operations, preventing and controlling spills, which mitigate human health and life risks associated with fuel spills.

In addition to the plans, preparedness and recovery actions outlined above and described in the associated plans, the proposed action includes specific improvements to marina structures and infrastructure that will mitigate hazards to human health and life in a floodplain. These include replacing the current buildings that do not meet flood elevation standards with buildings that exceed these standards (described below), as well as replacing aged and dilapidated fuel infrastructure with fuel lines and dispensers that meet modern standards.

As noted above, the only Class II Action associated with the proposed action is the continued storage of fuel in three above ground storage tanks (ASTs). The marina's ASTs are double walled concrete tanks that are strapped to a concrete foundation with hurricane straps (NPS SPCC 2016). The tanks were installed in 2007 and in good working order with recent repairs (2017) and ongoing maintenance. Therefore, the proposed action does not include any changes to these tanks and hazard mitigation is already in place. The proposed action does include replacing fuel piping, dispensers and other fuel infrastructure (marine and vehicle fuel), which would mitigate current hazards associated with the aged infrastructure, including hazards to human health and life. In the proposed action, all fuel lines and dispensers would have secondary containment, sumps and emergency cutoff switches and breakaway couplings to protect from spills in the event of extreme weather events. In the event of a catastrophic weather event, fuel in the ASTs and fuel lines could be evacuated to prevent from a release of petroleum products to the environment.

Protection of Property (Capital Investment)

As described above, the purpose of the proposed action is to replace vulnerable, deteriorating structures with sustainable structures adapted to sea level rise and storm surge, and to conduct other site improvements to modernize the marina premises and to support the replacement buildings. Therefore, the proposed action is designed to mitigate flood hazards to the property / capital investment.

All proposed above-ground structures (wastewater infrastructure excluded) would occur within the 100-year floodplain due to the project's proximity to the marina basin. However, the proposed replacement structures would exceed finished floor elevation (FFE) requirements and the structures would be designed for sustainability and to protect the capital investment in the marina.

The main marina building (replacement structure, including retail, food & beverage and marina operations with a first floor footprint approximately 6,393 sf) would be a pile-supported structure and elevated so that the finished floor elevation (FFE) would be at least 11.0 feet (relative to NAVD 88), which is three feet higher than the local (county) first floor requirement of 8.0 feet (NAVD 88) and six feet higher than the FEMA requirement of 5.0 feet (NAVD 88). Currently, the FFE of the retail structure and fish cleaning building (one unit) are at an elevation of 5.95 feet (NAVD 88). The 100-year flood elevation based on the current FEMA Flood Maps and a comparison of site topography is approximately 5.0 feet (NAVD 88). The fish cleaning building (replacement structure for fish cleaning services and operations, approximately 1,880 sf) would be a concrete block or short pile-supported structure and elevated to a first floor elevation of 11.0 feet (NAVD 88), which is six feet higher than the 100-year flood plain elevation FEMA requirement (5.0 feet NAVD 88) and three feet higher than the county first floor requirement of 8.0 feet (NAVD 88). The area where the replacement fish cleaning is proposed would be filled to an elevation of 8.5 feet (NAVD 88) to elevate the structure above the 100 year flood plain and allow for efficient delivery of fish and ice.

Preservation/Restoration of Natural and Beneficial Values

In addition to mitigating hazards associated with human health/life and protection of capital investment in a floodplain, the proposed action would also provide some preservation and restoration of the natural and beneficial values of the floodplain. The proposed action would remove all of the current marina buildings, none of which allow for water flow through the site. The replacement main marina would be elevated above the floodplain and constructed on pilings, which would allow for freer flow of water in the floodplain. Additionally, the proposed project would reduce impervious surfaces by removing approximately 7,305 sf of asphalt and concrete paving (which exists in the location proposed for the replacement main marina building, and adjacent to and underneath the existing main marina building). The proposed action would include new parking and drive aisle improvements amounting to a total of 22,782 sf, but these improvements would be pervious. A reduction in impervious surfaces will offer increased groundwater recharge and should help alleviate and mitigate flooding from extreme weather events and limit standing water following routine rainfall events. The removal of impervious surfaces would help to slow down floodwaters and encourage groundwater recharge

Figure 2: FEMA Flood Insurance Rate Map (FIRM) Panel: 3730072600K for Dare County, NC

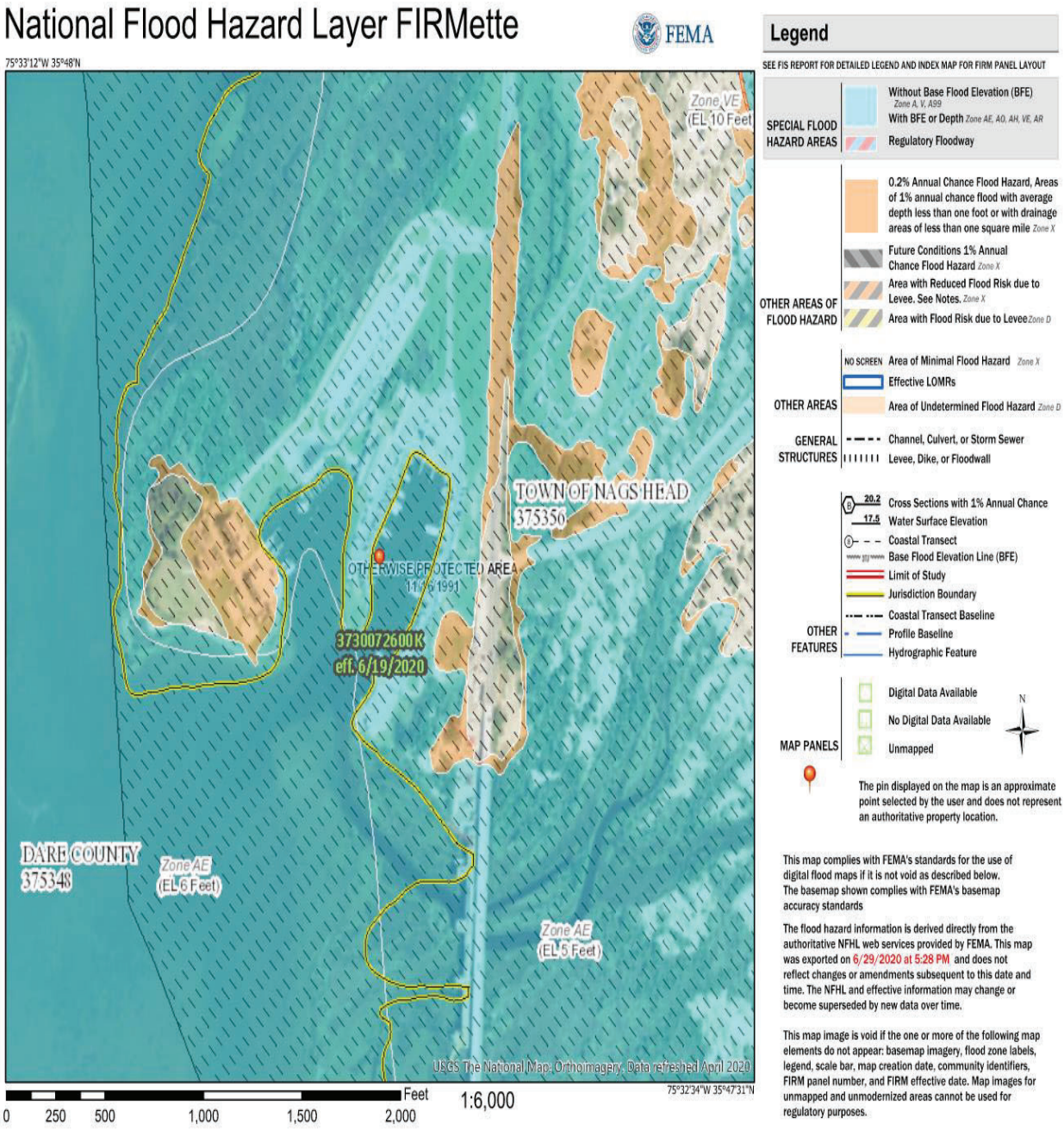
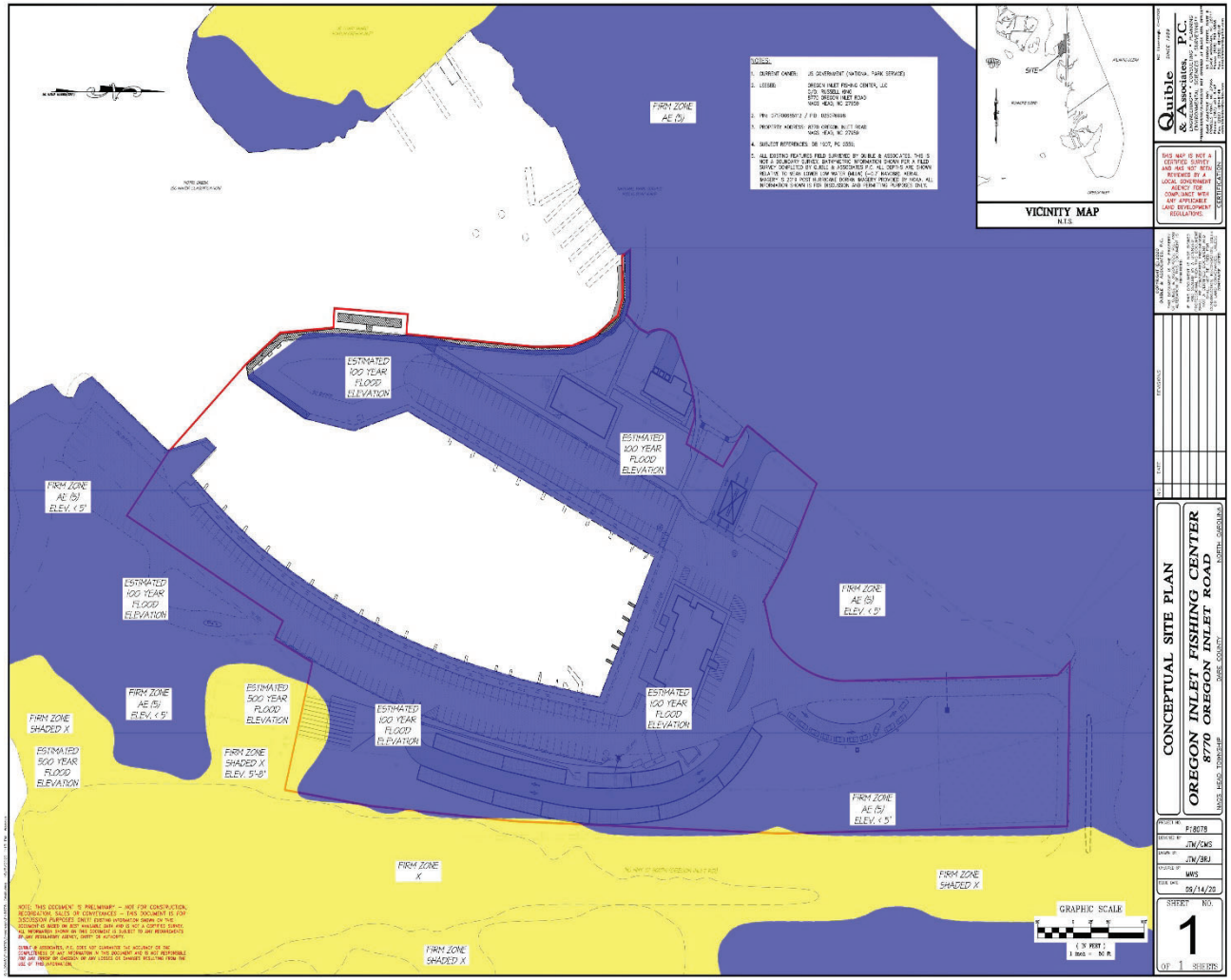


Figure 3: Estimated Depths of 100-year and 500-year Floods



Summary

The National Park Service finds that the proposed action at Oregon Inlet Marina to replace vulnerable, deteriorating structures with sustainable structures adapted to sea level rise and storm surge, and to conduct other site improvements to modernize the marina premises and to support the replacement buildings, is essential for continued public use and benefit, even though the actions would be in designated and mapped flood-prone areas. The National Park Service also finds that in order to continue operations at Oregon Inlet Marina, there are no practicable alternatives to locating the proposed action (project) in a floodplain. The proposed action is specifically designed to mitigate hazards to human health/life and property (capital investment) in a floodplain, as well as provide some preservation and restoration of the natural and beneficial values of the floodplain. These design elements and mitigations include replacing the existing buildings with structures exceeding constructions standards for this flood zone, improving fuel system components to mitigate hazards in flood events, and promoting natural surface water flows by removing impervious surfaces and elevating structures above the floodway. This project is consistent with the policies and procedures of NPS Director's Order #77-2 (Floodplain Management) and Executive Order 11988.

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