James J. Howard Laboratory
Seawater Intake System Repair

Sandy Hook, New Jersey

Environmental Assessment

Prepared for:

United States Department of Commerce
National Oceanic and Atmospheric Administration
Office of Chief Administrative Officer
Project Planning & Management Division – Eastern Region

Prepared by:

Whitney, Bailey, Cox, Magnani, LLC
AKRF, Inc.

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1.1 INTRODUCTION

The National Oceanic and Atmospheric Administration's (NOAA's) National Marine Fisheries Service (NMFS) is proposing a replacement of the seawater intake/delivery system at the James J. Howard Laboratory (the laboratory), located at 74 Magruder Road, in Sandy Hook, Monmouth County, New Jersey (see **Figures 1-1** and **1-2**).

This Environmental Assessment (EA) has been prepared to evaluate potential environmental impacts that may result from the proposed action. The environmental review process is being conducted in accordance with the National Environmental Policy Act of 1969 (NEPA; 42 USC 4321 et seq.), the Council on Environmental Quality's regulations implementing NEPA (40 CFR Parts 1500-1508), the procedures outlined in NOAA's Administrative Order 216-6, "*Environmental Review Procedures for Implementing the National Environmental Policy Act*" (May 20, 1999), Section 106 of the National Historic Preservation Act of 1966, Executive Order 12898 "*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*," and other relevant regulations.

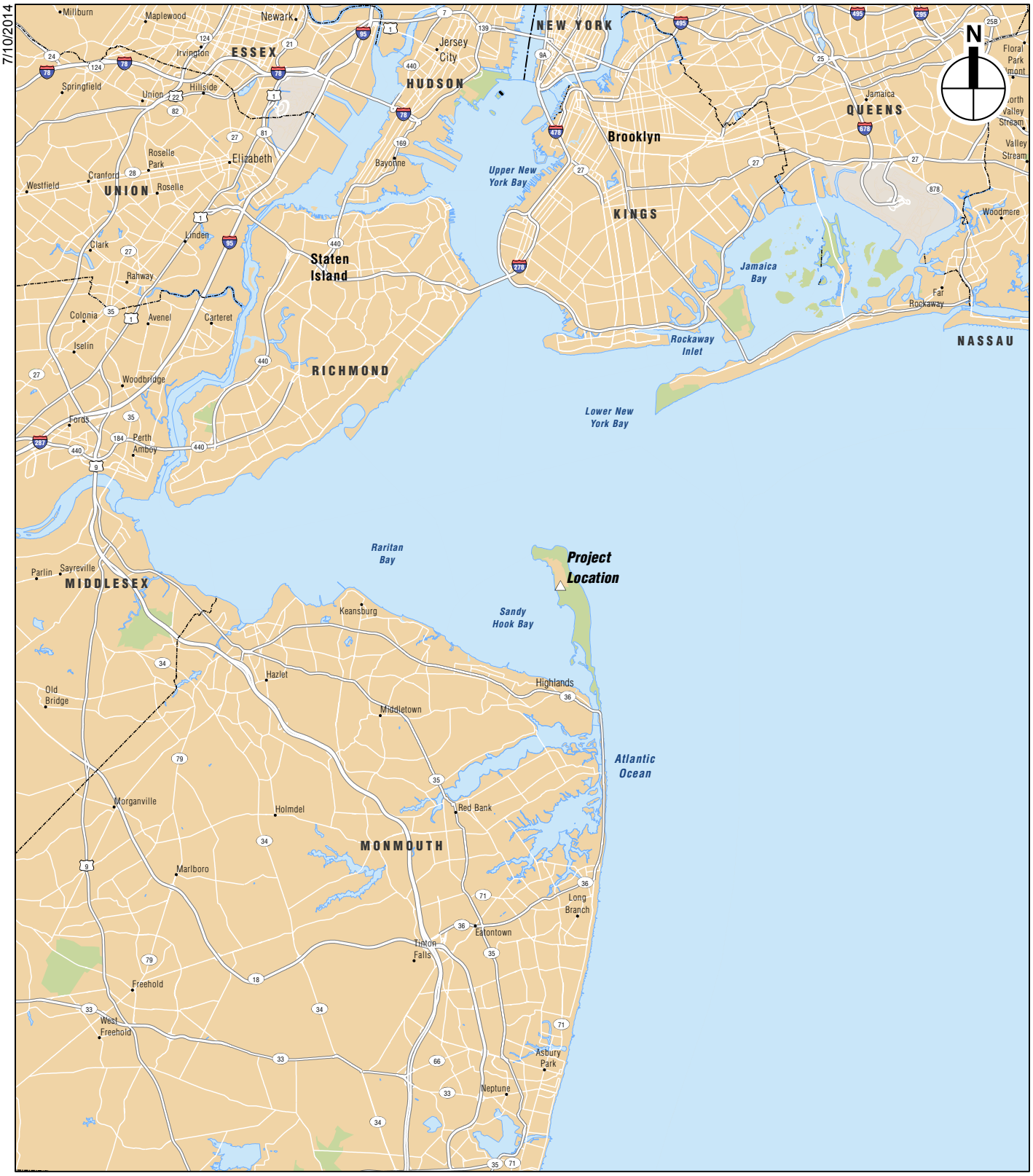
The laboratory and seawater intake system are owned by the State of New Jersey, and are situated on land leased from the National Park Service (NPS), however the project is being proposed by NOAA's NMFS, and therefore NOAA is serving as the lead federal agency for the environmental review process.

1.2 PROPOSED ACTION

Specifically, the proposed action will comprise the following elements:

- The installation of two new 6-inch seawater intake pipes and two new intake wells on an alignment parallel to the existing system, between the pumping/treatment/storage vault and offshore wellfield.
- The replacement of existing wells 1 and 2 with two new well heads. Two of the existing wells (3 and 4) will be left in place to provide the system with redundancy and to allow for maintenance while the system is operational.
- The replacement of approximately 1,000 square feet (approximately 20 linear feet) of riprap revetment along the waterfront.
- The renovation of the interior of the laboratory building to finish previously unfinished spaces, to convert laboratory space to office space, and to upgrade electrical and mechanical systems.

In addition, as part of the proposed action, NOAA will renew its lease of the laboratory building from its owner, the State of New Jersey.



Project Location

Figure 1-1

James J. Howard Laboratory Seawater Intake Repair EA

7/11/2014

James J. Howard Laboratory

Seawater pumping, treatment, and storage vault

Easement across National Park Service property

Existing Seawater Intake

0 200 FEET

SCALE

James J. Howard Laboratory Seawater Intake Repair EA

Project Site
Figure 1-2

1.3 PURPOSE AND NEED FOR THE PROPOSED ACTION

As noted above, the James J. Howard Laboratory provides scientific support to fisheries throughout the mid-Atlantic region while developing an understanding of the impacts of changing environmental factors on fish stocks, fisheries and coastal communities. Another main objective of NOAA's Northeast Fisheries Science Center is to better integrate ecosystem and climate change considerations into fisheries and protected resources assessments. No other fisheries research laboratory of this caliber exists in the New York/New Jersey area to support this important research.

The laboratory's state-of-the-art facilities and unique research capabilities are extremely dependent on a reliable delivery of seawater to its 11 individual seawater laboratories and aquarium. However, since its initial construction, the seawater intake system has experienced a number of problems. Ice uplift, related to the seasonal freezing of Sandy Hook Bay, has caused interruptions in the supply of seawater as well as damage to the intake piping. Points of actual seawater intake are above the sediments and are vulnerable to extreme low water events. The ***need for the proposed action*** has been exacerbated by the fact that the system was damaged further by Superstorm Sandy and now requires immediate repair. Two of the four intake pipes are currently inoperable.

The ***purpose of the proposed action*** is to replace the piping and wells for the seawater intake system serving James J. Howard Laboratory, in order to ensure a reliable seawater supply for the laboratory's research. The continuous and reliable delivery of high quality seawater and the ability to control experimental conditions—such as lighting, temperature, salinity, and pH—are critical for the success of the laboratory's research. The unreliable quality of the seawater intake system and aging infrastructure is a real and growing concern to continuous research at the laboratory. The successful completion of the proposed action will ensure that the laboratory will continue to support research priorities for NOAA's Northeast Fisheries, as well as a number of national, state, and regional partners, such as the Mid-Atlantic Fishery Management Council, the Atlantic States Marine Fisheries Commission, the Greater Atlantic Regional Fisheries Office, NJ Department of Environmental Protection, and numerous academic institutions.

The proposed action will also involve repairs to riprap along the waterfront to address the damage caused by Superstorm Sandy and to return the revetment to its pre-storm condition. This work is required to protect the pumping/treatment/storage vault as well as the adjacent buildings.

1.4 EXISTING LABORATORY AND FACILITIES

The James J. Howard Laboratory is a state-of-the art marine research facility for NOAA's Northeast Fisheries Science Center, which conducts ecosystem-based research related to human disturbances to fish and shellfish habitat. Facilities at the 36,000 square-foot laboratory include an extensive seawater intake system which supports research in 11 individual seawater laboratories, a 32,000 gallon aquarium, suites for chemistry and microbiology research, an extensive library of fisheries-related archives and journals, a conference room with videoconferencing capabilities serving as a multi-purpose room, and office and administrative spaces. While most of the laboratory staff is from the Northeast Fisheries Science Center's Ecosystems Processes Division, about a dozen other NOAA personnel are located at the laboratory. Research is also conducted by local and national universities and on behalf of state and national natural resources agencies.

The existing seawater intake system and discharge runs within an easement granted to NOAA by NPS. As shown on Figure 1-2, the width of the easement varies at 20 to 40 feet along the length of the intake piping; the easement is approximately 70-feet wide at its in-water portion around the intake wells.

The existing seawater intake system, which can provide up to 350 gallons per minute of seawater from Sandy Hook Bay, begins at the laboratory building at Magruder Road and stretches to a seawater pumping/treatment/ storage vault at Kessler Road and Hartshorne Drive (see Figure 1-2). From there, four six-inch polyvinyl chloride (PVC) intake pipes extend 250 linear feet to the west, into the water. When initially constructed, the existing piping was placed into a three-foot deep trench in the seabed and incased in a ¾-inch crushed stone jacket. Riprap was then placed atop the restored trench in order to protect the buried intake pipes. The four intake pipes are connected to four off-shore wells, placed three feet beneath the seabed, approximately 100 feet from the edge of an existing stone revetment. The off-shore wells include well screens that extend down into the seabed, approximately six feet from the end of the PVC intake piping; this places the bottom of the existing well screens approximately nine feet below the seabed. Seawater from the laboratory is returned to Sandy Hook Bay through a 15-inch diameter seawater/stormwater outfall located within the riprap shoreline just south of the intake system.

2.1 INTRODUCTION

In accordance with the National Environmental Policy Act of 1969 (NEPA; 42 USC 4321 et seq.) and its implementing regulations (40 CFR Parts 1500-1508) the Environmental Assessment (EA) must evaluate all reasonable alternatives to a proposed action. The following chapter describes the proposed action and alternative methods of constructing the proposed action (Construction Alternatives), as well as alternatives considered in the early planning stages of the project but eliminated from further evaluation (Alternatives Considered but Rejected), and the No Action Alternative.

2.2 PROPOSED ACTION

The physical components[1] of the proposed action are described below. The construction of the proposed action is expected to be procured via a design-build contract. The winning contractor will design the project components and will choose a preferred method to construct the seawater intake/discharge system. For the purposes of this Environmental Assessment (EA), three typical construction methods that may be employed by the winning contractor are described in the following section. It is expected that the riprap repairs and the laboratory building renovations will be constructed as described further below. The potential environmental consequences of the three seawater intake/discharge system Construction Alternatives—as well as potential impacts of the riprap replacement and building renovations—are analyzed throughout Chapter 4, "Environmental Consequences,"

CONSTRUCTION ALTERNATIVES FOR THE REPLACEMENT OF SEAWATER INTAKE SYSTEM

The proposed action includes the installation of two new 6-inch seawater intake pipes and two new intake wells on an alignment parallel to the existing system (see **Figure 2-1)**. The length of the replacement, between the offshore wells and the upland point where the replacement pipes will be connected to the existing system, is approximately 200 feet. The four existing pipes (numbered 1 to 4 from the south to the north) will be anchored and left in place.

Overall, construction is expected to last two to three weeks depending on weather and site conditions. In-water work, if required, will comprise 2-3 days within that period.

[1] As mentioned in Chapter 1, "Project Description and Purpose and Need," as part of the proposed action, NOAA will also renew its lease of the laboratory building from its owner, the State of New Jersey; since that action will not require any construction, no further description is included in this chapter.

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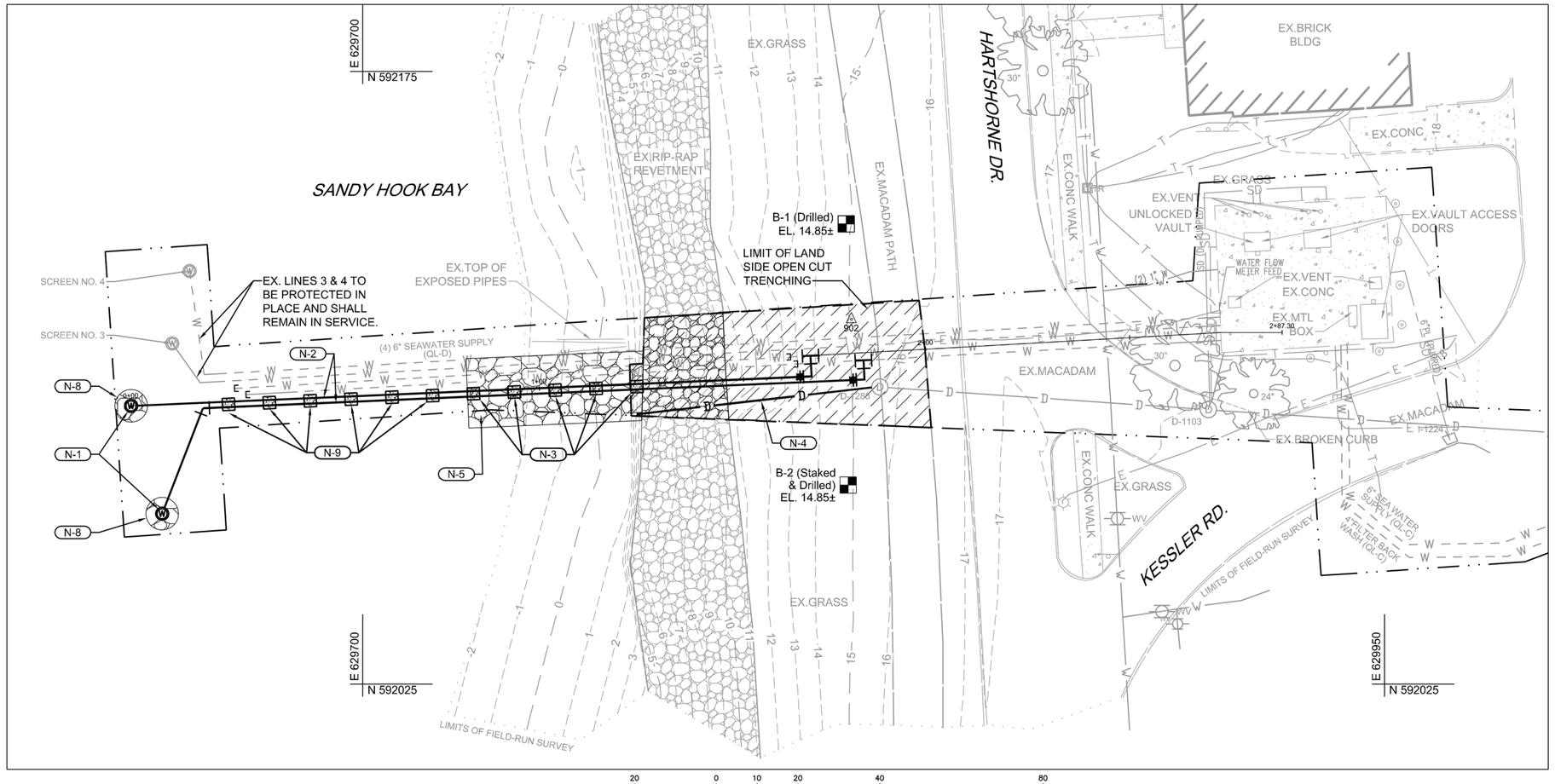


LEGEND

	EXISTING	NEW
BUILDING	EX. BLDG.	
PAVING	EX. PAVING	
CONCRETE WALK	EX. CONC.	
EASEMENT		
CURB		
CONTOUR	15 / 14	
STORM DRAIN	D	
WATER	W	
TELEPHONE	T	
ELECTRIC	E	
MANHOLE	D S E	
INLET		
STREET LIGHT	LP	
WATER VALVE	WV	
WELL	W	W
WELL (ADD ALTERNATE)		W
CAP		C
BOLLARD		
SIGN		
DECIDUOUS TREE		
RIP RAP		
RIP RAP (ADD ALTERNATE)		
OPEN CUT TRENCHING		

CONSTRUCTION NOTES:

N-1 NEW BASE BID WELLS. SEE SECTION 1 ON DRAWING C-3.

N-2 NEW 6"Ø SCH 80 PVC PIPE.

N-3 NEW 3' x 3' PRECAST CONC. COLLAR @ 10'-0" O/C. SEE SECTION 2 ON DRAWING C-3.

N-4 REINSTALLED 15" RCCP DRAIN PIPE.

N-5 NEW 2' d_{50} RIP RAP ARMOR STONE.

N-6 ADD ALTERNATE WELLS.

N-7 ADD ALTERNATE 2' d_{50} RIP RAP ARMOR STONE.

N-8 NEW 8'Ø RIP RAP PAD.

N-9 NEW 3' x 3' PRECAST CONC. COLLAR @ 10'-0" O/C. SEE SECTION 3 ON DRAWING C-3.

Proposed Intake Pipe/Well Head/Riprap Work
Figure 2-1

CONSTRUCTION ALTERNATIVE 1: OPEN CUT TRENCHING

Excavation

The construction of the replacement system under this Construction Alternative will begin with the upland (eastern) portion of the alignment. An open cut trench, approximately 30 feet wide and approximately 65 feet long, will be excavated to approximately 15 feet at its deepest point to expose the existing system and to allow for a connection for the replacement pipes. From there, approximately 20 linear feet of the existing riprap revetment will also be excavated. All salvageable materials will be stockpiled on site and will be used to backfill the excavated areas. A portion of this excavation work will occur from land mounted equipment, and a portion will be conducted from a barge positioned off-shore.

Pipe Placement

Upland and shoreline

In the upland portion of the alignment and in the area of the riprap revetment, the pipe will be placed into the excavated area, approximately 1-2 feet away from the existing pipes 1 and 2 and connected to the existing pipes. In the upland portion of the alignment the pipe will be backfilled with excavated material. In the riprap revetment area, riprap will be placed to cover the pipe as described below.

In-water

For approximately 40 feet of the in-water portion of the replacement alignment, the pipes will be placed into a stone encasement onto the seabed to anchor the pipe and to avoid floatation. As shown on **Figure 2-2** (section 2), an approximately 17-foot wide trench will be excavated on the seafloor and lined with filter fabric. A layer of 1-inch bedding stone will be placed at the bottom of the trench, followed by the pipe, encased in a 3-foot by 3-foot concrete bracket. The trench will be backfilled with stone and covered in another layer of filter fabric and riprap.

For the remaining 80 feet of the in-water portion of the alignment, the pipes will be placed directly on the seafloor in the aforementioned concrete brackets and stabilized with 1-inch bedding stone (see Figure 2-2, section 3).

Well Installation

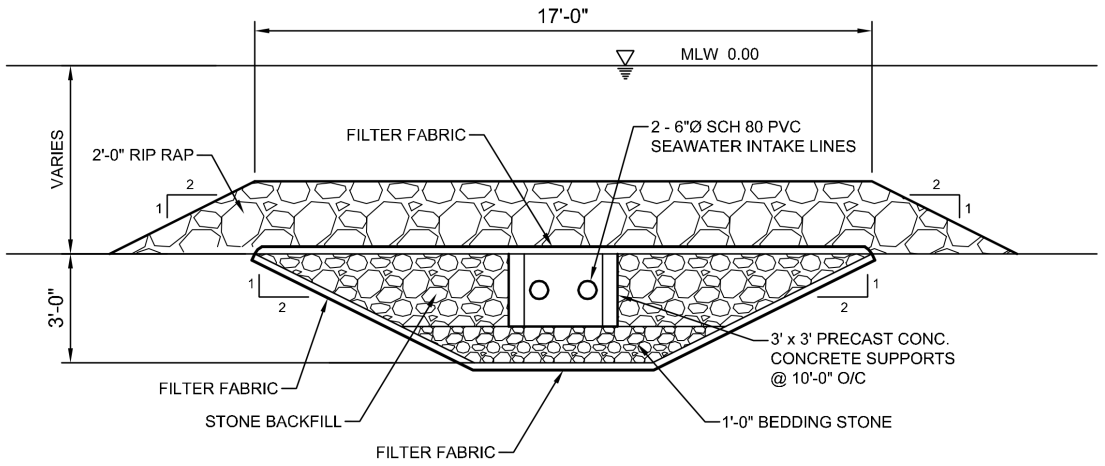
The proposed action will replace wells 1 and 2 with two new wells (see **Figure 2-3**). Two of the existing wells (3 and 4) will be left in place to provide the system with redundancy and to allow for maintenance while the system is operational.

The wells will be installed using heavy equipment mounted on a barge, which will be moored offshore. The barge will be equipped with a crane, staging facilities for divers, and equipment such as a long reach excavator, a skid loader, pans, dewatering equipment, and various attachments for auguring into the seafloor and handling excavated material.

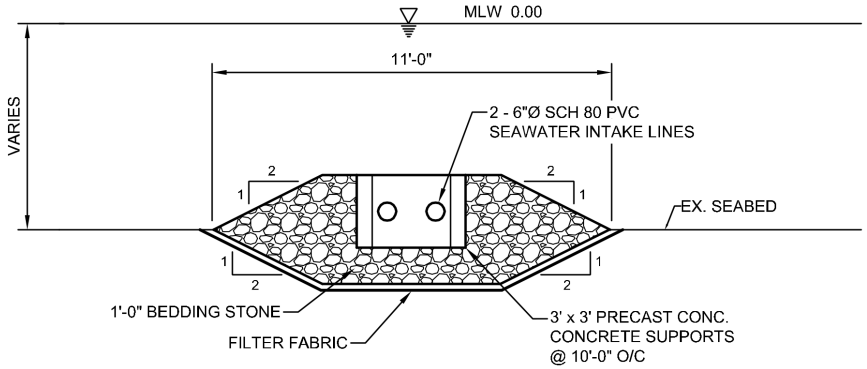
The wells will be installed by auguring down into the seabed to a depth of approximately 10 feet below the existing mudline. The well screens will be placed into the excavated area and the excavated material will be backfilled around the well screens. Then a concrete anchor will be placed around the top of the well piping and the entire assembly will be armored with riprap to resist erosion and ice damage.

CONSTRUCTION ALTERNATIVE 2: HORIZONTAL DIRECTIONAL DRILLING

A chosen contractor may utilize trenchless construction methods (including horizontal directional drilling [HDD]) to install the replacement piping. HDD is a trenchless pipe installation technology that



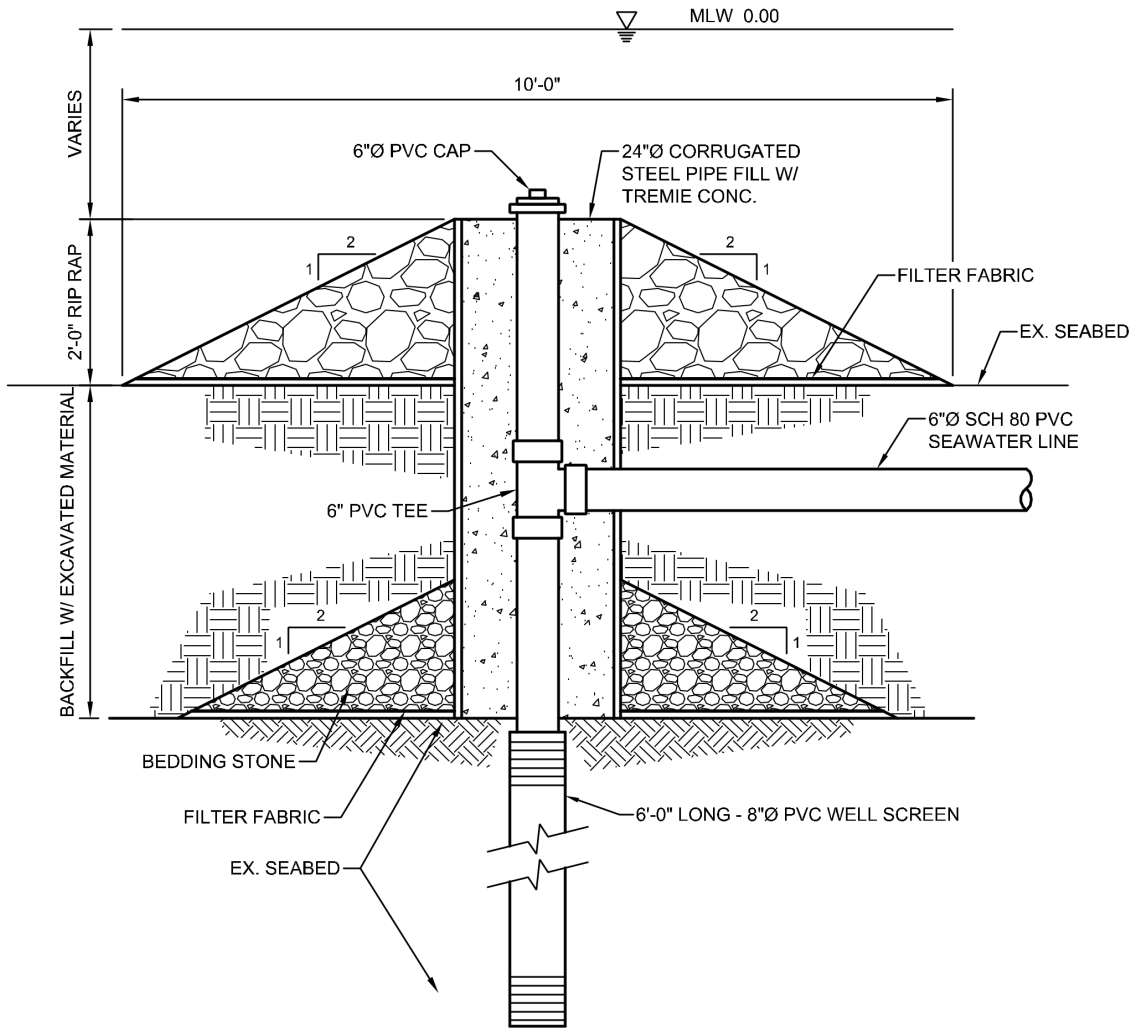
SECTION 2 - STONE ENCASED PIPING



SECTION 3 - UNENCASED PIPING

Replacement Piping (Typical Section)

Figure 2-2



SECTION 1 - AT SEAWATER WELL SCREEN

Replacement Wells (Typical Section)

would allow the pipelines to the placed sufficiently below the seabed to prevent surface erosion due to coastal processes. This installation method would eliminate the need for anchoring or armoring of the installed lines since they would be located under the seafloor with sufficient soil cover.

To install the pipes using HDD, an 8-foot by 20-foot pit would be excavated just east of the existing pumping/treatment/storage vault, to a depth of approximately 8 to 10 feet. A drill rig would be lowered into the hole and would proceed to drill a 9-inch borehole, approximately 300 feet to the west, under the existing revetment and through the seabed to the reconstructed well field. Where the drill emerges from the seabed, divers would disconnect the drill head, which would be lifted out of water via crane. After removal of the drill head, sections of high-density polyethylene (HDPE) pipe would be connected to a pulling head and fed back through the borehole, west to east. The sections of HDPE pipe would be heat welded together to provide a continuous conduit for the supply of seawater. The pipe would be connected to the existing pumping/treatment/storage vault. The process would be repeated for the second pipeline. This method would take about 10 to 12 days to complete.

Well installation under this Construction Alternative would proceed as described above under Construction Alternative 1.

CONSTRUCTION ALTERNATIVE 3: SLIPLINING

An additional option available to a contractor for installing the replacement pipe is sliplining, or installation of a smaller-diameter "carrier pipe" inside of the pipe to be replaced. The space between the pipes may then need to be grouted at the engineer's discretion. Typically the material used for sliplining is polyethylene (PE) pipe. One method of accomplishing the process is continuous feeding, where pipe segments are welded into a continuous line which is fed in at an insertion point and continues to a receiving pit. An alternative is segmental sliplining, wherein individual pieces of pipe employing bell-and-spigot connections are lowered into place, pushed together and fed through the host pipe (ITS Pipe Tech, 2014).

To install the pipes using sliplining, a starter trench would be excavated at such a location and to such a depth (anticipated to be 10 to 15 feet deep) that the carrier pipe can be pulled from the ground surface into the host pipe without requiring sharp bends. The length and width of the starter trench would be determined onsite to account for the exact location of the existing pipelines, as well as for the trench shielding or shoring requirements in the soil types encountered onsite. Prior to this, individual pipe sections would be fusion welded together to form a continuous section of pipe that matches the length of seawater intake lines to be lined. This continuous line would be pulled through the host pipe via a winch connected to the carrier pipe by a towing head. The annular space between the pipes would then be grouted, and the service lines connected.

Sliplining is a cost effective means of replacing damaged lines, although it must be decided through engineering analysis whether the carrier pipe has sufficient capacity to account for the reduced cross section resulting from the process. This method would take about 2 to 5 days to complete.

Well installation under this Construction Alternative would proceed as described above under Construction Alternative 1.

RIPRAP REPAIRS

As part of the proposed action, approximately 1,000 square feet (20 linear feet) of riprap revetment along the waterfront—where intake/delivery system and discharge pipelines enter the water—will be replaced in kind. The damaged riprap and debris will be removed using an excavator and salvageable material will be stockpiled onsite. As described above, after the existing riprap is removed, the new piping will be placed and excavations backfilled. Filter cloth will be then be installed and the reclaimed

and new riprap will be placed in an imbricated fashion to ensure stability. The elevations of the existing, intact revetment will be met on both ends of the repaired section. Appropriate sediment and turbidity controls will be provided to prevent release of particulate matter from the construction area. In-water measures would include installation of turbidity curtains around the perimeter of the offshore work area to reduce turbidity and contain ballast and floating materials. Upland erosion and sediment control measures may include installation of silt fencing, inlet protection around existing storm drains, and use of biodegradable erosion control matting.

LABORATORY BUILDING RENOVATIONS

The proposed action will also involve the renovation of the interior of the laboratory building. The renovation will include finishing previously unfinished spaces, converting of some laboratory space to office space, and upgrading to the building's electrical and mechanical systems. As part of the renovation, existing windows will be replaced with energy efficient windows, contextually appropriate to the historic district in which the building is located.

2.3 ALTERNATIVES CONSIDERED BUT REJECTED

NEW SEAWATER DELIVERY SYSTEM FROM THE EAST

Under this alternative, a new seawater pipeline would be constructed from the Atlantic Ocean side of Sandy Hook to deliver seawater to the laboratory. The new pipeline alignment would be nearly 4,000 feet long and would require the construction of a new pumping station somewhere along the alignment.

This alternative was deemed to be impractical and discarded from further consideration, as a system delivering seawater from the western side of Sandy Hook, similar to the existing intake system, would achieve the same objective at a lower cost and with less logistic complexity. Furthermore, funding for the proposed action is limited to an existing Congressional earmark, and therefore the project must retain existing infrastructure where feasible, replacing only critical portions, such as the intake piping.

SEAWATER DELIVERY VIA TRUCK

Under this alternative, seawater would be collected at a shoreline location on Sandy Hook by a tanker truck and delivered to the laboratory on an as-needed basis.

This alternative was deemed to be impractical and discarded from further consideration. As noted throughout this document, the facilities comprising the James J. Howard Laboratory are dependent on a continuous delivery of seawater and therefore direct delivery of seawater via a pipeline system is the most appropriate to meet research needs. Furthermore, the implementation of this alternative would introduce truck traffic to the National Park Service property surrounding the laboratory, with associated potential noise, air quality, and recreational resource impacts, among others.

CONSTRUCTION ALTERNATIVE: PIPE BURSTING

Under this construction alternative, a new seawater pipeline would be installed in the same location as the original pipe using pipe bursting. Pipe bursting entails destruction of the original pipe via a bursting head which is pulled through the existing pipe by a winch or rod located at an upstream manhole. As the head is pulled, it forces its way through existing pipe materials by fragmenting the pipe and compressing the broken pieces into the soil as it progresses.

This alternative was deemed to be impractical and discarded from further consideration due to the potential impacts of sound and vibration to marine life, including marine mammals. While noise levels

for pipe bursting operations have been studied and characterized for inland settings, applicability of this information to marine environments where sound is carried differently is not well established. Also of concern with pipe bursting is potential harm to nearby utilities given the tendency of bursts to cause ground movement. Shifting soils can crack brittle pipes, create leaks in mechanical joints or longitudinally bend adjacent lines away from bursts.

2.4 NO ACTION ALTERNATIVE

Under the No Action Alternative, the proposed action would not take place. The laboratory would continue to be supplied through the existing seawater intake system.

However, as mentioned in Chapter 1, "Project Description and Purpose and Need," the existing system has experienced a number of problems since its initial construction, including damage by Superstorm Sandy, and now requires immediate repair. Two of the four supply lines serving the laboratory are currently inoperable and the piping system is deteriorating. A partial failure of the seawater intake/delivery system would jeopardize the laboratory's live fish and shellfish research. A complete failure of the system would require the decommissioning of the facility and the elimination of most research, in which case the laboratory would default on commitments to deliver experimental results and research products to other federal agencies relying on said research.

3.1 INTRODUCTION

The following chapter describes the environment that may be affected by the operation and/or construction of the proposed action.

3.2 LAND USE

As shown on Figure 1-2, the proposed action site is located on Sandy Hook, a portion of a barrier peninsula stretching along the eastern shore of New Jersey. Sandy Hook is surrounded by the Atlantic Ocean on the east, Sandy Hook Bay to the southwest and Lower New York Bay to the northwest and north.

A large portion of Sandy Hook is managed by the National Park Service (NPS) as part of the Gateway National Recreation Area. The northernmost portion of Sandy Hook is occupied by a US Coast Guard (USCG) station and is off limits to the public. As noted below in Section 3.8, "Cultural Resources," the Fort Hancock and Sandy Hook Proving Ground Historic District—which is a National Historic Landmark and is listed on the National Register of Historic Places—comprises over 450 acres of Sandy Hook. The eastern shoreline of Sandy Hook comprises a number of public beaches. Recreational opportunities at these beaches, as well as other recreational resources available near the project site, are described below in Section 3.7, "Recreational Resources."

The nearest residential and commercial areas to Sandy Hook are located approximately 3 miles to the south, in Highlands. Vehicular access to/from Sandy Hook runs through Highlands via New Jersey Route 36 and the Highlands-Sea Bright Bridge (see Figure 1-1).

3.3 GEOLOGICAL RESOURCES

The project site lies within the Northern Barrier Islands Complex in the Atlantic Coastal Plain physiographic province (Stockton College 2014, USGS 2013). The entire shoreline from Monmouth Beach to the tip of Sandy Hook consists of sand eroded from the Monmouth County bluffs, which was then transported north by wave-generated littoral currents (Stockton College 2014). Surficial deposits at the project site and remaining portions of Sandy Hook consist of beach and nearshore marine sand (Holocene), comprising very pale brown to light gray sand; and pebble gravel. The thickness of the sand deposit can range from less than 20 feet to 150 feet (Standford 1999) and comprises the surficial aquifer underlain by the Merchantville-Woodbury confining unit which consists of silt, clay and thin layers of sand (Herman et al. 1998, NJ Department of Environmental Protection [DEP] 2012). Within Sandy Hook Bay, a layer of dark gray to black silt and clay, up to 10 feet thick, overlies the marine sand (Standford 1999).

At the seawater pumping/treatment/storage vault the site is flat and elevation is at approximately 16 feet North American Vertical Datum of 1988 (NAVD88). The project site slopes down to the water's edge (an approximately 15-foot elevation change) and varies in grade from about 2% to 20%.

Soils in the vicinity of the project site are defined as a well-drained Udorthents-Urban land complex with 0 to 8 percent slopes (NRCS web soil survey 2014). This complex consists of nearly level and gently sloping soils that have been altered by excavation or filling. Loamy material more than 20 inches thick is typically found in filled areas, generally in flood plains, tidal marshes, and areas of moderately well drained to very poorly drained soils. West of the vault and Hartshorne Drive, the shoreline is stabilized with riprap (**Figure 3-1, Photo 2**).

3.4 HYDROLOGICAL PROCESSES

The existing site drains from the east to the west with a 15 foot change in elevation, and varies in grade from 2% to 20%. The tidal range of Sandy Hook Bay is approximately five feet. Groundwater is expected to be encountered near the extent of the tidal range. The water depth at the end of the intake pipeline is approximately 6 feet at Mean Lower Low Water (MLLW; as per NOAA Nautical Chart #12324).

The bay side of Sandy Hook, where the project site is located, is heavily affected by tidal currents and waves generated by winds across Raritan Bay. There are several tidal current-constructed sand bars and small islands of the bay side near the mouth of the Navesink River. Along the west side of the peninsula are a couple of tidal creeks draining salt marshes (USGS, 2014).

Sandy Hook Bay contributes to the recharge of the New Jersey Coastal Plain Aquifer, a body of permeable rock which contains and transmits groundwater from the region consisting of Monmouth, Burlington, Ocean, Camden, Gloucester, Atlantic, Salem, Cumberland, Cape May and portions of Mercer and Middlesex Counties. One of its constituent aquifers is the Sandy Englishtown aquifer, located at or near the surface of the southern portion of Sandy Hook (National Park Service, 2013). Through its natural cycle of recharge and discharge the Aquifer serves as a source of inflow to this region's surface water via streams, springs and evapotranspiration (US EPA, 2010). Approximately 75% of the New Jersey Coastal Plain area's drinking water derives from the Coastal Plain aquifer.

3.5 AIR QUALITY

The Clean Air Act defines a non-attainment area (NAA) as a geographic region that has been designated as not meeting one or more of the National Ambient Air Quality Standards (NAAQS). When an area is designated as non-attainment by the US Environmental Protection Agency (USEPA), the state is required to develop and implement a State Implementation Plan (SIP), which delineates how a state plans to achieve air quality that meets the NAAQS under the deadlines established by the Clean Air Act, followed by a plan for maintaining attainment status once the area is in attainment.

The proposed action is located in Monmouth County, New Jersey, which has been designated by the USEPA as a marginal NAA for ozone (as part of the NY-NJ-CT NAA). The area is in attainment for all other criteria pollutants: nitrogen dioxide (NO_2), lead, sulfur dioxide (SO_2), fine particles ($PM_{2.5}$), inhalable coarse particles (PM_{10}) and carbon monoxide (CO).

3.6 WATER RESOURCES

The Sandy Hook barrier spit is located at the intersection of the New Jersey shore and the valley of the combined Raritan and Hudson Rivers, which is known as Raritan Bay. The project site is located within the Sandy Hook Bay portion of Raritan Bay. The most important hydrologic features to these waters are

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Mowed grasses and scattered shade trees, facing west toward Sandy Hook Bay from the location of the storage unit **1**

Riprap shoreline near the intake, facing south **2**

Representative Photographs

James J. Howard Laboratory Seawater Intake Repair EA

Figure 3-1a

7.11.14

Exposed sandy shoreline and herbaceous vegetation in the vicinity of the intake, facing northeast **3**

Herbaceous vegetation upland from the riprap shoreline in the vicinity of the intake, facing south **4**

Representative Photographs

James J. Howard Laboratory Seawater Intake Repair EA

Figure 3-1b

Grasses typical of the sandy shoreline upland from the riprap shoreline in the vicinity of the intake **5**

Representative Photographs

the semidiurnal tides of the bays and ocean (National Park Service, 2013). The project site incurs into these tidal waters, extending into Sandy Hook Bay just north of Horseshoe Cove. NJDEP classifies Sandy Hook Bay as Use Class SE1, which is designated for use in shellfish harvesting in accordance with New Jersey Administrative Code (NJAC) 7:12; maintenance, migration, and propagation of the natural and established biota; primary contact recreation; and any other reasonable uses.

3.7 RECREATIONAL RESOURCES

A number of recreational resources are available near the project site as part of the Gateway National Recreational Area. These include several public beaches on the Atlantic Ocean (eastern) side of Sandy Hook; natural areas, such as salt marshes and a holly forest; bird watching stations; hiking trails; picnicking and grilling areas; and historic structures that are part of the Fort Hancock and Sandy Hook Proving Ground Historic District. A multi-use path—suitable for biking, running, walking, or rollerblading—runs throughout Sandy Hook and across the project site (see Figure 1-2). The next closest recreational resource to the project site is Guardian Park, located approximately 300 feet to the southeast.

3.8 CULTURAL RESOURCES

Section 3.8 identifies cultural resources—including architectural and archaeological resources—in the area of potential effect for the project. This analysis was prepared in accordance with the procedures of Section 106 of the National Historic Preservation Act of 1966 (NHPA; Section 106), as implemented by federal regulations appearing in 36 CFR Part 800, in consultation with the New Jersey State Historic Preservation Officer (SHPO). SHPO correspondence is included in **Appendix A**.

REGULATORY AND GUIDANCE CONTEXT

NATIONAL HISTORIC PRESERVATION ACT (SECTION 106)

Section 106 mandates that federal agencies consider the effect of their actions on any properties listed on or determined eligible for listing on the National Register of Historic Places (NR) and afford the federal Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings. The lead federal agency, in consultation with SHPO and appropriate consulting parties, must determine whether a proposed action would have any adverse effects on the characteristics of a historic resource that qualify it for the NR. If historic resources that may be affected are identified, the potential effect of the proposed action on each resource must be evaluated, by applying the Advisory Council's Criteria of Adverse Effect (36 CFR § 800.5(a)(1)). If the analysis indicates that the proposed action may have an adverse effect, SHPO and any consulting parties are consulted to seek agreement on ways to avoid, minimize, or mitigate adverse effects. The Advisory Council must be invited to participate when the federal agency sponsoring the project wants the Council's involvement and when the project would have an adverse effect on a National Historic Landmark.

METHODOLOGY

DEFINITION OF THE AREA OF POTENTIAL EFFECT

A required step in the Section 106 process is determining the Area of Potential Effect (APE), which is defined as "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if such properties exist" (36 CFR § 800.16[d]). The APE is influenced by the scale and nature of an undertaking.

The APE for the proposed action was developed in consultation with the lead federal agency and SHPO based on the proposed work activities and their potential to affect historic properties, including potential direct and indirect effects caused by the construction and operation of the proposed action, based on information available at this time.

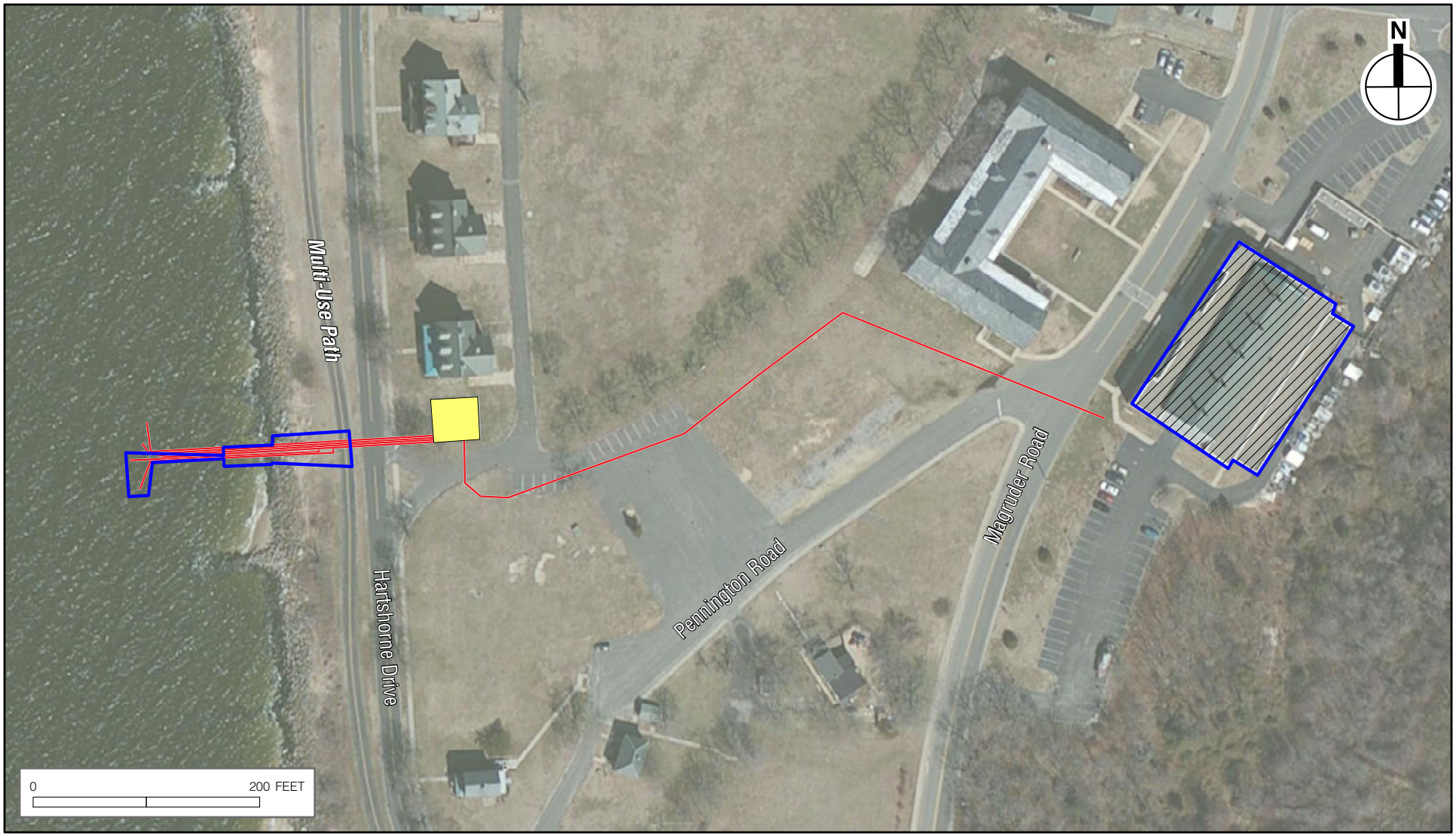
In general, potential effects on architectural resources can include both direct, physical effects and indirect, visual/contextual effects. Direct effects may include physical damage or destruction of a resource or its setting; indirect effects may include the introduction of visual, audible, or atmospheric elements that may alter the characteristics of the historic property that qualify it for inclusion in the NR in a manner that would diminish the integrity of the property's significant historic features. Archaeological resources are potentially affected by construction activity resulting in disturbance to the ground surface (including submerged ground surfaces) such as excavation, grading, cutting and filling, dredging, and staging.

The APE includes the locations that could potentially be subject to direct ground-disturbing activities, as well as those locations within which the project could have visual/contextual effects. The APE has been defined as follows and is mapped on **Figure 3-2**:

- The alignment of the proposed replacement seawater intake pipes between the pumping/treatment/storage vault and offshore wells. For a conservative assessment of potential effects, the APE includes the area within five feet on each side of the upland ground disturbance and the alignment of the in-water portion of the supply lines, to account for potential peripheral disturbance during construction activities. Since the replacement pipes would not be visible above-grade following the completion of construction, the APE does not include a larger area to account for potential visual/contextual effects related to this project element;
- The area of riprap replacement (approximately 1,000 square feet / 20 linear feet) along the waterfront. Since this work constitutes a replacement in kind, the APE does not include a larger area to account for potential visual/contextual effects related to this project element;
- The location of the proposed new well heads, as well as the area within five feet of this project element, to account for potential peripheral disturbance during construction activities. The installation of the well heads would take place within previously-disturbed portions of the existing easement. The well heads would protrude approximately two feet above the seabed but would not be visible above the surface of the water. Since the replacement wells would not be visible above the surface of the water, the APE does not include a larger area to account for potential visual/contextual effects;
- The laboratory building. Since the proposed work to this building includes only interior renovations (including finishing previously unfinished spaces, conversion of laboratory space to office spaces, and upgrades to the building's electrical and mechanical systems) and the replacement in kind of windows damaged by Superstorm Sandy with energy efficient but contextually appropriate windows, the APE does not include a larger area to account for potential visual/contextual effects related to this project element.

IDENTIFICATION OF HISTORIC PROPERTIES WITHIN THE APE

Once the APE was determined, a list of officially recognized architectural resources within the APE was compiled. This includes National Historic Landmarks (NHL) and properties listed on the National Register of Historic Places (NR) or New Jersey Register of Historic Places (NJR) or determined eligible for such listing. Since the APE is wholly within the boundaries of the Fort Hancock and Sandy Hook Proving Ground Historic District (see below), this analysis did not include a survey of the APE to identify



James J. Howard Laboratory

Seawater pumping, treatment, and storage vault

Existing Seawater Intake

Area of Potential Effect

Historic and Cultural Resources,
Area of Potential Effect

Figure 3-2

potential historic resources. In addition, SHPO was consulted to identify previously identified archaeological sites and previously completed cultural resource surveys for areas in or adjacent to the APE for potential direct effects.

EVALUATION OF POTENTIAL EFFECTS ON HISTORIC PROPERTIES

Once the historic properties in the APE were identified, the effects of the project on those resources were assessed. As described above, project effects on historic properties identified in this chapter may include both direct effects and indirect effects resulting from project construction or project operation. Assessments of effects are based on the Advisory Council's Criteria of Adverse Effect codified in 36 CFR § 800.5(a)(1) and (2). The assessment may result in three possible effects findings: no effect; no adverse effect; or adverse effect.

AFFECTED ENVIRONMENT

ARCHITECTURAL RESOURCES

The APE is within the boundaries of the Fort Hancock and Sandy Hook Proving Ground Historic District, which is a National Historic Landmark and is listed on the National Register of Historic Places. The historic district contains approximately 110 significant historic buildings and 16 batteries dating from the last quarter of the 19th century through the first half of the 20th century. The district's structures reflect the history of the U.S. Army's Ordnance Department Proving Ground and Fort Hancock Military Reservation, a vital defense installation guarding New York City from 1895 through the 1950s and 1960s Cold War era until 1974.

None of the historic district's buildings are located within the APE. The buildings closes to the APE are as follows:

Building 18, Officers Row. Fronting on Hartshorne Drive and built in 1898-99, the 18 buildings which constitute Officers' Row (HS 1-18), are basically identical two and half story L-shaped buff-colored brick buildings are designed in a plain Georgian Revival style, with both triangular and elliptical pediments on the dormers, plain box cornices, and flat keystoned lintels. All have interior brick chimneys.

Barracks and Mess (HS 74). This U-shaped, two and a half story building on Magruder Road was constructed in 1909. It has a gable roof supported by wooden trusses and a raised basement faced with field stone. There is a stone watertable and the windows have stone sills. The lintels are elliptically arched brick constructions. There are hip roofed dormers positioned regularly along the base of the U. The building has a plain box cornice with partial cornice returns on the gable ends. There are two-story wooden porches, supported on concrete piers, with flat roofs, along the inner court of the barracks, as well as on the center of the west facade, which faces the parade ground. There are internal brick chimneys near the gable ends, as well as internal metal vent stacks along the roof line. The double hung sash windows and the doors are of wooden construction.

ARCHAEOLOGICAL RESOURCES

As described in its nomination form, the historic district may contain significant prehistoric and historic period archeological sites and may be sensitive for other archaeological deposits that have not yet been identified. The nomination form states that to date there is little physical or documentary evidence which can be of assistance in precisely locating areas of historic and prehistoric sensitivity on Sandy Hook; however, some known archaeological sites are identified. The closest of these to the APE is the Guardian Park site, which is defined as being from the NIKE Missile Display northwest to Building 19 (no longer extant) and comprising a subsurface Post Hospital Army dump site of army materials.

3.9 FLORA AND FAUNA

UPLAND VEGETATION AND WILDLIFE

The project site is located in a previously disturbed and developed area of Sandy Hook. The project site in the immediate vicinity of the vault contains mowed grasses, and is landscaped with ornamental plants, shrubs and scattered shade trees. These landscaped areas support wildlife typically found in developed suburban areas (e.g., squirrels, opossum, raccoon, mice, rabbits, songbirds, and reptiles such as garter snakes and amphibians such as toads). Songbird species common to these areas include American robin (*Turdus migratorius*), house sparrow (*Passer domesticus*), barn swallow (*Hirundo rustica*), mourning dove (*Zenaida macroura*), European starling (*Sturnus vulgaris*), American crow (*Corvus brachyrynchos*), house wren (*Troglodytes aedon*), gray catbird (*Dumetella carolinensis*), northern mockingbird (*Mimus polyglottos*), and house finch (*Carpodacus mexicanus*).

The shoreline in the vicinity of the intake comprises large riprap, eroding sandy soil, herbaceous plants and occasional trees (see Figure 3-1, Photos 1-5). The transitional ecological community located between the riprap/erosion control shoreline and the paved road is composed of unvegetated patches of sand and areas dominated by grasses (e.g., American beachgrass [*Ammophila breviligulata*] and other herbaceous plants (e.g., goldenrod [*Solidago* sp.], seaside goldenrod [*Solidago sempervirens*], and common mugwort [*Artemisia vulgaris*]) (see Figure 3-1, Photos 1-5). Shrubs are nearly absent from this ecological community, and canopy cover from trees is less than 5 percent.

The following sections describe the wildlife expected to occur within and along the shoreline of Sandy Hook Bay.

SANDY HOOK BAY FAUNA

BIRDS

American black duck (*Anas rubripes*), Canada goose (*Branta canadensis*), gadwall (*Anas strepera*), mallard (*Anas platyrhynchos*), and a variety of gull species (Laridae family) are year-round residents of Sandy Hook Bay. A number of shorebird and tern species occur in the Bay during the spring and summer. American wigeon (*Anas americana*), bufflehead (*Bucephala albeola*), canvasback (*Aythya valisineria*), common goldeneye (*Bucephala clangula*), mergansers (*Mergus merganser*), oldsquaw (*Clangula hyemalis*), redhead (*Aythya americana*), ruddy duck (*Oxyura jamaicensis*), scaup (*Aythya affinis*), and scoters (*Melanitta* sp.) are winter residents of Sandy Hook Bay, typically occurring from October to March (NOAA 2001).

Between March and May, spring hawk counts have historically revealed an average of nearly 5,000 birds including kestrel (*Falco sparverius*), sharp-shinned hawk (*Accipiter striatus*), northern harrier (*Circus cyaneus*), red-shouldered hawk (*Buteo lineatus*), merlin (*Falco columbarius*), Cooper's hawk (*Accipiter cooperii*), turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), and osprey (*Pandion haliaetus*) (US Fish and Wildlife Service [USFWS] 1997). Osprey are known to occur in shoreline areas north and south of the project site in the spring and summer months (NOAA 2001). No osprey nests are located in the vicinity of the project site.

Sandy Hook is the only undeveloped barrier beach area on the northern end of the New Jersey coastline and as such, supports a number of beach-nesting bird colonies. Nesting birds include piping plover (*Charadrius melodus*), common tern (*Sterna hirundo*), least tern (*Sternula antillarum*), black skimmer (*Rynchops niger*), and American oystercatcher (*Haematopus palliates*).

BENTHIC MACROINVERTEBRATES

American lobster (*Homarus americanus*) and blue crab (*Callinectes sapidus*) are present throughout the year in Sandy Hook Bay, and northern quahog can be found year-round starting approximately 0.25 miles from the shore in the project vicinity and extending into the deeper waters offshore (NOAA 2001). In the deeper waters north of Sandy Hook, there are also areas of blue mussel (*Mytilus edulis*), eastern oyster (*Crassostrea virginica*), and Atlantic surf clam (*Spisula solidissima*) beds (USFWS 1997).

FISH

Sandy Hook Bay provides year-round habitat for a number of fish species: American eel (*Anguilla rostrata*), American shad (*Alosa sapidissima*), Atlantic herring (*Clupea harengus*), Atlantic menhaden (*Brevoortia tyrannus*), bay anchovy (*Anchoa mitchilli*), killifish (*Fundulus heteroclitus*), silversides (*Menidia* sp.), shortnose sturgeon (*Acipenser brevirostrum*), and winter flounder (*Pseudopleuronectes americanus*). Species present from the spring to fall months include alewife (*Alosa pseudoharengus*), Atlantic sturgeon (*Acipenser oxyrhynchus*), black sea bass (*Centropristis striata*), bluefish (*Pomatomus saltatrix*), scup (*Stenotomus chrysops*), striped bass (*Morone saxatilis*), summer flounder (*Paralichthys dentatus*), tautog (*Tautoga onitis*), and weakfish (*Cynoscion regalis*) (NOAA 2001).

MARINE MAMMALS

In the winter and spring months, Sandy Hook Bay provides habitat for harbor porpoise (*Phocoena phocoena*), gray seal (*Halichoerus grypus*), harbor seal (*Phoca vitulina*), harp seal (Pagophilus groenlandicus), and hooded seal (*Cystophora cristata*). Bottlenose dolphins (*Tursiops truncates*) are present in the summer, and minke whales (*Balaenoptera acutorostrata*) occur year-round in the Bay (NOAA 2001).

THREATENED AND ENDANGERED SPECIES

Federally endangered, threatened, candidate, or proposed species listed by the USFWS IPaC System as occurring in the project vicinity include piping plover (*Charadrius melodus*; threatened), red knot (*Calidris canutus rufa*; proposed threatened), northern long-eared bat (*Myotis septentrionalis*; proposed endangered), seabeach amaranth (*Amaranthus pumilus*; threatened), and northeastern beach tiger beetle (*Cicindela dorsalis dorsalis*; threatened). The NJDEP lists the following additional species as occurring in the vicinity of Sandy Hook bay: black skimmer (*Rynchops niger*; state endangered), least tern (*Sternula antillarum*; state endangered), northern harrier (*Circus cyaneus*; state endangered), osprey (*Pandion haliaetus*; state threatened), shortnose sturgeon (*Acipenser brevirostrum*; endangered), Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*; endangered), loggerhead sea turtle (*Caretta caretta*; federally threatened, state endangered), leatherback sea turtle (*Dermochelys coriacea*; endangered), and Kemp's ridley sea turtle (*Lepidochelys kempi*; endangered). These species are described in detail below. There are no significant natural communities, as mapped by NJDEP within the vicinity of the project site.

Piping plover

The piping plover is a migratory shorebird that nests on sandy beaches along the Atlantic coast and around the Great Lakes. Steep population declines, primarily due to extensive coastal development, beach engineering activities that alter natural coastal processes (e.g., jetty construction, nourishment), and disturbance from human recreational use of nesting beaches led to the species' listing under the federal Endangered Species Act in 1986.

The breeding range of the piping plover within New Jersey is limited to coastal beaches in Monmouth, Ocean, Atlantic, and Cape May Counties; nesting typically occurs between the dunes and the high-tide

line (USFWS 2014a, NJDEP undated). During the nonbreeding season, plovers inhabit coastal beaches, barrier islands, inlets, sandflats, mudflats, and dredged material islands, and they forage on intertidal beaches, washover areas, exposed mudflats and sandflats, wracklines, and shorelines (NJDEP undated).

Red knot

The *rufa* subspecies of the red knot migrates up to 30,000 miles round trip between primary wintering grounds in South America and breeding grounds in the high arctic, with conditions for refueling at staging areas along the Atlantic coast being critical determinants of migration and reproductive success and overall survival (Baker et al. 2004, Morrison et al. 2007). Red knots are dependent upon a superabundance of horseshoe crab eggs as a food source in order to almost double their body mass and fuel the remaining leg of their migration to the high arctic (Baker et al. 2004, Morrison and Hobson 2004). Delaware Bay is the only place in the Western Hemisphere where horseshoe crabs spawn in numbers that enable red knots to do so (Niles 1999). Migrating red knots may commonly stage, albeit in much lower densities, elsewhere along the Atlantic coast (Harrington 2001, Burger et al. 2012).

In New Jersey, red knots are known to use stopover habitats in Cumberland, Cape May, and Atlantic Counties in the southern portion of the state (USFWS 2014b). Red knots are highly sensitive to human disturbance at staging sites (Burger et al. 2004, 2007).

Black skimmer

Black skimmers are waterbirds that nest on open sandy beaches, inlets, sandbars, offshore islands, and dredge disposal islands that are sparsely vegetated and contain shell fragments. Foraging habitats include shallow-water tidal creeks, inlets, and ponds. Similar coastal and estuarine habitats are used throughout the year.

Least tern

The least tern is a colonial seabird that nests on open, sparsely vegetated sand beaches and dredge spoil sites, especially after recent deposition before the establishment of dense vegetation. Colonies of nesting least terns in New Jersey are found primarily along barrier island beaches or mainland beach strands. Foraging habitats include bays, lagoons, estuaries, rivers, and lakes along the coast.

Northern harrier

Northern harriers, formerly known as “marsh hawks,” inhabit open country such as tidal marshes, emergent wetlands, fallow fields, grasslands, meadows, airports, and agricultural areas. In New Jersey, this species typically nests in brackish or saline marshes, particularly along the shores of Delaware Bay. They may also nest in freshwater tidal marshes that contain emergent wetland plants. Foraging occurs over marshes, fields, bushes, and edges that contain low vegetation.

Osprey

Osprey, formerly known as “fish hawks,” is a piscivorous species that inhabits bodies of water supporting adequate fish populations including coastal rivers, marshes, bays, inlets, lakes, and reservoirs. In New Jersey, this species typically nests close to water, particularly along the shores of Delaware Bay and along the Atlantic Coast from Sandy Hook to Cape May. They may also nest on the ground within coastal marshes, although this in an infrequent occurrence.

Seabeach amaranth

Seabeach amaranth is a state and federally listed threatened annual herbaceous plant. In New Jersey, seabeach amaranth occurs in Monmouth, Ocean, Atlantic, and Cape May Counties along coastal beaches. It grows in a sprawling pattern along sandy beaches of the Atlantic coast in areas of accreting

shoreline, typically in the zone between the high tide line and the toe of primary dunes. The species occasionally establishes small temporary populations in other habitats, including sound-side beaches, blowouts in foredunes, inter-dunal areas, and on sand and shell material deposited for beach replenishment (USFWS 2014c). Seabeach amaranth inhabits areas of very sparse vegetation because it is extremely sensitive to competition for resources from other plants. This species has been affected by beach stabilization (particularly sea walls and riprap), intensive recreational use, mechanical beach raking, and herbivory by insects.

Northeastern beach tiger beetle

The northeastern beach tiger beetle is often the dominant invertebrate predator in habitats where they occur, feeding on amphipods, flies, and other invertebrates along the water's edge. In New Jersey, the beetle spends its entire life cycle on wide, sandy, ocean beaches from the intertidal zone to the upper beach. It was historically found along New Jersey's Atlantic coastal beaches from Sandy Hook to Holgate, but was extirpated until 1994, when a population of northeastern beach tiger beetle was re-established at the Gateway National Recreation Area, Sandy Hook Unit (USFWS 2014c). Primary threats to the beetle include habitat disturbance and compaction from development, beach stabilization activities, and recreational beach uses including pedestrian and vehicle traffic.

Northern long-eared bat

The northern long-eared bat is a temperate, insectivorous bat whose life cycle can be coarsely divided into two primary phases – reproduction and hibernation. Northern long-eared bats hibernate in caves or mines during winter and then emerge in early spring, with males dispersing and remaining solitary until mating season at the end of the summer, and pregnant females forming maternity colonies in which to rear young. Summer habitat of the bat generally includes mature, intact, upland and riparian forest within heavily forested landscapes (Ford et al. 2005, Henderson et al. 2008). Although they have been documented in urbanized areas (Whitaker et al. 2004, Johnson et al. 2008) and will occasionally utilize buildings and other artificial structures rather than trees for roosting (Timpone et al. 2010, USFWS 2013b), urban northern long-eared bats tend to occur near large forested parks or other expansive green spaces with abundant tree cover towards the city's outskirts (Johnson et al. 2008).

Shortnose Sturgeon

The shortnose sturgeon is an anadromous fish that can be found in Sandy Hook Bay year-round (NOAA 2001). These fish spawn, develop, and overwinter in the Hudson River well upriver from Sandy Hook Bay, and prefer colder and deeper waters at all life stages. Larvae may be found in brackish areas, but juveniles are predominantly confined to freshwater reaches of major rivers. Sturgeon are bottom dwellers and feed on crustaceans, insects, snails, marine worms, and small fish.

Atlantic Sturgeon

The Atlantic sturgeon is an anadromous bottom-dwelling fish that inhabits large freshwater rivers when spawning and primarily marine waters when not breeding; they can also be found in bays, river mouths, and estuaries. They can be found in Sandy Hook Bay from spring to fall (NOAA 2001). When in marine waters, they typically stay close to shore over substrates of gravel or sand (NJDEP 2010a). Spawning occurs during the spring months in flowing water between the salt front and fall line of major rivers; they may also spawn in brackish water.

Sea turtles

Leatherback sea turtles inhabit warm, tropical and subtropical waters and migrate northward in late spring and summer, remaining until late fall. They feed primarily on jellyfish and other soft-bodied animals. Leatherbacks are the largest and deepest-living of the sea turtles and can also tolerate colder

water temperatures (NJDEP 2010b). Loggerhead sea turtles occur in waters less than 60 meters deep within the warmer portions of ocean waters and feed on a variety of marine invertebrates including crabs, mollusks, sponges, and jellyfish. They have been documented nesting as far north as New Jersey, with one nesting record in Island Beach State Park (NJDEP 2010c). The Kemp's ridley is the smallest of the sea turtles and feeds on small crabs, plants, and snails. They inhabit tropical and subtropical waters until migrating northward in late spring and summer, where they remain until late fall. New Jersey coastal waters provide important seasonal foraging habitat during this time (NJDEP 2010d).

Leatherback and loggerhead sea turtles occur in Sandy Hook Bay from July through October (NOAA 2001); leatherback turtles do not typically occur close to shore on the Bay side of Sandy Hook (NJDEP 2010c). Kemp's ridley sea turtles have been known to feed in Horseshoe Cove, south of the project site (USFWS 1997).

ESSENTIAL FISH HABITAT (EFH)

There are a number of EFH designated species in the vicinity of Sandy Hook Bay (see **Table 3-1**).

Table 3-1
Essential Fish Habitat Designated Species in the Vicinity of Sandy Hook Bay

Species	Eggs	Larvae	Juveniles	Adults
Red hake (*Urophycis tenuis*)		X	X	X
Redfish (*Sebastes fasciatus*)	n/a			
Winter flounder (*Pseudopleuronectes americanus)*	X	X	X	X
Windowpane flounder (*Scophthalmus aguosus*)	X	X	X	X
Atlantic sea herring (*Clupea harengus*)		X	X	X
Bluefish (*Pomatomus saltatrix*)			X	X
Long finned squid (*Loligo pealeii*)	n/a	n/a		
Longfin inshore squid (*Doryteuthis pealeii*)	X		X	X
Short finned squid (*Illex illecebrosus*)	n/a	n/a		
Atlantic butterfish (*Peprilus triacanthus*)		X	X	X
Atlantic mackerel (*Scomber scombrus*)			X	X
Summer flounder (*Paralichthys dentatus*)		X	X	X
Scup (*Stenotomus chrysops*)	n/a	n/a	X	X
Black sea bass (*Centropristis striata*)	n/a		X	X
Surf clam (*Spisula solidissima*)	n/a	n/a		
Ocean quahog (*Artica islandica*)	n/a	n/a		
Spiny dogfish (*Squalus acanthias*)	n/a	n/a		
King mackerel (*Scomberomorus cavalla*)	X	X	X	X
Spanish mackerel (*Scomberomorus maculatus*)	X	X	X	X
Cobia (*Rachycentron canadum*)	X	X	X	X
Dusky shark (*Carcharhinus obscurus*)		X[(1)]		
Sandbar shark (*Carcharhinus plumbeus*)		X[(1)]	X	X
Sand tiger shark (*Carcharius taurus*)		X[(1)]	X	X
Clearnose skate (*Raja eglanteria*)			X	X
Little skate (*Leucoraja erinacea*)			X	X
Winter skate (*Leucoraja ocellata*)			X	X

Notes:

n/a – insufficient data for this lifestage exists and no EFH designation has been made.

(1) – None of these species have a free-swimming larval stage; rather they are live bearers that give birth to fully formed juveniles. For the purposes of this table, "larvae" for dusky, sandbar, and sand tiger sharks refers to neonates and early juveniles.

Sources:

National Marine Fisheries Service. "Summary of Essential Fish Habitat (EFH) Designation" posted online at http://www.nero.noaa.gov/hcd/STATES4/new_jersey/40207400.html

National Marine Fisheries Service EFH Mapper accessed online at http://www.habitat.noaa.gov/protection/efh/habitatmapper.html

3.10 WETLANDS

The U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI; 2014) has mapped Sandy Hook Bay, where the seawater intake would be located as estuarine habitat with an unconsolidated bottom that has a subtidal water regime (E1UBL, see **Figure 3-3**). These habitats are continuously submerged. Because this estuarine habitat does not contain wetland vegetation, it does not meet the federal definition of wetlands under the Clean Water Act[1] and Executive Order 11990 Protection of Wetlands. Wetlands are areas that are covered by water or have waterlogged soils for long periods during the growing season. Plants growing in wetlands are capable of living in saturated soil conditions for at least part of the growing season. Aquatic habitats with submerged aquatic vegetation and/or macro algae are not identified as wetlands. The US Army Corps of Engineers (USACE) uses three characteristics of wetlands when making wetland determinations: vegetation, soil, and hydrology. One or more indicators of wetland vegetation, hydric soil, and wetland hydrology must be present for an area to be a wetland.

3.11 FLOODPLAINS

The Federal Emergency Management Agency (FEMA) has not printed a 100-year flood risk mapping panel for the area encompassing the project site. However it classifies this area as a Zone D, "where flood hazards are undetermined but flooding is possible."

3.12 COASTAL ZONE MANAGEMENT

The proposed action would involve the placement of fill below the Spring High Tide and within a navigable waterway; therefore, the construction of these elements would require Federal authorization from USACE under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. The project would also require a Section 401 Water Quality Certification and Federal Coastal Zone Management Consistency Determination from the New Jersey Department of Environmental Protection (NJDEP). In New Jersey, the Water Quality Certification is issued by NJDEP under the Coastal Zone Management Rules (N.J.A.C. 7:7E).

The Coastal Zone Management Act enables coastal states to designate state coastal zone boundaries and develop coastal management programs to improve protection of sensitive shoreline resources and guide sustainable use of coastal areas. The New Jersey Coastal Management Program (CMP) is administered by NJDEP. Lands below mean high water and tidal waters are also in the New Jersey coastal zone, but fall under the jurisdiction of the New Jersey Waterfront Development Law. The project site is within the coastal zone regulated under the New Jersey Coastal Area Facilities Review Act (CAFRA).

The following policies under New Jersey Rules on Coastal Zone Management (N.J.A.C. 7:7E) are not applicable to the proposed action:

[1] The term "wetlands" means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

7.14.14

Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwat
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

0 2000 FEET

SCALE

National Wetlands Inventory

Figure 3-3

STANDARDS FOR BEACH AND DUNE ACTIVITIES (N.J.A.C. 7:7E SUBCHAPTER 3A)

This policy applies to routine beach maintenance, emergency post-storm restoration, dune creation and maintenance, and construction of boardwalks. The proposed action does not involve these actions; therefore, this policy is not applicable.

IMPERVIOUS COVER LIMITS AND VEGETATIVE COVER PERCENTAGES IN THE UPLAND WATERFRONTDEVELOPMENT AREA (N.J.A.C. 7:7E SUBCHAPTER 5A)

This policy sets forth requirements for impervious cover and vegetative cover on sites in the upland waterfront development area. The upland portion of the project includes realignment of the pipe and in-kind replacement of riprap along the shoreline. The trench for the pipe will be backfilled with the excavated material. Since these activities would not result in a change to impervious or vegetative cover, this policy is not applicable.

IMPERVIOUS COVER LIMITS AND VEGETATIVE COVER PERCENTAGES IN THE CAFRA AREA (N.J.A.C. 7:7E SUBCHAPTER 5B)

This policy sets forth requirements for impervious cover and vegetative cover on sites in the CAFRA area. As with Subchapter 5A, the activities that would take place in the CAFRA area would not result in a change to impervious or vegetative cover, and this policy is not applicable.

The proposed action's consistency with the remaining Coastal Zone Management Policies is evaluated in Section 4.12 in Chapter 4, "Environmental Consequences."

3.13 FARMLANDS

The project site is located wholly within the Sandy Hook Unit of the Gateway National Recreation area and there are no farmlands located on or near the project site.

3.14 NOISE

There are no industrial or transportation facilities located near the project site and any noise that can be experienced by users of the site would be ambient noise resulting from recreational activities, Sandy Hook Bay marine traffic, limited traffic on internal roadways, and wildlife.

3.15 TRANSPORTATION

Sandy Hook is connected to the mainland via New Jersey Route 36 between the towns of Highlands to the north and Sea Bright to the south. Here, New Jersey Route 36 branches into Hartshorne Drive, which runs across Sandy Hook, paralleled in most places by a multi-use path. Additionally two bus routes currently approach Sandy Hook via stops in Highlands, NJ. From here visitors need additional transportation to and through destinations within the park.

A seasonal public ferry operates during the summer between a ferry landing at Fort Hancock and Manhattan. Visitors arriving by ferry at Fort Hancock can take a shuttle bus throughout Sandy Hook and/or access the multi-use path that runs most of the length of the peninsula. (National Park Service, 2013).

The project site sits alongside both Hartshorne Drive and the multi-use path at the Sandy Hook's western edge, and includes a portion of Kessler Road, a circulator road.

3.16 UTILITIES AND SOLID WASTE

As a result of Superstorm Sandy in 2012, Sandy Hook's wastewater treatment plant suffered catastrophic damage, requiring replacement of all pumps, electronic controls, wiring, auxiliary power units and lift stations. Additionally water lines required disinfection and piping and manholes required clearing of sand and debris (National Park Service, 2013). Such events underscore the vulnerability of Sandy Hook's utilities not only to stresses from use and age, but from the elements.

The project site is located outside of the extent of the sanitary sewer system. However record documents and a utility designation indicate there are numerous utilities around the project site. The area around the project site is predominantly paved surfaces and vehicular oriented, except for lawn areas surrounding the laboratory building and facing Sandy Hook Bay near the existing multi-use path. Utility pipes and conduits of all types traverse the study area at various depths with storm drain piping located 5 to 15 feet below the ground surface.

3.17 VISUAL RESOURCES

There are a number of visual resources located in the vicinity of the project site. These include the historic buildings that are part of the aforementioned Fort Hancock and Sandy Hook Proving Ground Historic District. The historic district contains approximately 110 significant historic buildings and 16 batteries dating from the last quarter of the 19th century through the first half of the 20th century. In addition, the project site's waterfront location provides views of Sandy Hook Bay and Raritan Bay beyond and their adjacent shorelines.

3.18 HAZARDOUS MATERIALS

The area around the project site has no history of industrial or manufacturing uses as it served as an active military installation from the late 1850s through 1974. While historical military uses throughout the installation may have included activities that involved the use and storage of various chemicals and/or petroleum, the project site is located specifically near Officer's Row, which served as residences for officers and their families, and is therefore unlikely to contain soils or groundwater contaminated through such uses. Similarly, while historic military uses in the area may be indicate the potential for the presence of buried ordnance, such deposits are unlikely in the vicinity of officer housing and no such resources were encountered during the borings program conducted for the proposed action.

The laboratory stores and uses chemicals and petroleum products required for research purposes, however, any such chemicals are stored and used within controlled laboratory environments, in accordance with all relevant regulations.

Section 4.18 in Chapter 4, "Environmental Consequences," discusses measures that may be implemented to avoid significant impacts from hazardous materials in the event that such materials are discovered during subsurface excavations.

4.1 INTRODUCTION

The following provides an evaluation of the potential environmental consequences of the proposed action.

4.2 LAND USE

NO ACTION

Under the No Action Alternative, the existing seawater intake/discharge system would continue to operate as is and would have no effect on land use surrounding the project site, which would be unchanged from what is described in "Chapter 3, Affected Environment."

PROPOSED ACTION

CONSTRUCTION EFFECTS

The construction of the proposed action, under all Construction Alternatives, is expected to be limited in nature and duration and would not have a significant adverse effect on adjacent land uses. Potential impacts from the construction of the proposed action on recreational resources near the project site are described below in Section 4.7.

OPERATIONAL EFFECTS

The proposed action comprises a replacement in kind of an existing seawater intake system and would not result in any changes to land uses on Sandy Hook or in the surrounding areas. The implementation of the proposed action would ensure the continuity of research activities at the James J. Howard Laboratory and would therefore continue the use of the building as a marine fisheries research facility and the presence of research personnel on or near the project site.

4.3 GEOLOGICAL RESOURCES

NO ACTION

Under the No Action Alternative, the existing seawater intake/discharge system would continue to operate as is and would have no effect on geologic resources. Under the No Action alternative, the geology, aquifer, topography and soils within the vicinity of the project site would be unchanged from that described in "Chapter 3, Affected Environment."

PROPOSED ACTION

CONSTRUCTION EFFECTS

The replacement of the seawater intake/delivery system—and riprap repairs and building renovations that would occur under all of the Construction Alternatives—would not adversely affect the geological resources, or groundwater aquifer resources within the vicinity of the project site and would not result in significant adverse impacts to soils within the project site.

In order to minimize potential construction effects on soil resources, erosion and sediment control measures would be employed during upland excavation activities under all Construction Alternatives. At the completion of construction, all excavated areas would be restored to existing grade. Excavations would not extend to bedrock and would not have the potential to affect geologic resources or the Merchantville-Woodbury confining unit or surficial aquifer. Erosion and sediment control measures consistent with the NJDEP Standards for Soil Erosion and Sediment Control in New Jersey will be implemented to minimize soil erosion during construction activities. Examples of erosion and sediment control measures include installation of silt fencing, inlet protection around existing storm drains, and use of biodegradable erosion control matting. The replacement of riprap along the waterfront would be in-kind and in-place, and would be backfilled with material compatible with the existing shoreline. Overall, the construction of the proposed action would not result in a significant adverse effect on geological processes.

OPERATIONAL EFFECTS

The replaced intake/delivery piping system would continue to operate as it did before sustaining damage during Superstorm Sandy. The withdrawal of seawater through the pipeline would not result in effects to geological resources. The shoreline riprap would be comprised of the same materials and would be placed in the same location as the existing riprap and would not affect geological resources at the project site. Additionally, the shoreline within the area of disturbance, which is eroding, will be permanently stabilized in accordance with NJDEP requirements and a grass cover, minimizing loss of soil resources from within the project site. Overall, the operation of the proposed action would not result in a significant adverse effect on geological processes.

4.4 HYDROLOGICAL PROCESSES

NO ACTION

Under the No Action Alternative, the existing seawater intake/discharge system would continue to operate as is and would have no effect on hydrologic resources such as groundwater and tidal flow in Sandy Hook Bay. Drainage on the site would be unchanged from that described in Chapter 3.

PROPOSED ACTION

CONSTRUCTION EFFECTS

The replacement of the seawater intake/delivery piping under this alternative, which would involve excavation along the shoreline, would not include the placement of any temporary structures within Sandy Hook Bay, and would not, therefore, affect tidal flow in the vicinity of the project site. Some dewatering would be required during the construction of the proposed action under all Construction Alternatives; trenching under Construction Alternative 1 would require the most dewatering, while alternatives 2 and 3 would require some dewatering of the drilling pits and pipe insertion points.

Discharge from dewatering pumps would be returned to groundwater or to the bay and would therefore result in no significant adverse effects to groundwater resources as the water recovered would have originated primarily from Sandy Hook Bay. Overall, the construction of the proposed action would not result in a significant adverse effect on hydrological processes.

OPERATIONAL EFFECTS

Construction Alternative 1 would result in the placement of permanent elements of the intake system —i.e. concrete collars and riprap to anchor the intake/discharge lines—at the shoreline. However, the intake structures have been designed to minimize placement of fill within Sandy Hook Bay. The presence of these structures would not have a significant adverse effect on tidal flow within the vicinity of the project site.

Additionally, the withdrawal of seawater from the bay would not differ from that withdrawn prior to damage sustained from Superstorm Sandy; water would be withdrawn at the same velocity and volume as the existing system. The discharge of seawater into Sandy Hook Bay, as a result of the operation of the proposed action, would be subject to the New Jersey State Pollutant Discharge Elimination System (SPDES) Individual Permit and all relevant requirements, discussed below in Section 4.6. Therefore, the proposed action would not differ substantially from the existing condition, and would not have a significant adverse effect on hydrologic processes within the bay.

The operation of the proposed action would not adversely affect the Merchantville-Woodbury confining unit or surficial aquifer, or drinking water supplies. Groundwater is not used as a potable water supply in the area, and the proposed action would not result in groundwater withdrawal. Therefore, the proposed action would not have the potential to result in significant adverse impacts to groundwater resources on or in the vicinity of the project site, and would be compliant with Section 1424(e) of the Safe Drinking Water Act.

4.5 AIR QUALITY

NO ACTION

Under the No Action Alternative, the existing seawater intake/discharge system would continue to operate as is and would not result in any changes to air quality.

PROPOSED ACTION

CONSTRUCTION EFFECTS

As discussed in Chapter 2, "Alternatives," the construction of the proposed action, under all Construction Alternatives, would require some heavy equipment. Most engines on heavy construction equipment are diesel-powered, and produce relatively high levels of sulfur oxides (SO2), nitrogen oxides (NOX) and particulate matter (PM2.5 and PM10). Technologies have been developed to substantially reduce SO2 and PM emissions. These include ultra-low-sulfur diesel fuel (ULSD), diesel particulate filters (DPFs), and cleaner engines (Tier 2 or better). To the extent practicable, the equipment used for the construction of the proposed action, under all Construction Alternatives, would use these technologies. Additional measures to minimize pollutant emissions would be taken in accordance with applicable laws and regulations, e.g. restricting on-site vehicle idle time for all vehicles not using the engine to operate a loading, unloading, or processing device (e.g., concrete mixing trucks).

Furthermore, construction activities associated with any of the construction options—and associated use of diesel-powered construction equipment—would be short-term in nature (approximately 3 weeks or less). There are also no sensitive residential or community facility receptors located near the project site. Therefore, the construction of the proposed action, under all Construction Alternatives, would not result in any significant adverse effects to air quality.

OPERATIONAL EFFECTS

Air quality can be affected by air pollutants produced by moving sources, such as vehicular traffic, referred to as "mobile sources," and by fixed combustion facilities, referred to as "stationary sources." The proposed action would not result in additional vehicle trips; therefore, no mobile source impacts would occur. In addition, no new stationary sources of emissions would be constructed. No new or additional air quality impacts would occur from existing sources of emissions. Therefore, no significant adverse air quality impacts from the proposed actions are anticipated.

GENERAL CONFORMITY WITH CLEAN AIR ACT REQUIREMENTS

The conformity requirements of the Clean Air Act (CAA) and regulations promulgated thereunder (conformity requirements) limit the ability of federal agencies to assist, fund, permit, and approve projects that do not conform to the applicable State Implementation Plans (SIP) for attainment or maintenance of the NAAQS. Conformity determinations for federal actions other than those related to transportation plans, programs, and projects which are developed, funded, or approved under title 23 U.S.C. or the Federal Transit Act (49 U.S.C. 1601 et seq.) must be made according to the requirements of 40 CFR Parts 51 and 93 (federal General Conformity regulations). The General Conformity Rule applies to federal actions in non-attainment or maintenance areas to ensure that the actions do not interfere with a state's plans to meet the NAAQS. As noted in Chapter 3, Monmouth County is classified as in attainment for all criteria pollutants with the exception of ozone. It is designated as a marginal NAA for ozone under the 8-hour ozone standard.

Under the General Conformity Rule, the proposed action is required to demonstrate conformity for any pollutant designated as in non-attainment if the overall predicted increase in emissions due to the proposed action in the NAA exceeds the de minimis rate prescribed in 40 CFR § 93.153(b). The purpose of such a determination is to prevent the air quality impacts of the action from causing or contributing to a violation of the NAAQS or interfering with the purpose of the SIP.

In the case of Monmouth County, the prescribed de minimis annual rates are 50 tons of volatile organic compounds (VOC) and 100 tons of nitrogen oxides (NOx) (marginal ozone NAA in an ozone transport region).

The proposed action would not create any permanent sources of emissions, but emissions associated with construction would be expected. Since construction activity in general is included in the SIP estimates, the construction-related emissions of the proposed action are included in the SIP and would conform to the SIP. Therefore, no further analysis or determination is required.

4.6 WATER RESOURCES

NO ACTION

Under the No Action alternative, the proposed repairs to the riprap revetment would not take place, and therefore shoreline erosion may increase overtime, increasing suspended sediments in Sandy Hook Bay.

PROPOSED ACTION

CONSTRUCTION EFFECTS

Excavation related to the installation of the intake/discharge system piping under Construction Alternative 1, as well as excavation of the shoreline riprap and auguring for installation of the new well heads—which would be required under all Construction Alternatives—may result in some temporary sediment disturbance. However, with the implementation of appropriate erosion and sediment controls during shoreline and upland construction activities, and turbidity curtains around open water construction areas, increases in suspended sediment during construction activities would be minimal and would not result in a significant adverse effect on the water quality of Sandy Hook Bay or result in long term impacts that would impair its designated use as a Class SE1 water.

In the upland section of the seawater intake/delivery system Construction Alternative 1 (Open Cut Trenching) would require the largest extent of excavation, while Construction Alternatives 2 and 3 would limit surface excavation to the drilling or insertion pits. Under all Construction Alternatives, sediment impact to the bay that may result from excavation activities onshore would be mitigated through the use of silt fence, super silt fence, silt fence on pavement and inlet protection to filter any water exiting the construction site to nearby inlets, offsite areas or to the bay.

OPERATIONAL EFFECTS

Operation of the proposed action would not differ from that of the site prior to damage sustained from Superstorm Sandy and would not be substantially different from the existing condition and, therefore, would not result in adverse impacts to water quality of Sandy Hook Bay, or its designation as a Class SE1 water.

4.7 RECREATIONAL RESOURCES

NO ACTION

Under the No Action Alternative, the existing seawater intake/discharge system would continue to operate as is and would not result in any changes to recreational resources near the project site.

PROPOSED ACTION

CONSTRUCTION EFFECTS

The construction of proposed action, under all Construction Alternatives, may disturb the existing multi-use pathway that runs through the project site, adjacent to Hartshorne Drive. Bicycle and pedestrian traffic would be diverted around the project site during staging and directed to nearby streets (e.g. Kessler Road, running parallel approximately 100 feet to the east). Appropriate signage would be posted along the multi-use pathway directing users to the diverted route. Since the construction for the proposed action would be limited in duration (up to 3 weeks) and would take place outside of the peak summer season, it is not expected to result in a significant adverse effect on users of this recreational resource.

Similarly, users of nearby Guardian Park, which provides passive recreation opportunities such as picnicking, may experience noise related to the construction of the proposed action. However, because of the limited duration of construction, users of Guardian Park would not be adversely affected by the construction of the proposed action. To the extent practicable, the selected contractor would employ measures to mitigate noise resulting from construction activities and equipment (e.g.,

utilizing properly maintained equipment and mufflers) and therefore the construction of the proposed action would not result in significant adverse effects on this recreational resource.

OPERATIONAL EFFECTS

As the multi-use path would be restored immediately following construction, the operation of the proposed action would also not affect recreational users.

4.8 CULTURAL RESOURCES

NO ACTION

Under the No Action Alternative, the existing seawater intake/discharge system would operate as is and would not result in any adverse effects on cultural resources.

PROPOSED ACTION

In accordance with 36 CFR 800.11(e), SHPO has reviewed the proposed action and has concurred that it would have no adverse effect on cultural resources (see Appendix A).

CONSTRUCTION EFFECTS

The ground-disturbing activities that would occur under all of the Construction Alternatives for the proposed action would occur in the portion of the historic district that falls within the APE (See Section 3.8). As described above, this portion of the historic district has been previously disturbed, and thus the potential for the APE to have archaeological sensitivity is considered to be low. However, should any archaeological resources be encountered during the construction process, work in that area will be halted and SHPO will be notified so that the nature of the find may be evaluated and a course of action can be agreed upon. With the implementation of this protocol, the construction for the proposed action would have no adverse effect on archaeological resources.

The ground-disturbing activities that would occur under all of the Construction Alternatives for the proposed action also would not directly affect any historic buildings. As described above, none of the historic district's buildings fall within the APE. The proposed renovation of the laboratory building would take place within a modern structure, and the only project element that would be visible on the exterior of the building would be the replacement in-kind of windows damaged by Hurricane Sandy; therefore, this project element would not be expected to have any visual/contextual effects on the historic district.

OPERATIONAL EFFECTS

The replaced intake/delivery piping system and laboratory building would continue to operate as they did before sustaining damage during Superstorm Sandy. As described above, the only project element that would be visible on the exterior of the laboratory building would be the replacement in-kind of windows damaged by Hurricane Sandy, which would not be expected to have any visual/contextual effects on the historic district.

Therefore, the proposed action would have no adverse effect on architectural resources.

4.9 FLORA AND FAUNA

NO ACTION

Under the No Action Alternative, the existing flora and fauna resources would be as described in Chapter 3, "Affected Environment."

PROPOSED ACTION

UPLAND VEGETATION AND WILDLIFE

Construction Effects

Construction Alternative 1: Open Cut Excavation

The transitional ecological community located between the riprap shoreline and the multi-use path would not be adversely affected by project activities associated with Construction Alternative 1 (i.e., approximately 30 foot wide by 65-foot long trench). The proposed pipeline replacement would occur parallel to the footprint of the existing pipes and would be tied in to existing connections, and would therefore not result in a significant loss of upland habitat. The replacement of approximately 1,000 square feet of riprap shoreline would occur in the same footprint as the existing riprap and would consist of the same material. Therefore, the riprap replacement would not result in a loss of habitat. Construction activities would take place in an area of previously disturbed and frequently trafficked shoreline dominated by common grasses and herbaceous plants. The minimal area of disturbance to these resources would not result in significant adverse impacts to vegetation resources within or in the vicinity of the project site. No trees would be removed as a result of this Construction Alternative.

Noises and increased human activity that would be generated during construction and excavation for the pipeline replacement would likely cause disturbances to and displace some wildlife, but these effects would be temporary (2 to 3 weeks) and localized and would not result in significant adverse impacts to wildlife resources. Because baseline levels of human disturbance in the area are already high due to foot and vehicle traffic and various background noises associated with the developed surroundings, wildlife communities in the study area are dominated by suburban-adapted, generalist species (e.g., American crows, squirrels, gulls, etc.) that may habituate to and tolerate the construction activity. Any wildlife displaced by construction activities would be expected to move to suitable available habitat sufficiently distant from the project site.

Construction Alternative 2: Horizontal Directional Drilling

Horizontal directional drilling (HDD) would not result in significant adverse effects to the transitional ecological community between the riprap shoreline and the paved road. The excavation of the 8-foot by 20-foot pit for the drill rig east of the pumping/treatment/storage vault in the lawn area would result in minimal temporary loss of landscaped habitat, comprising mowed grass, and would not result in significant impacts to upland wildlife communities dominated by suburban-adapted, generalist species. Any wildlife displaced by construction activities over the estimated 10 to 12 day construction period would be expected to move to suitable available habitat sufficiently distant from the project site. The potential effects of the shoreline riprap replacement would be the same as described above under Construction Alternative 1.

Construction Alternative 3: Sliplining

Through sliplining, the replacement pipeline would be installed within the original pipe and would not result in loss of upland habitat. Excavation of a 10 to 15 foot deep starter trench east of the pumping/treatment/storage vault in the lawn area would result in minimal temporary loss of landscaped habitat, comprised of mowed grass. The exact length and width of the starter trench would

be determined onsite to account for the exact location of the existing pipelines, as well as the trench shielding or shoring requirements in the soil types encountered onsite. This minimal temporary loss would not result in significant impacts to upland wildlife communities dominated by suburban-adapted, generalist species. Any wildlife displaced by construction activities over the estimated 2 to 5-day construction period would be expected to move to suitable available habitat sufficiently distant from the project site. The potential effects of the shoreline riprap replacement would be the same as described above under Construction Alternative 1.

Operational Effects

Operational effects for the proposed action would be the same for all Construction Alternatives. Operation of the proposed action would not differ from that of the site prior to damage sustained from Superstorm Sandy, or differ substantially from the existing condition, and therefore, would not result in adverse impacts to wildlife occupying the area under those conditions.

SANDY HOOK BAY FAUNA

Birds

Construction Effects

Construction Alternative 1: Open Cut Excavation

Noise and disturbance from construction activities over the two to three week construction period may cause some individuals to avoid the portion of the bay in the immediate vicinity of the project location, but these effects would be temporary and localized. The mowed grass area, shoreline vegetation and riprap that comprise the portion of the project site that would be disturbed for installation of the seawater intake is not expected to offer suitable habitat for species that nest on beaches in the area. Therefore, the proposed action under this Construction Alternative would not affect these species.

Construction Alternative 2: Horizontal Directional Drilling

HDD would occur 10 to 15 feet beneath the surface and would not result in any loss of habitat for birds with the potential to occur in this portion of Sandy Hook Bay. Noise and disturbance associated with the excavation of the 10 to 15 foot deep entry pit for HDD may cause some individuals to avoid the portion of the Bay in the immediate vicinity of the project location, but these effects would be temporary (estimated 10 to 12 day construction period) and localized, and would not result in significant adverse impacts to these species. Any wildlife displaced by construction activities would be expected to move to suitable available habitat sufficiently distant from the project site. The potential effects of the shoreline riprap replacement would be the same for all Construction Alternatives.

Construction Alternative 3: Sliplining

Sliplining would involve feeding the replacement pipe through the existing pipe and would therefore not result in any loss of habitat for birds with the potential to occur in this portion of Sandy Hook bay. Noise and disturbance from construction activities associated with excavation of the 10 to 15 foot deep entry trench may cause some individuals to avoid the portion of the Bay in the immediate vicinity of the project location, but these effects would be temporary (estimated construction period of 2 to 5 days) and localized. The mowed grass area, shoreline vegetation and riprap that comprise the portion of the project site that would be disturbed for installation of the seawater intake is not expected to offer suitable habitat for species that nest on beaches in the area, and project activities would not affect these species. The potential effects of the shoreline riprap replacement would be the same for all Construction Alternatives.

Operational Effects

Operational effects for the proposed action would be the same for all Construction Alternatives. Riprap replacement would be in-kind and in-place and would not significantly alter the existing nature of the shoreline, and therefore would not have significant adverse effects on birds that may have the potential to occur along the shore in the project vicinity. Operation of the proposed action would not differ from that of the site prior to damage sustained from Superstorm Sandy, or differ substantially from the existing condition, and, therefore, would not result in adverse impacts to birds occupying the area under those conditions.

Benthic Macroinvertebrates

Construction Effects

Construction Alternative 1: Open Cut Excavation

In-water and shoreline construction activities— Excavation of the shoreline riprap and auguring for installation of the new well heads—would occur over an overall duration of 10 to 12 days and would result in temporary bottom disturbance, but effects to benthic macroinvertebrates would be minimal. The use of turbidity curtains around the open water work area encompassing approximately 3,000 to 5,000 square feet (0.07 to 0.1 acres) would minimize the resuspension of bottom material and changes in water quality that may have the potential to affect benthic macroinvertebrates and other aquatic biota.

Additionally, the use of erosion and sediment control measures during upland construction activities would minimize the discharge of sediments to the Bay and potential impacts to benthic macroinvertebrates and other aquatic biota. During construction, there would be an alternation of approximately 766 square feet (0.02 acres) due to the placement of the concrete collars (approximately 81 square feet), riprap armor stone (approximately 585 square feet), and the riprap pads surrounding the two new well screens (approximately 100 square feet). While the bottom habitat would be converted from the existing sand sediment to a rock or concrete substrate and would not be suitable for burrowing organisms, it would still be suitable refugia and would be available for encrusting organisms. This minimal loss of bottom habitat and any macroinvertebrates unable to move from the area of disturbance for these project elements would not result in significant adverse effects to macroinvertebrate populations within Sandy Hook Bay.

Construction Alternative 2: Horizontal Directional Drilling

HDD would result in a temporary loss of 0.07 to 0.1 acres of benthic habitat where the turbidity curtain is deployed, and a modification of approximately 100 square feet of benthic habitat due to the placement of the riprap pads surrounding the two new well screens. This minimal loss of bottom habitat and stationary macroinvertebrates, and the short duration of construction (2 to 3 days), would not result in significant adverse effects to macroinvertebrate populations within the Bay. The use of

turbidity curtains in the open water work area, around the exit point for the drill, would minimize the resuspension of bottom material and potential changes in water quality. Because the pipe would be installed below the seafloor there would be no need for anchoring or armoring, and no loss of habitat along the length of the pipeline. The potential effects of the shoreline riprap replacement would be the same for all Construction Alternatives.

Construction Alternative 3: Sliplining

Sliplining would result in the same temporary loss and alteration of habitat described above for HDD and would have the same minimal effects on macroinvertebrates, although the duration of the construction would be longer, lasting 10 to 12 days. The potential effects of the shoreline riprap replacement would be the same for all Construction Alternatives.

Operational Effects

Operational effects for the proposed action would be the same for all Construction Alternatives. Operation of the proposed action would not differ from that of the site prior to damage sustained from Superstorm Sandy, or substantially from the existing condition and, therefore, would not have significant adverse impacts to benthic macroinvertebrates occupying the area under those conditions. Riprap armor stone placed to protect the two intake pipes and the pads surrounding the well screens would be expected to be colonized by encrusting organisms and possibly used as refuge by mobile macroinvertebrates and fish.

Fish

Construction Effects

Construction Alternative 1: Open Cut Excavation

Construction activities may cause some temporary noise and bottom disturbance, but effects to fish would be minimal. Excavation of the shoreline riprap and auguring for installation of the new well heads may result in some temporary sediment disturbance. However, with the implementation of appropriate erosion and sediment controls during shoreline and upland construction activities, and turbidity curtains around open water construction areas, increases in suspended sediment during construction activities would be minimal and would not adversely affect fish resources within Sandy Hook Bay. The modification of approximately 766 square feet of benthic habitat resulting from the placement of the concrete collars, riprap armor stone, and the riprap pads surrounding the two new well screens would represent a minimal loss of fish breeding and foraging habitat and would not result in adverse impacts to fish resources within Sandy Hook Bay. While the change from sand to rock or concrete substrate would not be suitable for burrowing organisms, it would still provide suitable habitat for encrusting organisms, and would not result in significant adverse impacts to foraging or breeding habitat for fish.

In-water construction activities would be limited to the in-water restriction recommendations identified by NMFS and the New Jersey Regional Nationwide Permit conditions to minimize effects on fish; in-water construction would likely be prohibited between January 1 and May 31 according to NMFS policies, and between March 1 and June 30 according to state permit conditions. The area of Sandy Hook Bay affected by construction would be small (0.07 to 0.1 acres, encircled by the turbidity curtain), and the duration of construction would be short (10 to 12 days). Given the limited duration of construction activity, the small area of the bay that would be minimally affected during construction within the turbidity curtain, and the limited alteration of bottom habitat that would result from the proposed project, the project would not be expected to result in significant adverse effects to fish.

Construction Alternative 2: Horizontal Directional Drilling

In-water construction activities may cause temporary noise and bottom disturbance, but effects to fish would be minimal. HDD would result in the temporary loss of 0.07 to 0.1 acres of benthic habitat where

the turbidity curtain is deployed, and there would be an alteration of approximately 100 square feet of benthic habitat due to the placement of the riprap pads surrounding the two new well screens. The use of turbidity curtains in the open water work area, around the exit point for the drill, would minimize the resuspension of bottom material and potential changes in water quality. Because the pipe would be installed below the seafloor there would be no need for anchoring or armoring, and no loss of habitat along the length of the pipeline. Potential effects from HDD would represent a minimal loss of fish breeding and foraging habitat and would not result in significant adverse impacts to fish resources within Sandy Hook Bay. The potential effects of the shoreline riprap replacement would be the same for all Construction Alternatives.

Construction Alternative 3: Sliplining

Sliplining would result in the same temporary loss of habitat and the same minimal effects on fish as those described for HDD, although the duration of construction would be longer, lasting 10 to 12 days. The potential effects of the shoreline riprap replacement would be the same for all Construction Alternatives.

Operational Effects

Operational effects for the proposed action would be the same for all Construction Alternatives. Operation of the proposed action would not differ from that of the site prior to damage sustained from Superstorm Sandy and would not be substantially different from the existing condition and, therefore, would not result in adverse impacts to fish within Sandy Hook Bay. Riprap armor stone placed to protect the two intake pipes and the pads surrounding the well screens would be expected to be colonized by encrusting organisms, and possibly used as refuge and foraging habitat by fish.

Marine Mammals

Construction Effects

Construction Alternative 1: Open Cut Excavation

These species would be expected to occur farther offshore than the project site, or in less developed locations north and south of the project site. Project activities may cause some temporary noise and bottom disturbance, but effects would be minimal and would not adversely affect marine mammals. Erosion and sediment controls implemented for upland and shoreline construction activities, and turbidity curtains deployed for open water construction areas, would minimize potential increases in suspended sediment and potential impacts to marine mammals within the Bay. Given the limited area and duration of disturbance and the minimal change in bottom habitat type as a result of the proposed project, the project would not result in significant adverse impacts to marine mammals.

Construction Alternative 2: Horizontal Directional Drilling

Effects to marine mammals as a result of HDD would be the same as those described above for open cut excavation, although construction using HDD would be shorter in duration, lasting only 2 to 3 days.

Construction Alternative 3: Sliplining

Effects to marine mammals as a result of sliplining would be the same as those described above for open cut excavation.

Operational Effects

Operational effects for the proposed action would be the same for all Construction Alternatives. Operation of the proposed action would not differ from that of the site prior to damage sustained from Superstorm Sandy, or differ substantially from the existing condition and, therefore, would not result in adverse impacts to marine mammals that may occur within Sandy Hook Bay.

THREATENED OR ENDANGERED SPECIES

Due to the level of disturbance caused by daily activities and/or the lack of suitable habitat, the following threatened and endangered species would not be expected to occur in the vicinity of the project site and would not be affected by construction or operation activities: piping plover, red knot, black skimmer, least tern, northern harrier, seabeach amaranth, northeastern beach tiger beetle, and northern long-eared bat (See **Appendix B**, USFWS Concurrence). The project site does not contain optimal habitat for osprey, shortnose sturgeon, Atlantic sturgeon, or sea turtles, but these species may occur as transient individuals, and potential effects are discussed below.

Construction Effects

Construction Alternative 1: Open Cut Excavation

Osprey are known to occur in shoreline areas north and south of the project site in the spring and summer months; however, no osprey nests are located in the vicinity of the project site and construction activities would not have an impact on breeding pairs. Noise and disturbance from construction activities may cause some individuals to avoid the portion of the bay in the immediate vicinity of the project location, but these effects would be temporary and localized. No significant adverse effects on osprey would be expected as a result of the proposed project.

In-water construction activities may cause some temporary noise and bottom disturbance, but effects to sturgeon and sea turtles would be minimal. In-water and shoreline construction would last 10 to 12 days, and given their preference for deeper waters, shortnose and Atlantic sturgeon would likely avoid the shallow waters of the project site in favor of more suitable habitat during this time, to return following completion of the work. Sea turtles would only be expected to occur in the project site for foraging as occasional transient individuals; the site does not provide nesting habitat for these species. Benthic habitat would be altered within the 766 square feet (sf) area comprising the footprint of the riprap around the well screens, riprap pad along the shoreline, and the concrete collars around the two pipe intakes. While this area would be converted from the existing sand sediment to a rock or concrete substrate and would not be suitable for burrowing organisms, it would still provide suitable habitat for encrusting organisms and would not result in significant adverse impacts to foraging habitat for sturgeon or sea turtles.

Excavation of the shoreline riprap and auguring for installation of the new well heads may result in some temporary sediment disturbance. However, with the implementation of appropriate erosion and sediment controls during shoreline and upland construction activities, and the use of turbidity curtains around the open water construction areas, increases in suspended sediment during construction activities would be minimal and would not result in significant adverse effects to sturgeon or sea turtles that may occur as occasional transient individuals within Sandy Hook Bay. Given the limited duration of in-water construction activity (10 to 12 days), the small area of the bay that would be minimally affected during construction within the turbidity curtain (0.07 to 0.1 acres), and the limited modification of bottom habitat that would result from the proposed project (766 sf), the project would not be expected to result in significant adverse impacts to sturgeon or sea turtles (see Appendix B, NMFS Protected Species concurrence).

Construction Alternative 2: Horizontal Directional Drilling

Project activities associated with HDD would not result in significant adverse effects to osprey. The effects to osprey from HDD would be the same as those described above for open cut excavation, although the duration of construction would be shorter, lasting 2 to 3 days.

HDD would result in the temporary loss of 0.07 to 0.1 acres of benthic habitat where the turbidity curtain is deployed, and there would be alteration of approximately 100 square feet of benthic habitat

due to the placement of the riprap pads surrounding the two new well screens. This represents a minimal loss of foraging habitat and would not result in significant adverse effects to sturgeon or sea turtles that may occur as occasional transient individuals within the Bay. The implementation of sediment controls described above would minimize potential increases in suspended sediment and potential impacts to these species.

The potential effects of the shoreline riprap replacement would be the same for all Construction Alternatives.

Construction Alternative 3: Sliplining

Project activities associated with sliplining would not result in significant adverse effects to osprey. The effects to osprey from sliplining would be the same as those described above for open cut excavation.

Sliplining would result in the same temporary loss and modification of habitat and the same minimal effects to sturgeon and sea turtles as those described for HDD, although the duration of construction would be longer, lasting 10 to 12 days. The potential effects of the shoreline riprap replacement would be the same for all Construction Alternatives.

Operational Effects

Operational effects for the proposed action would be the same for all Construction Alternatives. Operation of the proposed action would not differ from that of the site prior to damage sustained from Superstorm Sandy or differ substantially from the existing condition and, therefore, would not have significant adverse impacts to sturgeon or sea turtles occupying the area under those conditions. The minimal loss of benthic habitat would not adversely affect the availability of suitable foraging habitat for occasional transient individuals that may occur in the Bay.

ESSENTIAL FISH HABITAT

Construction Effects

Construction Alternative 1: Open Cut Excavation

The proposed action would not result in any significant adverse impacts to EFH in Sandy Hook Bay, and would not result in a significant loss of fish habitat or forage species. For all Construction Alternatives, the installation of the intake and replacement of shoreline riprap would be conducted according to federal and state permit requirements to protect water quality and benthic habitat. With the implementation of appropriate erosion and sediment controls during shoreline and upland construction activities, and turbidity curtains around open water construction areas, increases in suspended sediment during construction activities would be minimal and would not result in significant adverse effects to EFH within Sandy Hook Bay. Appendix B contains the Northeast Regional Office EFH Assessment worksheet for Federal Agencies prepared for the Proposed action which concludes that the adverse effect on EFH due to Proposed action is not substantial, and the concurrence from NMFS, Habitat Conservation Division, on this finding.

The alteration of approximately 766 square feet of benthic habitat from sand to rock or concrete substrate resulting from the placement of the concrete collars, riprap armor stone, and the riprap pads surrounding the two new well screens would not be suitable for burrowing organisms, but would still provide suitable habitat for encrusting organisms; this alteration would represent a minimal loss of habitat for EFH species and would not result in adverse impacts to EFH or EFH species within Sandy Hook Bay.

Construction Alternative 2: Horizontal Directional Drilling

Project activities associated with HDD would impact, but would not result in substantial adverse effects to EFH or EFH species. In-water construction activities may cause temporary noise and bottom disturbance, but effects to EFH would be minimal. The temporary loss of 0.07 to 0.1 acres of benthic habitat where the turbidity curtain is deployed, and the modification of approximately 100 square feet of benthic habitat resulting from the placement of riprap pads surrounding the two new well heads would represent a minimal loss of habitat for EFH species and would not result in significant adverse impacts to EFH or EFH species within Sandy Hook Bay. The potential effects of the shoreline riprap replacement would be the same for all Construction Alternatives.

Construction Alternative 3: Sliplining

Project activities associated with sliplining would impact, but would not result in substantial adverse effects to EFH or EFH species. Sliplining would result in the same temporary loss and modification of habitat and the same minimal effects as those described for HDD, although the duration of construction would be longer, lasting 10 to 12 days. The potential effects of the shoreline riprap replacement would be the same for all Construction Alternatives.

Operational Effects

Operational effects for the proposed action would be the same for all Construction Alternatives. Operation of the proposed action would not differ from that of the site prior to damage sustained from Superstorm Sandy or differ substantially from the existing condition and, therefore, would not have significant adverse impacts to EFH or EFH species Sandy Hook Bay. Riprap armor stone placed to protect the two intake pipes and the pads surrounding the well screens may provide habitat for EFH species.

4.10 WETLANDS

As noted in Section 3.10, one or more indicators of wetland vegetation, hydric soil, and wetland hydrology must be present for an area to be a wetland. Because this estuarine habitat does not contain wetland vegetation, it does not meet the federal definition of wetlands under the Clean Water Act and Executive Order for the Protection of Wetlands (EO 11990). Therefore, since the project site does not contain habitats that would meet the definition of wetlands under the Clean Water Act, the proposed action would have no potential to adversely affect wetland resources.

4.11 FLOODPLAINS

Executive Order for Floodplain Management (EO 11988) requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of flood plains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. According to NOAA's guidance on implementing EO 11988 for the agency's projects and programs[1], EO 11988 does not apply to the proposed action as it comprises a "*minor modification of an existing facility or structure in a floodplain or wetland to improve safety or environmental conditions unless the modification would result in a significant change in the expected useful life of the facility or structure or involve draining, dredging, channelizing, filling, diking,*

[1] Guidance on Compliance with the Implementing Procedures for Executive Orders 11988 and 11990, US Department of Commerce, National Oceanic and Atmospheric Administration, Office of the Chief Administrative Officer, Safety Compliance Office. December 2012.

impounding, or related activities…" Therefore, NOAA has determined that no floodplain assessment needs to be conducted as part of this Environmental Assessment (EA).

Because the project site is located within a coastal area—that is affected by coastal flooding (e.g., long and short wave surges that affect the shores of the Atlantic Ocean, and bays such as Raritan and Sandy Hook)—construction and operation of the proposed action would not have the potential to adversely affect the floodplain or result in additional flooding adjacent to the project site.

4.12 COASTAL ZONE MANAGEMENT

NO ACTION

Under the No Action Alternative, the existing conditions described in previous sections would remain essentially the same, and an evaluation of compliance with Coastal Zone Management policies would not be necessary since no action would occur.

PROPOSED ACTION

The proposed action would be consistent with the following applicable policies:

- Special Area Policies (N.J.A.C. 7:7E Subchapter 3)
- Standards for Endangered or Threatened Species Habitat Impact Assessment or Habitat Evaluation (N.J.A.C. 7:7E Subchapter 3C)
- General Water Area Policies (N.J.A.C. 7:7E Subchapter 4)
- Requirements for Impervious Cover and Vegetative Cover for General Land Areas and Certain Special Areas (N.J.A.C. 7:7E Subchapter 5)
- General Location Rules (N.J.A.C. 7:7E Subchapter 6)
- Use Rules (N.J.A.C. 7:7E Subchapter 7)
- Resource Rules (N.J.A.C. 7:7E Subchapter 8)

Additional discussion is provided below regarding the determination of consistency with several of the Special Areas Policies in Subchapter 3, specifically: shellfish habitat, intertidal and subtidal shallows, riparian zones, endangered or threatened wildlife or plant species habitats, and lands and waters subject to public trust rights.

SPECIAL AREA POLICIES (N.J.A.C. 7:7E SUBCHAPTER 3)

Shellfish Habitat (N.J.A.C. 7:7E-3.2)

Waters adjoining the project site are classified as a Special Restricted Area for shellfish growing; harvesting is prohibited in all marina and boat docking areas. In accordance with the NJ Coastal Zone Management Rule on Shellfish Habitat, the excavation of shoreline riprap and auguring for installation of the new well heads, under all Construction Alternatives, would not cause significant mortality of shellfish in adjacent habitat due to increased turbidity and sedimentation or resuspension of sediment. Sediment disturbance associated with these construction activities would be temporary and localized, and the use of turbidity curtains around the open water work area would minimize the resuspension of bottom material and changes in water quality that may have the potential to affect shellfish. Therefore, the proposed action is consistent with this policy.

Intertidal and Subtidal Shallows (N.J.A.C. 7:7E-3.15)

A portion of the project site is located in an intertidal and subtidal shallows area, defined as "all permanently or temporarily submerged areas from the spring high water line to a depth of four feet below mean low water." Development, filling, new dredging or other disturbance is discouraged in these areas but may be permitted in accordance with the requirements of this policy. The intake structure has been designed to minimize placement of fill within intertidal and subtidal shallows while at the same time providing resilience to the structure, and avoiding potential for exposure or hazard. The proposed action would result in minimal modification of intertidal and subtidal shallows habitat, approximately 766 sf, due to the placement of the concrete collars, riprap armor stone, and the riprap pads surrounding the two new well screens. The design of the seawater intake will resist coastal erosion processes and will be able to withstand at least Category 3 Hurricane forces, up to 130 mile per hour winds with associated wave action, and will be vandal, theft, ice uplift, and rust resistant. Therefore, the proposed action is consistent with this policy.

Riparian Zones (N.J.A.C. 7:7E-3.26)

The upland portion of the project site is located in a riparian zone, which, along a non-linear tidal water such as a bay or inlet, is measured landward of the mean high water line. The proposed activities would be in compliance with the NJ Coastal Zone Management Rule on Riparian Zones as it would not involve new development, would not adversely affect the 100-year floodplain, and would not impact habitat for threatened and/or endangered species.

Endangered or Threatened Wildlife or Plant Species Habitats (N.J.A.C. 7:7E-3.38)

A number of threatened or endangered species may occur in Sandy Hook Bay; however, the project site does not provide optimal habitat for any of these species, and none would be expected to occur except as occasional transient individuals. Although osprey, shortnose sturgeon, Atlantic sturgeon, and three species of sea turtles have the potential to occur as transient individuals in the vicinity of the project site, construction activities associated with the proposed action would not result in significant adverse effects to these species or their habitats. Excavation of the shoreline riprap and auguring for installation of the new well heads under all Construction Alternatives may result in some temporary noise and sediment disturbance. However, with the implementation of appropriate erosion and sediment controls for upland construction, and turbidity curtains around open water construction areas, increases in suspended sediment during construction activities would be minimal and would not result in significant adverse effects to sturgeon or sea turtles that may occur as transient individuals within Sandy Hook Bay. The minimal loss of benthic habitat associated with pipeline replacement and well head installation would not result in significant adverse effects to the availability of suitable foraging habitat for these individuals. Therefore, the proposed action is consistent with this policy.

Lands and Waters Subject to Public Trust Rights (N.J.A.C. 7:7E-3.2)

The project site is located along a tidal waterway, which is subject to the Public Trust Doctrine and held in trust by the State for the benefit of the public. Public trust rights include physical and visual public access along the waterfront, and to use these lands and waters for leisure and recreational purposes. In accordance with the NJ Coastal Zone Management Rule regarding these lands and waters, the proposed action activities would not inhibit public access along the waterfront. During construction activities, a portion of the project site would be blocked from public access for safety purposes, but this restriction would be temporary and would only exist within the construction zone. Once construction is completed, the project site would be reopened, and public access would not differ substantially from the existing condition. The seawater intake would occupy minimal area of bottom of Sandy Hook Bay

and would not affect public use of this area. Therefore, the proposed action is consistent with this policy.

4.13 FARMLANDS

There are no farmlands present on the project site and therefore the proposed action would have no potential to affect any farmlands.

4.14 NOISE

NO ACTION

Under the No Action Alternative, the existing seawater intake/discharge system would operate as is and would result in no new stationary or mobile noise sources. Ambient noise on the project site would remain as described in Chapter 3.

PROPOSED ACTION

CONSTRUCTION EFFECTS

The construction of the proposed action, under all construction scenarios, would generate noise from mobile equipment (e.g. excavators and materials delivery) and construction activities. As noted in Chapter 3, there are no sensitive residential or community facility uses near the project site and therefore no sensitive receptors would be affected by construction noise. Users of nearby recreational resources, such as the multi-use path running through the project site, would experience any construction noise for limited periods, as they pass through the project site.

To the extent practicable, the selected contractor would employ measures to mitigate noise resulting from construction activities and equipment (e.g., utilizing properly maintained equipment and mufflers) and would limit working hours to daytime on weekdays. Furthermore, as noted throughout this EA, the overall duration of construction is expected to be limited to 3 weeks or less and confined to the project site. Therefore, the construction of the proposed action would not result in any significant adverse noise impacts.

OPERATIONAL EFFECTS

The proposed action would not introduce any new stationary or mobile noise sources. Any replacement equipment that may be installed as part of the laboratory building renovation would be a replacement in-kind of equipment currently located within the building and would not introduce any new stationary noise sources. Therefore, the operation of the proposed action would not result in any noise impacts.

4.15 TRANSPORTATION

NO ACTION

Under the No Action Alternative, the existing seawater intake/discharge system would operate as is and would not result in any adverse effects on transportation.

PROPOSED ACTION

CONSTRUCTION EFFECTS

The construction of the proposed action, under all construction scenarios, will affect the multi-use path running parallel to Hartshorne Drive. Under Construction Alternative 1 (Open Cut Trenching) approximately 30 linear feet of the 12-foot wide path will be excavated, requiring rerouting of pedestrian and bicycle traffic. Other construction scenarios may also block or otherwise disturb the multi-use path through construction staging or other construction activities. However, since the construction for the proposed action would be limited in duration (up to 3 weeks) and would take place outside of the peak summer season, it is not expected to result in a significant adverse effect on the users of this path. Excavation is not expected to occur in vehicular traffic areas under any Construction Alternative.

The project site is located away from most recreational areas on Sandy Hook and would not affect ferry service to/from Sandy Hook or internal circulation. The construction of the proposed action under all construction scenarios would result in limited traffic increases on Hartshorne Drive due to the delivery of materials and equipment and the travel of workers to and from the project site. Since the construction of the project is limited in duration (3 weeks or less) and is expected to take place outside of the peak summer season, this additional traffic would not result in significant adverse impacts to traffic conditions.

OPERATIONAL EFFECTS

As the proposed action comprises a replacement in kind of an existing seawater intake system and renovations to an existing building, it would not generate any new traffic from its operation and would not result in any operational effects.

4.16 UTILITIES AND SOLID WASTE

NO ACTION

Under the No Action Alternative, the existing seawater intake/discharge system would operate as is and utilities and solid waste disposal would be as described in Chapter 3.

PROPOSED ACTION

CONSTRUCTION EFFECTS

As noted in Chapter 3, utilities in the vicinity of the project site include, but are not limited to, telephone, electric, water, and stormwater lines. Record documents suggest sanitary sewer lines do not traverse the site.

The construction of the proposed action under Construction Alternatives 1, 2 and 3 would not have a significant effect on on-site utilities. The chosen contractor would coordinate with appropriate entities regulating each utility and would secure all appropriate permits before construction can begin. Any solid waste generated during construction would be carted off site by a licensed carter to facilities licensed to dispose of and/or recycle the waste.

OPERATIONAL EFFECTS

The proposed action would not require any new utility connections nor would the proposed action generate any solid waste during its operation and therefore has no potential to affect utilities.

4.17 VISUAL RESOURCES

NO ACTION

Under the No Action Alternative, the existing seawater intake/discharge system would operate as is and the visual context around the project site would remain unchanged from what is described in Chapter 3.

PROPOSED ACTION

CONSTRUCTION EFFECTS

The construction of the proposed action under all Construction Alternatives may introduce temporary structures (e.g. cranes), mobile equipment, and staging areas to the project site; these elements would be visible within views of the Raritan Bay and Sandy Hook Bay from the project site. However, the construction of the proposed action under all Construction Alternatives would be limited in its extent and duration and would not result in prolonged or significant temporary or permanent impacts on visual resources.

OPERATIONAL EFFECTS

As noted above under Cultural Resources, the installation of the replacement piping system would not directly affect any buildings within the Fort Hancock and Sandy Hook Proving Ground Historic District. The proposed renovation of the laboratory building would take place within a modern structure, and the only project element that would be visible on the exterior of the building would be the replacement in-kind of windows damaged by Superstorm Sandy; therefore, this project element would not be expected to have any significant adverse visual/contextual effects on the historic district. Therefore, it is anticipated that the proposed action would not result in significant adverse effects on visual resources in the area.

4.18 HAZARDOUS MATERIALS

NO ACTION

As discussed in Section 3.18, the laboratory stores and uses chemicals and petroleum products required for research purposes, however, any such chemicals are stored and used within controlled laboratory environments, in accordance with all relevant regulations. Under the No Action Alternative, the existing seawater intake and discharge system would continue to operate as is, and would not result in significant adverse effects related to hazardous materials.

PROPOSED ACTION

CONSTRUCTION EFFECTS

As noted in Chapter 3, there are no indications at this time that hazardous materials are present on the project site. Some excavation would be required for all Construction Alternatives; Construction Alternative 1 would require the greatest amount of excavation since it comprises open cut trenching. Should contaminated soil and/or petroleum tanks be encountered, applicable regulatory requirements (e.g., those relating to spill reporting and tank registration) would be followed to address removal of the tanks and any associated soil or groundwater contamination. Any excavated soil and fill materials

requiring off-site disposal would be handled and disposed of in accordance with applicable regulatory requirements. During all dewatering required during subsurface work, water would be discharged in accordance with appropriate permit requirements. All subsurface soil disturbance would be performed in accordance with existing procedures relating to potential unexploded ordnance. With the implementation of these measures the proposed action would not result in any significant adverse impacts related to hazardous materials.

OPERATIONAL EFFECTS

The operation of the proposed action would not require the storage or use of any hazardous materials or petroleum products and therefore would have no adverse effects related to hazardous materials.

4.19 ENVIRONMENTAL JUSTICE

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (February 11, 1994) requires federal agencies to identify and address any disproportionately high and adverse impacts on minority or low-income populations that could result from the project. Executive Order 12898 also requires federal agencies to work to ensure greater public participation in the decision-making process.

As there are no residential populations located near the project site, no environmental justice populations can be present near the project site. Furthermore, as described throughout this chapter, the proposed action would have no adverse environmental consequences and therefore cannot have disproportionate adverse environmental consequences on environmental justice populations.

4.20 CUMULATIVE IMPACTS

Cumulative impacts can result "from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts are usually related to the relationship between the proposed action and other actions expected to occur in a similar location or one a similar timeline, therefore the scope of a cumulative impacts analysis usually involves both a certain geographic extent and a certain timeframe.

As the construction of the proposed action would be limited in duration, intensity, and location, and is not expected to take place at the same time as other construction projects near the project site, no cumulative impacts from the construction of the proposed action would be expected.

While the operation of the seawater intake/discharge system itself would not increase erosion and sedimentation in Sandy Hook Bay, the system suffered much damage as a result of Superstorm Sandy. Related to the goal of increasing the reliability of the system, all of the Construction Alternatives would result in a robust seawater intake/discharge system that would be resilient against the effects of future storm events and sea-level rise related to climate change. While the proposed action is a replacement in-kind, it is designed to increase the reliability of an existing seawater intake/delivery system and to ensure the continued operation of the James J. Howard laboratory through repairs to the seawater intake/delivery system, strengthening shoreline protection, renovation of the laboratory building, and the renewal of NOAA's lease of the laboratory.

Overall, no cumulative impacts from the construction and operation of the proposed action are expected.

Chapter 5: Community Involvement

Public participation opportunities in the EA process for the proposed action are governed by NOAA's Administrative Order 216-6, "*Environmental Review Procedures for Implementing the National Environmental Policy Act*" (May 20, 1999), Sections 5.02b.1, 5.03e.2, and 5.03e.3.

NOAA has determined that due to the limited construction duration, intensity and geographic extent of the proposed action, no public comment period is required. Upon the completion of the EA and the Finding of No Significant Impact (FONSI) a notice will be made available to the public on the website of NOAA's Office of the Chief Administrative Officer.

Chapter 6: Suggested Mitigation Measures

This EA finds that no significant adverse environmental impacts would result from the operation of the proposed action with the implementation of the following mitigation measures:

- Erosion and sediment control measures consistent with the NJDEP Standards for Soil Erosion and Sediment Control in New Jersey will be implemented to minimize soil erosion during upland construction activities. Examples of erosion and sediment control measures include installation of silt fencing, inlet protection around existing storm drains, and use of biodegradable erosion control matting.
- Appropriate measures (such as turbidity curtains) would be employed during in-water work to minimize increases in suspended sediment during construction activities.
- In-water construction activities would be limited to the in-water restriction recommendations identified by NMFS and the New Jersey Regional Nationwide Permit conditions to minimize effects on fish; in-water construction would likely be prohibited between January 1 and May 31 according to NMFS policies, and between March 1 and June 30 according to state permit conditions.
- To the extent practicable, the equipment used for the construction of the proposed action, under all Construction Alternatives, would use ultra-low-sulfur diesel fuel (ULSD), diesel particulate filters (DPFs), and cleaner engines (Tier 2 or better) to reduce SO2 and PM emissions.
- Additional measures to minimize pollutant emissions would be taken in accordance with applicable laws and regulations, e.g. restricting on-site vehicle idle time for all vehicles not using the engine to operate a loading, unloading, or processing device (e.g., concrete mixing trucks).
- To avoid significant adverse impacts to the existing multi-use pathway that runs through the project site, bicycle and pedestrian traffic would be diverted around the project site during staging and directed to nearby streets (e.g. Kessler Road, running parallel approximately 100 feet to the east). Appropriate signage would be posted to direct users to the diverted route.
- To the extent practicable, the selected contractor would employ measures to mitigate noise resulting from construction activities and equipment (e.g., utilizing properly maintained equipment and mufflers) and would limit working hours to daytime on weekdays.
- Should contaminated soil and/or petroleum tanks be encountered during construction, applicable regulatory requirements (e.g., those relating to spill reporting and tank registration) would be followed to address removal of the tanks and any associated soil or groundwater contamination. Any excavated soil and fill materials requiring off-site disposal would be handled and disposed of in accordance with applicable regulatory requirements.
- During all dewatering required during subsurface work, water would be discharged in accordance with appropriate permit requirements.
- All subsurface soil disturbance would be performed in accordance with existing procedures relating to potential unexploded ordnance.
- Should any archaeological resources be encountered during the construction process, work in that area will be halted and SHPO will be notified so that the nature of the find may be evaluated and a course of action can be agreed upon.

Chapter 7: Conclusion

This EA has been prepared to evaluate potential environmental impacts that may result from the proposed action, which comprises the following elements:

- The installation of two new 6-inch seawater intake pipes and two new intake wells on an alignment parallel to the existing system, between the pumping/treatment/storage vault and offshore wellfield.
- The replacement of existing wells 1 and 2 with two new well heads. Two of the existing wells (3 and 4) will be left in place to provide the system with redundancy and to allow for maintenance while the system is operational.
- The replacement of approximately 1,000 square feet (approximately 20 linear feet) of riprap along the waterfront.
- The renovation of the interior of the laboratory building to finish previously unfinished spaces, to convert laboratory space to office space, and to upgrade electrical and mechanical systems.

In addition, as part of the proposed action, NOAA will renew its lease of the laboratory building from its owner, the State of New Jersey.

This EA analyzed four alternatives to construct the proposed action and the No Action Alternative and found that no significant adverse environmental impacts would result from the proposed action during construction or operation.

Chapter 8: List of Agencies Consulted

The following agencies were consulted during the preparation of the EA. Records of consultation are included in the appendices of this EA.

CULTURAL RESOURCES CONSULTATION (APPENDIX A)

- New Jersey Department of Environmental Protection, Historic Preservation Office

NATURAL RESOURCES CONSULTATION (APPENDIX B)

- New Jersey Department of Environmental Protection, Division of Fish and Wildlife
- US Fish and Wildlife Service, New Jersey Field Office
- National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Office of Protected Resources, Greater Atlantic Region
- National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Northeast Regional Office, Habitat Conservation Division

Chapter 9: List of Preparers

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)
Richard C. Morehouse, R.A.,
Project Manager, COR
NOAA/PPMD-ER

Jack Emberg,
Facilities Operations & Safety Branch Chief
NOAA Northeast Fisheries Science Center

Dr. Thomas Noji
Director, James J. Howard Marine Sciences Laboratory
NOAA Fisheries - Northeast Fisheries Science Center

WHITNEY BAILEY COX & MAGNANI, LLC
Blaine Linkous P.E.,P.H.,LEED AP
Vice President
Civil Engineering Design Lead

Nathan Turk, E.I.T.
Design Engineer
Civil Engineering Design Technical Assistance

AKRF, INC
Dina Rybak, AICP
Senior Environmental Planner
EA Project Manager

Sandy Collins
Vice President
Natural Resources Technical Lead

Jennifer Morris, AICP
Senior Technical Director
Cultural Resources Technical Lead

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FINDING OF NO SIGNIFICANT IMPACT

For the James J. Howard Laboratory Seawater Intake System Repair
Sandy Hook, New Jersey

The National Oceanic and Atmospheric Administration's (NOAA's) National Marine Fisheries Service (NMFS) is proposing a replacement of the seawater intake/delivery system at the James J. Howard Laboratory (the laboratory), located at 74 Magruder Road, in Sandy Hook, Monmouth County, New Jersey.

An Environmental Assessment (EA) has been prepared to evaluate potential environmental impacts that may result from the proposed action. The construction of the proposed action is expected to be procured via a design-build contract. The winning contractor will design the project components and will choose a preferred method to construct the seawater intake/discharge system; therefore, three typical construction methods that may be employed by the winning contractor have been analyzed in the EA. These methods may include open cut trenching, horizontal directional drilling and sliplining (described in detail in Chapter 2 of the EA).

The environmental review process has been conducted in accordance with the National Environmental Policy Act of 1969 (NEPA; 42 USC 4321 et seq.), the Council on Environmental Quality's (CEQ's) regulations implementing NEPA (40 CFR Parts 1500-1508), the procedures outlined in NOAA's Administrative Order 216-6, *"Environmental Review Procedures for Implementing the National Environmental Policy Act"* (May 20, 1999), Section 106 of the National Historic Preservation Act of 1966 (Section 106), Executive Order 12898 *"Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,"* and other relevant regulations.

NOAA's Administrative Order 216-6 contains criteria for determining the significance of the impacts of a proposed action. In addition, CEQ's regulations at 40 C.F.R. 1508.27 state that the significance of an action should be analyzed both in terms of "context" and "intensity." Accordingly, the significance of this action is analyzed based on the NAO 216-6 criteria and CEQ's context and intensity criteria. Each criterion listed below is relevant to making a Finding of No Significant Impact (FONSI) and has been considered individually, as well as in combination with the others.

1) Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in fisheries management plans (FMPs)?

> The proposed action would not result in substantial damage to ocean and coastal habitats and/or essential fish habitat in Sandy Hook Bay. For all construction alternatives, the installation of the intake and replacement of shoreline riprap would be conducted according to federal and state permit requirements to protect water quality and benthic habitat. Appropriate erosion and sediment controls would be employed during shoreline and upland construction activities; turbidity curtains would be used around open water construction areas. With the implementation of these measures, the proposed action would not result in a significant loss of fish habitat or forage species.

2) Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?

> The proposed action would not result in a substantial impact on biodiversity or affect ecosystem function within the project site. Upland construction activities for the proposed action would

take place in an area of previously disturbed and frequently trafficked shoreline dominated by common grasses and herbaceous plants; no trees would be removed as a result of the construction of the proposed action. Noise and disturbance from construction activities over the two to three week construction period may cause some birds to avoid the portion of the bay in the immediate vicinity of the project location, but these effects would be temporary and localized. Excavation of the shoreline riprap and auguring for installation of the new well heads may result in some temporary sediment disturbance; however, the use of turbidity curtains around the open water work area would minimize the resuspension of bottom material and changes in water quality that may have the potential to affect benthic macroinvertebrates and other aquatic biota.

3) Can the proposed action reasonably be expected to have a substantial adverse impact on public health or safety?

The proposed action would not result in a substantial adverse impact on public health and safety. The construction of the proposed action is limited in duration and extent and is expected to take place outside of the peak summer season at Sandy Hook.

4) Can the proposed action reasonably be expected to adversely affect endangered or threatened species, their critical habitat, marine mammals, or other non-target species?

The proposed action would not result in adverse effects to threatened or endangered species (or their habitat) or to marine mammals or other non-target species; the US Fish and Wildlife Service (USFWS) and NMFS Office of Protected Resources have concurred with this assessment. A number of threatened or endangered species may occur in Sandy Hook Bay; however, the project site does not provide optimal habitat for any of these species, and none would be expected to occur except as occasional transient individuals. Marine mammals would be expected to occur farther offshore than the project site, or in less developed locations north and south of the project site. Given the limited area and duration of disturbance and the minimal change in bottom habitat type as a result of the proposed project, the project would not result in significant adverse impacts to marine mammals.

5) Are significant social or economic impacts interrelated with natural or physical environmental effects?

The proposed action would not result in any significant social or economic impacts. As there are no residential populations located near the project site, no environmental justice populations can be present near the project site. Furthermore, as described throughout this chapter, the proposed action would have no adverse environmental consequences and therefore cannot have disproportionate adverse environmental consequences on environmental justice populations. The construction of the proposed action would be limited in duration and extent and would not affect the users of National Park Service properties on Sandy Hook.

6) Are the effects on the quality of the human environment likely to be highly controversial?

The proposed action would not result in any highly controversial effects on the human environment.

7) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers, essential fish habitat, or ecologically critical areas?

The proposed action would not result in any substantial impacts to historic or cultural resources, parkland, wetlands, essential fish habitat, or ecologically critical areas. There are no farmlands or wild and scenic rivers on or near the project site. The project site does not contain any habitats that meet the definition of wetlands under the Clean Water Act.

The New Jersey State Historic Preservation Office (SHPO) has reviewed the proposed action and has concurred that it would have no adverse effect on cultural resources. The ground-disturbing activities that would occur as a result of the construction of the proposed action would occur in a portion of the Fort Hancock and Sandy Hook Proving Ground Historic District, which is a National Historic Landmark and is listed on the National Register of Historic Places; however, this portion of the historic district has been previously disturbed, and thus the potential for archaeological sensitivity in this area is considered to be low. Should any archaeological resources be encountered during the construction process, work in that area will be halted and SHPO will be notified so that the nature of the find may be evaluated and a course of action can be agreed upon. The ground-disturbing activities that would occur under all of the construction alternatives for the proposed action also would not directly affect any historic buildings. The proposed renovation of the laboratory building would take place within a modern structure, and the only project element that would be visible on the exterior of the building would be the replacement in-kind of windows damaged by Hurricane Sandy; therefore, this project element would not be expected to have any visual/contextual effects on the historic district.

The construction of proposed action may disturb the existing multi-use pathway that runs through the project site. Bicycle and pedestrian traffic would be diverted around the project site during staging and directed to nearby streets; appropriate signage would be posted along the multi-use pathway directing users to the diverted route. Since the construction for the proposed action would be limited in duration (up to 3 weeks) and would take place outside of the peak summer season, it is not expected to result in a significant adverse effect on users of this recreational resource. Similarly, users of nearby Guardian Park may experience noise related to the construction of the proposed action. However, because of the limited duration of construction, users of Guardian Park would not experience significant adverse effects related to the construction of the proposed action. To the extent practicable, the selected contractor would employ measures to mitigate noise resulting from construction activities and equipment.

As noted above, the proposed action would not result in substantial impacts to essential fish habitat or ecologically critical areas in Sandy Hook Bay.

8) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

The proposed action would not result in any effects on the human environment that are highly uncertain or involve unique or unknown risks. The construction of the proposed action would be limited in duration and extent. As the proposed action comprises a replacement of an existing seawater intake/discharge system and repairs to the shoreline to restore pre-Superstorm Sandy conditions, the operation of the proposed action would be similar to existing conditions and would not result in any significant adverse effects.

9) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?

The proposed action is not related to any other actions that are individually insignificant but would cumulatively have significant impacts. As the construction of the proposed action would be limited in duration, intensity, and location, and is not expected to take place at the same time as other construction projects near the project site, no cumulative impacts from the construction of the proposed action would be expected. While the operation of the seawater system itself would not increase erosion and sedimentation in Sandy Hook Bay, the system suffered much damage as a result of Superstorm Sandy. Related to the goal of increasing the reliability of the system, all of the construction alternatives would result in a robust seawater

intake/discharge system that would be resilient against the effects of future storm events and sea-level rise related to climate change. While the proposed action is a replacement in-kind, it is designed to increase the reliability of an existing seawater intake/delivery system and to ensure the continued operation of the James J. Howard laboratory.

10) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?

The proposed action would not adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic places or cause the loss or destruction of significant scientific, cultural, or historic resources. The ground-disturbing activities that would occur as a result of the construction of the proposed action would occur in a portion of the Fort Hancock and Sandy Hook Proving Ground Historic District, which is a National Historic Landmark and is listed on the National Register of Historic Places; however, this portion of the historic district has been previously disturbed, and thus the potential for archaeological sensitivity in this area is considered to be low. Should any archaeological resources be encountered during the construction process, work in that area will be halted and SHPO will be notified so that the nature of the find may be evaluated and a course of action can be agreed upon. The ground-disturbing activities that would occur under all of the construction alternatives for the proposed action also would not directly affect any historic buildings. The proposed renovation of the laboratory building would take place within a modern structure, and the only project element that would be visible on the exterior of the building would be the replacement in-kind of windows damaged by Hurricane Sandy; therefore, this project element would not be expected to have any visual/contextual effects on the historic district.

11) Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

The proposed action is not expected to result in the introduction or spread of a non-indigenous species. The proposed action does not include the removal of a significant amount of vegetation or the introduction of new vegetation, nor would it result in the introduction or spread of a non-indigenous aquatic species. Vegetation used for soil stabilization will be in accordance with the New Jersey Department of Environmental Protection Standards for Soil Erosion and Sediment Control.

12) Is the proposed action likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?

The proposed action is not likely to establish a precedent for future actions with significant effects nor does the proposed action represent a decision in principle about a future consideration. The construction of the proposed action would be limited in duration and extent and comprises largely the replacement of an existing seawater intake/discharge system for the James J. Howard Laboratory.

13) Can the proposed action reasonably be expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?

The proposed action would not threaten the violation of Federal, State, or local laws or requirements imposed for the protection of the environment. The environmental review process has complied with the requirements of Section 106 by consulting with SHPO. The environmental review process has also included consultation with the USFWS and NMFS regarding potential impacts to threatened and endangered species. In addition, the construction of the proposed project would take place in accordance with all applicable regulations related to

air quality and hazardous materials and all relevant construction permit requirements; the operation of the proposed project would also comply with all relevant permit requirements.

14) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?

The proposed action would not result in any cumulative adverse effects that could have a substantial effect on target or non-target species. As the construction of the proposed action would be limited in duration, intensity, and location, and is not expected to take place at the same time as other construction projects near the project site, no cumulative impacts from the construction of the proposed action would be expected.

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting Environmental Assessment prepared for James J. Howard Laboratory Seawater Intake System Repair, it is hereby determined that the proposed action will not significantly impact the quality of the human environment as described above and in the Environmental Assessment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an Environmental Impact Statement (EIS) for this action is not necessary.

Edward C. Horton,
Chief Administrative Officer-NOAA

9/10/2014
Date