DRAFT STATEMENT OF FINDINGS

FOR

FLOODPLAIN MANAGEMENT

Following EOs 11988 and 13690 and DO #77-2

Well-related Construction and Decommissioning Activities at Sandy Hook, Monmouth County, New Jersey

Gateway National Recreation Area

October 27, 2022

Recommended: _____ _____

Jennifer T. Nersesian — Date
Superintendent, Gateway National Recreation Area

Certification of Technical Adequacy and Servicewide Consistency:

_____ _____

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

Approved: _____ _____

Gay E. Vietzke — Date
Director, Interior Region 1

INTRODUCTION

Executive Order (EO) 11988 (Floodplain Management) and EO 13690 (Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input) require the National Park Service (NPS) and other federal agencies to clearly identify the likely impacts of proposed actions in floodplains and to improve the Nation's resilience to flood risk. The objective of EO 11988 is to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative. EO 13690 was issued to establish a Federal Flood Risk Management Standard (FFRMS) for federally funded projects to improve the Nation's resilience to floods and to insure new federal infrastructure will last as long as intended. NPS procedures for complying with the floodplain EOs are outlined in NPS Director's Order and Procedural Manual #77-2 (DO #77-2 and PM #77-2, respectively).

It is NPS policy to preserve floodplain functions and values and minimize potentially hazardous conditions associated with flooding, including threats to human health and life, risk to capital investment, and impacts to natural and beneficial floodplain values. If a proposed action is found to cause adverse impacts in an applicable regulatory floodplain and relocating the action to a non-floodplain location is considered not to be a practicable alternative, then a formal floodplain "Statement of Findings" must be prepared. The "Statement of Findings" must (a) describe the rationale for selection of a floodplain site, (b) quantify flood conditions and associated hazards as a basis for management decision making, (c) disclose the resources and amount of risk associated with the chosen site, and (d) explain flood mitigation plans. The "Statement of Findings" must be available for public review and comment, generally by including it in National Environmental Policy Act compliance documentation.

This *draft* Floodplain Statement of Findings (FSOF) documents compliance with NPS floodplain management procedures for the proposed well-related construction and decommissioning activities on the Sandy Hook peninsula, located in Monmouth County, New Jersey. The proposed action area is located entirely within an area in which flooding is possible but hazards have not been determined by the Federal Emergency Management Agency (FEMA). This *draft* FSOF clearly explains the rationale for site selection, documents how impacts to floodplain natural resources are or will be minimized, and how flood hazard mitigation will be achieved. In accordance with PM #77-2, this FSOF also documents that the new well has been designed to the 100-year standard.

PROPOSED ACTION

The NPS proposes to conduct well-related construction and decommissioning activities at the Sandy Hook Unit of Gateway National Recreation Area to comply with public health and safety regulations promulgated under the New Jersey Safe Water Drinking Act (SDWA; N.J.S.A. 58:12A-1 et seq.) and under which the New Jersey Department of Environmental Protection (NJDEP) assumes primary enforcement responsibility under the Federal Safe Drinking Water Act (Pub. L. 93-523; 88 Stat 1660, 42 U.S.C. 300f). The NPS operates the Sandy Hook Water Treatment Plant (Building 341), conveying over 100,000 gallons of potable water per day through service connections on the peninsula for a dynamic population, with main demands coming from the U.S. Coast Guard Station, the James J. Howard Marine Lab, the National Park staff and visitors, the Marine Academy of Science and Technology High School, and several public beaches.

The NPS proposes to construct a new potable water well (Well 6) and decommission two potable water wells (Wells 3 and 4) in accordance with NJDEP regulations. Well 6 is proposed to be installed within 100 feet of the sole operational well (Well 5A) to act as a redundant source that would meet NJDEP regulations and constitute a minor modification to the 2016 Water Allocation Permit. Well 6 construction activities include drilling the well, installing appropriate pumps and lines to connect the pump to the lines from Well 5A, and constructing a new well house to protect the well and pump. The entire area encompassing Well 5A and Well 6 (120-foot by 120-foot) would be enclosed with a secured, chain link fence. An 8-foot wide clear zone around the fenced area would be established to allow for mowing/

vegetation control. The existing electric meter would be moved outside of the fence, next to the new entrance.

Prior to developing the new well, NPS must decommission Wells 3 and 4 that could act as a vehicle for cross-aquifer pollution. Well 3 was abandoned during the 20th century, and Well 4 was abandoned in 1982. Decommissioning activities include filling the wells with grout, and the top 4 feet of each well would be exposed, cut, then backfilled. The well house, concrete slab, parking lot, and access road associated with Well 4 would be removed, and the site would be restored to reflect surrounding habitat. Abandoned electrical service poles associated with the wells would be cut at or below surface level and legally disposed of outside the park.

All work would occur on a site that is less than one acre (Figure 1). Where necessary to accommodate construction activities and equipment, trees and shrubs would be cleared, grubbed, and removed from the area. No woody vegetation would be cleared between April 1 and September 30. Access to Wells 3 and 4 for decommissioning would follow a previously disturbed access route that would be widened using a temporary road base.

All areas of temporary disturbance would be restored to their pre-project conditions (or better). Disturbed areas would be revegetated with native plant species that reflect surrounding native vegetation. Any American holly trees or other native trees with diameter at breast height (dbh) of four inches or greater would be replaced at no less than a 1:1 ratio. No wetlands are within the areas that would be disturbed during project activities.

FLOODPLAINS WITHIN PROJECT AREA

The proposed action would qualify as a Class I Action as defined in PM #77-2, subject to the floodplain policies and procedures if occurring within the 100-year floodplain. Since FEMA has not published a map for the project area showing the floodplain limits or hazard zones with base flood elevations (BFE) (Figure 2), NPS used each of the three approaches identified in the FFRMS to evaluate the flood elevation ("how high") and corresponding flood hazard area ("how wide") for project siting, design, and construction:

- 500-year Floodplain: The area subject to flooding by the 0.2%-annual-chance flood;
- Freeboard Value Approach (FVA): The elevation and flood hazard area that result from adding an additional 2 feet to the BFE for non-critical actions and by adding an additional 3 feet to the BFE for critical actions; or
- Climate Informed Science Approach (CISA): The elevation and flood hazard area that result from using the best-available, actionable hydrologic and hydraulic data and methods that integrate current and future changes in flooding based on climate science.

500-year Floodplain

The FEMA floodplain information for areas south, southwest, and across the Bay from SAHO were reviewed to assess the elevation of the 500-year floodplain (accessed September 2022 at *https://www.fema.gov/flood-maps*). In the nearby coastal boroughs of Sea Bright and Highlands, the 500-year floodplain elevation is essentially the same as the 100-year floodplain. In these areas, the 100-year floodplain ranged from 8 to 11 feet above the North American Vertical Datum of 1988 (NAVD88), except for areas at the mouth of the Shrewsbury River that ranged from 8 to 13 feet above NAVD88.

The proposed project area is located approximately 800 feet east of the Horseshoe Bay Marsh, in one of the few higher elevation areas at SAHO. According to data collected by the NPS after Superstorm Sandy in 2012 (Figure 3), elevation generally ranges from 12 to 14 feet above NAVD88 at the proposed well 6 site, from approximately 10 to 12 feet above NAVD88 along Randolph Road, 7 feet above NAVD88 at wells 3 and 4, and from 7 feet to 10 feet above NAVD88 along the temporary access road to Wells 3 and 4.

Unfortunately, these elevation data were not collected by a surveying engineer and must not be used to inform construction planning or activities.

Using this approach, NPS determined that the Well 3, Well 4, and the temporary access route to these wells are within the FFRMS floodplain, while the proposed Well 6 site is outside of the FFRMS floodplain.

Freeboard Value Approach

As noted previously, the 100-year floodplain in the nearby coastal boroughs of Sea Bright and Highlands ranged up to 11 feet above NAVD88. By assuming this 100-year floodplain elevation of 11 feet is applicable to the project area and adding 2-feet freeboard, the FFRMS floodplain would be 13 feet.

Using this approach, NPS determined that most of the project area is below this floodplain elevation and that the proposed Well 6 area (12 to 14 feet) may be within this FFRMS floodplain.

Climate Informed Science Approach (CISA)

Anticipated flooding in the project area would result from sea level rise and storm surges. Based on the U.S. Global Change Research Program Climate Mapping for Resilience and Adaptation mapping tool (accessed September 2022 at *https://resilience.climate.gov*), the entire project area would not be affected by sea level rise under the Late Century (2070-2099) higher emissions scenario.

According to the Height above Nearest Drainage (HAND)-based inundation modeling map included in the NJFloodMapper tool, the Well 6 location would be unaffected at a flood height of 15 feet above the nearest drainage, while the location of Wells 3 and 4 would be flooded to a depth of 1 to 2 feet (accessed September 2022 at *https://www.njfloodmapper.org/map/Z7iZH77cB5B2Nue*).

The NJFloodMapper tool also includes a Superstorm Sandy surge extent map, showing that the proposed Well 6 location was not inundated but the locations of Wells 3 and 4 were inundated. The projected NJFloodMapper Sea, Lake, and Overland Surges from Hurricanes (SLOSH) model for a Category 1 Hurricane would not inundate the Well 6 location, but a SLOSH model for a Category 2 Hurricane would inundate the site to a depth of 3 to 6 feet. The location of Wells 3 and 4 would be inundated to a depth of 0 to 3 feet in a Category 1 Hurricane.

Summary

NPS concluded that Well 3, Well 4, and the temporary access route to these wells are within the FFRMS floodplain. Erring on the side of caution to be protective of federal investments for development that may occur within the 100-year floodplain and may be vulnerable to flood damage, NPS concluded that the proposed Well 6 location is within the FFRMS floodplain.

JUSTIFICATION FOR USE OF THE FLOODPLAIN

There is no practicable non-floodplain location for maintaining a potable water supply at SAHO in accordance with applicable Federal and State regulations.

Flood Risks

The proposed action is assumed to occur within the 100-year regulatory floodplain. The decommissioning of two wells and widening the existing access route would involve short-term work within the 100-year floodplain. The risk of flooding during these short-term project activities is minimal. The newly constructed Well 6 would be exposed to potential damage during flooding.

Natural and Beneficial Floodplain Values. Adverse impacts on natural floodplain values include potential removal of some vegetation. All areas of temporary disturbance would be restored to their pre-project conditions (or better). Disturbed areas would be revegetated with native plant species that reflect surrounding native vegetation. Native soils excavated for construction of Well 6 would be screened, and

suitable soils would be reused to restore the decommissioned well sites with plantings of native vegetation.

Site-Specific Flood Risk. Flood risk in the Well 3, Well 4, and access route portions of the project area within the 100-year floodplain is negligible due to the temporary nature of the proposed activities. Well 6 may be exposed to inundation and damage during flooding events (e.g., Category 2 or higher hurricane).

Capital Investment. Moderate flood risk (described in the preceding sections), practicable mitigation measures (described in the following section), and the acute need for a regulatory compliant water supply justify the investment in the proposed action within the regulatory floodplain. The proposed action minimizes the footprint and associated impacts from temporary construction activities and new permanent infrastructure, concentrates construction activities on previously disturbed and developed areas with the lowest relative potential flood risk, and includes repurposing native site materials (e.g., soils) to the maximum extent practicable.

Human Health and Safety. The proposed action has been developed in accordance with NJDEP requirements for the protection of human health and safety for well-related construction and decommissioning activities. As designed, the proposed action would also enhance the resiliency and be protective of the potable water supply at SAHO.

Mitigation

The proposed action includes mitigation measure such as removing existing abandoned structures, followed by restoration and revegetation of the decommissioned wells and temporary access route.

The site for the new well is proposed to be constructed at one of the few higher elevation areas at SAHO. The wellhouse would have a 6-inch thick slab-on-grade foundation, and the height of the well casing would be at least 1 foot above the 100-year floodplain to comply with NJDEP requirements. Additional mitigation measures to be incorporated into final construction plans for the new well may include:

1) Raising the ground level grade to 1 foot above the FFRMS floodplain elevation.
2) Installing all controls at least 3 feet above the wellhouse floor.
3) Constructing the well house foundation with a 2-foot wall around the edge to protect from flooding.
4) Designing a wellhouse door so that temporary flood barriers can be inserted during heavy storm events.
5) Extending the well casing above the FFRMS floodplain elevation.
6) Protecting chemical storage by a secondary containment wall or use of floodproof containers.

Since the area encompassing Well 5A and 6 would be enclosed with a chain link fence, the proposed project would not result in any new risks to park visitors. Only NPS-authorized personnel would be accessing the site, and NPS would manage the site in accordance with the park's Storm Plan to mitigate risk to human health and life throughout SAHO through warning, evacuation, or closure. The conditions that lead to flood events are known by park staff and will be carefully monitored, making warning and evacuation a practical option for protection of human life. NPS staff at the park endeavor to maintain a state of preparedness on a year-round basis regarding severe weather conditions. The safety of all employees, volunteers, and visitors takes precedence over all other mission-critical goals. All actions taken before, during, and after a storm will be conducted applying safety practices and operational leadership.

During hurricane season (June 1 to November 30), extra care and precautions will be maintained to ensure quick response to potentially severe tropical weather. The park's response to severe weather conditions is managed under an Incident Command System approach for preparedness purposes during hurricane season. In keeping with the park's storm plan and protocols, NPS personnel progress to higher

levels of operational preparedness when tropical storm conditions or strong storm surge is predicted by the National Weather Service to occur within 5 days.

SUMMARY

Through the FSOF process, the NPS has determined that there are no practicable, non-floodplain locations for the proposed action. There are minimal risks to natural and beneficial floodplain values because the net decrease in natural, vegetated land and net increase in developed space within the floodplain following completion of the proposed action would have negligible effects on the floodplain. The flood risks to capital investment are manageable through implementation of mitigation measures. Because the proposed action involves uninhabited infrastructure, there are no potential impacts to human life and health from flooding. The proposed action would raise the human health and safety standards of the water supply system. Therefore, the NPS finds that the floodplain impacts to and from the proposed action are acceptable under the applicable regulations and guidance.

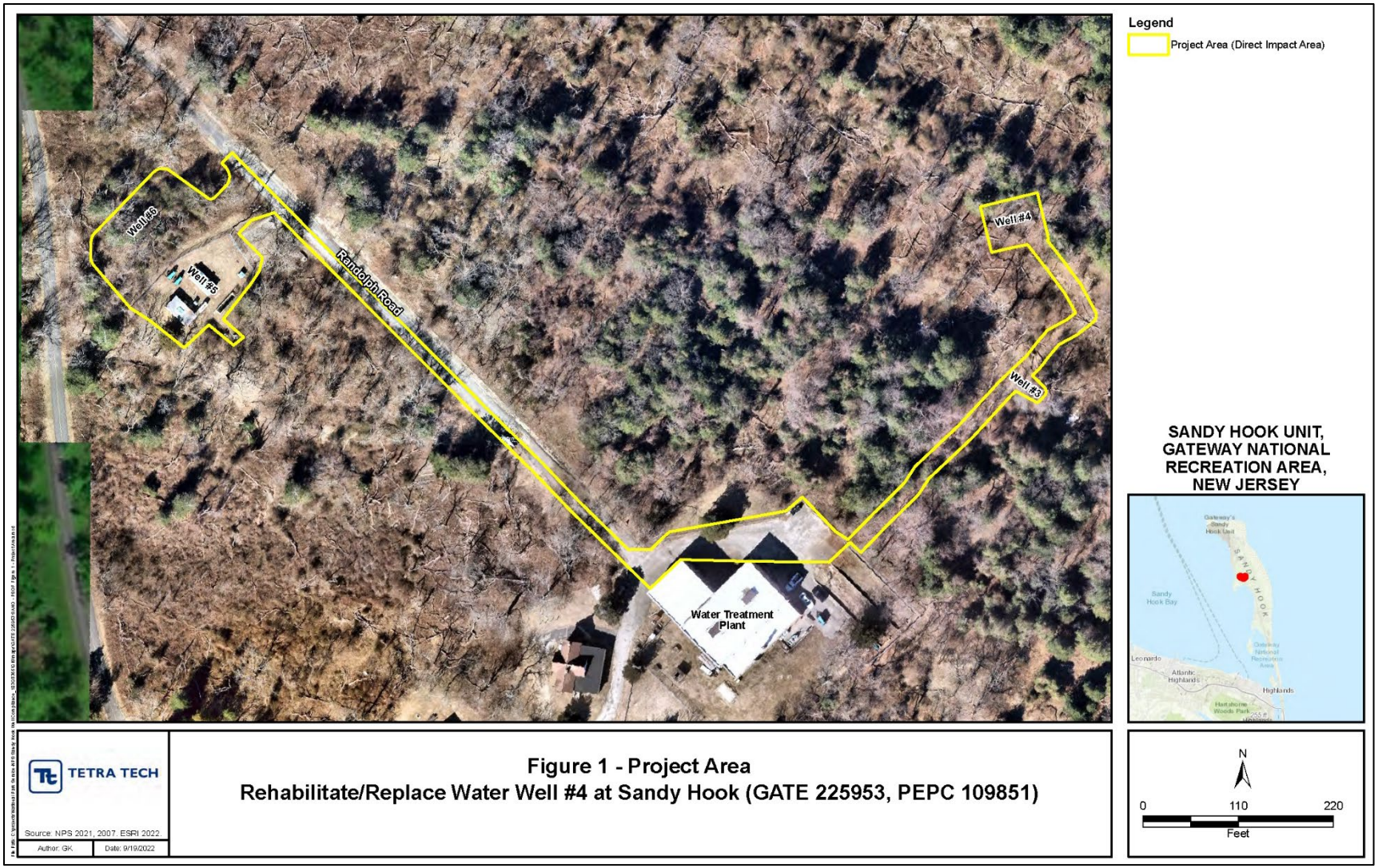

Figure 1. Project area map for the proposed well-related construction and decommissioning activities at the Sandy Hook Unit of Gateway National Recreation Area.

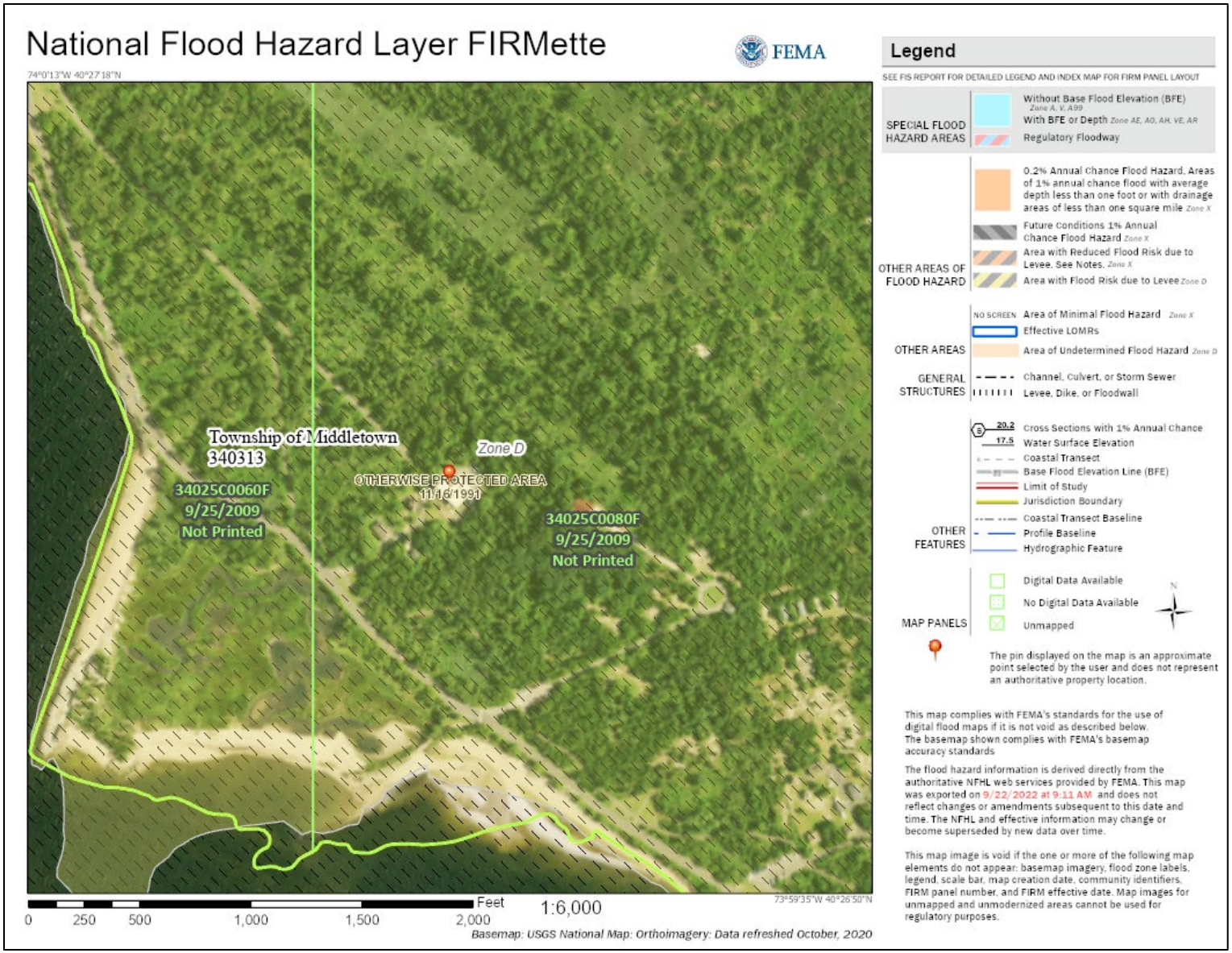

Figure 2. National Flood Hazard Layer FIRMette (Effective FIRM Panels 34025C0060F and 34025C0080F, dated 9/25/2009) for the project area.

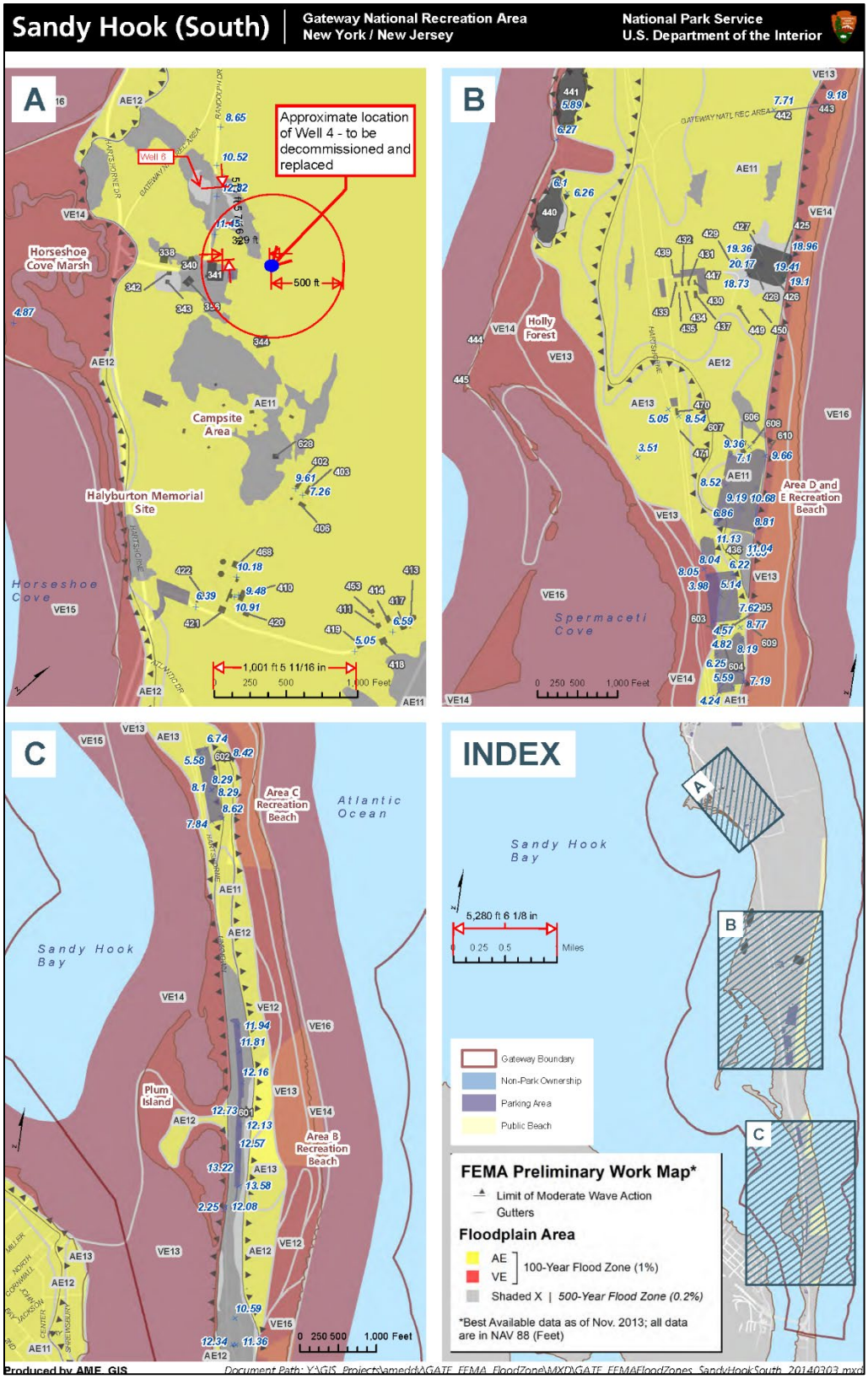

Figure 3. Preliminary work map, showing the best available floodplain information as of November 2013 with an overlay of elevations collected by National Park Service staff for informational purposes only. DISCLAIMER: Elevation data shown is not survey grade and must not be used for construction.