

Environmental Assessment

South Riverside Drive Outfall Valve and Bulkhead Project

PDMC-PJ-02-NJ-2011-005

Township of Neptune, New Jersey

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FEMA

Federal Emergency Management Agency

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LIST OF ACRONYMS

amsl	Above Mean Sea Level
APE	Area of Potential Effect
BMP	Best Management Practices
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CMP	Coastal Management Program
CO	Carbon Monoxide
CWA	Clean Water Act
dB	Decibel
DNL	Day-Night Average Sound Level
EA	Environmental Assessment
EAB	Emerald Ash Borer
EPA	Environmental Protection Agency
ESA	Endangered Species Act
EO	Executive Order
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
GHG	Greenhouse Gases
HMA	Hazard Mitigation Assistance
IPaC	Information, Planning and Conservation System
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHP	Natural Heritage Program
NHPA	National Historic Preservation Act
N.J.A.C	New Jersey Administrative Code
NJDEP	New Jersey Department of Environmental Protection
N.J.S.A.	New Jersey Statutes Annotated
NMFS	National Marine Fisheries Services
NO ₂	Nitrogen Dioxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O ₃	Ozone
PM	Particulate Matter
SHPO	State Historic Preservation Office
USACE	United State Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
WOUS	Waters of the United States

SECTION ONE INTRODUCTION

The Township of Neptune, Monmouth County, New Jersey, herein referred to as the Subgrantee, requested funding from the Federal Emergency Management Agency (FEMA) Hazard Mitigation Assistance (HMA), Pre-Disaster Mitigation-Competitive grant program to mitigate flooding in the Shark River Hills neighborhood. The Proposed Action is to construct a new bulkhead and install nine outfall valves along South Riverside Drive from Milford Road south to Sylvan Drive. Low-lying areas along the tidal Shark River in the area of South Riverside Drive flood during storm surges. Flooding also occurs approximately two to three times per month, year round, during high tides. The flooding frequently causes damage to residences, roadways, and utility infrastructure. The hazard mitigation project would be designed as flood damage risk reduction for these facilities and to minimize potential road closures that currently occur due to the flooding. The Grantee is the New Jersey Office of Emergency Management and the project reference number is PDMC-PJ-02-NJ-2011-005(0).

In accordance with Title 44 of the Code of Federal Regulations (CFR) Part 10, FEMA has prepared this Environmental Assessment (EA) to meet the requirements of Section 102 of the National Environmental Policy Act of 1969 (NEPA), the President's Council on Environmental Quality (CEQ) regulations to implement NEPA (40 CFR Parts 1500–1508), and FEMA's regulations implementing NEPA (44 CFR Part 10). FEMA is required to consider potential environmental impacts before funding or approving projects. FEMA will use the findings in this EA to determine whether to prepare an Environmental Impact Statement or a Finding of No Significant Impact (FONSI).

SECTION TWO PURPOSE AND NEED

The purpose of the HMA Grant Program is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. The purpose of the grant project is to reduce the risk of flood damages to approximately 61 residences, the road, and utility infrastructure along South Riverside Drive from the intersection with Milford Road south to Sylvan Drive. Additionally, the purpose of the project is to minimize flood-related closures of the roadway. The need for the project is due to repetitive flooding that causes both flood damages to residences and infrastructure, but also results in frequent transportation detours and access issues for local residents that disrupt daily life and pose a health and safety risk for the community. The project is in alignment with goal number four of the Monmouth County Multijurisdictional Hazard Mitigation Plan to “Reduce the possibility of damage and losses due to flooding, caused by floods, hurricanes and nor'easters.”

SECTION THREE BACKGROUND INFORMATION

The low-lying areas along South Riverside Drive flood frequently as a result of the low elevation of the roadways and from sea water backflowing into the Township of Neptune's storm drainage outfall pipes. Remnants of an old bulkhead that was installed in the 1930s exist in the intertidal

area; this old bulkhead has nearly completely disintegrated and does not adequately protect against minimal flooding. Given the lack of a sufficient bulkhead in this area or other means of protection from flooding, the tides and ground water levels rise above the existing bulkhead. The repetitive flooding causes damage to and closure of South Riverside Drive and side roads frequently (approximately two to three times per month, year round). Residents of the Shark River Hills neighborhood are required to detour or wait out the tide to access or exit their homes. Infrastructure located on South Riverside Drive, including water, sewer, gas, storm sewer, electric, and cable utilities, is also damaged during some flooding events. During flooding events, sea water enters the existing storm drainage pipe outfalls and reduces the capacity of the storm drainage system to effectively drain water from the neighborhood.

Neptune is a small township in the easternmost part of Monmouth County, with a land area of 8 square miles. The proposed project area is in the Shark River Hills neighborhood. The Proposed Action would alleviate flooding along South Riverside Drive from Milford Road south to Sylvan Drive, and within the side streets as noted on Figure 1 in *Appendix A*. There are 61 residences that would be protected from flooding as a result of the Proposed Action, 38 of which are National Flood Insurance Program-insured properties.

The Proposed Action would tie into work previously completed by the Shark River Yacht Club adjacent to the proposed bulkhead location. The Proposed Action would complete the flood barrier along the Shark River in the Shark River Hills neighborhood providing a solution to the chronic tidal flooding experienced several times per month.

SECTION FOUR DESCRIPTION OF ALTERNATIVES CONSIDERED

NEPA requires the analysis of practicable alternatives as part of the environmental review process for the proposed project. Inclusion of a No Action Alternative in the environmental analysis and documentation is required under NEPA. The No Action Alternative is used to evaluate the effects of not providing Federal financial assistance for the project, thus providing a “without project” benchmark against which “action alternatives” may be evaluated. FEMA reviewed all applicable Federal, State, and local laws and Executive Orders for each alternative considered.

4.1 SITE ALTERNATIVES CONSIDERED AND DISMISSED

The Subgrantee initially considered constructing a new bulkhead approximately 35 feet offshore in the same place as the existing deteriorated bulkhead. The offshore bulkhead alignment would have been constructed in intertidal habitat areas. In a letter to FEMA dated July 6, 2011, the U.S. Fish and Wildlife Service (USFWS) stated that installing a new bulkhead in an intertidal alignment would adversely impact tidal wetland and floodplain habitat. To avoid adverse impacts on tidal habitats, as well as the need for some permits from New Jersey Department of Environmental Protection (NJDEP) and U.S. Army Corps of Engineers (USACE), the Subgrantee dismissed this design from further consideration and is now proposing to construct the new bulkhead above the mean high water line.

Another alternative initially considered was elevating South Riverside Drive and the adjoining properties. However, this alternative was dismissed because of the excessive cost.

4.2 SITE ALTERNATIVES CONSIDERED IN THIS EA

Proposed Site: The proposed bulkhead would be constructed parallel to South Riverside Drive along 2,000 feet of the shore between the roadway of South Riverside Drive and the Shark River (see Figure 1, *Appendix A*). Eight of the nine outfall valves would be installed at the end of existing outfall pipes along the same alignment as the bulkhead; one outfall valve would be installed on an existing outfall pipe that is located approximately 1,300 feet northeast of the proposed bulkhead near an existing marina (see Figure 1, *Appendix A*).

The No Action Alternative and the Proposed Action Alternative are considered further in this EA and are summarized below.

4.2.1 No Action Alternative

As the No Action Alternative, it is anticipated that, absent Federal financial assistance, the Subgrantee would not construct a bulkhead or implement other flood protection measures to minimize flooding along the Shark River in the Shark River Hills neighborhood. Neighborhood roads would continue to flood, which would result in a recurring cost to homeowners and the Subgrantee to repair homes, roads, and other local infrastructure. Frequent transportation detours and access issues for local residents that disrupt daily life and pose a health and safety risk for the community would continue. This alternative would not fully address the project's purpose and need. Flood damage risk reduction would not be achieved through this alternative. The risk to private property, infrastructure, and public health and safety during flood events would not be addressed by this alternative.

4.2.2 Proposed Action

As the Proposed Action, the Subgrantee would construct a new bulkhead and install new outfall valves in the alignment shown on Figure 1 in *Appendix A*. The bulkhead would be made of a composite material and would extend approximately 2,000 linear feet along South Riverside Drive. Composite material would be used for the bulkhead because it is less susceptible to weather and water damages and would require less maintenance over time compared to traditional treated wood. The bulkhead would be installed approximately 20 feet away from South Riverside Drive and approximately 35 feet inland from the remnants of the deteriorated 1930s bulkhead. The proposed bulkhead would be located approximately 20 feet away from the edge of the road to ensure it is outside of the road right-of-way.

The bulkhead would be installed immediately above the mean high water line. The top of the new bulkhead would be at a height of approximately 10 feet above mean sea level (amsl) (for reference, the roadway of South Riverside Drive is at an elevation of 5 feet amsl). An elevated, cantilevered 6-foot-wide walkway and American Disabilities Act-compliant access ramps would be constructed on the shoreward side of the bulkhead. The Subgrantee would repair and replace existing deteriorated drainage lines and install duckbill-style check valves to prevent sea water

from backflowing into the storm drainage system. Clean, sandy fill would be placed behind the bulkhead and no fill would be placed below the mean high tide line. Construction activities would remove all vegetation in the sandy, partially vegetated project site (about an acre of disturbance) located between the edge of South Riverside Drive and the proposed bulkhead.

The Subgrantee would use a “living shorelines” concept of shoreline stabilization in conjunction with the bulkhead. The living shorelines stabilization effort would involve, in part, planting saltwater tolerant species within the intertidal zone, which is a method promoted by the NJDEP, Division of Land Use Regulation. The plantings will likely consist of high tide bush (*Iva frutescens*) and salt meadow chordgrass (*Spartina patens*).

Once built, the Subgrantee would conduct regular inspection and maintenance, including cleaning outfalls after each major storm event as needed and bi-weekly from May to October (approximately 14 times per year). Equipment and material staging would be located on two vacant lots at 131 and 137 South Riverside Drive, north of the Shark River Municipal Marina Building (see Figure 1, *Appendix A*). Figure 2 in *Appendix A* shows a concept plan of the Proposed Action.

SECTION FIVE AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Table 1 summarizes potential impacts of the No Action and the Proposed Action Alternatives. The following sections provide a more detailed description of the affected environment and potential environmental impacts of the No Action and Proposed Action Alternatives.

5.1 SOILS AND TOPOGRAPHY

5.1.1 Existing Conditions

Soils in the project area consist of loamy sand and sand and may contain urban fill (USDA, Natural Resources Conservation Service, 2013). Although the general topography of the area is flat, elevation varies between South Riverside drive and the water. The roadway is at an elevation of 5 feet amsl, the ground surface elevation rises to approximately 7 feet between the roadway and the water and drops to 4.6 feet at the mean high water line (see Figure 2, *Appendix A*).

The Farmland Protection Policy Act (FPPA) requires Federal agencies to minimize the extent to which Federal programs contribute to the unnecessary conversion of farmland to non-agricultural use and to assess potential conversion of farmland to developed property. Soils that are already committed to urban development are not considered prime or unique farmland (7 CFR Part 658.2); therefore, because the project site is within Township of Neptune limits, the FPPA does not apply.

Table 1: Summary of Potential Environmental Impacts and Mitigation

Resource	Potential Impacts		Agency/ Permits	Mitigation
	No Action	Proposed Action		
Soil and Topography	No impact	Minor short-term impacts on soils from ground disturbance during construction.	NJDEP/NPDES permit	Implement erosion and sediment control BMPs. Subgrantee shall obtain applicable certifications or permits in accordance with the Soil Erosion and Sediment Control Act (N.J.S.A. 4:24 -39 et seq.) and Stormwater Management Rules (N.J.A.C. 7:8) prior to start of construction. Excavated soil and waste materials will be managed and disposed of in accordance with applicable Federal, State, and local regulations. Fill material shall be brought from offsite and must be from a commercial supplier or other permitted source and meet the definition of clean fill at N.J.A.C. 7:26E- 1.8 and per guidance available at www.nj.gov/dep/srp/guidance/srra/fill_protocol.pdf .
Land Use and Zoning	No impact	No impact	NA ¹	NA
Water Resources and Water Quality	No impact	Temporary, minor impacts on Waters of the U.S. during construction from increased turbidity.	NJDEP/Clean Water Act Section 401 permit USACE/Clean Water Act Section 404 permit	Implement erosion and sediment control and spill prevention BMPs. Subgrantee shall obtain applicable certifications or permits in accordance with the Soil Erosion and Sediment Control Act (N.J.S.A. 4:24 -39 et seq.) and Stormwater Management Rules (N.J.A.C. 7:8) prior to start of construction. Construction equipment would be operated and staged on existing roadways to the extent practicable to limit ground disturbance.
Coastal Resources	No impact	FEMA submitted the Federal Coastal Consistency Determination to NJDEP on May 8, 2015, determining that the project is consistent with New Jersey coastal policies. No response has been received to date, so FEMA is assuming concurrence from NJDEP.	NJDEP/Federal Coastal Consistency Determination	NA
Floodplains and Wetlands	No impact.	Long-term beneficial impacts on infrastructure; project would reduce risk of flood damages to properties and infrastructure. Bulkhead would provide protection against the 50-year storm event. Temporary work in wetlands would be required during construction; however, no permanent impacts to wetlands are anticipated.	Project will be coordinated with local floodplain administrator and must comply with Federal, State, and local floodplain laws and regulations. USACE/Clean Water Act Section 404 permit	No equipment or materials should be placed in wetlands. Implement erosion and sediment control and spill prevention BMPs.
Vegetation	No impact	Minor, temporary impacts to vegetation from construction and long-term beneficial impacts on vegetation from implementation of the Living Shorelines plantings.	NA	Avoid unnecessary clearing of vegetation. Plant disturbed areas with native plant material, as soon as practicable after bare soil exposure, to avoid or minimize growth of undesired and potentially invasive plant species that can potentially take hold without competition of native plant materials. Any woody tree and shrub material removed will not be transported whole outside the community or will be chipped on site to chips of less than one inch in two dimensions. Planting of saltwater tolerant species within the intertidal zone as part of a "Living Shorelines" concept of shoreline stabilization.
Wildlife and Fisheries Habitat	No impact	Temporary minor impacts during construction. Minor long-term impacts.	NA	Restore disturbed construction areas with native seed and/or plant species to minimize soil erosion and sedimentation, as well as enhance environmental habitat quality of project area.

Resource	Potential Impacts		Agency/ Permits	Mitigation
	No Action	Proposed Action		
Threatened and Endangered Species and Critical Habitat	No impact	No impact	NA	Implementation of the “Living Shorelines” concept, which would include planting of saltwater tolerant plant species within the intertidal zone, would result in long-term beneficial impacts on migratory birds protected under the Migratory Bird Treaty Act.
Cultural Resources	No impact	No impact	NA	If cultural resources, unmarked graves, burials, human remains, or archaeological deposits are discovered during project implementation, FEMA will contact NJ SHPO and the Delaware Tribe immediately.
Aesthetic and Visual Resources	No impact	New bulkhead would partially block views of the Shark River from the road and nearby homes; long-term changes to the viewshed.	NA	Pedestrian walkway added to bulkhead to provide public access to shoreline and views of Shark River. Construction equipment operated and staged on existing roadways to the extent practicable.
Socioeconomic Resources	Recurring adverse economic impacts to local residences and the Subgrantee due to flooding damages.	Short-term benefits to local economy during construction; long-term benefits to local residents and Subgrantee from reduced number of flood events.	NA	NA
Environmental Justice	No impact	No impact	NA	NA
Air Quality	No impact	Short-term minor impacts during construction.	NA	BMPs
Contaminated Materials	No impact	No impact	NA	Any hazardous materials discovered, generated, or used during construction would be handled and disposed of in accordance with applicable local, State, and Federal regulations.
Noise	No impact	Short-term increases in noise levels during construction.	NA	Follow Township noise ordinance (no construction before 8:00 a.m. or after 7:00 p.m. Monday through Saturday or on Sundays).
Traffic	Long-term adverse impacts due to road closures and detours during flood events.	Minor temporary impacts during construction due to temporary lane and/or road closure along South Riverside Drive and additional construction-related vehicles on local roadways. Long-term beneficial impacts from reduction of flooded roadways.	NA	Posting signage for lane/road closures.
Infrastructure	Long-term adverse impacts from repeated flood damages.	Long-term beneficial impacts; project would minimize flooding damages to roadways and utilities.	NA	NA
Public Health and Safety	Continued risk for adverse impacts due to frequent flood events.	No impact	NA	Construction workers to follow Occupational Safety and Health Administration regulations. Appropriate signage and barriers in place prior to construction to alert pedestrians, residents, and motorists along South Riverside Drive of project activities.
Climate Change	No impact	No impact	NA	NA
Cumulative Impacts	No impact	Short-term minor adverse impacts to soils, water resources, vegetation, wildlife and fisheries habitat, air quality, noise, and traffic. Long-term beneficial impacts to floodplains, socioeconomics, traffic, infrastructure and public health and safety by minimizing recurring flooding.	NA	Implement mitigation measures and obtain permits as specified in this EA and per local, State and Federal regulations.

¹NA = not applicable

5.1.2 Potential Impacts and Proposed Mitigation

No Action Alternative

The No Action Alternative would not impact soils or topography.

Proposed Action

The Proposed Action would not result in changes to topography. The Proposed Action would have minor short-term impacts on soils from ground disturbance during construction. Clean, sandy fill would be placed on the shore side of the bulkhead on top of existing sandy soils. Construction activities would disturb approximately 1 acre of soils. The Proposed Action would comply with stormwater regulations to minimize erosion and sedimentation as required by the State of New Jersey under Section 402 of the Clean Water Act (CWA) National Pollutant Discharge Elimination System (NPDES) permit program and Township of Neptune.

5.2 LAND USE AND ZONING

5.2.1 Existing Conditions

The project site is located within the Township of Neptune's Zoning District R-2 Low Density Single-Family Residential and is adjacent to Zoning District R-3 Moderate Density Single Family Residential (Neptune Township, Land Use Department, 2000). The project area is characterized as residential; however, there are small businesses in the area including a marina near where one of the tidal valves would be installed.

5.2.2 Potential Impacts and Proposed Mitigation

No Action Alternative

The No Action Alternative would have no changes in or impacts on land use.

Proposed Action

The Proposed Action would not result in changes in land use and would comply with the current Township of Neptune zoning designation.

5.3 WATER RESOURCES AND WATER QUALITY

Congress enacted the Federal Water Pollution Control Act in 1948, which was reorganized and expanded in 1972 and became known as the CWA in 1977, as amended. The CWA regulates discharge of pollutants into water with sections falling under the jurisdiction of the USACE and the U.S. Environmental Protection Agency (EPA). Section 404 of the CWA establishes the USACE permit requirements for discharging dredged or fill materials into Waters of the United States (WOUS) and traditional navigable waterways. Under NPDES, the EPA regulates both point and non-point pollutant sources, including stormwater.

5.3.1 Existing Conditions

The proposed project is located in Watershed Management Area 12, Monmouth watershed (NJDEP, 2012). The Shark River, which is adjacent to the proposed project, is tidal in the project area and drains to the Atlantic Ocean through a maintained channel approximately 10,000 feet east of the project. The shoreline in the area of the proposed bulkhead consists of a 25- to 50-foot-wide strip of sandy, partially vegetated area between the edge of pavement of South Riverside Drive and the shallow open water areas of Shark River.

5.3.2 Potential Impacts and Proposed Mitigation

No Action Alternative

Under the No Action Alternative, because no construction would occur there would be no impact to surface waters and WOUS. The No Action Alternative would have no impact on water resources or water quality.

Proposed Action

Temporary work in WOUS would be required during construction; however, no permanent impacts to WOUS are anticipated. The new bulkhead would not allow landward migration of the water's edge due to sea level rise. Clean fill material would be placed behind the proposed bulkhead only; no fill would be placed below the mean high water line, so there would be no permanent impacts to the tidal/intertidal area.

All construction staging and access would be from South Riverside Drive, nearby disturbed areas, and in the sandy strip between the bulkhead and South Riverside Drive; no equipment or materials would be placed in WOUS. Construction of the new bulkhead would cause temporary minor impacts to water quality in the Shark River from localized increases in turbidity. Bulkhead installation would be conducted at low tide to the extent practicable to minimize water quality impacts.

Erosion and sediment control measures would be implemented to minimize sediment transport into marine waters. Spill prevention and control best management practices (BMPs) would be used to minimize potential for a spill of pollutants, such as fuel, into marine waters and associated water quality impacts. Potential water quality impacts and soil erosion and sedimentation would be mitigated both during and after construction by required compliance with the current soil erosion controls standards established by the State of New Jersey and enforced by the Freehold Soil Conservation District.

Because work in WOUS would be necessary, the Subgrantee would be required to obtain a CWA Section 401 Water Quality Certificate from the NJDEP Division of Land Use Regulation (DLUR) and a CWA Section 404 permit from the USACE. Copies of these permits must be submitted to FEMA prior to the grant being awarded to the Subgrantee.

5.4 COASTAL RESOURCES

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.

5.4.1 Existing Conditions

Under the Coastal Zone Management Act, the Township of Neptune in Monmouth County is in the New Jersey CMP-designated coastal zone (NJDEP, 2013b).

5.4.2 Potential Impacts and Proposed Mitigation

No Action Alternative

Under the No Action Alternative, there would be no impacts on coastal zone resources managed under the New Jersey CMP because no construction would occur.

Proposed Action

The project site is located within the New Jersey CMP-designated coastal zone boundary. Because all proposed project activities would be landward of mean high water, they would be regulated under the Coastal Area Facilities Review Act. FEMA has prepared the NJDEP Application for Federal Coastal Consistency Determination that is used to evaluate which policies under the New Jersey Rules on Coastal Zone Management (N.J.A.C. 7:7E) are applicable to the Proposed Action and for those that are applicable, whether the proposed project is consistent to the extent feasible with those policies. FEMA submitted the Federal Coastal Consistency Determination to NJDEP on May 8, 2015, determining that the project is consistent with New Jersey coastal policies (*Appendix C*). No response has been received to date, so FEMA is assuming concurrence from NJDEP.

5.5 FLOODPLAINS AND WETLANDS

Executive Order (EO) 11988 (Floodplain Management) requires that Federal agencies avoid direct or indirect support of development in the 100-year floodplain whenever there is a practicable alternative. FEMA has developed Flood Insurance Rate Maps (FIRMs) to identify special flood hazard areas and risk zones for communities. Federal actions within the 100-year floodplain, or 500-year floodplain for critical actions, require the Federal agency to conduct an Eight-Step Review Decision-Making Process. This process, like NEPA, requires the evaluation of alternatives prior to funding the action. FEMA's regulations for conducting Eight-Step Review Process are contained in 44 CFR Part 9. The Eight-Step Review Documentation conducted for this project in compliance with EO 11988 can be found in *Appendix B*.

EO 11990 "Protection of Wetlands" requires that Federal agencies take actions to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the beneficial effects of wetlands. Compliance with this EO begins with the process of identifying whether the action would be located within or would potentially affect federally regulated wetlands (USFWS,

1994). Federal regulation of wetlands is under the jurisdiction of the USACE; in New Jersey, NJDEP also regulates and protects freshwater wetlands as defined by New Jersey State Act 13:9B. Federal actions within wetlands require the Federal agency to conduct an Eight-Step Review Process. This process, like NEPA, requires the evaluation of alternatives prior to funding the action. FEMA’s regulations for conducting the Eight-Step Review process are contained in 44 CFR Part 9.5. The Eight-Step Review Documentation for this project can be found in *Appendix B*.

5.5.1 Existing Conditions

According to the FIRM for this area (Community Panel Number 34025C0341F and 4025C0333F effective on 09/25/2009, revised Preliminary 01/31/2014), the project site is located within the Special Flood Hazard Area subject to inundation by the 1 percent annual chance flood event, commonly referred to as the 100-year floodplain. As depicted on the FEMA Flood Zone map (Figure 4, *Appendix A*), the flood elevations in the project area range from VE12 within Shark River to AE11 along the shoreline to AE10 landward of South Riverside Drive (FEMA, 2015). “VE” designates a coastal flood zones with a velocity hazard due to wave action. Per FEMA’s regulations at 44 CFR 9.11(d)(1)(i), there shall be no new construction in a V Zone except for a functionally dependent use or to facilitate open space use. A bulkhead fits the definition of functionally dependent, as it requires a location near water to perform its intended purpose. Zone “AE” designates a 1 percent annual chance of flooding for which the flood elevation has been determined. The limit of potential wave action extends to the proposed bulkhead location.

Based on a review of the USFWS National Wetlands Inventory, Shark River waters are considered WOUS and are classified in accordance with Cowardin (et. al., 1979) as estuarine, subtidal, unconsolidated bottom with a subtidal water regime (E1UBL) (USFWS, 2015b). Water depths adjacent to the project site vary from 1 to 10 feet with most of the nearshore area being less than 5 feet deep (NOAA, 2012).

There are no State-regulated freshwater wetlands in the project site (NJDEP, 2013c). As shown on Figure 3 in *Appendix A*, there are tidal wetlands in the project area – the upper wetland boundary line, which indicates the limit of tidal wetlands as mapped by NJDEP, is along the shoreline of the Shark River at the proposed bulkhead location.

5.5.2 Potential Impacts and Proposed Mitigation

No Action Alternative

Under the No Action Alternative, there would be no impact to floodplains or wetlands because no construction would occur. However, given the lack of sufficient protection from a bulkhead, frequent and extensive flooding would continue to damage roadways, homes, infrastructure and utilities, because the first floor elevations of both roadways and nearby homes are all below the 100-year and 500-year base flood elevations (FEMA, 2013).

Proposed Action

The bulkhead top would be set at elevation of approximately 10 feet amsl, which offers protection from a 50-year flood event. The Proposed Action would have beneficial impacts by reducing the risk of future flood damage to residential properties and provide protection to infrastructure and utilities. The proposed construction in the floodplain would be coordinated with the local floodplain administrator and would comply with Federal, State, and local floodplain laws and regulations.

Temporary work in wetlands would be required during construction; however, no permanent impacts to wetlands are anticipated. Clean fill material would be placed behind the proposed bulkhead only and no fill would be placed below the mean high water line, so there would be no permanent impacts from placement of fill to the tidal/intertidal area. No equipment or materials would be placed in wetlands and all construction staging and access would be from South Riverside Drive, nearby disturbed areas, and in the sandy strip between the bulkhead and South Riverside Drive. Because temporary work in wetlands would be necessary, the Subgrantee would be required to obtain a CWA Section 404 permit from the USACE. A copy of the permit must be submitted to FEMA prior to the grant being awarded to the Subgrantee.

Erosion and sediment control measures would be implemented to minimize sediment transport into wetlands. Spill prevention and control best management practices (BMPs) would be used to minimize potential pollution of the nearby wetlands. Potential water quality impacts and soil erosion and sedimentation would be mitigated both during and after construction by required compliance with the current soil erosion controls standards established by the State of New Jersey and enforced by the Freehold Soil Conservation District.

5.6 VEGETATION

5.6.1 Existing Conditions

Because the bulkhead would be located above the mean high water line, and clean fill material would only be placed behind the proposed bulkhead and no fill would be placed below the mean high water line, there would be no impacts to the tidal/intertidal area.

The area where the bulkhead is proposed is a 2,000-foot-long, 25- to 50-foot-wide sandy, partially vegetated area located between the edge of pavement of South Riverside Drive and the shallow open water areas of Shark River. The project site is partially vegetated with herbaceous and shrub species typical in the back bay areas of New Jersey. There are no State-regulated freshwater wetlands in the project site (NJDEP, 2013c). As shown on Figure 3 in *Appendix A*, there are tidal wetlands in the project area.

Vegetation in the lower elevations of the project site regularly inundated by the tide include species typical of salt marsh habitats such as smooth cordgrass (*Spartina alterniflora*) and salt meadow grass; the higher elevations not regularly inundated by the tide contain groundsel tree (*Baccharis halimifolia*), northern bayberry (*Morella pensylvanica*), seaside goldenrod (*Solidago sempervirens*), switch grass (*Panicum virgatum*), mugwort (*Artemisia vulgaris*), common reed (*Phragmites australis*), and a few small eastern red-cedar (*Juniperus virginiana*).

As of July 11, 2014, the entire State of New Jersey is currently quarantined for the invasive insect Emerald Ash Borer (EAB), which impacts ash tree populations. Therefore, the proposed project is located in an EAB quarantine zone.

The area directly adjacent to the paved road is periodically mowed. The project vicinity, landward of South Riverside Drive consists of a residential neighborhood with single family homes surrounded by lawn and landscape plantings.

5.6.2 Potential Impacts and Proposed Mitigation

No Action Alternative

Under the No Action Alternative, there would be no impact to vegetation because no construction would occur.

Proposed Action

Under the Proposed Action, most of the vegetation between the edge of South Riverside Drive and the proposed bulkhead would be removed prior to or damaged during construction. The Subgrantee would plant disturbed areas with native plant material as soon as practicable after soil disturbance to avoid or minimize growth of undesired and potentially invasive plant species that can potentially take hold without competition of native plant materials. Because the proposed project is located in an EAB quarantine zone, any woody tree and shrub material removed for the Proposed Action will not be transported whole outside the community or will be chipped on site to chips of less than one inch in two dimensions in order to adhere with EO13112 Invasive Species and Federal regulations at 7 CFR Part 301.53-1 through 301.53-9.

Following construction, the disturbed area between the new bulkhead and edge of pavement would be re-vegetated with a mix of native herbaceous and shrub species similar to the existing vegetation, such as panic grass, seaside goldenrod, groundsel tree, and northern bayberry. Additionally, as part of a “Living Shorelines” concept of shoreline stabilization, the Subgrantee would plant saltwater tolerant species within the intertidal zone, which is a method promoted by the NJDEP, Division of Land Use Regulation. The plantings would likely consist of high tide bush (*Iva frutescens*) and salt meadow grass. The Proposed Action would result in minor, temporary impacts to vegetation from construction and long-term beneficial impacts on vegetation from implementation of the Living Shorelines plantings.

5.7 WILDLIFE AND FISHERIES HABITAT

5.7.1 Existing Conditions

The portion of the project site regularly inundated by the tide and the nearby shallow waters of Shark River provide foraging habitat for wading birds such as great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), American oystercatcher (*Haematopus palliatus*) and great egret (*Ardea alba*), and wintering habitat for American black duck (*Anas rubripes*), Canada goose (*Branta canadensis*), mute swan (*Cygnus olor*), and purple sandpiper (*Calidris maritima*). The project site is adjacent to a paved road within a residential area and would therefore not provide

suitable breeding bird habitat for shorebirds. The project site would provide some habitat for small mammals typically found in suburban environments, such as raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), Virginia opossum (*Didelphis virginiana*), white-footed mouse (*Peromyscus leucopus*), and house mouse (*Mus musculus*). Invertebrate species likely to be found in the intertidal areas of the project site include ribbed mussel (*Geukensia demissa*), fiddler crab (*Uca spp.*), horseshoe crab (*Limulus polyphemus*), and blue crab (*Callinectes sapidus*).

5.7.2 Potential Impacts and Proposed Mitigation

No Action Alternative

Under the No Action Alternative, no construction would occur and there would be no impact to wildlife.

Proposed Action

Under the Proposed Action, most of the vegetation between the edge of South Riverside Drive and the proposed bulkhead would be removed prior to or damaged during construction, temporarily displacing small animals and invertebrates which may be present. During construction, wading birds are not likely to forage in the shallow water habitats due to the noise and human activity. Following construction, the disturbed areas would be re-vegetated with a mix of native herbaceous and shrub species similar to the existing vegetation, restoring habitat for small animals and invertebrates. The habitats on the waterward side of the bulkhead that are currently vegetated with salt marsh vegetation and regularly inundated by the tide would remain and continue to function as salt marsh habitat. As discussed in Section 5.6.2, the tidal area on the waterward side of the bulkhead would be enhanced by the planting of species such as high tide bush and salt meadow grass after project implementation. Due to the height and nature of the bulkhead, it would create a localized barrier to terrestrial wildlife, hindering access to the water. These animals could access the water at either end of the bulkhead; therefore, the fragmentation impact would be minor.

5.8 THREATENED AND ENDANGERED SPECIES AND CRITICAL HABITAT

The Endangered Species Act (ESA) of 1973 provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found. The lead Federal agencies for implementing ESA are USFWS and U.S. National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS). The law requires Federal agencies to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. The law also prohibits any action that causes a “taking” of any listed species of endangered fish or wildlife.

Under provisions of the ESA, all states were granted authority to create their own endangered species protection policies. The State of New Jersey has implemented its own legislation for the

protection of plant and animal species of state importance (i.e., State-listed “endangered” and “threatened” species) that is similar to the ESA.

The Migratory Bird Treaty Act (MBTA) protects over 800 birds. It is illegal for any person to “take” migratory birds, their eggs, feathers, or nests under the MBTA. Departments and agencies are directed to take certain actions to implement the MBTA under EO 13186. Similarly, the Bald and Golden Eagle Protection Act (BGEPA) prohibits the take and trade of bald and golden eagles (*Haliaeetus leucocephalus* and *Aquila chrysaetos*, respectively). Federal agencies must evaluate potential impacts to migratory and bald and golden eagles and their habitats from proposed activities.

5.8.1 Existing Conditions

The on-line USFWS Information, Planning and Conservation System (IPaC) was accessed to obtain an ESA species list for Monmouth County, as well as other Trust Resources for the project area (USFWS, 2015a). The results of the IPaC query are included in *Appendix D*. The results of the IPaC query indicate that the two federally threatened plants Knieskern’s beaked-rush (*Rhynchospora knieskernii*) and seabeach amaranth (*Amaranthus pumilus*) should be considered in the affects analysis for the project. According to the USFWS recovery plan, Knieskern’s beaked-rush “...is found on wet bog-iron substrates that remain in early successional stages due to erosional forces from nearby streams” (USFWS, 1993). The project site is a narrow strip of sandy shoreline adjacent to a residential neighborhood and would not be considered suitable habitat for this species. According to the USFWS recovery plan, seabeach amaranth “... is native to the barrier island beaches of the Atlantic Coast. An annual plant, this species appears to need extensive areas of barrier island beaches and inlets, functioning in a relatively natural and dynamic manner, allowing it to move around in the landscape, occupying suitable habitat as it becomes available” (USFWS, 1996). The project site is a narrow strip of sandy shoreline adjacent to a residential neighborhood and would not be considered suitable habitat for seabeach amaranth. The results of the IPaC query indicate that there are no critical habitats designated in the project area.

The project site lies within the Atlantic Flyway for migratory birds and provides some foraging habitat for migratory species. The project site does not contain suitable nesting or foraging habitat for bald or golden eagles.

Consultation with USFWS: FEMA consulted with the USFWS on the initial design of this bulkhead project in 2010-2011. However, due to USFWS concerns about the project being located in the tidal area, the Subgrantee has redesigned the project to move the bulkhead out of the tidal area above the mean high water line. The response letter from USFWS to FEMA, dated June 29, 2011, states that USFWS reviewed the project and that “No federally listed or proposed threatened and endangered flora or fauna (terrestrial species only) are known to occur within the vicinity of the project site” (see *Appendix C*). FEMA consulted with the USFWS again in a letter dated May 6, 2015 regarding the current Proposed Action. In the response from the USFWS, dated May 6, 2015, USFWS agreed that the No Effect determination did not require a consultation under ESA. USFWS also concurred that seasonal restrictions would limit impacts

on migratory and other birds under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act (see *Appendix C*).

Consultation with the NJDEP Natural Heritage Program: The Township of Neptune consulted with the NJDEP Natural Heritage Program (NHP) on the initial design of the proposed bulkhead in 2010. The response letter from the NJDEP NHP, dated August 3, 2010, stated that great blue heron (State special concern) occur on the project site and least tern (*Sterna antillarum*, State endangered) and osprey (*Pandion haliaetus*, State threatened) occur within ¼ mile of the project site (see *Appendix C*). Special concern species are given no additional legal protection under State regulation.

Consultation with NMFS: The Township of Neptune consulted with NMFS Habitat Conservation Division on the initial design of the proposed bulkhead in 2010. The enclosed August 3, 2010 letter from NMFS states that "With the exception of occasional transients, no threatened or endangered species under the jurisdiction of the NMFS are known to occur in the project area ... impacts to [resources under NMFS jurisdiction] and their habitats are expected to be minimal and no special conditions are necessary ... [and] no more than minimal short-term adverse effects to EFH are expected provided compensatory mitigation is completed for the fill." FEMA consulted with the NMFS Office of Protected Resources in a letter dated May 6, 2015 regarding the current Proposed Action. The response from NMFS Office of Protected Resources Division, dated May 14, 2015, stated that NMFS has no objection and no EFH conservation recommendations (see *Appendix C*).

5.8.2 Potential Impacts and Proposed Mitigation

No Action Alternative

Under the No Action Alternative, there would be no impact to federally or State-listed species.

Proposed Action

Based on coordination with the USFWS, NMFS, and NJDEP NHP and the results from the USFWS IPaC query, it is unlikely that Federal or State-listed species occur on the project site. The results of the IPaC query also indicate that there are no critical habitats in the project area. Therefore, no impacts to any Federal or State-listed species or critical habitats are anticipated as a result of the Proposed Action. Although the project site is within the Atlantic Flyway, any migratory birds in the area would be transient. Implementation of the "Living Shorelines" concept, which would include planting of saltwater tolerant plant species within the intertidal zone, would result in long-term beneficial impacts on migratory birds by providing improved foraging habitat at the project site.

5.9 CULTURAL RESOURCES

Section 106 of the National Historic Preservation Act (NHPA), as amended, and implemented by 36 CFR Part 800 requires Federal agencies to consider the effects of their actions on historic properties and provide the Advisory Council on Historic Preservation an opportunity to comment on Federal projects that would have an effect on historic properties. These actions must take

place prior to the expenditure of Federal funds. Historic properties include districts, buildings, structures, objects, and sites (including landscapes, archaeological sites, and traditional cultural properties) that are listed in or eligible for listing in the National Register of Historic Places (NRHP).

5.9.1 Existing Conditions

To identify previously recorded resources and historic properties and resources listed in or eligible for listing in the NRHP, FEMA conducted research using NJ-GeoWeb (NJDEP, 2015a), the NRHP Focus database (NHRP, 2015), the New Jersey and National Registers of Historic Places listings (NJDEP, 2015b), the U.S. Geological Survey Map Locator and Downloader (USGS, 2015), and Historic Map Works (Historic Map Work, 2015). No known archaeological or above-ground resources or historic properties are located within or in the vicinity of the Proposed Action. Additionally, FEMA assessed the potential for the project area to contain intact, undocumented archaeological sites. The project area contains soil units that consist of urban, disturbed soils and/or somewhat poorly drained soils and has been previously disturbed as a result of construction activities associated with the former bulkhead and drainage utilities. As such, the project area is considered to have a low potential to contain intact archaeological sites.

5.9.2 Potential Impacts and Proposed Mitigation

No Action Alternative

Under the No Action Alternative, no construction would occur and no historic properties would be affected.

Proposed Action

The Subgrantee consulted with the New Jersey State Historic Preservation Office (SHPO) in 2010 on the previous bulkhead design (see *Appendix C*, letter to SHPO dated September 15, 2010). In that letter, the Subgrantee stated that there were no direct impacts to historic properties and requested consultation regarding potential indirect impacts from the proposed undertaking. The SHPO responded on November 19, 2010 with concurrence that no historic properties would be affected within the project's APE and stipulated that no additional Section 106 consultation was required unless additional resources were discovered during project implementation.

FEMA has determined that the new bulkhead design under the Proposed Action would not affect historic properties. Because the design of the bulkhead has changed since 2010, FEMA re-initiated consultation with the SHPO in a letter dated April 10, 2015. On May 5, 2015 the SHPO concurred with FEMA's determination of no historic properties affected, with the stipulation that FEMA would contact the SHPO if additional resources are discovered during project implementation (see *Appendix C*).

FEMA also consulted with the Delaware Nation, the Delaware Tribe of Indians, the Eastern Shawnee Tribe of Oklahoma, and the Shawnee Tribe of Oklahoma in letters dated April 10, 2015. On April 27, 2015, the Delaware Tribe concurred with FEMA's determination with the stipulation that FEMA would contact the Delaware Tribe if archaeological and/or human remains

are discovered during project implementation (see *Appendix C*). FEMA has not received a response from the other three Tribes.

5.10 AESTHETICS AND VISUAL RESOURCES

5.10.1 Existing Conditions

Views in the project area are characteristic of a residential neighborhood and primarily include single-family residences along town streets as well as views of the Shark River. The remnants of the old wooden bulkhead can be seen in the tidal waters of the Shark River approximately 35 feet offshore. There is a 25- to 50-foot-wide strip of sandy, partially vegetated shore between the edge of pavement of South Riverside Drive and the shallow open water areas of Shark River that can easily be seen from the roadway and by houses that front South Riverside Drive.

5.10.2 Potential Impacts and Proposed Mitigation

No Action Alternative

Under the No Action Alternative, no changes to the current visual resources would occur.

Proposed Action

Under the Proposed Action, there would be minor, short-term impacts on visual resources in the neighborhood and at the project site during construction from construction vehicles and equipment that will be staged at and driving in the area while working at the project site. Construction equipment would be operated and staged on existing roadways and staging areas to the extent practicable. The area between the bulkhead and South Riverside Drive would be planted in native vegetation upon completion of construction and native species would be planted in the intertidal zone on the Shark River side of the bulkhead.

Construction of the proposed bulkhead would result in long-term changes in the view of the Shark River from South Riverside Drive and from the homes that face towards the Shark River along South Riverside Drive. The top of the proposed bulkhead would be at an elevation of approximately 10 feet amsl and the South Riverside Drive roadway is at an elevation of 5 feet amsl; therefore, views of the Shark River would be partially blocked by approximately 5 feet of bulkhead for people along the roadway. Impacts on views from the homes that face the Shark River would not be affected as much as views from the road because the homes are farther from the proposed bulkhead than the roadway and because the first floor of the homes would be slightly elevated compared to the roadway. Although the views from these homes would be permanently altered compared to existing conditions, the Proposed Action seeks to restore a bulkhead that was part of the viewshed in this area for several decades starting in the 1930s. To mitigate impacts on visual resources for the general public, the proposed bulkhead design includes a pedestrian walkway that is elevated approximately above the existing roadway (see Figure 2, *Appendix A*). The walkway would be accessed by stairs and an American Disabilities Act-compliant ramp and would provide full views of the Shark River.

5.11 SOCIOECONOMIC RESOURCES

5.11.1 Existing Conditions

The population of Census Tract 8080.01, which encompasses the Shark River Hills neighborhood and where the project site is located, is 4,157 people with a median household income of \$80,607, while the county has a population of 630,378 people with a median household income of \$84,526 (US Census Bureau, 2015; USBoundary.com, 2015).

5.11.2 Potential Impacts and Proposed Mitigation

No Action Alternative

Under the No Action Alternative, recurring economic impacts to local residences and the Subgrantee would continue due to flooding damages to roads and utilities. The Subgrantee's staff would continue to spend time and resources cleaning the roadway and project area after flooding. The disruption of daily life and health and safety risks for the community would continue as a result of road closures and detours.

Proposed Action

Under the Proposed Action, there would be long-term benefits to residents in the Shark River Hills neighborhood and the public because South Riverside Drive and local roads would not continue to be closed periodically from flooding. Infrastructure such as roads and utilities would require less maintenance and/or repairs, resulting in long-term economic benefits to the Subgrantee. The project would create temporary jobs during the construction phase resulting in short-term benefits to the local economy.

5.12 ENVIRONMENTAL JUSTICE

EO 12898, entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," guides Federal agencies to make environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations (USEPA, 2015d).

5.12.1 Existing Conditions

The Shark River Hills neighborhood is located in Census Tract 8080.01 in Monmouth County. The table below presents population, demographic, and economic data for Census Tract 8080.01, Monmouth County, and the State of New Jersey. There are census blockgroups (areas within a census tract that typically have a population between 600 to 3,000 people) within 0.5 mile of the proposed project site where minorities make up more than 40 percent of the population (USEPA, 2015b).

Table 2: Population, Demographic and Economic Data

	Census Tract 8080.01	Monmouth County	State of New Jersey
Total population (2010)	4,157	630,378	8,791,936
Annual median household income	\$80,607	\$84,526	\$71,629
Residents below poverty level (2009)	2.5%	6.9%	9.4%
Minorities ¹	7.55%	27.06%	49.11%
Over 65	15.11%	13.8%	13.5%

¹Racial Minority = Black or African American alone, American Indian and Alaskan Native alone, Asian alone, Native Hawaiian and Other Pacific Islander alone, Some Other Race alone, Two or More Races, and Hispanic or Latino.

Source: (USBoundary.com, 2015) (US Census Bureau, 2015) (City-Data.com, 2015) (City-Data.com, 2013) (USBoundary.com, undated)

5.12.2 Potential Impacts and Proposed Mitigation

No Action Alternative

Under the No Action Alternative, local residents, including the minority and low-income populations, will continue to incur the costs of flooding events, due to the lack of protection from an adequate bulkhead.

Proposed Action

There would not be disproportionate adverse impacts on minority or low-income populations from the Proposed Action. All populations that live in the area and travel along South Riverside Drive would benefit from reducing repetitive flooding along South Riverside Drive.

5.13 AIR QUALITY

The Clean Air Act and its amendments require the EPA to establish national ambient air quality standards (NAAQS). The standards have been established to protect the public from potentially harmful amounts of pollutants. Under the Clean Air Act, the EPA establishes primary and secondary NAAQS. Primary air quality standards protect the public health, including the health of “sensitive populations, such as people with asthma, children, and older adults.” Secondary air quality standards protect the public welfare by promoting ecosystem health and preventing decreased visibility and damage to crops and buildings. The EPA has set NAAQS for the following six criteria pollutants: ozone (O₃), particulate matter less than 2.5 microns and less than 10 microns (PM_{2.5}, PM₁₀), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide, and lead. States have the authority to adopt stricter air quality standards and the NJDEP has established a State Implementation Plan for air quality, giving the agency the authority to implement and enforce emission standards for criteria pollutants statewide (NJDEP, 2015).

Areas that fail to meet the NAAQS are considered “non-attainment areas”, while those areas that meet the NAAQS are considered “attainment areas.” When areas that were previously non-attainment are redesignated to attainment they are known as “maintenance areas.” The EPA may also give an area an air quality status classification (that is relative to the NAAQS) that ranges from marginal to extreme (USEPA, 2015a). The General Conformity Final Rule (40 CFR Part 51) specifies criteria or requirements for conformity determinations for Federal projects. The General Conformity Rule ensures that the actions taken by Federal agencies in nonattainment and maintenance areas do not interfere with a state’s plans to meet national standards for air quality.

There is scientific consensus that some human activities, such as fuel combustion, are changing the weather, climate, and chemical composition of the Earth’s atmosphere through the accumulation of trace greenhouse gases (GHGs). GHGs include water vapor, carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons. The New Jersey *Global Warming Response Act*, enacted by the State of New Jersey in 2007, establishes statewide GHG reduction goals (New Jersey Senate and General Assembly, 2007).

5.13.1 Existing Conditions

The USEPA considers Monmouth County to be a marginal non-attainment area for ozone, and to be a maintenance area for CO and PM_{2.5}. However, the county is in attainment for all other criteria pollutants (USEPA, 2015c).

5.13.2 Potential Impacts and Proposed Mitigation

No Action Alternative

Under the No Action Alternative, there would be no impact on air quality because no construction would occur.

Proposed Action

Under the Proposed Action, short-term impacts to air quality in the project area are expected during construction primarily from vehicle and heavy equipment operation emissions and fugitive dust. Construction contractors would cover material transport trucks with tarps and water down construction areas to suppress dust when necessary. Emissions from fuel-burning internal combustion engines (e.g., heavy equipment) could temporarily increase the levels of some of the criteria pollutants, including CO, NO₂, O₃, PM₁₀, and non-criteria pollutants such as volatile organic compounds. To reduce the emission of criteria pollutants from equipment operation, fuel-burning equipment idling and running times would be kept to a minimum and engines would be properly maintained. Since the proposed project is in a non-attainment and maintenance area for some criteria pollutants, FEMA has completed a general conformity applicability analysis, as per the General Conformity Rule (see *Appendix E*). The general conformity applicability analysis showed that emissions would be well below conformity thresholds for criteria pollutants (as specified in 40 CFR 93.153); therefore, a conformity determination is not needed.

FEMA anticipates that this project will have no long-term impacts and neutral-no net changes to air quality conditions in the local community because there would be no emission sources at the proposed project location post-construction.

Because there would be no stationary emission sources at the proposed project location post-construction, climate change contributions from the Proposed Action would be temporary. When compared to the entire GHG contributions of human activities in the Township of Neptune, GHG emissions from the proposed project would be negligible.

5.14 CONTAMINATED MATERIALS

Hazardous substances are defined as any solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes, that pose a substantial present or potential hazard to human health or the environment. Hazardous substances are primarily generated by industry, hospitals, research facilities, and the government. Improper management and disposal of hazardous substances can lead to pollution of groundwater or other drinking water supplies, and the contamination of surface water and soil. The primary Federal regulations for the management and disposal of hazardous substances are the Comprehensive Environmental Response, Compensation and Liability Act and the Resource Conservation and Recovery Act.

5.14.1 Existing Conditions

There are no active hazardous waste sites near the project area or in the Shark River Hills neighborhood (USEPA, 2015b; NJDEP, 2013a). A review of the NJDEP New Jersey Landfill List reveals that there are no landfills in the neighborhood or near the project site (NJDEP, 2014).

5.14.2 Potential Impacts and Proposed Mitigation

No Action Alternative

Under the No Action Alternative, no construction would occur and there would be no impact from hazardous materials or waste.

Proposed Action

Under the Proposed Action, no hazardous materials or waste impacts are anticipated. Any hazardous materials discovered, generated, or used during construction would be handled and disposed of in accordance with applicable local, State, and Federal regulations.

5.15 NOISE

Noise is generally defined as unwanted sound. Sound is most commonly measured in decibels (dB) on the A-weighted scale, which is the scale most similar to the range of sounds that the human ear can hear. The Day-Night Average Sound Level (DNL) is an average measure of sound. The DNL descriptor is accepted by Federal agencies as a standard for estimating sound impacts and establishing guidelines for compatible land uses. EPA guidelines, and those of many

other Federal agencies, state that outdoor sound levels in excess of 55 dB DNL are “normally unacceptable” for noise-sensitive land uses such as residences, schools, or hospitals.

Under Chapter III, Section 3-2 “Noise from Construction” of the Township of Neptune’s ordinances, construction is prohibited before 8:00 a.m. and after 7:00 p.m. Monday through Saturday. Heavy equipment or power equipment may not be used on Sunday (Township of Neptune, undated).

5.15.1 Existing Conditions

The project site is located in a low to moderate density neighborhood where ambient noise levels are typical of a residential area and may include vehicle traffic and barking dogs.

5.15.2 Potential Impacts and Proposed Mitigation

No Action Alternative

Under the No Action Alternative, no construction would occur and there would be no impact to noise levels.

Proposed Action

Under the Proposed Action, short-term increases in noise levels are anticipated during the construction period. To comply with the Township of Neptune’s noise ordinances, the use of heavy and/or power equipment for construction would not occur before 8:00 a.m. or after 7:00 p.m. Monday through Saturday or on Sundays. Construction vehicles and equipment used at the proposed project site would meet all local, State, and Federal noise regulations. No long-term increases in noise levels would occur.

5.16 TRAFFIC

5.16.1 Existing Conditions

The proposed project site is along South Riverside Drive, which provides access to local residences. There are eight neighborhood roads that are connected to South Riverside Drive starting from Sylvan Drive to Milford Road (see Figure 1, *Appendix A*). Eighteen residences are accessed directly from South Riverside Drive .

5.16.2 Potential Impacts and Proposed Mitigation

No Action Alternative

Under the No Action Alternative, the ability for residents to access their homes would be hindered by road closures and detours. Therefore, long-term adverse impacts on traffic would continue to occur.

Proposed Action

During the construction period, there would be minor temporary impacts on traffic flow in and around the project area due to additional construction-related vehicles accessing the project site

(e.g., haul trucks, construction worker vehicles, and heavy equipment transport trucks). Appropriate signage would be posted along South Riverside Drive to alert traffic of slow-moving vehicles and equipment entering and exiting the project site. Construction vehicles and equipment would be stored in nearby vacant lots to the extent practicable during project construction to reduce the amount of vehicles and equipment travelling to/from the project site to mitigate potential traffic delays. A portion of the traffic lane of South Riverside Drive that is closest to the shore would be temporarily closed during construction; however, the closure would take place only during working hours (typically, the entire roadway would be open by 5:00 p.m., but may be as late as 7:00 p.m., and would remain open until 8:00 a.m.). The other lane would remain open to local traffic throughout the duration of the project with the use of flaggers and traffic safety officers. There would be long-term beneficial impacts on traffic due to the reduction of flooded roadways.

5.17 INFRASTRUCTURE

5.17.1 Existing Conditions

The proposed project site is in close proximity to utilities and roadways along South Riverside Drive.

5.17.2 Potential Impacts and Proposed Mitigation

No Action Alternative

The No Action Alternative would have a long-term adverse impact on infrastructure because the roadways and utilities would continue to incur damages from frequent flooding.

Proposed Action

Under the Proposed Action, there would be a long-term beneficial impact on infrastructure because the proposed bulkhead and outfall valves would minimize flooding that damages roadways and utilities.

5.18 PUBLIC HEALTH AND SAFETY

Safety and security issues considered in this EA include the health and safety of area residents and the public at large as well as the protection of personnel involved in activities related to the construction of the proposed project. EO 13045 (Protection of Children) requires Federal agencies to identify and assess environmental health and safety risks that may disproportionately affect children.

5.18.1 Existing Conditions

The Shark River Hills neighborhood currently floods two to three times per month, which results in damages to structures, roadways, and utilities, posing a risk to the health and safety of the local residents.

5.18.2 Potential Impacts and Proposed Mitigation

No Action Alternative

Under the No Action Alternative, risks to public health and safety from road closures and detours during flood events, as well as flood damages to roads and structures would continue.

Proposed Action

Under the Proposed Action, no impact to public health or safety is anticipated. To minimize risks to construction workers, all construction activities would be performed by qualified personnel trained in the proper use of equipment, including all appropriate safety precautions. Additionally, project-related activities would be conducted safely in accordance with the standards specified in the Occupational Safety and Health Administration regulations. The Subgrantee would be required to have appropriate signage and barriers in place prior to construction to alert pedestrians, residents, and motorists along South Riverside Drive of project activities.

5.19 CLIMATE CHANGE

According to the EPA, “climate change refers to any significant change in the measures of climate lasting for an extended period of time.” These changes may involve temperature, precipitation, or wind patterns, or more. EPA also states that humans are largely responsible for these climate changes, primarily through the emission of greenhouse gases from the production of energy and other processes. EPA is working to reduce climate change impacts by regulating greenhouse gas emissions and helping communities to adapt to the changing environment (USEPA, 2014).

5.19.1 Existing Conditions

Climate change could potentially increase temperatures across the country, cause more severe weather events to occur, and cause sea levels to rise. Increases in severe weather events and rises in sea levels could cause more frequent flooding in the Shark River Hills neighborhood.

5.19.2 Potential Impacts and Proposed Mitigation

Neither the **No Action Alternative** nor the **Proposed Action** would impact or be significantly or uniquely impacted by climate change. As noted in Section 5.13, the project area is located in a nonattainment area for air quality; however, emissions associated with the project would be from construction activities and therefore temporary. The proposed bulkhead and outflow valves would reduce the flood damage risk and address sea-level rise concerns in the project area.

5.20 CUMULATIVE IMPACTS

According to CEQ regulations, cumulative impacts represent the “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.7). In

accordance with NEPA and to the extent reasonable and practical, this EA considers the combined effect of the Proposed Action and other actions occurring or anticipated to occur in the vicinity of the proposed project site.

The Subgrantee's other recent projects near the proposed project site include a drainage basin and two bulkhead installation projects similar to this Proposed Action. Many of New Jersey's coastal neighborhoods have also been involved in reconstruction projects related to the damage caused by Hurricane Sandy in 2012. Together, these projects and the Proposed Action would have temporary, minor impacts on soils, water quality, vegetation, wildlife and fisheries habitat, air quality, noise, and traffic. However, no cumulative impacts would occur. These impacts are consistent with those described for the Proposed Action analysis in this EA, and would be mitigated through implementation of BMPs and following local, State and Federal regulations.

The Proposed Action, in conjunction with these projects, would have long-term beneficial impacts on floodplains, socioeconomics, traffic, infrastructure and public health and safety by minimizing damages to infrastructure and utilities (subsequently reducing maintenance and repair costs for homeowners and the municipality) and reducing hazards to public health and safety.

SECTION SIX PERMITS AND PROJECT CONDITIONS

The Subgrantee is responsible for obtaining all applicable Federal, State, and local permits for project implementation prior to construction, and for adhering to all permit conditions. Any substantive change to the Proposed Action would require re-evaluation by FEMA for compliance with NEPA and other laws and executive orders. The Subgrantee must adhere to the following conditions during project implementation. Failure to comply with these conditions may jeopardize Federal funds:

1. Any proposed construction in the floodplain will need to be coordinated with the local floodplain administrator and must comply with Federal, State, and local floodplain laws and regulations.
2. Any required permits, licenses, or approvals shall be obtained prior to construction, including, if applicable, the following list of permits and approvals:
 - CWA Section 402/NJPDES Permit, NJDEP Division of Water Quality
 - CWA Section 404 Permit, USACE
 - CWA Section 401 Water Quality Certification, NJDEP DLUR
3. Excavated soil and waste materials will be managed and disposed of in accordance with applicable Federal, State, and local regulations.
4. The Subgrantee shall be responsible for obtaining any applicable certifications or permits in accordance with the Soil Erosion and Sediment Control Act (N.J.S.A. 4:24 -39 et seq.) and Stormwater Management Rules (N.J.A.C. 7:8) prior to start of construction. Copies of certifications or permits must be provided to FEMA and New Jersey Office of Emergency Management at or before grant project closeout per grant administrative procedures to be identified by the New Jersey Office of Emergency Management. For more information contact the: FREEHOLD SOIL CONSERVATION DISTRICT at 4000 Kozloski Road, Freehold, NJ 07728; (732)-683-8500; fax (732)-683-9140; info@freeholdscd.org. The following website has general information about Soil Erosion & Sediment Control Plan requirements, as well as Stormwater Permits for new site construction: <http://www.nj.gov/agriculture/divisions/anr/nrc/njdep.html>
5. The Subgrantee (and its contractors) shall stage equipment on impervious surfaces to the extent practicable including local roadways and planned staging areas to limit ground disturbance.
6. The Subgrantee (and its contractors) must avoid unnecessary clearing of vegetation.
7. Any fill material shall be brought from offsite and must be from a commercial supplier or other permitted source and meet the definition of clean fill at N.J.A.C. 7:26E- 1.8 and per guidance available at www.nj.gov/dep/srp/guidance/srra/fill_protocol.pdf.
8. In the event that unmarked graves, burials, human remains, or archaeological deposits are uncovered, the Subgrantee and its contractors will immediately halt construction

activities in the vicinity of the discovery, secure the site, and take reasonable measures to avoid or minimize harm to the finds. Personnel should take all reasonable measures to avoid or minimize harm to the archaeological find(s) and/or avoid or minimize further unanticipated effects. The person or persons encountering such properties or effects will immediately notify the Subgrantee at 908-359-5783 and the Subgrantee will immediately notify the SHPO at 609-984-6019, the FEMA Environmental/Historic Preservation section at 212-680-8677 or 917-561-3292, and the Grantee at 609-963-6900 ext. 6208. The Sub-grantee will immediately contact the County Medical Examiner who will determine if the nature of the human remains is a recent forensic case or pre-contact/historic human remains. The Grantee must determine appropriate legal measures under New Jersey Cemetery law (N.J.S.A. 45:27-23.c). For the protection of the potential burials, information regarding the discovery shall not be disclosed to others except for individuals who have a need to know (e.g., site managers). The Subgrantee will produce digital photographs, which can be transmitted electronically, and which will be sent to FEMA and SHPO. These photos are for use by the agencies only for identification purposes and will not be duplicated or shared. FEMA and SHPO will then determine if the discovery warrants additional examination. If so, the signatories and invited signatories will consult to determine the appropriate course of action from that point forward in accordance with Federal, tribal, State, and local laws. In addition, The Delaware Nation, the Delaware Tribe of Indians, the Eastern Shawnee Tribe of Oklahoma and the Shawnee Tribe of Oklahoma will be notified by FEMA regarding any inadvertent archaeological discovery. Construction in the area of such sites or effects shall not resume until the requirements of 36 CFR §800.13(b)(3) have been met. At all times human remains shall be treated with the utmost dignity and respect. Reversible actions such as careful obscuring and/or securing the burial(s) through backfilling of soils or other means shall be undertaken. The location shall be immediately secured and protected from damage and disturbance. In the case of pre-contact or historic human remains, it may be necessary to have a guard or police officer on site 24/7 until permission has been granted to remove the human remains to ensure they are adequately protected. Under no circumstances should the human remains or any associated artifacts be disturbed or removed until appropriate consultation has taken place and a plan of action has been developed.

9. As of July 11, 2014, the entire State of New Jersey is currently quarantined for the invasive insect Emerald Ash Borer (EAB). Since the proposed project is located in an EAB quarantine zone, it is required that any woody tree and shrub material to be removed for the Proposed Action be chipped on site to chips of less than one inch in two dimensions or not be transported whole outside the community in order to adhere with EO13112 Invasive Species and Federal regulations at 7 CFR Part 301.53-1 through 301.53-9. Invasive insects can devastate the forests of the northeast and it is recommended that communities in the northeast treat or handle wood materials in place to minimize the spread of these non-native insects. For more information concerning this

environmental stewardship requirement, visit USDA-APHIS, New Jersey State Department of Agriculture, and other websites concerning EAB:

- www.aphis.usda.gov/plant_health/plant_pest_info/emerald_ash_b/
- <http://www.nj.gov/agriculture/divisions/pi/prog/emeraldashborer.html>
- <http://www.nj.gov/dep/njisc/>

10. It is recommended that the Subgrantee restore disturbed construction areas of the site with native seed and/or plant species to minimize soil erosion and sedimentation, as well as enhance environmental habitat quality of project area. It is recommended that disturbed soil areas be planted with native plant material, as soon as practicable after exposure, to avoid or minimize growth of undesired and potentially invasive plant species that can potentially take hold without competition of native plant materials.
11. Occupational Safety and Health Administration standards shall be followed during construction to avoid adverse impacts to worker health and safety.
12. Subgrantee shall not initiate construction activities until fifteen (15) days after the date that the FONSI has been signed as “APPROVED.”

SECTION SEVEN PUBLIC INVOLVEMENT

In accordance with NEPA, this EA will be released for a 30-day public review and comment period. Availability of the document for comment will be advertised in the Asbury Park Press newspaper. A hard copy of the EA will be available for review at:

Township of Neptune Municipal Office
25 Neptune Boulevard
Neptune, NJ 07753
Hours: Monday through Friday 8:00 a.m. – 5:00 p.m.

An electronic copy of the EA is available for download from the FEMA website at www.fema.gov/resource-document-library.

This EA reflects the evaluation and assessment of the Federal government, the decision-maker for the Federal action; however, FEMA will take into consideration any substantive comments received during the public review period to inform the final decision regarding grant approval and project implementation. The public is invited to submit written comments by mail to FEMA Region II, Environmental Planning & Historic Preservation, Attn: Neptune Riverside Project, 26 Federal Plaza, 13th Floor, New York, NY 10278 or E-mail to: FEMAR2COMMENT@fema.dhs.gov.

The EA evaluation resulted in the identification of no unmitigated significant impacts to the human environment. Obtaining and implementing permit requirements along with appropriate best management practices would avoid or minimize potential adverse effects associated with the

alternatives considered in this EA to below the level of a significant impact. Substantive comments received will be evaluated and addressed as part of Final Environmental Assessment documentation prior to the anticipated issuance of a Finding of No Significant Impact (FONSI) by FEMA. If no substantive comments are received during the public review and comment period, this EA will be adopted as Final with issuance of the FONSI.

The following will receive a copy of the EA:

Township of Neptune
25 Neptune Boulevard
Neptune, NJ 07753

The following will receive notice of the EA's availability:

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SECTION EIGHT CONCLUSION

FEMA, through the NEPA process, has found that the Proposed Action to install a new bulkhead and outfall valves along South Riverside Drive in the Township of Neptune, NJ, is a practicable alternative that would not significantly adversely impact the human environment.

During the construction period, short-term minor impacts to soils, water quality, vegetation, wildlife and fisheries habitat, air quality, noise and traffic would be anticipated. Short-term impacts would be mitigated using BMPs, such as silt fences, proper equipment maintenance, and appropriate signage. There would be long-term minor impacts on visual resources. The environmental impacts as a result of the bulkhead and valves installation would be outweighed by the long-term positive benefits that the Proposed Action would provide the residents. The project would achieve flood damage risk reduction for 61 residences in the Shark River Hills neighborhood, 38 of which are National Flood Insurance Program-insured properties.

SECTION NINE LIST OF PREPARERS

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SECTION TEN REFERENCES

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