LIST OF ACRONYMS

- ABFE Advisory Base Flood Elevation
- ACS American Community Survey
- APE Area of Potential Effect
- ARC Access to the Region's Core
- ARTP Archaeological Resource Treatment Plan
- ASD Acceptable Separation Distance
- Asl Above sea level
- AST Above-ground storage tank
- AVE Area of Visual Effect
- BCR Benefit-Cost Ratio
- BFE Base Flood Elevation
- Bgs Below ground surface
- BMP Best Management Practice
- Bpf Blows per foot
- CAA Clean Air Act
- CAAA Clean Air Act Amendments
- CAFRA Coastal Area Facility Review Act
- CAG Citizen Advisory Group
- CALTRANS California Department of Transportation
- · CARB California Air Resources Board
- CBD Central Business District
- CDC Centers for Disease Control and Prevention
- CDBG-DR Community Development Block Grant Disaster Recovery
- CEA Classification Exception Area
- CEQ Council on Environmental Quality

- CFR Code of Federal Regulations
- CMU Concrete masonry unit
- COE Certification of Eligibility
- COP Citizen Outreach Plan
- CPP Citizen Participation Plan
- CRS Community Rating System
- CSO Combined Sewer Overflow
- CWA Clean Water Act
- CZMA Coastal Zone Management Act
- dB Decibel
- dBA A-weighted decibel
- DEIS Draft Environmental Impact Statement
- DLUR Division of Land Use Regulation
- DLWRR Delaware, Lackawanna and Western Railroad
- DO Dissolved Oxygen
- DOE Determination of Eligibility
- DSD Delay Store and Discharge
- EDR® Environmental Data Resources, Inc.
- · EFH Essential Fish Habitat
- EIS Environmental Impact Statement
- ENSP Endangered and Nongame Species Program
- EO Executive Order
- ESA Endangered Species Act
- ESC Executive Steering Committee
- ESCWG ESC Working Group

- FAQ Frequently Asked Question
- FEIS Final Environmental Impact Statement
- FEMA Federal Emergency Management Agency
- FFRMS Federal Flood Risk Management Standard
- FHWA Federal Highway Administration
- FIRM Flood Insurance Rate Map
- FIS Flood Insurance Study
- · FONSI Finding of No Significant Impact
- FRP Federal Review and Permitting
- FTA Federal Transit Administration
- FWCA Fish and Wildlife Coordination Act
- g/veh-mi Grams-per-vehicle-mile
- GARFO Greater Atlantic Regional Fisheries Office
- GCR General Conformity Regulations
- · GHG Greenhouse Gas
- GIS Geographic Information System
- Gpd Gallons per day
- · GWQS Ground Water Quality Standards
- HABS-HAER Historic American Buildings Survey Historic American Engineering Record
- HAPC Habitat Area of Particular Concern
- HASP Health and Safety Plan
- · HBLR Hudson Bergen Light Rail
- HEPSCD Hudson-Essex-Passaic Soil Conservation District
- HHA Hoboken Housing Authority

LIST OF ACRONYMS (CONT'D)

- HLSS High Level Storm Sewer
- HUC Hydrologic Unit Code
- HUDU.S. Department of Housing and Urban Development
- in/sec Inches per second
- IPaC Information for Planning and Conservation
- JCMUA Jersey City Municipal Utilities Authority
- KCS Known Contaminated Sites
- kW Kilowatt
- lbs/ft2 Pounds per square foot
- LCR Linear Construction Report
- Ldn A-weighted day-night equivalent sound level
- Leq Equivalent steady-scale sound level
- LF Linear feet
- · LOD Limits of Disturbance
- LOI Letter of Interpretation
- LSRP Licensed Site Remediation Professional
- LTCP Long Term Control Plan
- Lv Vibration velocity levels
- μg/m3 Micrograms per cubic meter
- MBTA Migratory Bird Treaty Act
- Mg/l Milligrams per liter
- · MGD Million gallon-per-day
- MHWS Mean High Water Spring
- MLUL Municipal Land Use Law
- · MLWS Mean Low Water Spring

- MMP Material Management Plan
- MMPA Marine Mammal Protection Act
- MS4 Municipal Separate Storm Sewer System
- NAAQS National Ambient Air Quality Standards
- · NAC Noise Abatement Criteria
- NAVD North American Vertical Datum
- NEPA National Environmental Policy Act
- NFIP National Flood Insurance Program
- NHP Natural Heritage Program
- NHPA National Historic Preservation Act
- NHSA North Hudson Sewerage Authority
- NJAC New Jersey Administrative Code
- NJCU New Jersey City University
- NJDCA New Jersey Department of Community Affairs
- NJDEP New Jersey Department of Environmental Protection
- NJHPO New Jersey Historic Preservation Office
- NJPDES New Jersey Pollutant Discharge Elimination System
- NJSM New Jersey State Museum
- NJTPA North Jersey Transportation Planning Authority
- NMFS National Marine Fisheries Service
- NOAA National Oceanic and Atmospheric Administration
- NOHRHC Noise Ordinance of the Hudson Regional Health Commission
- · NOI Notice of Intent
- NRCS Natural Resource Conservation Service
- NWI National Wetlands Inventory

- NYCDEP New York City Department of Environmental Protection
- PA Programmatic Agreement
- PAH Polycyclic aromatic hydrocarbon
- PANYNJ Port Authority of New York and New Jersey
- PATH Port Authority Trans Hudson
- PCBs Polychlorinated Biphenyls
- PEM Palustrine emergent wetland
- PIL Project Initiation Letter
- PPM Parts Per Million
- PPT Parts Per Thousand
- PPV Peak particle velocity
- R-EMAP Regional Environmental Monitoring and Assessment Program
- RAO Response Action Outcome
- RBD Rebuild by Design
- RBD-HR Rebuild by Design-Hudson River
- RCNM Roadway Construction Noise Model
- REC Recognized Environmental Condition
- RM River Mile
- RMS Root mean square
- ROD Record of Decision
- ROSI Recreational and Open Space Inventory
- ROW Right-of-Way
- RQD Rock Quality Designations
- RSIS Residential Site Improvement Standards
- SAF Simple Attenuation Formula

LIST OF ACRONYMS (CONT'D)

- SAMP Sampling, Analysis, and Monitoring Plan
- SAV Submerged Aquatic Vegetation
- · SDWA Safe Drinking Water Act
- SEL Sound Exposure Level
- SF Square feet
- SFHA Special Flood Hazard Area
- SHPO State Historic Preservation Office
- SOW State Open Water
- SPT-N Standard Penetration Test
- SRIRC Sandy Regional Infrastructure Resilience Coordination
- SSA Sole Source Aquifer
- SWPPP Storm Water Pollution Prevention Plan
- TCT Technical Coordination Team
- TES Technical Environmental Study
- TMDL Total Maximum Daily Load
- ULSF Ultra-low sulfur fuel
- USACE United States Army Corps of Engineers
- USEPA United States Environmental Protection Agency
- USFWS US Fish and Wildlife Service
- UST Underground storage tank
- VdB Unit of vibration velocity level
- VIA Visual Impact Assessment
- VRAP Visual Resources Assessment Procedure
- WMA Watershed Management Area

- WOH Weight-of-Hammer
- WOR Weight-of-Rod
- WWTP Wastewater Treatment Plant

GLOSSARY / DEFINITIONS

- 10-year Storm Surge a storm surge event of a particular magnitude that has
 10 percent chance of occurring in any given year.
- 50-year Storm Surge a storm surge event of a particular magnitude that has a two percent chance of occurring in any given year.
- 100-year Floodplain a flood event that has a one percent chance of occurring in any given year.
- 100-year Storm Surge a storm surge event of a particular magnitude that has
 a one percent chance of occurring in any given year.
- 500-year Floodplain a flood event that has a 0.2 percent chance of occurring in any given year.
- 500-year Storm used to define the rainfall event that has a 0.2 percent chance of happening in any given year.
- Adaptive Management Project implementation techniques that allow for improvements and/or modifications based on lessons learned.
- A-Weighted Day-Night Equivalent Sound Level (Ldn) a 24-hour continuous noise level average used to characterize the noise within an environment. 10 dB is added to all noise levels between the hours of 10:00 PM and 7:00 AM to account for the extra sensitivity people have to noise during typical sleeping hours.
- Airshed a designated section of the atmosphere that generally behaves and disperses emissions as a unit.
- Area of Potential Effect (APE) the geographic area within which the proposed project may directly or indirectly cause changes in the character or use of National Register-listed or eligible properties, if any such properties exist.
- Base Flood Elevation (BFE) The elevation of surface water resulting from a
 flood that has a one-percent chance of equaling or exceeding that level in any
 given year. The BFE is shown on the Flood Insurance Rate Map (FIRM) for
 zones AE, AH, A1-A30, AR, AR/A, AR/AE, AR/A1- A30, AR/AH, AR/AO, V1V30 and VE.
- Benefit Cost Ratio (BCR) metric used to compare the total benefit of an alternative with the total associated costs in order to determine the most optimal choice.

- Berm a raised strip of land, constructed with natural materials such as soil
 and planted grass or artificial materials such as wooden beams or gravel,
 along a waterway that is implemented in order to prevent flooding.
- Boardwalk Levees a raised walkway along an embankment designed to prevent the overflow of a river.
- Citizen Advisory Group (CAG) a group of residents, community leaders, and public officials that meets regularly to represent community interests and contribute valuable information about the location, design, and implementation of proposed project components.
- Coastal 'AE' Zone areas where base flood elevations have been determined, typically located inland where the potential for additional hazards due to wind and wave action is smaller.
- Coastal Flooding flooding that occurs when low lying land is inundated by seawater due to unusually high tide or storm surge.
- Coastal High Hazard Area 'VE' Zone Special Flood Hazard Areas (SFHAs)
 along the coasts that have additional hazards due to wind and wave action.
- Coastal Zone as defined by the Coastal Zone Management Act, includes
 coastal waters extending to the outer limit of state submerged land title and
 ownership, adjacent shorelines and land extending inward to the extent
 necessary to control shorelines.
- Cofferdam a tightly enclosed area pumped dry to allow construction work to be down below the water line.
- Combined Sewer Overflow (CSO) occurs during a heavy rainfall event when
 combined sewer pipes are filled to capacity with storm water but the need for
 sanitary sewer storage remains. This results in an overflow of mixed sewerage
 and storm water out of the sewer outfalls and into public waterways. The water
 can also overflow up out through storm drains onto streets and sidewalks,
 attributing to increased flooding and posing a potential public health risk.
- Combined Sewer System a type of urban plumbing that uses the same infrastructure (pipes) for stormwater as sanitary sewerage.
- Constructed Wetlands artificial wetlands designed to increase water storage
 and filtration within an urban or suburban area. They are often designed to
 mimic the function of natural wetlands in order to obtain more natural flow
 regimes, prevent flooding, and decrease pollution from runoff.

- Cooperating Agency An agency that has been invited by the Lead Agency to consult on the project. A Cooperating Agency has jurisdiction over a particular law or special expertise with respect to any environmental issue. Per NEPA requirements, cooperating agencies are invited as early in the project as possible
- Curbside Treatments depressions along the side of a road against the curb built to retain stormwater in order to prevent flooding.
- Deployable Gate or deployable wall as defined by the US Army Corps of Engineers, structure similar to a floodwall constructed without a permanent base that is activated or rises to position due to buoyancy of its material when a flood is occurring in order to protect the area behind it from flooding.
- Earthen Levees embankments constructed by modifying or compressing earth along a waterway in order to prevent the waterway from overflowing into the adjacent area.
- Embankment an artificially raised area of land, such as a levee, designed to prevent flooding.
- Environmental Impact Statement (EIS) a detailed report under NEPA that federal agencies are required to prepare to assess the environmental impact of alternatives including the "No Build" alternative.
- Equivalent Steady-Scale Sound Level (Leq) a sound level that, during a specific period of time, contains the same acoustic energy as the time-varying sound level during that same period.
- Erosion the gradual degradation of soil due natural forces such as wind or water.
- Estuarine related to an estuary, or a coastal environment that connects to
 one or more freshwater rivers or streams, acting as a transition zone and
 comprised of both salt water and fresh water.
- Executive Steering Committee (ESC) The ESC includes the NJDEP project team members; the mayors and their staff from Hoboken, Weehawken, and Jersey City; and HUD. The ESC is to collaborate, exchange information, and provide a forum for committee members to provide input to the NJDEP throughout all phases of the Project, from NEPA and feasibility through construction.



GLOSSARY / DEFINITIONS (CONT'D)

- Five-year Rainfall Event a rainfall event of a specific magnitude that has a 20 percent chance of happening in any given year.
- Fixed Gates see in-water gate.
- Floodplain Any land area susceptible to being inundated by floodwaters from any source.
- Floodwalls or seawalls hard infrastructure barriers created to protect inland communities from rising flood waters.
- Force Main a water, sewage or stormwater main that pressurizes the water to convey it.
- Geotechnical Investigation sampling and testing of a site's substrate material conducted to provide information on soil taxonomy and chemistry as well as other site characteristics, such as depth to groundwater and bedrock.
- Green Infrastructure landscape design that incorporates features that enhance and restore the natural flow of water throughout an ecosystem.
- Green Roof vegetated area built on the roof of a building to maximize water retention, and can also incorporate other irrigation systems for diversion and reuse of collected excess water not used by plants.
- Grey Infrastructure traditional water resource management techniques such as pipes, tanks, water treatment plants, etc.
- Groundwater Recharge the hydrologic process where water flows from surface water down into the groundwater supply. Groundwater Recharge can happen naturally by means of gravity and topography, or artificially through canals and other irrigation or injection systems.
- Hard Infrastructure structures built with materials such as concrete or steel
 that are designed and implemented within a landscape or along a coast line to
 protect the community from flooding.
- Hollow Masonry Walls walls of mortar and brick, stone, granite, etc. designed with a hollow cavity to prevent moisture from entering the inside of the building.
- Hydroacoustic related to the study of sound in water.
- Impervious Surface groundcover which prevents the infiltration of water into the ground, such as concrete or asphalt.

- In-water Gate also known as a floodgate, a device that is situated in a
 waterway and can be opened or closed depending on risk of water level
 rise due to high tide or a storm in order to prevent flooding within a coastal
 community.
- Invasive Species an alien species (plants, animals, and microbes) not
 native to a particular geographic region that is likely to cause harm to the
 environment or to human health once introduced.
- Lead Agency the agency that supervises the preparation of an environmental impact statement.
- Linear Construction Project (LCR) as defined by NJDEP, a construction or development to create, maintain or alter a roadway, railroad or utility. LCRs include one or more contaminated properties and will generate more than 200 cubic yards of contaminated soil for fill or disposal during the duration of the project.
- Marshland a typically tidally-influenced, low-lying area that is inundated during wet seasons or high tide and remains saturated throughout the entire year.
- Mean High Water Line the average of all of the highest water lines recorded over the National Tidal Datom Epoch in a specific location.
- Migration Corridor the route traveled by mammals, fish, or birds that connects between their seasonal or spawning habitats.
- Minority Populations as defined by the U.S. Census Bureau, includes
 persons who identify themselves as African American, American Indian and
 Alaska Native, Asian alone, Native Hawaiian and Other Pacific Islander, some
 other race alone or two or more races. People who identify themselves as
 Hispanic may be of any race.
- Modeled Increases in Flood Depths used to describe areas on the unprotected side of the Resist feature that experience a measurable level of additional flooding as a result of the presence of the Resist feature as identified in the coastal storm modeling.
- Municipal Separate Storm Sewer Systems (MS4s) a water conveyance system owned by a city, town, or related public entity that routes stormwater (not combined with sanitary sewerage) from catchments or pipes and discharges it into a local waterbody.

- National Environmental Policy Act (NEPA) federal law that requires federal
 agencies to integrate environmental values into their decision making
 processes by considering the environmental impacts of proposed actions
 through the preparation of an environmental document.
- New Jersey Department of Environmental Protection (NJDEP) state
 agency responsible for preserving, sustaining, protecting, and enhancing the
 environment to ensure the integration of high environmental quality, public
 health, and economic vitality.
- Non-point Source Pollution degradation or contamination of the natural environment of which the root cause is not traceable, such as stormwater runoff, snow melt, or smog.
- O₃ Nonattainment as defined by the EPA, a designation given to an area not meeting the ground-level ozone standards established in 2015.
- Outcrops rock formations apparent at or above the surface of the ground.
- Outfall Pipes the end of a pipeline where the contained water is discharged into a stream, river, pond, ocean, or other waterbody.
- Participating Agency an agency that has been invited by the Lead Agency
 to participate in the project by providing input on methodologies, take part in
 coordination meetings, and provide comment on draft documents and reports.
- Particulate Matter very small liquid and solid particles suspended within the lower atmosphere that irritates the membranes of the respiratory system and therefore may affect sensitive groups including the elderly, individuals with cardiopulmonary disease such as asthma, and children.
- Permeable Ground groundcover which allows for the infiltration of water, such as loosely compacted soils, vegetated areas, or porous pavement.
- Pile Driving the mechanical process of forcing piles (or poles) into the ground in order to provide support for the foundation of buildings or other structures to be built.
- Pilings structures such as steel rods or sheets used for structural support at the foundation of a building, bridge, dam, or other structure.
- Planktonic describes organisms that are related to plankton in nature, i.e. passively floating or drifting within a waterbody.

GLOSSARY / DEFINITIONS (CONT'D)

- Point Source Pollution degradation or contamination of the natural environment that is traceable to an original source, such as effluent from a pipe or a hazardous waste spill.
- Purpose and Need states the project intentions at an early stage in the NEPA process. The purpose and need identifies why proposed action is necessary, provides explanation of project drivers, and constitutes the basis for the development of range of reasonable alternatives.
- Rain Garden an area of shallow surface depression that is covered in vegetation to allow rainwater and bypassing runoff to be absorbed into the soil and used by plants or infiltrated into the groundwater supply rather than contribute to flooding or pollution into waterways.
- Raised Bulkheads structure that aligns the coastline designed to protect the community from flooding due to high tide.
- Recharge Zone the area at which groundwater recharge occurs.
- Revetments artificial gradient along a coastline designed to keep coastal waters from breaching onto and flooding inland communities.
- Right-of-Way (ROW) the permissible passage of the public through a piece of land such as a sidewalk, pathway, or street.
- Rip-rap permanent strip of loosely packed angular stone or concrete placed along banks, slopes, or other erosion-prone coastal or low-lying areas to protect from scour.
- Riparian Buffer or riparian zone stretch of vegetated land adjacent to a body
 of water that provides many beneficial services that contribute the overall
 health of the aquatic ecosystem and water quality. For example, a riparian
 buffer will provide shade, filter pollutants from runoff, and provide habitat.
- Scoping Process part of the NEPA process, the public Scoping Process
 determines the scope of issues to be addressed and identification of the
 significant issues related to a proposed action. The Scoping Process begins
 with the publication of the Notice of Intent, and results in the publication of
 a Scoping Document that outlines a project's purpose and need, proposed
 actions, as well as a description of areas of impact to be studied in the
 environmental document.
- Sewershed the network of sewers, pipes, storm drains, and basins through

- which water flows in an urban environment until its ultimate destination at an outfall or stream.
- Sheet Piles deep foundation piles made from sheet metal molded into stacked structures to support the foundation of a building or other structure.
- Soft landscape refers to landscape design features that incorporate vegetated surfaces into an area in order to increase stormwater storage capacity and prevent the flow of excess runoff and flooding.
- Soil Boring a type of geotechnical investigation that uses a drill, bore, auger, or other tool to generate a core sample of the subsurface material.
- Sole Source Aquifers (SSA) regulated aquifers that have been designated by EPA as a sole source of drinking water.
- Special Flood Hazard Area (SFHA) An area having special flood, mudflow or flood-related erosion hazards and shown on a Flood Hazard Boundary Map (FHBM) or a Flood Insurance Rate Map (FIRM) Zone A, AO, A1-A30, AE, A99, AH, AR, AR/A, AR/AE, AR/AH, AR/AO, AR/A1-A30, V1-V30, VE or V.
 For the purpose of determining Community Rating System (CRS) premium discounts, all AR and A99 zones are treated as non-SFHAs.
- Storm Surge Abnormal rise of water during a storm that, combined with normal tides, is pushed by strong winds toward the coast. This water often breaches up onto normally dry land, which can result in severe flooding within a coastal community.
- Stormwater Infiltration Planters depressed structures, usually along sidewalks or the edges of roads, with open bottoms built to allow stormwater to infiltrate through a layer of vegetation or gravel and soil to groundwater.
- Stormwater Runoff the excess water during a heavy rainfall event or snowmelt that is left to flow throughout streets and sidewalks when storm drains have been filled to capacity and there is no available permeable surface area for infiltration. Guided by gravity and topography, it often contracts and transports pollutants in streets such as motor oils, nutrients from fertilizers, and human and animal waste and discharges them directly into nearby streams or rivers.
- Street Levees a functioning roadway built atop a constructed flood protection barrier.

- Subwatershed a smaller, localized section of hydrologic connectivity within an entire watershed.
- Systemic Inland Flooding flooding that occurs from heavy rainfall accumulated in an area of low elevation and inadequate storage capacity.
- Technical Coordination Team (TCT) a group of federal, state, and local
 officials with subject matter expertise in resilience, planning, environmental
 review and permitting in the Study Area. The TCT was formed by the Sandy
 Regional Infrastructure Resilience Coordination FRP Team to provide
 regulatory guidance throughout the course of the project.
- Terraced Berms gradual staircase-like breaks along the edge of a sloped landscape used to slow rise of water during a flood.
- Tidelands all lands that currently and formerly flowed by the mean high tide
 of a natural waterway.
- Topography natural surface features of a region, including its relief.
- Total Maximum Daily Load (TMDL) as defined by EPA and described in Section 303(d) of the Clean Water Act, TMDL is a pollution budget and includes a calculation of the maximum amount of a pollutant that can occur in a waterbody and allocates the necessary reductions to one or more pollutant sources.
- Upland refers to an area inland from a body of water or adjacent to a wetland, generally characterized by having an increased elevation as compared to the adjacent lowland or wetland.
- Vegetated Swale shallow channel constructed within the earth that is planted with a variety of vegetation in order to slow and infiltrate stormwater runoff to reduce flooding and pollution.
- View Corridors or viewsheds areas within the Study Area from which sight
 of the Hudson River and New York City are visible.
- Watershed a hydrologic network of rivers, streams, and lakes the covers a
 particular geographic area defined by the flow of water due to topography and
 gravity.
- Wetland areas of land that are saturated with surface water or groundwater with a frequency sufficient to support vegetative or aquatic life that requires saturated or seasonally saturated soil conditions.

