APPENDIX B

FEMA 8-STEP PROCESS FOR WETLANDS AND FLOODPLAINS

EO 11988 & EO 11990 Eight-Step Decision Making Process Summary
South Riverside Drive Outfall Valve and Bulkhead Project, Neptune, NJ

Construction Project

PDMC-PJ-02-NJ-2011-005

Executive Order 11988 (Floodplain Management) and Executive Order 11990 (Protection of Wetlands) require Federal agencies "to avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of the floodplains/wetlands and to avoid direct or indirect support of floodplains/wetland development wherever there is a practicable alternative." The Federal Emergency Management Agency (FEMA)'s implementing regulations are contained in 44 CFR Part 9, which includes an Eight-Step Decision Making Process for compliance with this part.

This Eight-Step Decision Making Process is applied to the proposed South Riverside Drive Outfall Valve and Bulkhead Project. The Township of Neptune, Monmouth County, New Jersey (Subgrantee), requested funding from the FEMA Hazard Mitigation Assistance, Pre-Disaster Mitigation-Competitive grant program to mitigate flooding in the Shark River Hills neighborhood. 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).

The Subgrantee proposes to construct a new bulkhead and install nine outfall valves along South Riverside Drive from Milford Road south to Sylvan Drive. The bulkhead 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 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 water line. Refer to *Figures 1 and 2 of the Environmental Assessment (EA)* associated with this project.

Steps one through eight in this decision making process per 44 CFR Part 9.5(d) are as follows:

Step 1 **Determine if the proposed action is located in, affects or is affected by the Floodplain or Wetland.**

According to the Flood Insurance Rate Map for the project area (Community Panel Numbers 34025C0341F and 4025C0333F, effective on 09/25/2009, revised Preliminary 01/31/2014), the proposed project site is in 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 (see *Figure 3 of the EA* prepared for this project), 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. "VE" designates a coastal flood zone with a velocity hazard due to wave action. "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 U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory, Shark River waters are considered Waters of the United States (WOUS) and are classified in accordance with Cowardin (et. al., 1979) as estuarine, subtidal, unconsolidated bottom with a subtidal water regime. 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. As shown on *Figure 4 of the EA* prepared for this project, there are tidal wetlands in the project area waterward of the proposed bulkhead location. The upper wetland boundary line, which indicates the limit of tidal wetlands as mapped by New Jersey Department of Environmental Protection (NJDEP) and regulated under the NJ Tidal Wetlands Act of 1970 (N.J.S.A. 13:9), is along the shoreline of the Shark River at the proposed bulkhead location. Tidal wetlands and open waters would also be regulated by U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act. During the Land Use permitting phase, necessary permits to authorize project construction will be obtained by the municipality. A compensatory mitigation plan would be developed for any unavoidable wetland impacts.

Step 2 **Early public notice (Preliminary Notice)**

The project specific public notice is integrated with the Notice of Availability of the EA, which will be published in the local newspapers *The Ashbury Park Press* and *The Coaster*. The public notice will invite comments within 30 days of the publication date of the notice.

Step 3 **Identify and evaluate alternatives to locating in the base floodplain and wetland.**

44 CFR 9.9 (b) requires that FEMA "identify and evaluate practicable alternatives to carrying out a proposed action in floodplains or wetlands," including:

1) Alternative sites outside the floodplain or wetland;
2) Alternative actions which serve essentially the same purpose as the proposed action, but which have less potential to affect or be affected by the floodplain or wetlands; and

3) No action. The floodplain and wetland site itself must be a practicable location in light of the factors set out in this section.

Factors to consider in determining practicable alternatives include:

1) Natural environment (topography, habitat, hazards, etc.);
2) Social concerns (aesthetics, historical and cultural values, land patterns, etc.);
3) Economic aspects (cost of space, construction, services and relocation);
4) Legal constraints (deeds, leases, etc.); and
5) Engineering.

The Alternatives analyzed in further detail in the EA included a No Action Alternative and Proposed Action Alternative. The EA also discussed Alternatives Considered and Dismissed in Section 4.1. The following is a brief summary of the three categories of alternatives:

1) No Action Alternative – The existing, dilapidated bulkhead would remain and the neighborhood would continue to be at risk to future flooding events.

2) Proposed Action Alternative – The proposed project is to construct a new bulkhead and install nine new outfall valves along South Riverside Drive to reduce flood damage risk for the Shark River Hills neighborhood and to minimize potential road closures that currently occur due to the flooding.

3) Alternatives Considered and Dismissed – Alternatives included constructing a new bulkhead approximately 35 feet offshore in the same place as the existing deteriorated bulkhead. This alternative was dismissed to avoid construction of a new offshore bulkhead alignment in intertidal habitat areas. Another alternative initially considered was elevating South Riverside Drive and the adjoining properties, but this was dismissed due to excessive cost.

The No Action Alternative would allow neighborhood roads to continue flooding, 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 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.

The Proposed Action Alternative to construct a new bulkhead and install nine new outfall valves would minimize flooding in the Shark River Hills neighborhood and along South Riverside Drive. The bulkhead would extend approximately 2,000 linear feet along South Riverside Drive and would be installed approximately 20 feet away from South Riverside Drive and approximately 35

feet inland from the remnants of the deteriorated bulkhead. The bulkhead would be installed at approximately the mean high water line and would have a maximum elevation of 10 feet above mean sea level (amsl) (for reference, the roadway of South Riverside Drive is at an elevation of 5 feet amsl). 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. The Subgrantee would use a "living shorelines" concept of shoreline stabilization that 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 (DLUR).

Please refer to Section 4.2 of the EA for additional information on the proposed project description.

The Alternatives Considered and Dismissed included 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 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 NJDEP and 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.

Therefore, no practicable alternatives were identified to continued floodplain occupancy or the minor adverse impacts to wetland habitats involved with the Proposed Action Alternative.

Step 4 **Identify impacts of the proposed action associated with occupancy or modification of the floodplain and wetland.**

The Proposed Action would have beneficial floodplain management impacts for the community. The proposed new bulkhead and outfall valves would be constructed to provide flood damage risk reduction up to the 100-year flood event. The Proposed Action would reduce risk of future flood damage to residential properties and provide protection to infrastructure and utilities. The Proposed Action would not increase the frequency or depth of inundation to properties upstream or downstream of the project area and would be consistent with floodplain management regulations.

The project site is located within the New Jersey Coastal Management Program-designated coastal zone boundary. Project activities would be regulated under the Coastal Area Facilities Review Act. FEMA has prepared the NJDEP Application for Federal Coastal Consistency Determination and has determined that with implementation of avoidance measures and

appropriate agency coordination, the Proposed Action is consistent with applicable NJDEP coastal policies under the New Jersey Rules on Coastal Zone Management (N.J.A.C. 7:7E).

Construction of the new bulkhead would cause temporary adverse minor impacts to water quality in the Shark River from localized increases in turbidity. Tidal wetlands in the project area would be temporarily adversely affected during construction. Long-term beneficial impacts on tidal wetlands would occur because the new bulkhead would minimize the landward migration of the water's edge due to sea level rise, and because the Subgrantee would use a "Living Shorelines" concept of shoreline stabilization waterward of the new bulkhead. The Living Shorelines stabilization effort would consist of planting saltwater tolerant species at suitable elevations waterward of the bulkhead, which is a method promoted by the NJDEP DLUR. The plantings would likely consist of high tide bush (*Iva frutescens*) and salt meadow chordgrass (*Spartina patens).* Permanent adverse impacts to WOUS or tidal wetlands are not anticipated. During the Land Use permitting phase, necessary permits to authorize project construction would be obtained by the Subgrantee. A compensatory mitigation plan would be developed for any unavoidable wetland impacts.

Step 5 **Design or modify the proposed action to minimize threats to life and property and preserve its natural and beneficial floodplain and wetland values.**

In order to minimize the risk of future floodplain damage to the community and to comply with EO 11988 and the National Flood Insurance Program, FEMA must minimize potential harm to lives and the investment at risk from the base flood. The Proposed Action Alternative would provide flood damage risk reduction up to the 100-year level of protection.

Erosion and sediment control measures would be implemented to minimize sediment transport into marine waters. Spill prevention and control best management practices would be used to minimize potential for a spill of pollutants, such as fuel, into marine waters and associated water quality impacts. Bulkhead installation would be conducted at low tide to the extent practicable to minimize 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.

The Subgrantee would obtain a Clean Water Act Section 401 Water Quality Certificate from the NJDEP DLUR and a Clean Water Act Section 404 permit from the USACE prior to construction.

Step 6 **Re-evaluate the proposed action.**

After evaluating alternatives including impacts and minimization opportunities, as set forth by factors described in 44 CFR Part 9.9(c) and documented in Step 3 of this Eight-Step Review, FEMA determined that the Proposed Action Alternative was a practicable alternative. The No Action Alternative would not meet the project purpose and need. FEMA also determined that constructing the new bulkhead approximately 35 feet offshore in the same place as the existing deteriorated bulkhead was not an acceptable alternative, because it would have been constructed in intertidal habitat areas and would have adversely impacted tidal wetland and floodplain habitat. Therefore, the currently proposed location of the new bulkhead under the Proposed Action Alternative would minimize impacts on wetlands and tidal habitats when compared to the initial design.

The public benefits of the project outweigh the risk of investment into the bulkhead and valve installation project. Future flood damage risk would be reduced up to the 100-year flood event with installation of the proposed bulkhead.

Step 7 **Final Public Notice**

FEMA's determination is documented in this summary. This Eight-Step Review as part of the project's EA will be made available for public review and comment with a project-specific public notice. The Final Public Notice will be integrated with the anticipated Finding of No Significant Impact statement for the EA.

Step 8 **Implement the action.**

The project will be constructed in accordance with the proposed scope of work, applicable Federal and State permit requirements and per conditions of the Federal grant. The Subgrantee is responsible for review of the final construction plans and will need to ensure compliance with all applicable Federal, State, and local codes and standards. The Subgrantee will need to obtain all required permits as a condition of the Federal grant to protect the environment, and to minimize risk and harm to life and property. The Subgrantee will submit copies of obtained permits and certification from the local floodplain administrator in accordance with 44 CFR 65.10 to FEMA at or before final project closeout documentation submission.