

**VA**



U.S. Department  
of Veterans Affairs

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## **NY HARBOR HEALTHCARE SYSTEM MANHATTAN CAMPUS**

**Narrative**

**HDR**

**DRAFT ENVIRONMENTAL ASSESSMENT FOR**  
FLOOD MITIGATION MEASURES  
Design and Construction of Perimeter Flood Wall

MANHATTAN, NEW YORK







# COVER SHEET

Draft Environmental Assessment Addressing Construction and Operation of a Floodwall at the Veterans Affairs Medical Center, Manhattan, New York

**Responsible Agencies:** United States Department of Veterans Affairs (VA)

**Affected Location:** VA Medical Center (VAMC) Manhattan, New York

**Report Designation:** Draft Environmental Assessment (EA)

**Abstract:**

The VA proposes to construct a floodwall flood protection system at the VAMC Manhattan. The floodwall would be constructed along the eastern and portions of the northern and southern boundaries of the VAMC Manhattan facility. Floodgates, a secant wall serving as seepage cutoff, internal storm water piping and storage, utility modifications, and internal drainage area pump stations are part of the flood protection system.

The purpose of the Proposed Action is to provide flood protection for the VAMC Manhattan from coastal flooding. The wall extent and height have been designed to provide protection from the 100 year flood (still water elevation plus design wave height and 1 foot of freeboard), and from the 500-year flood (still water elevation plus 2 feet of freeboard). Still water elevations are taken from Federal Emergency Management Agency (FEMA) coastal flood mapping data. The Proposed Action is needed to reduce flood risk and storm damage to the facility from hurricanes, storm surge, and other storm events that would cause East River waters to encroach on the VAMC Manhattan. The completed floodwall system would reduce the risk of damage to property from coastal flooding events that do not exceed the design criteria.

This EA has been prepared to evaluate the potential environmental impacts of the No Action Alternative and the Proposed Action (Preferred Alternative). The analyses presented in this EA indicate that implementation of the Proposed Action would not result in significant environmental impacts; therefore, a Finding of No Significant Impact (FONSI) would be prepared and an Environmental Impact Statement (EIS) would not be required. Resources that have been considered in the impact analysis include the following: aesthetics; land use and zoning; air quality; cultural resources; topography, geology, and soils; hydrology and water resources; wildlife and habitat; floodplains, wetlands, and coastal zone management; socioeconomic; community services; solid waste and hazardous materials; traffic, transportation, and parking; utilities; alternative energy sources; noise; environmental justice; shadows; cumulative impacts; and potential for generating substantial controversy.



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# EXECUTIVE SUMMARY

## INTRODUCTION

The Veterans Affairs Medical Center (VAMC) Manhattan provides services in acute medicine, surgery, acute psychiatry, neurology, and rehabilitation medicine. The campus houses a designated clinical care unit and a Research Center for Acquired Immune Deficiency Syndrome (AIDS) and Human Immunodeficiency Virus (HIV) infection. The VAMC Manhattan is located on the east side of Manhattan on a site bounded by First Avenue on the west, East 23<sup>rd</sup> Street on the south, Asser Levy Playground on the east, and East 25<sup>th</sup> Street on the north, approximately 450 feet from the East River and is within the Federal Emergency Management Agency (FEMA) designated 100- and 500-year floodplains.

In late October 2012, flooding from Hurricane Sandy caused extensive damages to the VAMC Manhattan, resulting in the temporary shutdown of the facility. The VAMC Manhattan was unable to reopen to full capacity until May 2013. Temporary flood barriers have been erected around the facility; however, these measures are not adequate to protect VAMC Manhattan fully and to prevent damage during future flooding events. As recommended by the VA's *Flood Preparedness Study Final Strategic Report*, the VAMC Manhattan is proposing to construct a floodwall with floodgates along the northern, eastern, and southern perimeter of the VAMC Manhattan property. The proposed floodwall would serve as a first line of defense to reduce

property damage and interruptions of service during future flooding events.

## PURPOSE AND NEED FOR THE PROPOSED PROJECT

The wall extent and height have been designed to provide protection from the 100 year flood (still water elevation plus design wave height and 1 foot of freeboard), and from the 500-year flood (still water elevation plus 2 feet of freeboard). Still water elevations are taken from Federal Emergency Management Agency (FEMA) 2013 coastal flood mapping data. The Proposed Action results from a defined need to reduce flood risk and storm damage to the facility from hurricanes, storm surge, and other storm events that would cause East River waters to encroach on the grounds of VAMC Manhattan. The completed floodwall protection system would reduce the risk of damage to property for events that do not exceed design criteria. The high water marks from Hurricane Sandy are approximately correlated to the 100-year still water elevation as indicated by FEMA 2013 coastal flood mapping data.

## PROPOSED ACTION

Under the Proposed Action, the U.S. Department of Veterans Affairs (VA) would construct a floodwall with floodgates around portions of the north, east, and south perimeters of the VAMC Manhattan. This project would

include construction of a floodwall, seepage cutoff wall, interior drainage improvements, four combined sanitary/storm sewer pumping stations, interior site paving, utility service reconstruction, installation of backflow prevention valves, and landscaping. The floodwall would traverse from the main building entrance at East 23<sup>rd</sup> Street, east to Asser Levy Playground, north along Asser Levy Playground, and west along East 25<sup>th</sup> Street. The floodwall would be approximately 1,570 feet long and 10 to 10.5 feet high above existing grade along Asser Levy Playground. Along East 23<sup>rd</sup> and East 25<sup>th</sup> Streets, the floodwall would maintain a height of at least 8 feet above grade because the ground elevations rise toward First Avenue. Five flood gates would be installed around the perimeter of the site, which would allow vehicle and pedestrian access to the site, while allowing closure of openings in the event of a flooding event. The proposed floodgates would be passive flood barriers that are capable of operating without human intervention. Hollow internal gate elements make the gates buoyant in the event of rising floodwaters. The buoyant gates rotate upwards into place as floodwaters rise, while rubber gaskets along the sides of the gate prevent significant water seepage into the interior of the site. Upon completion of the project, the system will not be a 44 CFR 65.10 certified flood protection system. Certification of the system and remapping is not required and would not provide tangible benefits to the VA. The system will be designed, however, to be compliant with the technical requirements of 44 CFR 65.10. The system will also be designed to meet technical requirements and best practices as identified in applicable USACE guidance.

## NO ACTION ALTERNATIVE

Under the No Action Alternative, the VA would not construct the proposed floodwall system and the potential for future flood-related damages at the VAMC Manhattan would remain unchanged. Future coastal flooding events similar to Hurricane Sandy or the 100-year FEMA event would cause flooding to the interior of the hospital. As demonstrated by the effects of Hurricane Sandy, flooding would cause extensive interruptions to patient care, and would require costly repairs in order to make the facility suitable for a return to service.

## SUMMARY OF ENVIRONMENTAL IMPACTS

Resources that have been considered in the impact analysis of this EA include aesthetics; land use and zoning; air quality; cultural resources; topography, geology, and soils; hydrology and water resources; wildlife and habitat; floodplains, wetlands, and coastal zone management;

socioeconomics; community services; solid waste and hazardous materials; traffic, transportation, and parking; utilities; alternative energy sources; noise; environmental justice; shadows; cumulative impacts; and potential for generating substantial controversy. A summary of environmental effects for each of the environmental resources are described in the following paragraphs.

**Aesthetics.** A majority of the pedestrian view is already limited by the VAMC Manhattan and other surrounding structures, the Proposed Action would not have a significant negative effect on a pedestrian's experience of the area.

**Land Use and Zoning.** The Proposed Action would not result in a direct displacement of any land uses and would not change the site's zoning. Construction and operation of the proposed floodwall would be consistent with the existing land uses. The Proposed Action would not alter or accelerate development patterns in the area.

**Air Quality.** Construction of the proposed floodwall would result in short-term, adverse effects on air quality; however, the effects would not be significant. Emissions from construction activities would only last the duration of the construction activities. Operation of the proposed floodwall would include the use of one 100-kilowatt emergency generator for each of the four proposed sewage pumping stations. These generators would only be used for emergencies and as required for monthly testing. It is anticipated that the intermittent use of the generators would not contribute significantly to the area's nonattainment status.

**Cultural Resources.** The Proposed Action would not result in a significant adverse impact on cultural resources. The proposed floodwall would not result in a significant impact on the Public Baths, a City Landmark and a National Register of Historic Places-listed property located in the Asser Levy Playground. A Construction Protection Plan for the Public Baths would be generated to protect the Public Baths and would be reviewed by the New York City Landmarks Preservation Commission. The proposed floodwall could be designed with special surface treatments to enhance its compatibility with the Public Baths and the surrounding landscape. The proposed floodwall would be constructed in a manner to reduce or eliminate construction vibrations and would thus not damage or affect the Public Baths.

**Topography, Geology, and Soils.** The Proposed Action would have a direct impact on the surface and subsurface

at the project site. The floodwall would be installed approximately 6 feet below grade (i.e., below the frost line). This would require excavation and disposal of undocumented fill. Removal of undocumented fill and nonnative material could be considered a net benefit as the composition of this material is not fully known and could be contaminated. Bedrock and topography would not be impacted by the Proposed Action because the topography would be regraded to existing conditions and the excavation would not extend to bedrock.

**Hydrology and Water Resources.** Impacts on water resources from the Proposed Action would consist primarily of the alteration of existing drainage patterns to accommodate the construction and function of the proposed floodwall system. The presence of a wall along the exterior of the site could lead to ponding of storm water on the interior (protected side) of the floodwall during rainfall events. In order to protect against interior ponding, the Proposed Action includes use of four pump stations, and a storm water storage area. These systems are designed to outlet water to the same approximate locations as under existing conditions. Temporary supplemental pumps could be required during events that exceed design conditions.

**Wildlife and Habitat.** Impacts on biological resources from the Proposed Action would be minimal as few resources are present. Removal of trees along the proposed floodwall and temporary disruption of the area due to construction would be anticipated as part of the Proposed Action. Avian, mammal, and reptile species using the project site would likely avoid the area for the duration of construction. Comparable habitats are located in other areas in the vicinity of the project site that would be available for species avoiding the project site; thereby minimizing impacts on these resources.

**Floodplains, Wetlands, and Coastal Zone Management.** The construction of the floodwall system would exclude the 1 percent probability storms from entering the project site. Because coastal storms are tidal in nature, the loss of this floodplain storage would have no discernible effect on the overall depth of the floodwaters on adjacent properties.

The possibility of reflective wave damage was qualitatively evaluated during design. The potential for reflective waves causing increased damages to adjacent properties appears to be unlikely given the topography of the area, the fetch for wave development, and the location of adjacent facilities. In addition, the VA has been in coordination with

FEMA since October 2013 to ensure the flood protection efforts were coordinated with the overall Sandy Disaster Recovery efforts undertaken by other federal agencies as well as New York University Hospital and Bellevue Hospital. These coordination activities will continue throughout the duration of construction. The Proposed Action would result in no impacts to wetlands or the Coastal Zone Management area.

**Socioeconomics.** Construction of the proposed floodwall would not directly displace any residents or business employees and would not result in indirect displacement of residences or businesses. Over the long-term, the presence and operation of the floodwall system during significant flood events would provide direct, beneficial impacts on the local community by protecting the VAMC Manhattan campus and ensuring the continuity of access to quality health care in cases of emergency.

**Community Services.** The Proposed Action would not physically displace or alter any schools, libraries, child care centers, health care facilities, Fire Department of New York City (FDNY) firehouse or Emergency Medical Services (EMS) stations, or New York City Police Department (NYPD) stations during construction or operation.

**Solid Waste and Hazardous Materials.** Elements of the proposed construction could result in the short-term use, generation, and transportation of hazardous substances, petroleum products, and hazardous wastes. The Proposed Action would not generate additional exposure pathways to hazardous materials after construction. There would be no long-term or permanent direct impact on hazardous materials or solid waste as a result of the Proposed Action. Once constructed, the floodwall and floodgates would not require hazardous materials for their continued operation.

**Traffic, Transportation, and Parking.** The implementation of a floodwall along portions of the north, east, and south sides of the facility would not have a significant impact on any permanent transportation or traffic items. The Proposed Action would not result in a substantial change in any of the permanent roadway geometry of the surrounding streets, nor result in any changes at any of the surrounding intersections; therefore, no traffic impacts would be anticipated. It is likely that pedestrian circulation would be considered for the reconfigured eastern boundary of the VAMC Manhattan, and with no other change to any of the other sidewalks or crosswalks around the project site, no pedestrian impacts would be anticipated.

Construction for the proposed floodwall would last less than 1 year. Construction activity could require temporary sidewalk closures, lane closures, temporary loss of parking along East 23<sup>rd</sup> Street, and East 25<sup>th</sup> Street.

**Utilities.** All of the underground utilities which cross the floodwall alignment will be replaced. Some utilities may be temporarily rerouted during construction in order to facilitate construction of the seepage cutoff wall or floodwall foundation system. Some utilities would be temporarily relocated outside of the project site prior to construction and then permanently relocated through the project site after construction, while other utilities would be permanently relocated outside of the project site prior to construction. The contractor will be required to conduct construction activities in a manner that minimizes risks of damaging utilities that are to be left in place.

The Proposed Action could result in temporary impacts on utilities due to the temporary and permanent relocation of the utility lines. Additionally, the relocation of portions of utilities would require the replacement of existing older utility infrastructure with new, modern materials.

**Alternative Energy Sources.** The Proposed Action would not significantly impact energy consumption or the transmission of energy. The proposed floodwall would not consume any energy once constructed because the floodgates would be passively engaged during flood events due to their buoyancy. Accordingly, a detailed examination of alternative energy resources has been omitted from this EA.

**Noise.** Short-term, minimal-to-moderate, adverse effects on the ambient noise environment would be expected from the Proposed Action; however, the effects would not be significant. The noise from construction equipment would be localized, short-term, and intermittent during machinery operations. Heavy construction equipment would be used periodically during construction; therefore, noise levels from the equipment would fluctuate throughout the day. Once construction of the proposed floodwall is completed, the only source of noise could be the occasional use of emergency generators at the four proposed sewage pumping stations. However, it is not anticipated that there would be an increase to the ambient noise levels due to daily operations.

**Environmental Justice.** The Proposed Action would not cause minority populations to experience disproportionately high adverse human health or environmental effects as compared to the general

population because construction activities would be temporary and transitory in nature. Effects from construction of the floodwall would be similar to those resulting from routine construction activities in New York City. Construction noise and dust from the proposed activities would temporarily affect adjacent areas, including residents in the Peter Cooper Village to the south of the VAMC Manhattan; however, construction activities would only be temporary. It is anticipated that the design of the proposed floodwall would not significantly increase flooding in the adjacent areas; therefore, the proposed floodwall would not cause minority, low-income, or youth populations to experience disproportionately high adverse human health or environmental effects.

**Shadows.** Incremental shadows would be cast on the Public Baths within the Asser Levy Playground from the Proposed Action, although due to all of the existing surrounding structures, this resource is already affected by existing shadows. The Proposed Action would not, therefore, result in adverse shadow impacts.

**Cumulative Impacts.** The following projects were identified as having the potential for cumulative effects: (1) Initiative 22 - Install an integrated flood protection system at Hospital Row; (2) Asser Levy Playground Expansion; (3) VAMC Manhattan Access Road and Stacked Parking; and (4) New York City Department of Sanitation (DSNY) East 25<sup>th</sup> Street Manhattan Districts 6, 6A, and 8 Garage. This EA identifies potential short-term, adverse effects on the natural environment as a result of proposed construction activities. These potential adverse effects include noise generation, air emissions, solid waste generation, soil erosion, storm water runoff, temporary loss of parking, and a temporary increase in demand for utilities. Implementation of the proposed project would help ensure that the VAMC Manhattan would not close during future storm events, which would be a long-term beneficial effect.

**Potential for Generating Substantial Controversy.** There are no known or anticipated issues likely to generate substantial controversy among the VAMC Manhattan stakeholders, regulatory agencies, or the general public. The likely negative impact of the project on these groups is none-to-negligible. Accordingly, a detailed examination of the potential for generating substantial controversy has been omitted from this EA.

# INTRODUCTION 01

This Environmental Assessment (EA) describes the proposal set forth by the U.S. Department of Veterans Affairs (VA) to construct and use a floodwall with floodgates at the VA Medical Center (VAMC), Manhattan. This EA also describes alternatives to the Proposed Action, including the No Action Alternative. The objective of this EA is to disclose and analyze the potential for significant environmental impacts from implementation of the Proposed Action and alternatives.

## 1.1 PROJECT BACKGROUND

The VAMC Manhattan provides services in acute medicine, surgery, acute psychiatry, neurology, and rehabilitation medicine. The facility houses a designated clinical care unit and a Research Center for Acquired Immune Deficiency Syndrome (AIDS) and Human Immunodeficiency Virus (HIV) infection. The VAMC Manhattan is located on the east side of Manhattan on a site bounded by First Avenue on the west, East 23rd Street on the south, Asser Levy Playground on the east, and East 25th Street on the north, approximately 450 feet from the East River (see Figures 1.1-1 and 1.1-2) and within the Federal Emergency Management Agency (FEMA) designated 100- and 500-year floodplains (see Figure 1.1-3).

In late October 2012, flooding from Hurricane Sandy caused extensive damage to the VAMC Manhattan, resulting in the temporary shutdown of the facility. The VAMC

Manhattan was unable to reopen to full capacity until May 2013. Temporary flood barriers have been erected around the facility; however, these measures are not adequate to protect the VAMC Manhattan fully and to prevent damage during future flooding events. As recommended by the VA's Flood Preparedness Study Final Strategic Report, the VAMC Manhattan is proposing to construct a floodwall with floodgates along the northern, eastern, and southern perimeter of the VAMC Manhattan property. The proposed floodwall would serve as a first line of defense to reduce future property damage and interruptions of service during future flooding events.

## 1.2 PURPOSE OF AND NEED FOR THE ACTION

The wall extent and height have been designed to provide protection from the 100 year flood (still water elevation plus design wave height and 1 foot of freeboard), and from the 500-year flood (still water elevation plus 2 feet of freeboard). Still water elevations are taken from Federal Emergency Management Agency (FEMA) 2013 coastal flood mapping data. The Proposed Action results from a defined need to reduce flood risk and storm damage to the facility from hurricanes, storm surge, and other storm events that would cause East River waters to encroach on the grounds of VAMC Manhattan. The completed floodwall protection system would reduce the risk of damage to

Figure 1.1-1. VAMC Manhattan Project Site and Surrounding Area Topography

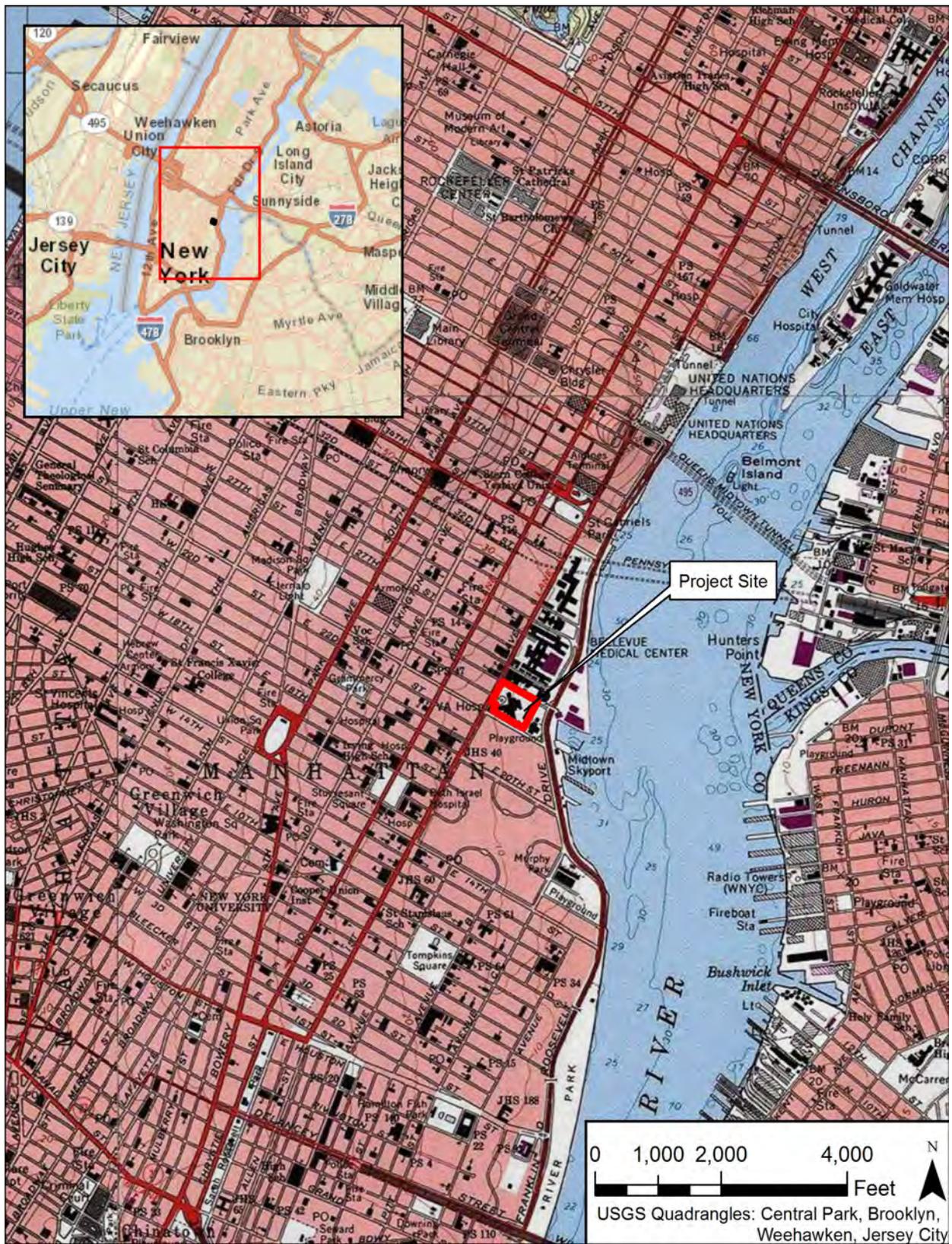
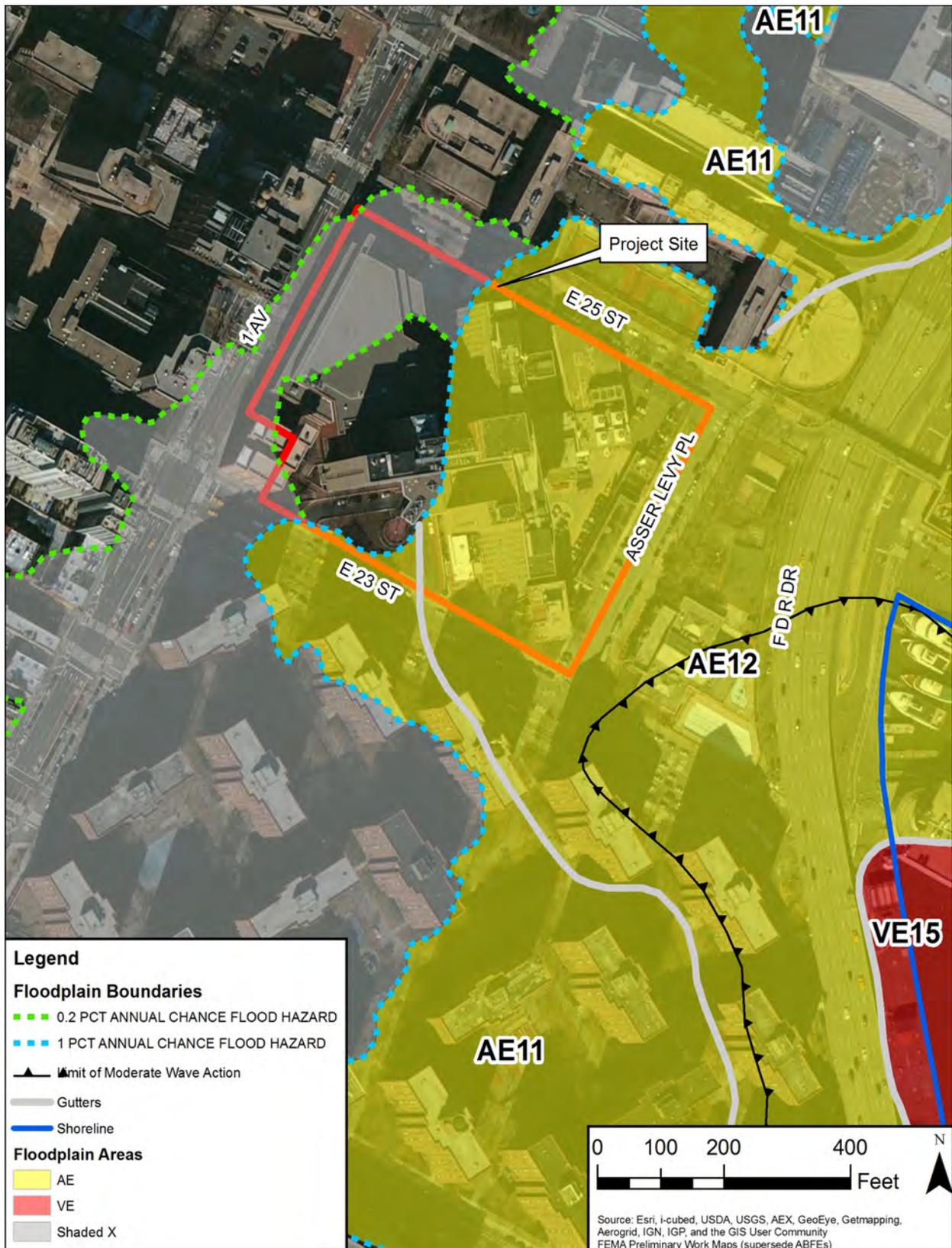


Figure 1.1-2. VAMC Manhattan Project Site and Proposed Floodwall Location



Figure 1.1-3. FEMA Floodplain Areas in the Vicinity of the VAMC Manhattan



property for events that do not exceed design criteria. The high water marks from Hurricane Sandy are approximately correlated to the 100-year still water elevation as indicated by FEMA 2013 coastal flood mapping data.

## 1.3 ASSESSMENT METHODOLOGY

### 1.3.1 ENVIRONMENTAL COMPLIANCE REQUIREMENTS

The Proposed Action is subject to Federal environmental review requirements because the VA proposes the use of Federal funds and requires one or more discretionary Federal actions. Consequently, project environmental documentation has been prepared in compliance with the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations implementing NEPA (Title 40 Code of Federal Regulations [CFR] Parts 1500–1508), VA regulations implementing NEPA (Title 38 CFR 26), and VA's Interim NEPA Guidance for Projects.

The Proposed Action could result in direct or indirect impacts on historic properties. All impacts on properties listed in or adjacent to a historic district or that could be eligible for listing on the National Register of Historic Places (NRHP) are subject to the consultation requirements of Section 106 of the National Historic Preservation Act (NHPA) of 1966.

**National Environmental Policy Act.** NEPA (42 United States Code [U.S.C.] Section 4321–4347) is a Federal statute requiring the identification and analysis of potential environmental impacts associated with proposed Federal actions before those actions are taken. The intent of NEPA is to help decision makers make well-informed decisions based on an understanding of the potential environmental consequences, and take actions to protect, restore, or enhance the environment. NEPA established the CEQ that was charged with the development of implementing regulations and ensuring Federal agency compliance with NEPA. The CEQ regulations mandate that all Federal agencies use a prescribed, structured approach to environmental impact analysis. This approach also requires Federal agencies to use an interdisciplinary and systematic approach in their decision making process. This process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action.

The process for implementing NEPA is codified in Title 40 of the CFR, Parts 1500–1508, *Regulations for Implementing*

*the Procedural Provisions of the National Environmental Policy Act*. The CEQ regulations specify that an EA be prepared to provide evidence and analysis for determining whether to prepare a Finding of No Significant Impact (FONSI) or whether the preparation of an Environmental Impact Statement (EIS) is necessary. The EA can aid in an agency's compliance with NEPA when an EIS is unnecessary and facilitate preparation of an EIS when one is required.

### **State Environmental Quality Review Act and City Environmental Quality Review.**

In 1975, the New York State Legislature enacted the State Environmental Quality Review Act (SEQRA), which requires all state and local government agencies to assess the environmental effects of discretionary actions before undertaking, funding, or approving a project, unless such actions fall within certain statutory or regulatory exemptions from the requirements for review. The provisions of SEQRA are found in Article 8 of the New York State Environmental Conservation Law. The New York State Department of Environmental Conservation (NYSDEC) has promulgated regulations (6 NYCRR 617) that guide that process of review. As allowed under SEQRA and its implementing regulations, a local government may promulgate its own procedures provided they are no less protective of the environment, public participation, and judicial review than provided for by state rules. The City of New York has exercised this prerogative by promulgating its own procedures, known as CEQR, to take into account the special circumstances of New York City's urban environment. These rules and procedures are found in Mayoral Executive Order (EO) No. 91 of 1977, which established CEQR, and 62 Rules of the City of New York Chapter 5. The environmental review process provides a means for decision makers to consider environmental effects systematically along with other aspects of project planning and design, to propose reasonable alternatives, and to identify, and when practicable mitigate, potential significant adverse environmental effects. The Proposed Action would not result in any New York State or New York City discretionary actions; therefore, it is not applicable to SEQRA or CEQR. Attached to this document is a New York CEQR Environmental Assessment Form to illustrate that the Proposed Action would not result in any New York City discretionary actions (Appendix A).

### **Integration of Other Environmental Statutes and Regulations.**

To comply with NEPA, the planning and decision making process for actions proposed by Federal agencies involves a study of other relevant environmental statutes and regulations. The NEPA process, however, does not replace procedural or substantive requirements

of other environmental statutes and regulations. The VA addresses them collectively in the form of an EA or EIS, which enables the decision maker to have a comprehensive view of major environmental issues and requirements associated with a proposed action.

This EA examines the potential effects of the Proposed Action and alternatives on all resource areas that could be affected. However, based on a review of the scope of the Proposed Action, the resource areas that have been identified to require particular consideration and review include aesthetics; land use and zoning; air quality; cultural resources; topography, geology, and soils; hydrology and water resources; wildlife and habitat; floodplains, wetlands, and coastal zone management; socioeconomics; community services; solid waste and hazardous materials; traffic, transportation, and parking; utilities; alternative energy sources; noise; environmental justice; shadows; cumulative impacts; and potential for generating substantial controversy. These resources were identified as being potentially affected by the Proposed Action and alternatives and include applicable elements of the human and natural environments that are prompted for review by Executive Order (EO), regulation, or policy.

### 1.3.2 RESOURCE METHODOLOGY

This EA identifies the potential environmental consequences of the Proposed Action and alternatives and assesses whether the impacts would be significant. Each resource area has specific criteria for evaluating the potential environmental effects of a proposed action. These specific criteria are provided by resource area in Section 4. The significance of a proposed action is measured in terms of its context and intensity. The context and intensity of potential environmental effects are described in terms of duration, whether they are direct or indirect, the magnitude of the impact, and whether they are adverse or beneficial, and are summarized as follows:

- » **Short-term or long-term.** In general, short-term effects are those that would occur only with respect to a particular activity, for a finite period, or only during the time required for construction or installation activities. Long-term effects are those that are more likely to be persistent and chronic.
- » **Direct or indirect.** A direct effect is caused by an action and occurs around the same time at or near the location of the action. An indirect effect is caused by an action and might occur later in time or be farther removed in distance but still be a reasonably foreseeable outcome of the action.

- » **None-to-negligible.** A potential impact of this severity would be barely detectable and an EIS is not required for this impact.
- » **Minimal-to-moderate.** A potential impact that is less than significant and would not require specific mitigation measures, other than those dictated by regulatory and permitting requirements and an EIS is not required for this impact.
- » **Significant-if-not-mitigated.** A potential impact of this severity would require specific mitigation measures beyond those associated with permit requirements but an EIS is not required for this impact.
- » **Significant-and-immitigable.** A potential impact of this severity would have to be evaluated in an EIS.
- » **Adverse or beneficial.** An adverse effect is one having unfavorable or undesirable outcomes on the man-made or natural environment. A beneficial effect is one having positive outcomes on the man-made or natural environment.

# DESCRIPTION OF THE PROPOSED ACTION

## 2.1 DESCRIPTION OF THE PROPOSED ACTION

This section describes the Proposed Action and alternatives to the Proposed Action, including the No Action Alternative. As discussed in Section 1.3, the NEPA process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action. Reasonable alternatives must satisfy the purpose of and need for a proposed action, as defined in Section 1.2. In addition, CEQ regulations specify the inclusion of the No Action Alternative against which the impacts can be compared. While the No Action Alternative would not satisfy the purpose of or need for the Proposed Action, it is analyzed to provide a baseline for comparison for any action alternative considered.

The VA proposes to construct and use a floodwall with floodgates around portions of the north, east, and south perimeters of the VAMC Manhattan. The Proposed Action would include construction of a floodwall, seepage cutoff wall, interior drainage improvements, four sewage pumping stations, interior site paving, utility service reconstruction, manholes and slide gates, installation of backflow prevention valves, and landscaping. The floodwall would traverse from the main building entrance at East 23rd Street, east to the Asser Levy Playground, north along the Asser Levy Playground, and then west along East 25th Street (see Figure 2.1-1).

Design of the proposed floodwall incorporates modeled storm surge and wave heights between a 100-year and 500-year flood based on FEMA flood maps and the high-water mark from Hurricane Sandy and would be in accordance with National Flood Insurance Program requirements (including 44 CFR Part 9) to the extent feasible. A stone cap would be placed on top of the floodwall as an architectural element, bringing the final floodwall elevation to approximately 14.5 feet above sea level (Manhattan Datum). The floodwall elevation would provide protection from a 100-year flood event (incorporating freeboard based on wave heights) and provides 2 feet of freeboard over the 500-year still water elevation.

The floodwall would be approximately 1,570 feet long and vertically extend to 14.5 feet above sea level. Based on the varying existing elevations along the proposed floodwall, the height of the floodwall would be between 10.0 and 10.5 feet above grade along the Asser Levy Playground and at least 8 feet above grade along East 23rd and East 25th Streets.

Five flood gates would be installed to allow vehicle and pedestrian access to the VAMC Manhattan, but would close in the event of coastal flooding. The proposed floodgates would be passive flood barriers deployed by rising floodwaters that would not require human intervention or



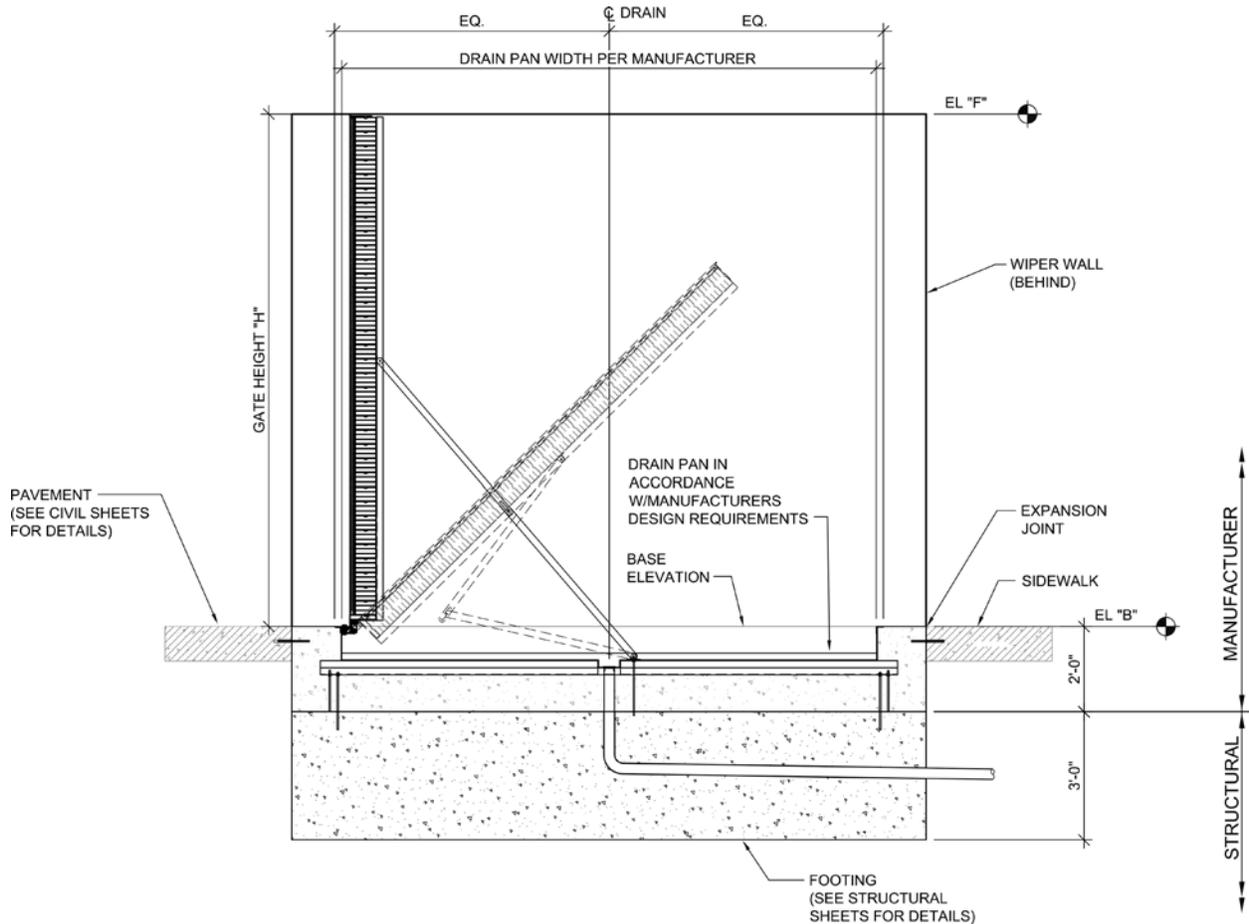
power to activate. Floodwaters would create hydrostatic pressure that would float a buoyant aluminum beam that would activate self-sealing rubber gaskets. The higher the floodwaters rise, the higher each floodgate would rise until it reaches a 90-degree angle to the ground and is held closed by floodwaters. As the floodwater recedes, the each floodgate would return to its recessed location (see Figure 2.1-2).

The floodwall would be constructed of reinforced concrete with brick facing to blend in with the local facades. The portion of the floodwall alignment along East 23rd and East 25th Streets would be simple brick facing. In addition, the wall facade would be graffiti resistant through the selection of materials, the application of surface sealants, or other architectural treatments. The eastern portion of the floodwall would be sited at the property line adjacent to the Asser Levy Playground. This section of wall would be designed to complement the architecture of the Public Baths through use of brick veneer and column representations.

Auger cast piles would be used to support loads on a footing while using an unreinforced cast secant wall for seepage cutoff. The installation of a secant wall for seepage cutoff instead of a sheet pile wall would significantly reduce the level of construction-related noise and vibration impacts. The floodwall would be installed atop the secant pile wall, approximately 6 feet below grade (below the frost line). The floodwall would have an L shape, which would allow placement of the floodwall as close to the VAMC Manhattan property line as possible without encroaching on adjacent properties. The floodwall would be constructed of cast-in-place concrete.

Design of the floodwall would consider potential storm water runoff during and after proposed construction activities. Alternate routes or consolidation of multiple utility lines to a larger single line would be used where feasible to limit underground utilities that cross the proposed floodwall alignment. In the event these alternative routes are not practicable, utilities would

**Figure 2.1-2. VAMC Manhattan Floodgate Design**



penetrate the proposed floodwall stem or be rerouted underneath the floodwall footing. "Positive closure" would be attained by installation of backflow prevention valves and gate valves on stormwater and sanitary lines. Electrical ducts would be sealed to prevent transmission of water through ducts underneath the floodwall.

There are four locations where combined sewer pumping stations would be installed to allow discharge of building sewage and roof drainage into the NYCDEP combined sanitary sewers when coastal flooding prevents gravity flow from the VAMC Manhattan facility. Manholes with backflow prevention valves and gate valves would be used at the floodwall perimeter to prevent backflow of floodwaters into the interior of the proposed floodwall system during coastal flooding events. During a coastal flooding event, rain water falling within the interior of the flood protection area would be evacuated via the four pump stations. An underground storage facility is proposed adjacent to one pump station to allow attenuation of peak flow rates and to minimize the required size of the pump station. Temporary pumps could be required to evacuate interior runoff for events that exceed design conditions. Utility services would be replaced across the property lines to protect against seepage failures, and to have new piping beneath the new floodwall, which would reduce the likelihood of pipe ruptures and decrease required maintenance.

Construction of the proposed floodwall would require demolition activities. The existing landscaping, brick walls, paving, curbs and gutters, perimeter security fencing, and lighting poles would be removed to accommodate the new floodwall. It is anticipated that construction staging areas would be limited to open paved areas within the VAMC Manhattan property. These staging areas and construction of the floodwall would disrupt some parking areas on VAMC Manhattan property and on adjacent streets during construction. It is anticipated that construction of the floodwall protection system could require up to 12 months and would begin in 2014.

## **2.2 DETAILED PROJECT ELEMENTS**

### **2.2.1 SUSTAINABLE DESIGN COMPONENTS**

Sustainable design seeks to reduce negative impacts on the environment by reducing consumption of non-renewable sources and minimizing waste. The Proposed Action would comply with the VA Sustainable Design and Energy Reduction Manual. If feasible, construction waste

would be recycled or salvaged and appropriate materials would be selected for construction to reduce the use of ozone- (O3) depleting compounds.

### **2.2.2 PEDESTRIAN AND VEHICLE ACCESS AND CIRCULATION**

Vehicular and pedestrian access to VAMC Manhattan would be provided through five points in the proposed floodwall. Floodgates would be used to close these openings during a flooding event. However, it is anticipated that pedestrian traffic could be rerouted for limited amounts of time to accommodate construction activities and equipment. Pedestrian access to sidewalks along portions of East 23rd Street, East 25th Street, and the Asser Levy Playground could be temporarily restricted during construction activities.

### **2.2.3 LANDSCAPING**

Construction of the proposed floodwall would involve the removal of trees, brick walls, paving, curbs and gutters, perimeter security fence, a security gate, lighting poles, and utility lines. Once construction is completed, new landscaping would be installed in keeping with the facility's existing landscaping design.

### **2.2.4 PARKING**

Construction activity could result in temporary loss of public parking along East 23rd Street and East 25th Street. Parking along the west side of Asser Levy Playground, although currently only for use within the VAMC Manhattan site, would be permanently altered by the Proposed Action, with the anticipated displacement of approximately 46 spaces. Therefore, this project would not incur any permanent public parking impacts adjacent to the Asser Levy Playground. These 46 parking spaces are already inaccessible due to the closure of Asser Levy Place due to the Asser Levy Playgound expansion project.

### **2.2.5 STORAGE OF CONSTRUCTION MATERIALS**

During construction, it is anticipated that staging areas would be limited to open paved areas within the VAMC Manhattan. By maintaining construction materials on site, additional trips by construction vehicles would be reduced. In addition, the construction materials stored would be maintained using best management practices (BMPs) to reduce any impacts.

### 2.2.6 UTILITY IMPROVEMENTS

All of the underground utilities which cross the floodwall alignment would need to be replaced. Some utilities would be temporarily relocated outside of the project site prior to construction and then permanently relocated within the project site after construction, while other utilities would be permanently relocated outside of the project site prior to construction. The contractor will be required to conduct construction activities in a manner that minimizes risks of damaging utilities that are to be left in place. Relocated utility lines would be installed using modern materials, thereby improving the quality of infrastructure along those segments. The VA and its construction contractor would coordinate the temporary and permanent utility relocations with the utility service providers, the New York City Department of Parks and Recreation (NYCDPR), and the New York City Department of Environmental Protection (NYCDEP), as needed.

### 2.2.7 POTABLE WATER SUPPLY

The potable water supply pipes would require relocation, as discussed in Section 2.2.6. The Proposed Action could require minor quantities of water during construction. The floodwall would result in no permanent change in water demand.

### 2.2.8 ENERGY SUPPLY

The existing energy utilities would require utility relocation, as discussed in Section 2.2.6. It is anticipated that the construction contractors would use the existing electrical infrastructure at the VAMC Manhattan property to construct the floodwall. The proposed floodwall would not consume any energy once constructed because the floodgates would be passively engaged during flood events due to their buoyancy. Four proposed sewage pumping stations would be used to discharge sanitary sewage and roof drainage when coastal flooding prevents gravity flow from the VAMC Manhattan facility. The sewage pumping stations would be powered via electricity. However, the pumping stations would be powered via four diesel-fueled emergency generators when electricity is not available.

### 2.2.9 OTHER INFRASTRUCTURE

**Solid Waste and Sanitation.** Construction of the floodwall would result in the removal of soil, trees, brick walls, paving, curbs and gutters, perimeter security fence, a security gate, lighting poles, and utility lines. Following construction, the proposed floodwall would not generate solid waste. All construction and demolition debris would be transported to appropriate landfills via private carters in accordance with the New York City Solid Waste Management Plan

(NYC SWMP). Additionally, in accordance with EOs 13423 and 13524, and the New York City-mandated recycling requirements, recyclable construction waste would be diverted to appropriate facilities. All soil removed that cannot be reused on site would be transported to a facility for reuse as fill.

**Storm Water and Sanitary Sewerage.** The combined sanitary sewage/storm water sewer internal drains would be replaced in certain locations. In locations where a sanitary or storm pipe conflicts with the floodwall footing elevation, the floodwall footing will be dropped in elevation to allow the pipe to penetrate through the relatively narrow stem of the floodwall (rather than through the greater width of the horizontal portion of the L footing). Short-term disruption of service to the VAMC Manhattan typical of other construction projects in New York City could occur. Replacement, relocation outside the construction zone, or support in-place of any internal drain lines identified as being within the project site would be performed in coordination with and under the review of the NYCDEP.

Sanitary sewage and storm water discharged during relocation of the internal drains would be temporarily flumed, or diverted to the four proposed sewage pumping stations. Storm water runoff from the project site would be controlled in accordance with the New York Standards and Specifications for Erosion and Sediment Control (NYSDEC 2005).

Following construction, sanitary sewage and roof drainage would be discharged to the combined sanitary sewage/storm water internal drains via gravity flow lines. Four sewage pumping stations would be used to discharge sanitary sewage and roof drainage when coastal flooding prevents gravity flow from the VAMC Manhattan facility to NYCDEP sewers in the surrounding streets.

During common rainfall events without any coastal flooding, storm water from the land interior of the proposed floodwall would be evacuated by gravity flow into the NYCDEP combined sewer system in the surrounding streets. During an exterior flooding event, storm water from the interior of the proposed floodwall would be evacuated via underground storage and one of four 3-cubic-feet-per-second sewage pumping stations or the use of temporary pumps.

**Telecommunications Systems.** Existing underground telecommunications lines would require relocation, as discussed in Section 2.2.6.

### **2.2.10 PROJECT PHASING**

The Proposed Action would consist of four phases: (1) planning and design of the proposed floodwall, (2) demolition activities (i.e., trees, brick walls, paving, curbs and gutters, perimeter security fence, a security gate, lighting poles, and utility lines), (3) construction activities (i.e., floodwall, seepage cutoff wall, interior drainage improvements, four sewage pumping stations, interior site paving, utility service reconstruction, manholes and slide gates, and landscaping), and (4) use of the proposed floodwall.

Construction activities for the Proposed Action would be coordinated with current and ongoing projects associated with the Asser Levy Playground and the New York City Department of Parks and Recreation. This coordination would reduce potential impacts to the Asser Levy Playground; these impacts are addressed in Section 4.18 - Cumulative Impacts.

# 03

## DESCRIPTION OF ALTERNATIVES

### 3.1 DEVELOPMENT OF ALTERNATIVES

The following alternatives were considered for constructing the proposed floodwall at VAMC Manhattan:

- » **Alternative 1 – No Action Alternative.** The VA would not construct the proposed floodwall and the potential for future flooding-related damages at the VAMC Manhattan would remain.
- » **Alternative 2 – Proposed Action (Preferred Alternative) for an L-Wall Design.** The VA would construct an L-wall design floodwall with floodgates. The floodwall would traverse from the main building entrance at East 23<sup>rd</sup> Street, east to the Asser Levy Playground, north along the Asser Levy Playground, and then west along East 25<sup>th</sup> Street (see Figure 2.1-1). The L-wall design would allow placement of the floodwall as close to the VAMC Manhattan property line as possible without encroaching on adjacent properties. The floodwall would have five floodgates (see Figure 2.1-2).
- » **Alternative 3 – I-Wall Design.** Placement of an I-wall design would be similar to the Proposed Action but would have a smaller footprint. I-walls are less resilient than L or T wall designs. The U.S. Army Corps of Engineers (USACE) Engineering Manual 1110-2-6066

states that the I-wall design should only be used where other design options are impractical. Since another design (an L-wall) was deemed to be practical and more resilient, an I-Wall design was eliminated from further consideration.

- » **Alternative 4 – T-Wall Design.** A T-wall design would be similar to the L-wall design alignment, but would use less concrete and steel due to a more structurally efficient configuration. This design would prevent placement of the wall immediately adjacent to the property line, however, since there is a waterward projection of the footing beyond the floodwall stem. The T-wall design was dismissed from further consideration since the L-wall positions the floodwall stem as far away from the facility as possible (which maximizes the amount of developable space on the interior).
- » **Alternative 5 – Grade Beam Wall.** A grade beam wall design would include a wall spanning between pile caps supported by auger cast piles. This design was eliminated from consideration due to a difficulty in incorporating seepage cutoff and because the design is less resilient than the L-wall and T-wall designs.

## **3.2 ALTERNATIVES SELECTED FOR DETAILED ANALYSIS**

Alternative 2 (the Proposed Action) will be analyzed in detail in this EA. Alternatives 3, 4, and 5 were considered but not carried forward for further detailed analysis due to the reasons provided in Section 3.1. This EA also evaluates Alternative 1, the No Action Alternative, under which the Proposed Action would not be implemented.

### **3.2.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE**

Under the No Action Alternative, the VA would not construct the proposed floodwall and the potential for future flooding-related damages at the VAMC Manhattan would remain. In addition, the potential for extended interruption to the health services provided by the facility would also continue. If the facility's ability to provide continuous high-quality health care is interrupted during another serious flooding event, the VAMC Manhattan's mission would be compromised.

### **3.2.2 ALTERNATIVE 2 – PROPOSED ACTION**

Under Alternative 2 - Proposed Action, the VA would construct and use the floodwall as described in Section 2.

# 04

## AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section includes the definitions of the resource, description of existing conditions at the project site, and a detailed assessment of the potential effects of the No Action Alternative and the Proposed Action. All environmental resource areas were initially evaluated for potential consequences. As a result of this initial screening, the following environmental resource areas are analyzed in detail: aesthetics; land use and zoning; air quality; cultural resources; topography, geology, and soils; hydrology and water resources; wildlife and habitat; floodplains, wetlands, and coastal zone management; socioeconomics; community services; solid waste and hazardous materials; traffic, transportation; and parking; utilities; alternative energy sources; noise; environmental justice; shadows; cumulative impacts; and potential for generating substantial controversy.

### 4.1 AESTHETICS

Urban design and visual resources contribute to a pedestrian's experience of a public space by connecting the public realm to significant natural or built features. The features of visual resources include views of the waterfront, public parks, landmark structures or districts, distinct buildings or groups of buildings, and natural resources, and the features of urban design include the form, arrangement, bulk, and streetscape of the urban environment that defines a pedestrian's immediate environment. Landmark structures and districts are

designated by the New York City Landmarks Preservation Commission and defined in greater detail in Section 4.4. There are no specific city, state, or Federal statutes, regulations, or standards governing the analysis of visual character (NYCMOEC 2013, NYSDEC 2000).

The aesthetics study area includes the surrounding streets and playground adjacent to the project site, which include First Avenue to the west, East 23<sup>rd</sup> Street to the south, East 25<sup>th</sup> Street to the north, and the Asser Levy Playground to the east. A detailed analysis is unwarranted; however, a visual assessment was completed to assess potential effects on major view corridors and effects on nearby important visual resources.

#### 4.1.1 EXISTING CONDITIONS

Aesthetics are composed of various components that have the ability to impact a pedestrian's experience within a public space. The street hierarchy and pattern in the area immediately surrounding the project site is the standard 1811 Commissioner's Plan rectilinear street grid form most commonly found in Manhattan. The elevated portion of the FDR Drive obstructs visual corridors of the East River waterfront to the east. The area to the north of the project site consists of the Bellevue Hospital campus. The area to the south consists of the residential complex known as Peter Cooper Village. The area to the west of the project site consists of the typical Manhattan street grid.

The following is a list and photographic representations of the various elements that make up the urban design and visual resources in the vicinity of the project site.

**Waterfront and View Corridors.** The project site is located near the eastern shore of the East River. However, readily accessible public views of the East River waterfront from publicly available locations in the vicinity of the project site are obstructed by the FDR Drive and the Asser Levy Playground. East 23<sup>rd</sup> and East 25<sup>th</sup> Streets are oriented directly towards the waterfront, although, the views to the waterfront are obstructed by existing development (see Figures 4.1-1 and 4.1-2).

**Natural Resources.** There are no significant natural resources near the project site that have the potential to be obstructed by the construction of the proposed floodwall. However, there are several trees planted along the sidewalk near the project site that could be obstructed by the proposed floodwall.

**Figure 4.1-1. View along East 23<sup>rd</sup> Street, Facing East**



**Figure 4.1-2. View along East 25<sup>th</sup> Street, Facing East**



**Public Parks.** Immediately east of the project site is the Asser Levy Playground, which dominates views to the east (see Figure 4.1-3). There are no other public parks in the immediate vicinity of the project site. The next closest public park is Bellevue South Park, which is located 0.1 mile to the north and is obstructed from the northern corner (East 25<sup>th</sup> Street and First Avenue) of the VAMC Manhattan by other existing buildings.

**Figure 4.1-3. View along Asser Levy Place, Facing Asser Levy Playground**



**Landmark Structures and Districts.** The Asser Levy Public Baths, designated as a NYC landmark in 1974, is located to the east of the project site within the Asser Levy Playground (see Figure 4.1-4). The northwestern portion of this building faces the project site.

Peter Cooper Village is a residential complex to the south of the project site across East 23<sup>rd</sup> Street.

**Distinct Buildings or Groups of Buildings.** Public School 138, the former Institute for the Crippled and Disabled, was designed in the Art Deco/Moderne style and is located to the southwest of the project site at 400 First Avenue.

#### **4.1.2 ENVIRONMENTAL IMPACTS**

An adverse effect is found when a project would result in a change to the built environment's arrangement, appearance, or functionality such that the change would negatively affect a pedestrian's experience of the area. Important considerations in assessing the impact of a project on aesthetics are whether the project would obstruct important visual resources, whether such obstruction would be permanent, seasonal, or temporary, and whether the views that would be affected are

unique or there are similar views that can be seen from other locations.

**Figure 4.1-4. View of the Asser Levy Public Baths with Asser Levy Place Under Construction**



#### 4.1.2.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Existing urban design and visual conditions at the VAMC Manhattan would remain the same as described in Section 4.1.1. It is possible that the VAMC Manhattan could be damaged during future flooding events, which could result in adverse impacts on aesthetics.

#### 4.1.2.2 ALTERNATIVE 2 – PROPOSED ACTION

The Proposed Action includes the construction of a floodwall that would be up to 10.5 feet above the existing grade. The floodwall would limit the pedestrian view of natural and built features primarily as the pedestrian approaches the corners of the Asser Levy Playground with East 23<sup>rd</sup> and East 25<sup>th</sup> Streets, as the wall would limit views through the VAMC Manhattan property towards Asser Levy Playground. The southeastern corner of the VAMC Manhattan floodwall at the junction of East 23<sup>rd</sup> Street and the Asser Levy Playground would obstruct the view of the front of the Asser Levy Public Baths from pedestrians on the southern sidewalk near 473 East 23<sup>rd</sup> Street. The northeastern corner of the VAMC Manhattan floodwall would also obstruct the pedestrian view of the Public Baths near 389 East 25<sup>th</sup> Street. Along the adjacent sidewalk, pedestrians would no longer have a view into the VAMC Manhattan campus, as the existing iron fence would be replaced by the floodwall. The proposed floodwall design would include a brick veneer and stone cap along East 23<sup>rd</sup> and East 25<sup>th</sup> Streets to add aesthetic details, and provide a similar building material as the surrounding buildings.

As the majority of the pedestrian view is already limited by the VAMC Manhattan and other surrounding structures, the Proposed Action would not have a significant negative effect on a pedestrian's experience of the area (see Figures 4.1-5 through Figure 4.1-12).

**Construction.** The Proposed Action includes the construction of a floodwall along portions of the southern, eastern and northern perimeter of the VAMC Manhattan facility. Project construction would have a temporary negative impact on the aesthetics of the area as pedestrian views of natural and built features may be obstructed by construction equipment. Upon completion of construction, all equipment would be removed; therefore, the construction phase of the Proposed Action would not have a significant long term negative effect on the aesthetics of the area.

**Operation.** The Proposed Action includes the construction of a floodwall that would be up to 10.5 feet above the existing grade. Upon completion of construction, the floodwall would limit the pedestrian view of natural and built features primarily as the pedestrian approaches the corners of the Asser Levy Playground with East 23<sup>rd</sup> and East 25<sup>th</sup> Streets, as the wall would limit views through the VAMC Manhattan property towards Asser Levy Playground. The southeastern corner of the VAMC Manhattan floodwall at the junction of East 23<sup>rd</sup> Street and the Asser Levy Playground would obstruct the view of the front of the Asser Levy Public Baths from pedestrians on the southern sidewalk near 473 East 23<sup>rd</sup> Street. The northeastern corner of the VAMC Manhattan floodwall would also obstruct the pedestrian view of the Public Baths near 389 East 25<sup>th</sup> Street. Along the adjacent sidewalk, pedestrians would no longer have a view into the VAMC Manhattan campus, as the existing iron fence would be replaced by the floodwall. The proposed floodwall design would include a brick veneer and stone cap along East 23<sup>rd</sup> and East 25<sup>th</sup> Streets to add aesthetic details, and provide a similar building material as the surrounding buildings. As the majority of the pedestrian view is already limited by the VAMC Manhattan and other surrounding structures, the Proposed Action would not have a significant negative effect on a pedestrian's experience of the area (see Figures 4.1-5 through Figure 4.1-12).

**Figure 4.1-5. Existing View Along East 23<sup>rd</sup> Street, Facing East (Google street view)**



**Figure 4.1-6. Proposed View along East 23<sup>rd</sup> Street, Facing East**



**Figure 4.1-7. Existing View Along East 23rd Street and Asser Levy Place, Facing North (Google street view)**



**Figure 4.1-8. Proposed View along East 23rd Street and Asser Levy Place, Facing North**



Figure 4.1-9. Existing View of VAMC Manhattan from Asser Levy Place, Facing West (Google street view)



Figure 4.1-10. Proposed View of VAMC Manhattan from Asser Levy Place, Facing West



**Figure 4.1-11. Existing View from East 25th Street at Asser Levy Place, Facing West (Google street view)**



**Figure 4.1-12. Proposed View from East 25th Street at Asser Levy Place, Facing West**



## 4.2 LAND USE AND ZONING

The term “land use” refers to real property classifications that indicate either natural conditions or the types of human activity occurring on a parcel, or within the structures that occupy the parcel. Types of land uses include residential, retail, commercial, industrial, vacant land, and parks. In many cases, land use descriptions are codified in local zoning laws. The foremost factor affecting a proposed project in terms of land use is its compliance with applicable land use or zoning regulations. Other relevant factors include matters such as existing land use at the project site, the types of land uses on adjacent properties and their proximity to the project site, and the duration of a proposed activity and its permanence. Consideration of these factors is essential to understanding the impacts of a proposed project in the context of overall land use plans.

This section addresses land use, zoning, and policies that define the existing conditions for the area wherein the proposed project would occur and potentially result in impacts. The following descriptions of the existing land uses and affecting policies are provided to facilitate understanding of the impacts posed by implementation of the Proposed Action and to inform the analyses of other technical areas of concern.

### 4.2.1 EXISTING CONDITIONS

**Land Use.** The project site is located on the lower east side of the Manhattan Borough, on East 23<sup>rd</sup> Street approximately 450 feet from the East River (see Figures 1.1-1 and 1.1-2) within a mixed residential and commercial district. The block on which the project site is located, is composed of two parcels of land. A small parcel in the southwest corner of the block is occupied by the New York City Department of Education (NYCDOE) building for District 75 City Wide Programs. The remainder of the block is occupied by the VAMC Manhattan. The block boundaries are lined on sides by city streets: First Avenue to the west, East 23<sup>rd</sup> Street to the south, and East 25<sup>th</sup> Street to the north; and by Asser Levy Playground to the east. Sidewalks and street parking line East 23<sup>rd</sup> and East 25<sup>th</sup> Streets and the Asser Levy Playground. A small VAMC Manhattan employee parking lot is located along the Asser Levy Playground, adjacent to the hospital.

First Avenue serves as a major thoroughfare for access to a series of hospital and related-use facilities that compose Lower Manhattan’s “Hospital Row” (City of New York 2013). Lower Manhattan’s “Hospital Row” includes the New York University (NYU) Medical Center; Bellevue Hospital; VAMC

Manhattan; and numerous substance abuse, mental health, and ambulatory care clinics. The surrounding area is densely developed with apartment buildings and residential communities, health and dental clinics, education facilities, and various commercial buildings (e.g., bars, restaurants, and retail businesses). The project site is adjacent to Hunter College and Bellevue Hospital Center on East 25<sup>th</sup> Street; the Peter Cooper Village housing community on East 23<sup>rd</sup> Street; and the Asser Levy Playground, and Public Baths in the Asser Levy Playground. The Public Baths are listed in the NRHP (80002709) and are a New York City Landmark (#234) (NRHPIS 2013, Dolkart 2009). Residential buildings, coffee shops, science clinics, and an NYU campus building for Dental Science are located on First Avenue, across the street from the VAMC Manhattan.

**Zoning.** The New York City Zoning Resolution (NYCZR) dictates the use, density, and bulk of developments within New York City (NYCZCP 2013a). It establishes the zoning districts within the city and dictates the zoning regulations governing land uses and developments.

New York City has three basic zoning district classifications: residential (R), commercial (C), and manufacturing (M). These three basic classifications are further divided into low-, moderate- and high-density districts. Moderate- and high-density districts are further categorized into contextual or non-contextual districts. Contextual district buildings are of similar size and form and must conform to base-height and building-height restrictions. Non-contextual districts have diverse building types that are height-controlled by a sky exposure plane or by tower regulations associated with their distance from the street. Certain areas of the city are also established as Special Mixed-Use Districts, which allow mixed residential and industrial neighborhoods while permitting the expansion of existing and creation of new developments with a variety of uses. The maximum bulk permitted for new developments within any zoning district is mainly governed by the district’s maximum floor area ratio (FAR) and minimum required open space.

The project site is in a moderate- and high-density residential district “R8” zone with a FAR that ranges from 0.94 to 6.02 residential (NYCZCP 2010a, NYCZCP 2012). The R8 district is a non-contextual district. The residential districts in the surrounding area are characterized as either contextual or non-contextual. Figure 4.2-1 depicts the existing zoning designations for the project site and surrounding area. Figure 4.2-2 depicts the tax parcel map within 400 feet of the project site.

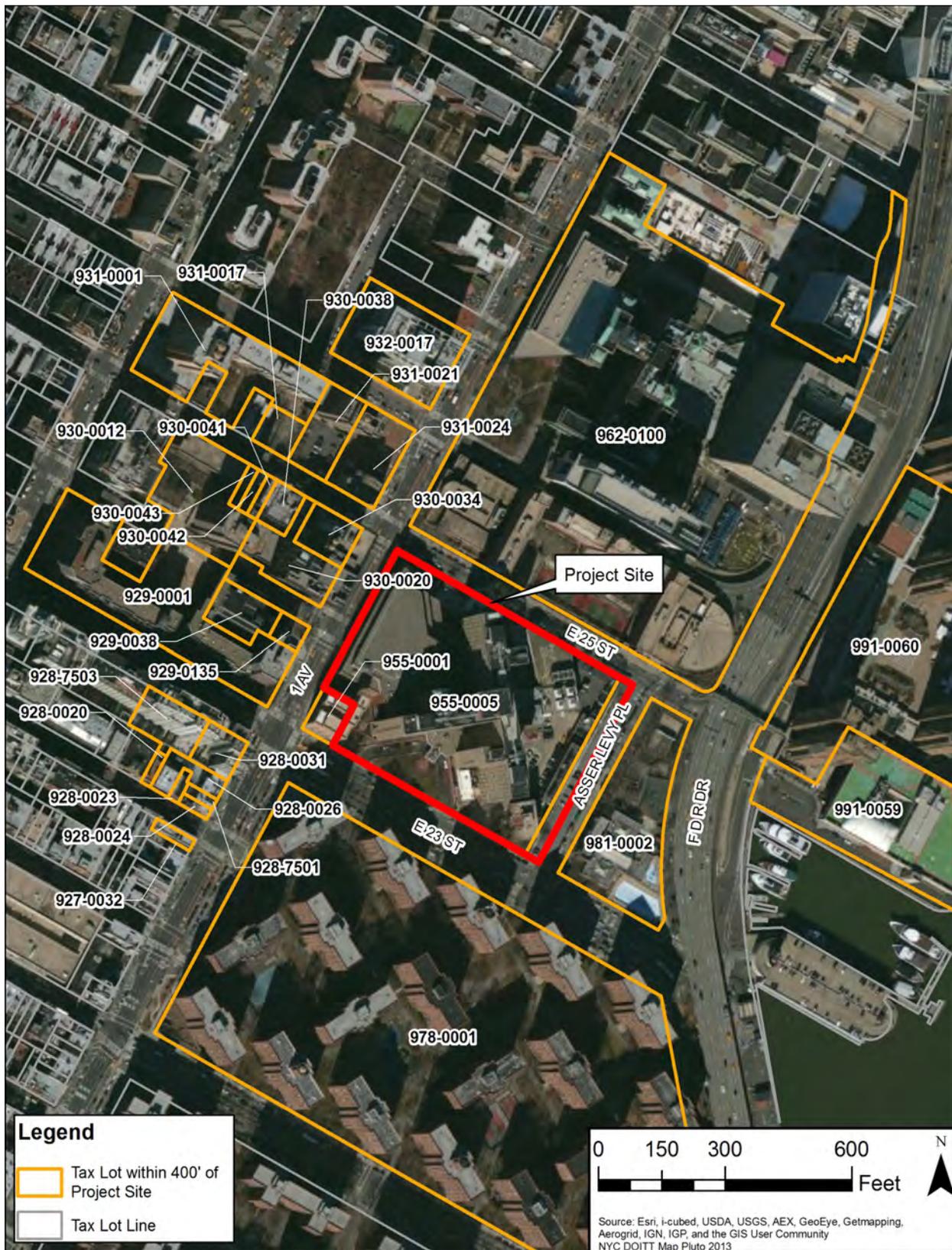
**Figure 4.2-1. Zoning District Map for the Project Site**

Note: Project site bordered in red.



**Figure 4.2-2. Tax Parcel Map for the Project Site**

Note: Project site bordered in red.



Zoning regulations for New York City specify construction and building design elements intended to ensure that new development is consistent with community composition. The NYCZR is also implemented in concert with the state and city planning requirements, public policies and community plans, state and local Coastal Zone Management Programs, and local New York City Waterfront Revitalization Program (WRP) policies to ensure land uses remain consistent with housing and urban development goals, architectural design, population density, protection and enhancement of open spaces and historic resources, corridors, waterfront access, and coastal resources (NYCDCP 2002). Brief discussion on these additional policy elements follows.

**State and City Land Use Planning Policies.** The NYSDEC requires consultations and assessments with appropriate regulating agencies for development actions that might impact how land is used. Included among the many considerations required under these regulating entities are assessments for coastal zone consistency, consistency of the proposed development with surrounding land uses, and potential for impacts on other open spaces and significant historical or natural resource areas. Publicly accessible open spaces, parks, and historical places and resources are also protected under the various zoning and public policies and community plans intended to ensure land use consistency, accessibility, and preservation of community resources in lower Manhattan (NYCDCP 2010a). Also addressed are land use changes that might impact traffic or transportation; or alter the design or use of roads, curbs and gutters, and pedestrian and bike paths. Generally, these are addressed through adherence to the zoning, public policies, and community plans that have adopted its requirements.

Specific protection for publicly accessible open spaces, parks, and historical places and resources include adherence to required architecture and design as stipulated in the NYCZR and meeting construction requirements to minimize shadows that might result from new structures or enlargements located adjacent to them (NYCMOEC 2013, City of New York 2013). A shadow assessment is required only if a project (a) would result in new structures (or additions to existing structures including the addition of rooftop mechanical equipment) of 50 feet or more; or (b) would be located adjacent to, or across the street from, a sunlight-sensitive resource (e.g., park, historic site, or site of significant natural resources).

Because the Proposed Action would result in a structure of more than 10 feet in height that would be adjacent to a

sunlight-sensitive open space resource, a shadow analysis was conducted and it is provided in Section 4.17.

New York City's sustainability policy is guided by PlaNYC, a long-term sustainability plan, which includes policies related to the city's land use, open space, brownfields, energy use and infrastructure, transportation systems, water quality and infrastructure, and air quality to make the city more resilient to projected climate change impacts.

**Public Policy.** Public policies can affect the allowable land uses on any project site. Areas located within floodplains are subject to FEMA National Floodplain Insurance Program requirements. Additionally, areas located on the nearest legally mapped street 300 feet landward of the High Mean Tide Line occur in Manhattan's Coastal Management Zone (CMZ).

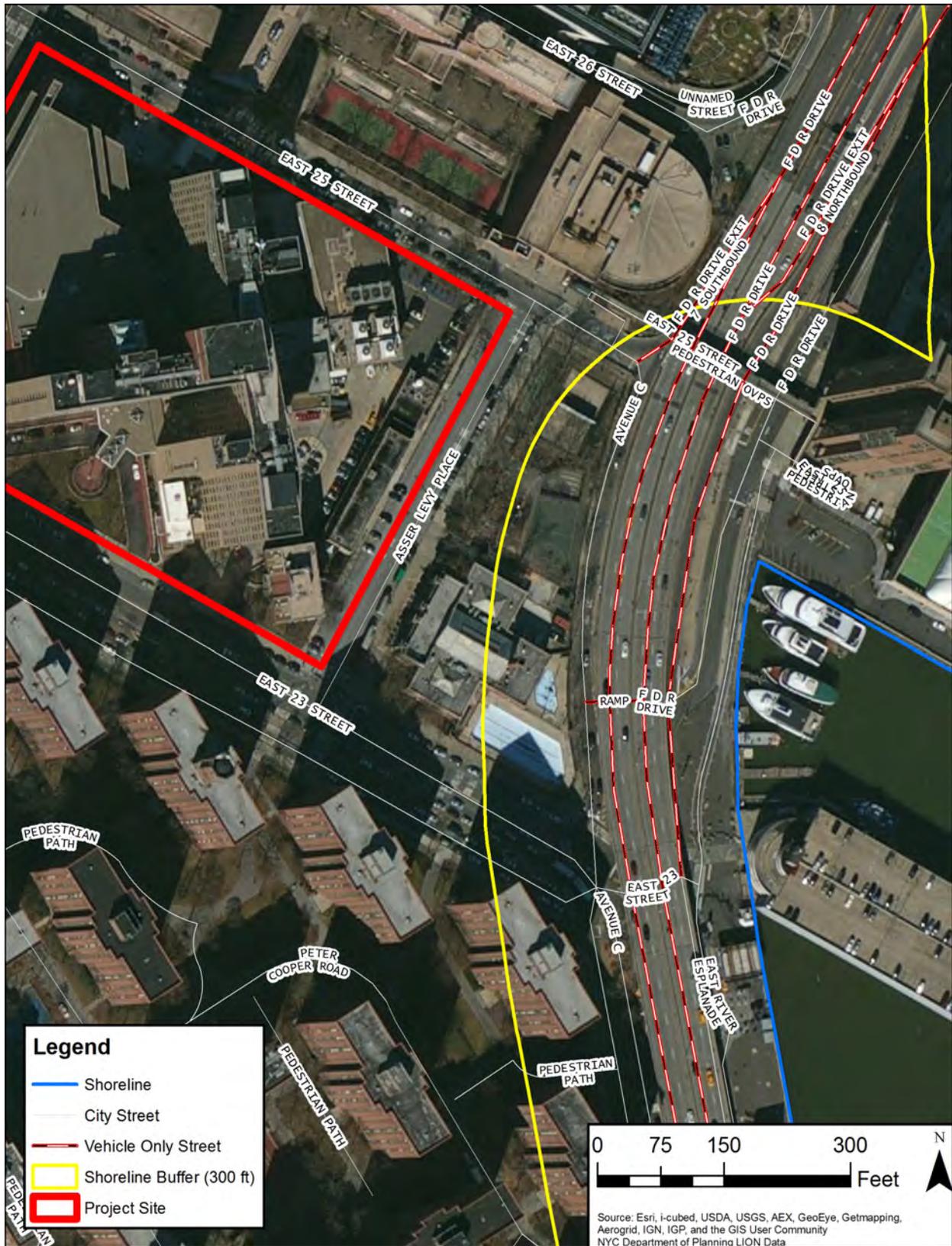
The VAMC Manhattan is approximately 450 feet west of the East River and is bordered by East 23<sup>rd</sup> Street, which is one of only seven streets in Lower Manhattan that provide pedestrian waterfront access to the East River (Buckhurst Fish and Jacquemart 2012). North to south, these streets are 51<sup>st</sup> Street, 37<sup>th</sup> Street, 34<sup>th</sup> Street, 25<sup>th</sup> Street, 23<sup>rd</sup> Street, 20<sup>th</sup> Street, and Avenue C.

The VAMC Manhattan is located within the 100-year and 500-year floodplains, just outside of the CMZ (see Figure 4.2-3). Construction activities that affect land use in this area are subject to regulations under floodplain management regulations, the New York City WRP and adopted policies from the 1992 New York City Comprehensive Waterfront Plan (CWP), and the 1997 Manhattan Borough Waterfront Plan (NYCDCP 2012, NYSDEC 2013a). The companion Manhattan Borough Waterfront Plan offers site-specific recommendations in accordance with the CWP's planning goals (NYCDCP 1992, NYCDCP 1997). Together, these plans assess local conditions and propose short- and long-term strategies to guide land use change, planning, and coordination for use, compatibility, and public investment for each of the waterfront functional areas in Community Board (CB) Number 6 (CB#6). CB#6 is one of 12 community planning boards for various neighborhoods in the Manhattan Borough of New York City. CB#6 represents the following lower Manhattan neighborhoods: Stuyvesant Town, Tudor City, Turtle Bay, Peter Cooper Village, Murray Hill, Gramercy Park, Kips Bay, and Sutton Place.

Refer to Section 4.8 and Appendix D for additional information on floodplains and coastal zone management.

**Figure 4.2-3. Coastal Zone Map for the Project**

Note: Project site bordered in red.



**Community-Based Plans.** Local planning and development of areas within CB#6, Borough of Manhattan, is regulated by the 197-A Plan for the Eastern Section of Community District 6 (hereafter, CB#6 197-A Plan) (NYCDP 2010a). The CB#6 197-A Plan, adopted by the City Planning Commission and the City Council pursuant to Section 197-a of the City Charter, guides the substantial growth and transformation occurring in Manhattan to ensure access to increased amounts of useful open space, improved waterfront access, improved street network and transportation systems, consistency and compatibility with historical use trends in the area, and preservation of significant residential developments and buildings. Additionally, the CB#6 197-A Plan provides a planning context for the NYC WRP and offers site-specific guidance to be considered in assessing the consistency of proposed actions with the WRP.

#### 4.2.2 ENVIRONMENTAL IMPACTS

The significance of potential land use and zoning effects is based on the level of land use sensitivity in areas affected by a proposed project and the compatibility of a proposed project with existing conditions. Analysis of a proposed project should determine whether it would be consistent with existing land uses, alter existing development patterns, directly displace any land use, or result in public policy that could change land uses. A proposed project could have a significant effect with respect to land use if any the following were to occur:

- » Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance adopted for the purpose of avoiding or mitigating an environmental effect.
- » Result in significant material changes to existing regulations or policies.
- » Physically divide an established community.
- » Conflict with any applicable habitat conservation plan or natural community conservation plan.

Changes in land use conditions could create impacts in other resource areas; however, this potential to result in impacts on other resource areas should not necessarily be confused with a land use impact. Therefore, the analysis of the effect of land use changes is often used to determine whether the land use changes could lead to impacts in other resource areas.

#### 4.2.2.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Under the No Action Alternative, the existing land uses would remain the same as described in Section 4.2.1.

#### 4.2.2.2 ALTERNATIVE 2 – PROPOSED ACTION

The Proposed Action would not result in a direct displacement of any land uses and would not change the project site's zoning. Construction and operation of the proposed floodwall would be consistent with the existing land uses, including the onsite VAMC Manhattan and surrounding uses such as hospitals, university, NYCDOE building, and the Asser Levy Playground. The Proposed Action would not alter or accelerate development patterns in the area.

Short-term, direct, minimal-to-moderate, adverse effects on land use would occur during construction of the proposed floodwall; however, these effects would not be significant. Construction activities would generate nuisance noises, dust, and heavy truck traffic in the vicinity of the project site. However, these effects would be temporary in nature, occur during regular business hours, and would not place significant burdens on nearby land uses. Further, a temporary sound barrier could be erected to mitigate noise impacts on pedestrians and residences in the area.

Although access to sidewalks, street lanes, and a portion of the Asser Levy Playground, immediately adjacent to the VAMC Manhattan, might be limited during construction, the existence and operation of the floodwall would not permanently preclude continued use or occupation of an area, in accordance with the NYC ZR. Areas of the Asser Levy Playground disturbed by the Proposed Action would be restored to NYCDPR standards. Further, the Proposed Action would not conflict with planning criteria established to ensure the safety and protection of human life and property. Continuous access to the VAMC Manhattan would be maintained throughout the construction period to ensure consistent provision of medical care. However, VAMC Manhattan personnel, workers, and visitors might be required to use designated safe walking paths and entrance ways into the hospital to ensure public safety and health.

The Proposed Action would be consistent with applicable plans and policies. In accordance with the NYC ZR, CB#6 197-A Plan, adopted guidance from the NYC WRP, and PlaNYC, construction and the continued existence of the floodwall would not reduce or adversely impact

useful open space, waterfront access, street networks, transportation systems, or sustainability. Pedestrian access to sidewalks along portions of East 23<sup>rd</sup> Street, East 25<sup>th</sup> Street, and the Asser Levy Playground might be temporarily restricted during construction activities. However, this would present only a short-term, minimal-to-moderate, adverse impact on pedestrians walking on East 23<sup>rd</sup> Street to the waterfront. For the duration of construction, pedestrians would either use modified walking paths around the construction area or cross the street to use the opposite sidewalk to travel eastward beyond the VAMC Manhattan campus. Following construction, availability of the portion of the sidewalk along East 23<sup>rd</sup> Street adjacent to the VAMC Manhattan would be fully returned.

Long-term, minimal-to-moderate, adverse and beneficial effects on land use would occur; however, these effects would not be significant. The proposed floodwall would be located within the footprint of the VAMC Manhattan campus and would change the visible landscape in the immediate vicinity of the VAMC Manhattan. However, the wall design and alignment would be developed and constructed to ensure consistency with architectural requirements and historical use trends described in the NYC ZR. An assessment of shadows is necessary for actions resulting in new structures or enlargement of existing structures that would be located near open spaces, parks, or places of significant historic or natural resources. Because portions of the proposed floodwall would be adjacent to a publicly accessible park and an NRHP-listed site, consultation with the NYSDEC and NYCDPR, and a shadow assessment were conducted to determine impacts on these resources. Section 4.17 and Appendix F of this EA summarize the results of the shadow assessment and potential impacts from the Proposed Action on sunlight-sensitive resources.

### 4.3 AIR QUALITY

In accordance with Federal Clean Air Act (CAA) requirements, the air quality in a given region or area is measured by the concentration of various pollutants in the atmosphere. The measurements of these “criteria pollutants” in ambient air are expressed in units of parts per million (ppm), milligrams per cubic meter (mg/m<sup>3</sup>), or micrograms per cubic meter (µg/m<sup>3</sup>). The air quality in a region is a result not only of the types and quantities of atmospheric pollutants and pollutant sources in an area, but also surface topography, the size of the topological “air basin,” and the prevailing meteorological conditions.

**National Ambient Air Quality Standards.** Under the CAA, the USEPA developed numerical concentration-based

standards, or National Ambient Air Quality Standards (NAAQS), for pollutants that have been determined to affect human health and the environment. The NAAQS represent the maximum allowable concentrations for O<sub>3</sub>, carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), respirable particulate matter (including particulate matter equal to or less than 10 microns in diameter [PM<sub>10</sub>] and particulate matter equal to or less than 2.5 microns in diameter [PM<sub>2.5</sub>]), and lead (Pb) (40 CFR §50). The CAA also gives the authority to states to establish air quality rules and regulations stricter than the Federal standards. New York State has adopted the NAAQS and promulgated additional State Ambient Air Quality Standards (SAAQS) for criteria pollutants. In some cases, the SAAQS are more stringent than the Federal primary standards. The NYSDEC regulates air quality for New York State. Table 4.3-1 presents the NAAQS and SAAQS.

**Attainment Status of the New York Region.** The USEPA classifies the air quality in an air quality control region (AQCR), or in subareas of an AQCR, according to whether the concentrations of criteria pollutants in ambient air exceed the NAAQS. Areas within each AQCR are therefore designated as either “attainment,” “nonattainment,” “maintenance,” or “unclassified” for each of the six criteria pollutants. Attainment means that the air quality within an AQCR is better than the NAAQS. Nonattainment indicates that criteria pollutant levels exceed NAAQS. Maintenance indicates that an area was previously designated nonattainment but is now attainment. An unclassified air quality designation by USEPA means that there is not enough information to classify an AQCR appropriately, so the area is considered attainment. The USEPA has delegated the authority for ensuring compliance with the NAAQS in New York to the NYSDEC. In accordance with the CAA, each state must develop a State Implementation Plan (SIP), which is a compilation of regulations, strategies, schedules, and enforcement actions designed to move the state into compliance with all NAAQS.

The General Conformity Rule (CAA §176(c)(4)) applies to all Federal actions in nonattainment or maintenance areas. This rule requires that any Federal action meet the requirements of a SIP or Federal Implementation Plan. More specifically, CAA conformity is ensured when a Federal action would not cause a new violation of the NAAQS; contribute to an increase in the frequency or severity of violations of NAAQS; or delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS.

**Greenhouse Gas Emissions.** Greenhouse gases (GHGs) are gaseous emissions that trap heat in the atmosphere.

**Table 4.3-1. Ambient Air Quality – Federal Standards and New York State Standards**

POLLUTANT	AVERAGE PERIOD	FEDERAL AIR QUALITY STANDARDS				NEW YORK STATE STANDARDS <sup>4</sup>	
		Primary Standards		Secondary Standards		Level	Statistic
		Level <sup>b</sup>	Statistic <sup>c</sup>	Level	Statistic		
Carbon Monoxide (CO)	8-hour	9 ppm	Maximum	None		9 ppm	Maximum
	1-hour	35 ppm	Maximum			35 ppm	Maximum
Lead <sup>d</sup> (Pb)	Rolling 3 month avg.	0.15 µg/m <sup>3</sup>	Maximum	Same as Primary		None	
Nitrogen Dioxide (NO <sub>2</sub> )	Annual	0.053 ppm	Arithmetic Mean	Same as Primary		0.05 ppm	Arithmetic Mean
	1-hour	0.100 ppm <sup>e</sup>	3-year avg.	0.053 ppm	Arithmetic Mean	None	
Total Suspended Particulates (TSP) <sup>f</sup>	12 consecutive months	None		None		75 µg/m <sup>3</sup>	Geometric Mean
	24-hour	260 µg/m <sup>3</sup>	Maximum	150 µg/m <sup>3</sup>	Maximum	250 µg/m <sup>3</sup>	Maximum
Particulate Matter (PM <sub>10</sub> ) <sup>g</sup>	24-hour	150 µg/m <sup>3</sup>	Maximum	Same as Primary		None	
Particulate Matter (PM <sub>2.5</sub> )	Annual	15 µg/m <sup>3</sup>	Arithmetic Mean	Same as Primary		None	
	24-hour	35 µg/m <sup>3h</sup>	3-year avg.	Same as Primary			
Ozone (O <sub>3</sub> ) <sup>i</sup>	8-hour (2008 std.)	0.075 ppm	3-year avg.	Same as Primary		None	
	8-hour (1997 std.)	0.08 ppm	3-year avg.	Same as Primary		0.08 ppm	Maximum
	1-hour	0.12 ppm	Not Applicable in NYS <sup>j</sup>	Same as Primary		0.12 ppm	Maximum
Sulfur Dioxide (SO <sub>2</sub> )	Annual	0.03 ppm	Arithmetic Mean	None		0.03 ppm	Arithmetic Mean
	24-hour	0.14 ppm	Maximum			0.14 ppm	Maximum
	3-hour	None		0.5 ppm	Maximum	0.50 ppm	Maximum
	1-hour	75 ppb	3-year avg. <sup>k</sup>	None		None	
Hydrocarbons (non-methane)	3-hour (6 to 9 a.m.)	None		None		0.24 ppm	Maximum

Source: USEPA 2012, NYSDEC 2012

Notes:

- a. State standards that are more stringent than Federal standards are in bold. New York State also has standards for beryllium, fluorides, hydrogen sulfide, and settleable particulates (dustfall). Ambient monitoring for these pollutants is not currently conducted.
- b. Gaseous concentrations for Federal standards are corrected to a reference temperature of 25 °C and to a reference pressure of 760 millimeters of mercury.
- c. All maximum values are concentrations not to be exceeded more than once per calendar year. (Federal 1-hour ozone standard not to be exceeded more than 3 days in 3 calendar years).
- d. While the Federal standard for lead has not yet officially been adopted by New York State, the 0.15 µg/m<sup>3</sup> standard was became effective throughout New York State on January 1, 2013, and replaced the previous level of 1.5 µg/m<sup>3</sup>.
- e. The 0.100 parts per million (ppm) standard was effective January 22, 2010. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average within an area must not exceed 0.100 ppm.
- f. New York State also has 30-, 60-, and 90-day standards and geometric mean standards of 45, 55, and 65 µg/m<sup>3</sup> in 6 NYCRR §257. While these TSP standards have been superseded by the PM10 standards, TSP measurements can still serve as surrogates to PM10 measurements in the determination of compliance status.
- g. Federal standard for PM10 has not yet officially been adopted by New York State, but is currently being applied to determine compliance status.
- h. Federal standard was changed from 65 to 35 µg/m<sup>3</sup> on December 17, 2006. Compliance with the Federal standard is determined by using the average of 98th percentile 24-hour value during the past 3 years, which cannot exceed 35 µg/m<sup>3</sup>.
- i. Former New York State Standard for ozone of 0.08 ppm was not officially revised via regulatory process to coincide with the Federal standard of 0.12 ppm, which is currently being applied by New York State to determine compliance status. Compliance with the Federal 8-hour standards is determined by using the average of the 4th highest daily value during the past 3 years, which cannot exceed 0.084 ppm or 0.075 ppm, effective May 27, 2008).=
- j. USEPA revoked the 1-hour ozone standard in all areas, although some areas have continuing obligations under that standard (“anti-backsliding”). The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is < 1.
- k. Final rule signed June 2, 2010. To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb.

These emissions occur from natural processes and human activities. The most common GHGs emitted from human activities include carbon dioxide (CO<sub>2</sub>), methane, and nitrous oxide. GHGs are primarily produced by the burning of fossil fuels and through industrial and biological processes. On September 22, 2009, the USEPA issued a final rule for mandatory GHG reporting from large GHG emissions sources in the United States. The purpose of the rule is to collect comprehensive and accurate data on CO<sub>2</sub> and other GHG emissions that can be used to inform future policy decisions. In general, the threshold for reporting is 25,000 metric tons or more of CO<sub>2</sub> equivalent GHG emissions per year; however, that excludes mobile source emissions.

EO 13514, Federal Leadership in Environmental, Energy, and Economic Performance, was signed in October 2009 and requires Federal agencies to set goals for reducing GHG emissions. One requirement within EO 13514 is the development and implementation of an agency Strategic Sustainability Performance Plan (SSPP) that prioritizes agency actions based on lifecycle return on investment. Each SSPP is required to identify, among other things, “agency activities, policies, plans, procedures, and practices” and “specific agency goals, a schedule, milestones, and approaches for achieving results, and quantifiable metrics” relevant to the implementation of EO 13514. On September 1, 2010, the VA publicly released its SSPP, which describes specific actions the VA will take to achieve its individual GHG reduction targets, reduce long-term costs, and meet the full range of goals of the EO. All SSPPs segregate GHG emissions into three categories: Scope 1, Scope 2, and Scope 3 emissions. Scope 1 GHG emissions are those directly occurring from sources that are owned or controlled by the agency. Scope 2 emissions are indirect emissions generated in the production of electricity, heat, or steam purchased by the agency. Scope 3 emissions are other indirect GHG emissions that result from agency activities but from sources that are not owned or directly controlled by the agency. The GHG goals in the VA SSPP (updated November 16, 2012) include reducing Scope 1 and Scope 2 GHG emissions by 29.8 percent by 2020, relative to Fiscal Year (FY) 2008 emissions, and reducing Scope 3 GHG emissions by 10 percent by 2020, relative to FY 2008 emissions (VA 2012).

**Table 4.3-2. Air Emissions Inventories for the Local and Regional Areas of Influence (2008)**

	NO <sub>x</sub> (TPY)	VOC (TPY)	CO (TPY)	SO <sub>2</sub> (TPY)	PM <sub>10</sub> (TPY)	PM <sub>2.5</sub> (TPY)
New York County	29,692	39,224	211,251	7,201	7,548	3,650
New Jersey-New York-Connecticut AQCR	415,090	453,928	2,212,433	70,880	100,934	43,919

Source: USEPA 2008

#### 4.3.1 EXISTING CONDITIONS

The project site is located within the New Jersey-New York-Connecticut AQCR. The AQCR has been designated as nonattainment for PM<sub>2.5</sub>, moderate nonattainment for 8-hour O<sub>3</sub>, and a maintenance area (moderate > 12.7 ppm) for CO. New York County has been further designated as moderate nonattainment for PM<sub>10</sub> (USEPA 2013a).

The most recent emissions inventories for New York County and the New Jersey-New York-Connecticut AQCR are shown in Table 4.3-2. New York County is considered the local area of influence, and the New Jersey-New York-Connecticut AQCR is considered the regional area of influence for the air quality analysis. O<sub>3</sub> is not a direct emission; it is generated from reactions of volatile organic compounds (VOCs) and nitrogen oxides (NO<sub>x</sub>), which are precursors to O<sub>3</sub>. Therefore, for the purposes of this air quality analysis, VOCs and NO<sub>x</sub> emissions are used to represent O<sub>3</sub> generation.

The VAMC Manhattan currently maintains an Air Permit (Permit ID 2-6206-01438/00002). Under this permit, the facility is allowed to operate four sterilizers and two abators. In addition, under this permit, VAMC Manhattan operates exempt sources of air emissions, which include one emergency generator and four diesel fuel above ground storage tanks (ASTs).

#### 4.3.2 ENVIRONMENTAL IMPACTS

The significance criteria are dependent on whether a project is located in an attainment, nonattainment, or maintenance area for criteria pollutants. Other significance criteria include whether New Source Review (NSR) air quality construction permitting is triggered or Title V operating permitting is triggered. Major NSR air quality construction permitting is divided into Nonattainment Major NSR (NANSR) for nonattainment pollutants and Prevention of Significant Deterioration (PSD) permitting for attainment pollutants. All of these significance criteria are discussed in the following paragraphs.

**Attainment Area Pollutants.** The attainment area pollutants for the project site are NO<sub>2</sub>, SO<sub>2</sub>, and Pb. The impact in NAAQS “attainment” areas would be considered significant if the net increases in these pollutant emissions

from the Federal action would result in any one of the following scenarios:

- » Cause or contribute to a violation of any national or state ambient air quality standard
- » Expose sensitive receptors to substantially increased pollutant concentrations
- » Exceed any Evaluation Criteria established by a SIP or permit limitations/requirements.

Impacts on ambient air quality were assessed by comparing the increase in emissions under the proposed project to the county and AQCR emissions inventory.

**Nonattainment or Maintenance Area Pollutants.** The nonattainment area pollutants for the location of this proposed project are PM<sub>10</sub>, PM<sub>2.5</sub>, and O<sub>3</sub> (measured as NO<sub>x</sub> and VOCs). In addition, the area is a maintenance area for CO. Effects on air quality in NAAQS “nonattainment” areas are considered significant if the net changes in these project-related pollutant emissions result in any of the following scenarios:

- » Cause or contribute to a violation of any national or state ambient air quality standard
- » Increase the frequency or severity of a violation of any ambient air quality standard
- » Delay the attainment of any standard or other milestone contained in the SIP.

With respect to the General Conformity Rule, effects on air quality would be considered significant if the proposed Federal action emissions exceed *de minimis* threshold levels established in 40 CFR 93.153(b) for individual nonattainment pollutants or for pollutants for which the area has been redesignated as a maintenance area.

Table 4.3-3 presents the General Conformity *de minimis* thresholds, by regulated pollutant. As shown in this table, *de minimis* thresholds vary depending on the severity of the nonattainment area classification. Note that emissions sources subject to NANSR, PSD, or even Minor NSR air permitting are not required to be counted towards the General Conformity *de minimis* thresholds. The reasoning for this is they would already be required to go through

**Table 4.3-3. General Conformity de minimis Emissions Thresholds**

POLLUTANT	STATUS	CLASSIFICATION	DE MINIMIS LIMIT (TPY)
O <sub>3</sub> (measured as NO <sub>x</sub> or VOCs)	Nonattainment	Extreme	10
		Severe	25
		Serious	50
		Moderate/marginal (inside ozone transport region)	50 (VOCs)/100 (NO <sub>x</sub> )
		All others	100
	Maintenance	Inside ozone transport region	50 (VOCs)/100 (NO <sub>x</sub> )
		Outside ozone transport region	100
CO	Nonattainment/ maintenance	All	100
PM <sub>10</sub>	Nonattainment	Serious	70
		Moderate	100
	Maintenance	No Special Classification	100
		All	100
PM <sub>2.5</sub> (measured directly, or as SO <sub>2</sub> , NO <sub>x</sub> , or VOCs as significant precursors)	Nonattainment/ maintenance	All	100
SO <sub>2</sub>	Nonattainment/ maintenance	All	100
NO <sub>x</sub>	Nonattainment/ maintenance	All	100
VOCs	Nonattainment/ maintenance	All	100
Pb	Nonattainment/ maintenance	All	25

Source: 40 CFR 93.153, as of January 9, 2012

an approval process with the appropriate Federal, state, or local air quality regulatory authority.

**Nonattainment Major NSR Permits.** The following factors were considered in determining the significance of air quality impacts with respect to NANSR permitting requirement:

- » If the net increase in stationary source emissions qualify as a NANSR major source. This major source threshold varies from 10 tons per year (tpy) to 100 tpy for nonattainment pollutants depending on the severity of the nonattainment classification and the pollutant (40 CFR 51.165).

**PSD and Title V Permits.** The following factors were considered in determining the significance of air quality impacts with respect to PSD permitting requirements prior to construction:

- » If the net increase in stationary source emissions qualify as a PSD major source. This includes 250 tpy emissions per attainment pollutant (40 CFR 52.21(b) (1) and 40 CFR 52.21(a)(2)), or 75,000 tpy emissions of GHGs.
- » If the net increase in stationary source emissions qualify as a significant modification to an existing PSD major stationary source, (i.e., change that adds 10 to 40 tpy of criteria pollutants to the PSD major source's potential to emit depending on the pollutant, or adding 75,000 tpy of GHGs).
- » If the proposed project occurs within 10 kilometers of a Class I area and if it would cause an increase in the 24-hour average concentration of any regulated pollutant in the Class I area of 1 µg/m<sup>3</sup> or more (40 CFR 52.21[b][23][iii] and 40 CFR 52.21[a][2]).

The following factor was considered in determining the significance of air quality impacts with respect to Title V operating permit requirements (40 CFR 71.2 and 40 CFR 71.3):

- » If the increase in stationary source emissions qualify as a Title V major source. This includes the potential to emit 100 tpy for criteria pollutants, or 10 tpy of any individual hazardous air pollutant (HAP), or 25 tpy of all HAPs combined, or 100,000 tpy of GHGs.

The proposed project would not be subject to the above significance criteria for these permit programs because no permanent stationary sources would be installed and construction emissions are typically not subject to these

significance criteria. Current emergency generators are considered exempt under the VAMC's air permit by the NYSDEC; therefore, it is anticipated that installation of emergency generators for the four proposed sanitary sewer pumping stations would also be exempt.

#### 4.3.2.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Existing conditions would remain the same as described in Section 4.3.1. No new effects on regional or local air quality would occur.

#### 4.3.2.2 ALTERNATIVE 2 – PROPOSED ACTION

**Construction.** Short-term, adverse effects on air quality would be expected from the construction of the proposed floodwall; however, the effects would not be significant. The proposed construction activities would generate air pollutant emissions from site-disturbing activities and operation of construction equipment. Construction activities would also generate particulate emissions as fugitive dust from ground-disturbing activities and from the combustion of fuels in construction equipment. The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of activity. Emissions from construction activities would be produced only for the duration of construction activities, which, for the purposes of this air quality analysis, is conservatively assumed to be 120 workdays or 6 calendar months.

Construction activities would incorporate BMPs to minimize fugitive particulate matter emissions. Additionally, the work vehicles are assumed to be well-maintained and could use diesel particle filters to reduce emissions. Construction workers commuting daily to and from the job site in their personal vehicles would also create regulated pollutant air emissions.

Air emissions from construction activities under the Proposed Action are summarized in Table 4.3-4. Applicable significance criteria also are summarized in Table 4.3-4. Appendix C contains detailed calculations and the assumptions used to estimate the air emissions.

**Operation.** Operation of the proposed floodwall would include the use of four emergency generators; one for each of the four proposed sanitary sewer pumping stations. These generators would use diesel fuel and would be only used for emergencies and as required for monthly testing. It is anticipated that there would be regularly scheduled tests for the generators, and very few and intermittent

emergency uses of the generators. Therefore, it is anticipated that the use of the proposed generators would not contribute significantly to the nonattainment area’s status. While the exact size of the proposed generators has not been determined, as a conservative estimate, it was assumed that each generator would be 100-kilowatts (kW). Table 4.3-5 lists the estimated emissions for 4 hours of operation per year of the proposed generators. The estimated emissions conservatively assumed 40 percent efficiency for the proposed emergency generators, but the actual emergency generators would likely be more efficient. Under the facility’s current Air Permit, VAMC Manhattan operates exempt sources of air emissions, which include emergency generators. However, the proposed generators would require a reevaluation of the current permit to ensure compliance.

**General Conformity.** The VAMC Manhattan is located in an area that has been designated as nonattainment area for PM<sub>10</sub>, PM<sub>2.5</sub>, and O<sub>3</sub>. In addition, the area is a maintenance area for CO. Therefore, the General Conformity Rule

requirements are potentially applicable for O<sub>3</sub>, which is measured as VOC and NO<sub>x</sub> emissions, PM<sub>10</sub>, PM<sub>2.5</sub>, and CO. Table 4.3-4 compares the estimated annual air emissions from construction of the proposed floodwall to the *de minimis* threshold limits for New York County. Table 4.3-5 compares the estimated annual air emissions from operation of the proposed emergency generators. Calculated air emissions from construction of the proposed floodwall and operation of the emergency generators would be well below *de minimis* threshold limits; therefore, a General Conformity determination would not be required.

**Greenhouse Gases.** The Proposed Action would contribute directly to emissions of GHGs from the combustion of fossil fuels. Because CO<sub>2</sub> emissions account for approximately 92 percent of all GHG emissions in the United States, they are used for analyses of GHG emissions in this assessment. The U.S. Department of Energy’s Energy Information Administration estimates that 2010 gross CO<sub>2</sub> emissions in New York and the United States were 172.8 million metric

**Table 4.3-4. Estimated Air Emissions Resulting from Construction of the Proposed Project**

ACTIVITY	NO <sub>x</sub> (TPY)	VOC (TPY)	CO (TPY)	SO <sub>2</sub> (TPY)	PM <sub>10</sub> (TPY)	PM <sub>2.5</sub> (TPY)	CO <sub>2</sub> (TPY)
Combustion	9,410	2,101	5,116	2,324	0.297	0.288	1,033,397
Fugitive Dust	-	-	-	-	0.904	0.090	-
Haul Truck On-Road	0.112	0.013	0.033	0.000	0.004	0.003	49,513
Commuter	0.024	0.025	0.238	0.000	0.003	0.002	39,693
<b>Total Construction Emissions</b>	<b>9,546</b>	<b>2,139</b>	<b>5,387</b>	<b>2,324</b>	<b>1,209</b>	<b>0,384</b>	<b>1,122,603</b>
<b>General Conformity de minimis thresholds</b>	<b>100</b>	<b>50</b>	<b>100</b>	<b>NA</b>	<b>100</b>	<b>100</b>	<b>NA</b>

Notes: All activities generate emissions from mobile sources unless indicated as stationary sources.

NA = Not Applicable

**Table 4.3-5. Estimated Operational Generator Emissions for the Proposed Project**

	NO <sub>x</sub> (TPY)	VOC (TPY)	CO (TPY)	SO <sub>2</sub> (TPY)	PM <sub>2.5</sub> (TPY)	CO <sub>2</sub> (TPY)
Calculated Emissions for each Generator	2,184	0,061	0,58	0,69	0,69	112,60
<b>Total Generator Emissions</b>	<b>8,74</b>	<b>0,25</b>	<b>2,32</b>	<b>2,76</b>	<b>0,27</b>	<b>450,40</b>
<b>General Conformity de minimis thresholds</b>	<b>100</b>	<b>50</b>	<b>100</b>	<b>NA</b>	<b>100</b>	<b>NA</b>

Source: USEPA 2008

**Table 4.3-6. Estimated CO<sub>2</sub> Equivalent Emissions from the Proposed Action**

	CO <sub>2</sub> EQUIVALENT EMISSIONS (METRIC TONS)	PERCENT OF NEW YORK’S CO <sub>2</sub> EMISSIONS	PERCENT OF U.S. CO <sub>2</sub> EMISSIONS
Proposed Action (construction)	1,018,201	0.0006%	0.000018%
Proposed Action (operation)	102,128	0.000006%	0.000002%

Source: (USDOE/EIA 2011)

tons and 5,631.3 million metric tons, respectively (USDOE/ EIA 2011). Table 4.3-6 summarizes the anticipated amount of CO<sub>2</sub> equivalent emissions from the Proposed Action. These emissions would represent a none-to-negligible contribution towards the statewide GHG inventory and the national GHG inventory.

## 4.4 CULTURAL RESOURCES

“Cultural resources” is an umbrella term for many heritage-related resources, including prehistoric and historic archaeological sites, buildings, structures, districts, or certain objects. Cultural resources are discussed in terms of archaeological resources, architectural resources, or resources of traditional cultural significance.

Federal cultural resources laws applicable to this project include the National Historic Preservation Act (NHPA), the Archaeological and Historic Preservation Act (1974), the American Indian Religious Freedom Act (1978), the Archaeological Resources Protection Act (1979), and the Native American Graves Protection and Repatriation Act (1990).

The National Register of Historic Places (NRHP) is the official list of the properties in the United States that are significant in terms of prehistory, history, architecture, or engineering. The NRHP is administered by the National Park Service. Generally, resources must be more than 50 years old to be considered eligible for the NRHP. To meet the evaluation criteria for eligibility to the NRHP, a property needs to be significant under one or more NRHP evaluation criteria (36 CFR Part 60.4), and retain historic integrity expressive of the significance. More recent structures might be eligible for listing in the NRHP if they are of exceptional importance or if they have the potential to gain significance in the future per special NRHP considerations.

Section 106 of the NHPA requires a Federal agency official to take into account the effects of its undertaking on historic properties, and afford the Advisory Council on Historic Preservation (ACHP), an independent Federal agency, an opportunity to comment. This is done in accordance with the regulations of the ACHP implementing Section 106 process, 36 CFR Part 800. The Section 106 review requires an assessment of the potential impact of an undertaking on historic properties that are within the proposed project’s Area of Potential Effect (APE). The APE is defined as the geographic area(s) “within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist.” Consultation with the State Historic Preservation Office (SHPO) and consulting parties including

local governments is required regarding the identification and evaluation of potentially affected historic properties, determination of potential effects of an undertaking on historic properties, and resolution of any adverse effects. Under the Section 106 process, the City of New York would be a consulting party for the proposed project.

The New York City Landmarks Law gives the New York City Landmarks Preservation Commission (NYCLPC) authority to designate City Landmarks, Interior Landmarks, Scenic Landmarks, and Historic Districts, and to regulate any construction, reconstruction, alteration, or demolition of them. Projects that might physically affect City Landmarks or are within landmark Historic Districts require review by NYCLPC. Archaeological resources also are considered by the NYCLPC. Criteria for City Landmarks are different from NRHP evaluation criteria, and consider properties 30 years of age or older that meet certain criteria, compared to the NRHP evaluation of properties of at least 50 years of age or older.

### 4.4.1 EXISTING CONDITIONS

**Onsite Architectural Resources.** The VAMC Manhattan was completed in 1954 and is composed of two major sections: the 19-story tower on the center of the parcel fronting East 23<sup>rd</sup> Street, and a five-story addition fronting First Avenue. The facility’s main entrance on East 23<sup>rd</sup> Street is inset from the street at the apex of a triangular driveway and courtyard. Patients and visitors enter the building via a large triangular canopy. The east side of the VAMC Manhattan has several smaller, three- and five-story buildings and surface parking (NYCLPC 2002, VANYHHS 2013, NYT 1954). The VAMC Manhattan is not eligible for the NRHP, and is not a New York City Landmark. The SHPO and NYCLPC have concurred with these determinations (NYSHPO 2013b) (see Appendix B).

A veteran’s monument is in the southeast portion of the VAMC Manhattan parcel, just southeast of the 19-story tower. The monument area is inside of the approximately 3-foot metal fence that surrounds the southeastern edge of the VAMC Manhattan parcel. The monument is approximately 10 feet from the sidewalk along East 23<sup>rd</sup> Street, but the pavers and stone associated with the monument area are adjacent to the sidewalk.

**Offsite Architectural Resources.** Immediately southwest of the VAMC Manhattan, on the northeast corner of First Avenue and East 23<sup>rd</sup> Street (400 First Avenue), is Public School 138, the former Institute for the Crippled and Disabled. Completed in 1931, this Art Deco/Moderne style building was designed by Voorhees, Gmelia, and Walker.

The building has been officially determined as not to be eligible for the NRHP with the SHPO's concurrence (NYSHPO 2013a).

Immediately east of the VAMC Manhattan is the Public Baths within the Asser Levy Playground. The Public Baths, built 1904–06, was designated a City Landmark by the NYCLPC in 1974 and is also listed in the NRHP. Designed by architects Arnold W. Bunner and William Martin Aiken, the Public Baths are recognized as an excellent example of neo-Classical-style architecture and as the city's early public bath for residents. The Public Baths occupy the southwest corner of the parcel with an outdoor pool behind it. Tennis and basketball courts and other sports facilities of the Asser Levy Playground, a city park, are north of the landmark building. The Asser Levy Playground between East 23<sup>rd</sup> Street and East 25<sup>th</sup> Street has been de-mapped as a roadway and developed for use as a public park (NYCLPC 2013, White et al. 2010, NYC Map 2013, NRHPIS 2013).

Immediately south of the VAMC Manhattan and across East 23<sup>rd</sup> Street from the medical center's entrance is the north side of the Peter Cooper Village. This is an extensive residential complex that stretches from East 23<sup>rd</sup> Street to East 20<sup>th</sup> Street and from First Avenue to FDR Drive. Completed in 1947, it is the companion development to Stuyvesant Town which is to the south from East 20<sup>th</sup> Street south to East 14<sup>th</sup> Street. Peter Cooper Village consists of a number of tall red brick residential towers in a park-like setting. Both Peter Cooper Village and Stuyvesant Town were developed as middle class family housing for returning World War II veterans, and were early examples of a private-public partnership involving the City of New York and Metropolitan Life Company. Robert Moses was a major champion of the project. Peter Cooper Village was designed by a team of architects led by Irwin Clavan and Gilmore Clarke. Although Stuyvesant Town is eligible for the NRHP, Peter Cooper Village is not. (NYSHPO 2013a, DOCOMOMO 2000, White et al. 2010, NYC Map 2013).

Immediately north across East 25<sup>th</sup> Street from the VAMC Manhattan is a portion of Bellevue Hospital. Although the complex has several landmark hospital buildings, the buildings that face the VAMC on East 25<sup>th</sup> Street are more recent. The primary building is a tall tower set back from the street with a large landscaped courtyard surrounded by a brick wall. This building is not eligible for the NRHP (NYSHPO 2013a, NYSHPO 2013b, DOCOMOMO 2000, White et al. 2010, NYC Map 2013, NRHPIS 2013).

**Archaeological Resources.** There are no known archaeological resources on the VAMC Manhattan

parcel, and the land use history of the block limits the archaeological potential of the block. The SHPO and NYCLPC review of the project did not indicate that the parcel has archaeological potential (NYCLPC 2013b, NYSHPO 2013b). The parcel is in the very lower end of Kips Bay, an inlet of the East River that extends to about 37<sup>th</sup> Street. Kips Bay also was the location of the Revolutionary War battle of the same name. Approximately the eastern half of the VAMC block was below the river's original high water mark. There were several farms, including that of Dutch settler Jacobus Hendrickson Kip, for whom the area was named, to the north and beyond the project site. By the early 20<sup>th</sup> century, the VAMC Manhattan block was partially developed with low buildings. The 1920–24 Bromley Map shows one-story buildings along East 23<sup>rd</sup> Street, the American Society for the Prevention of Cruelty to Animals (ASPCA) stable at the northeast corner of the block, and four-story buildings along the remaining east and southeast portions of the block (Bromley 1924). By 1930, the ASPCA's stable had been replaced with three- and four-story buildings at 387-395 Avenue A (Bromley 1930), and the southeast corner was undeveloped and remained vacant. However, the full depth of the remainder of the east half of the block was occupied by the Washington Square Laundry Company's three-story building at 429-35 East 23<sup>rd</sup> Street to East 24<sup>th</sup> Street (Bromley 1930). According to information published by the VA, the VAMC Manhattan complex replaced the 50-year old Municipal Lodging House, the building of the ASPCA, and an 11-story printing building (VANYHHS 2013).

#### 4.4.2 ENVIRONMENTAL IMPACTS

The criteria of adverse effect at 36 CFR 800.5(a) to a significant historic resource were applied to assess the environmental consequences of a proposed project on cultural resources. An adverse effect is found when an characteristics that qualify a property for the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects might include reasonably foreseeable effects caused by the undertaking that might occur later in time, be further removed in distance, or be cumulative. Thus, damage or destruction of a historic property, visual effects that would alter its setting or feeling, or other types of impacts would be considered adverse under this definition.

##### 4.4.2.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Existing conditions would remain the same as described in Section 4.4.1. No new effects on cultural resources would occur.

#### 4.4.2.2 ALTERNATIVE 2 – PROPOSED ACTION

The Proposed Action would not result in a significant adverse impact on cultural resources. The proposed floodwall would extend at or near the parcel's east property line by the Asser Levy Playground and wrap around the approximate east half of the property on East 25<sup>th</sup> Street and East 23<sup>rd</sup> Street. Based on preliminary engineering completed to date, the floodwall would be up to 10.5 feet high above the existing grade, have a deep foundation, and have five floodgates at locations yet to be determined. Design details such as the surface materials and treatment of the floodwall and its overall configuration are still being developed. Possible solutions include a floodwall with curved, straight, or partially recessed panel configurations; masonry veneers with various surface treatments; etched concrete; and other treatments.

As currently proposed, the floodwall would be located along the alignment of the current 3-foot metal fence that is around the southeastern portion of the VAMC Manhattan parcel. Therefore, the veteran's monument would be better protected from future floods but would not be visible to the public on the adjacent sidewalk.

The analysis of environmental consequences under NEPA and the APE for the purpose of Section 106 consider the VAMC Manhattan and adjacent properties to the east, south, and north. The Proposed Action would be limited to the eastern half of the VAMC Manhattan parcel; therefore, properties to the west of the property across First Avenue would be beyond the APE for Section 106 and NEPA purposes.

**Construction.** There are no known archaeological sites on the VAMC Manhattan parcel. It does not have archaeological potential due to previous development and its location below the high water mark of Kipps Bay and the East River. Floodwall construction would not result in a significant impact on the Public Baths, a City Landmark and a NRHP-listed property, nor would it result in an adverse effect under Section 106. By letter dated November 15, 2013, the SHPO concurred in the VA's determination of No Adverse Effect under the Section 106 review (NYSHPO 2013b). The NYCLPC also reviewed the project, and will review and comment on the VA's Construction Protection Plan for the Public Baths. The Construction Protection Plan would propose means to avoid or minimize construction impacts such as vibrations from deep excavations on the Public Baths. The Public Baths' use for swimming and other active recreation would not be impacted by construction noise. See Appendix B for correspondence with SHPO and NYCLPC.

**Operations.** Operation of the floodwall would not result in significant impacts on the Public Baths. There would be no impact to the Public Baths' use for swimming and other active recreation due to noise from operating the floodwall. Also, the appearance of the floodwall would not pose a significant impact on the Public Baths, despite that the landmark property would face the proposed floodwall. Currently, the Public Baths face the VA's Building 3 (Staff Quarters), a six-story building that sits on a diagonal at the southwest corner of the Asser Levy Playground and East 23<sup>rd</sup> Street; a long, low building along the Asser Levy Playground; and parking and utility areas at the northeast portion of the VAMC Manhattan parcel. The proposed floodwall could consolidate and unify the view east and north from the Public Baths, and improve the view from the building, which currently includes parking, utility, and service areas. The proposed floodwall could be designed with special surface treatments to enhance its compatibility with the Public Baths and the surrounding landscape.

The Proposed Action would have No Significant Impact on the VAMC Manhattan property under NEPA. This property is not eligible for the NRHP.

The Proposed Action would have No Significant Impact on Peter Cooper Village under NEPA. This property is not eligible for the NRHP. Only two of the five towers on East 23<sup>rd</sup> Street would be across from the proposed floodwall. The distance between the proposed floodwall and the two towers is approximately 160 feet, including East 23<sup>rd</sup> Street, which is a busy thoroughfare with four traffic lanes, two parking lanes, and broad sidewalks. The towers are set on a diagonal, which limits their exposure to East 23<sup>rd</sup> Street and the VAMC Manhattan. Furthermore, their primary orientation is to the south toward the rest of the Peter Cooper Village and Stuyvesant Town complexes. The many mature trees on East 23<sup>rd</sup> Street at the base of the towers would further buffer the view of the proposed floodwall from the towers.

The Proposed Action would have No Significant Impact on the Bellevue Hospital complex facing East 25<sup>th</sup> Street, which is south toward the utility and rear areas of the northeastern portion of the VAMC Manhattan. A brick wall and an iron fence surround much of the Bellevue Hospital complex on East 25<sup>th</sup> Street, and the complex's primary facade and entrance are set back behind a courtyard. Thus, the complex already has several layers of visual buffers to East 25<sup>th</sup> Street, and to the south toward the VAMC Manhattan. A proposed floodwall on the south portion of East 25<sup>th</sup> Street would pose no significant impact on the Bellevue Hospital complex.

There are no known archaeological sites on the VAMC Manhattan parcel. It does not have archaeological potential due to previous development and its location below the high water mark of Kipps Bay and the East River.

## 4.5 TOPOGRAPHY, GEOLOGY AND SOILS

This section describes the underlying formations that are present within the project site. The existing geology, topography, and soils can be described relative to bedrock composition, depth to bedrock, surficial materials, landscape, and soils. A review of published geological information regarding the area of the project site was conducted including a recent geotechnical report completed by HDR Engineering, Inc. (HDR 2013, NOAA 1978, NYSM 1990).

### 4.5.1 EXISTING CONDITIONS

**Topography.** The U.S. Geological Survey (USGS) 7.5-minute quadrangle map for Brooklyn, New York, indicates that the project site is approximately 8 to 13 feet above mean sea level (amsl). The topography in the project site is flat, with a gentle grade toward the East River.

**Geology.** The project site is located in a region known as the Manhattan Prong. The bedrock in the area has been metamorphosed and tightly folded by mountain-building periods. The VAMC Manhattan sits atop the Roosevelt Island Antiform that comprises the Inwood Marble and member B of the Fordham gneiss. The Inwood Marble is Lower Ordovician to Lower Cambrian in age and consists of white and blue-gray calcitic and dolomitic marble. Member B of the Fordham gneiss is of Middle Proterozoic age and consists of black and white layered gneiss. The bedrock is covered by Atlantic Coastal Plain deposits consisting of unsorted tills and glacial outwash deposited as layers of sand and gravel (Isachsen et al. 2000).

Four geotechnical explorations have been conducted at the VAMC Manhattan since the 1950s, including the recent geotechnical investigation conducted in support of the Proposed Action. Boring logs from one survey conducted in 1987 were illegible and no soil or rock formation was discernible. Bedrock depths are highly variable across the VAMC Manhattan with depths ranging from 10 feet below ground surface (gbs) to 140 feet below sea level (HDR 2013)."

**Soils.** The New York City Soil and Water Conservation District (NYCSWCD) maintains a soil survey of the entire city. The project site is in the following unit: Pavement &

buildings, wet substratum-Laguardia-Ebbets complex, 0 to 8 percent slopes. This unit is characterized as "nearly level to gently sloping urbanized areas with a mixture of natural soil and construction debris over swamp, tidal marsh, or water; a mixture of anthropogenic soils which vary in coarse fragment content, with up to 80 percent impervious pavement and buildings covering the surface" (NYCSWCD 2009).

The character of the surficial materials in the project site is the result of human activity. Geotechnical borings identified undocumented fill containing construction debris that was encountered at each boring along the proposed wall alignment. The debris consisted of brick, wood, and concrete and was large enough to impede drilling (HDR 2013).

The following subsurface description was developed from the two most recent geotechnical investigations by STV, Inc. and HDR, Inc.: The subsurface generally consisted of 15 to 20 feet of undocumented fill consisting of loose to dense silty sand and containing construction debris such as wood, brick, and concrete. The debris was large enough to impede drilling.

Below the fill at a depth ranging from 15 to 20 feet and extending to a depth of approximately 25 to 30 feet was a firm to stiff lean clay with organics and a peat layer at a depth of 20 to 27 feet. The lean clay layer and peat are discontinuous as they were not encountered in STV Boring M-3A. The clay layer was thinner and contained less organic material at STV Boring M-2W and the peat was not encountered.

Below the clay and peat layer at a depth between approximately 25 and 30 feet and extending to between 45 and 50 feet was a medium dense to dense poorly graded sand to silty sand.

Below the sand from a depth ranging from 45 to 50 feet and extending to depths of 77 and 72 feet in HDR Boring B-1 and STV Boring M-1, respectively, along the southern side of the project site, were alternating layers of stiff to hard clays, both lean and fat, and sandy silt. STV boring logs for Borings M-2W and M-3A, which were located on the eastern and northern sides of the project site, indicate that the clay and silt layers extended to depths of 65 and 60 feet, respectively. Below the clays and silts was a medium dense to dense poorly graded to silty sand (HDR 2013).

## 4.5.2 ENVIRONMENTAL IMPACTS

Protection of unique geological features, minimization of topographical changes and soil erosion, permanent conversion of farmland soils to nonagricultural uses, and the siting of facilities in relation to potential geologic hazards are considered when evaluating potential effects of a proposed action. Generally, adverse effects can be avoided or minimized if proper construction techniques, erosion-control measures, and structural engineering design are incorporated into project development. A proposed action could have a significant effect if any the following were to occur:

- » Alteration of the lithology, stratigraphy, and geological structure that control groundwater quality, distribution of aquifers and confining beds, and groundwater availability
- » Changes to the soil composition, structure, or function within the environment.

### 4.5.2.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Existing conditions would remain the same as described in Section 4.5.1. No changes to the existing geology, topography, and soils would occur.

### 4.5.2.2 ALTERNATIVE 2 – PROPOSED ACTION

The Proposed Action would have a direct impact on the subsurface at the project site. The floodwall would be installed approximately 6 feet below grade (below the frost line). This would require excavation and disposal of soil materials that are identified in geotechnical borings as undocumented fill. Removal of undocumented fill and non-native material would be considered a net benefit as the composition of this material is not fully known and could be contaminated. During construction there would be the potential for soil erosion as areas were cleared or excavated. The final floodwall project design would have a specification and staging plan for excavated material, and provision for disposal of potentially contaminated soil, including temporary cover while the material is on site to control possible odors and prevent transport of contaminants via storm water runoff. It is anticipated that the excavated material would be trucked off site daily, but there would still be some staging it on site. Bedrock and topography would not be impacted by the Proposed Action because the excavation would not extend to bedrock.

## 4.6 HYDROLOGY AND WATER

## RESOURCES

Water resources are natural and man-made sources of water that are available for use by and for the benefit of humans and the environment. Water resources include groundwater and surface water. Floodplains are addressed in Section 4.8. Hydrology concerns the distribution of water through the processes of evapotranspiration, atmospheric transport, precipitation, surface runoff and flow, and subsurface flow. Hydrology is affected by climatic factors such as temperature, wind direction and speed, topography, soil, and geologic properties.

### 4.6.1 EXISTING CONDITIONS

The majority of the VAMC Manhattan property is covered by impervious surfaces: 56 percent roof areas, 38 percent impervious parking lots and sidewalks, and 6 percent landscaped. As a result, the majority of rainfall on the VAMC Manhattan property converts directly into runoff and is conveyed to the municipal combined sewer system through surface grates and drains. Surface storm water from the majority of the project site flows to a grated inlet located near the loading docks east of the main building, and to the sidewalk and street parking areas east of Building 2, which drain to sewer grates adjacent to the Asser Levy Playground. The project site does not contain surface water features; the nearest surface water is the East River, which is approximately 450 feet to the east. Groundwater resources below the project site are not potable.

### 4.6.2 ENVIRONMENTAL IMPACTS

Evaluation criteria for effects on hydrology and water resources are based on water availability, quality, and use; and associated regulations. A proposed action could have a significant effect with respect to hydrology and water resources if any the following were to occur:

- » Substantially reduce water availability or supply to existing users
- » Overdraft groundwater basins
- » Exceed safe annual yield of water supply sources
- » Substantially affect water quality adversely
- » Endanger public health by creating or worsening health hazard conditions
- » Threaten or damage unique hydrologic characteristics
- » Violate established laws or regulations adopted to protect water resources.

#### 4.6.2.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Under the No Action Alternative, conditions would remain the same as described in Section 4.6.1.

#### 4.6.2.2 ALTERNATIVE 2 – PROPOSED ACTION

Impacts on hydrology and water resources from the Proposed Action would consist primarily of the alteration of existing drainage patterns to accommodate the construction and function of the floodwall. Construction of the floodwall would require that all areas internal to the project site drain to interior storm drains. These storm drains would collect runoff from rainfall and convey it through the floodwall perimeter at selected locations. As a result, during normal rainfall events without any flooding conditions outside of the floodwall, storm water drainage would leave the project site by gravity into the combined sewer system.

Storm drain lines that penetrate the floodwall would be outfitted with backflow prevention valves so that coastal flooding would not be able to enter the area interior of the floodwall through these pipes. As a result, any rainfall interior of the floodwall during an exterior flooding event would also be blocked from exiting the project site, resulting in ponding in the interior. This scenario was analyzed using the USACE Hydrologic Modeling Software (HEC-HMS), Version 3.5 to simulate the runoff that would occur for various storm events. Modeling was performed using the National Resources Conservation Service/ Soil Conservation Service (NRCS/SCS) Type III rainfall distribution, with storm durations of 6, 12, and 24 hours. The modeling indicates that ponding on the interior protected side of the floodwall would be sufficient to potentially cause damage and would need to be minimized through the installation of underground storage and a 3-cubic-feet-per-second pumping station or the use of temporary pumps during flooding events.

**Construction.** Impacts on hydrology and water resources from the Proposed Action, due to construction activities, would include temporary and permanent relocation of internal storm drains, resulting in short-term disruption of sewer service to the VAMC Manhattan. Sanitary sewage and stormwater discharged during construction would be temporarily flumed, or diverted to the four proposed sewage pumping stations. Storm water runoff from the project site would be controlled in accordance with the New York Standards and Specifications for Erosion and Sediment Control (NYSDEC 2005). Following construction,

sanitary sewage and roof drainage would be discharged to the combined sanitary sewage/ storm water internal drains via gravity flow lines.

**Operation.** Upon completion of construction, impacts on hydrology and water resources from the Proposed Action would consist primarily of altered drainage patterns as all areas internal to the floodwall would drain to interior storm drains. These storm drains would collect runoff from rainfall and convey it through the floodwall perimeter at selected locations. As a result, during normal rainfall events without any flooding conditions outside of the floodwall, storm water drainage would leave the project site by gravity into the combined sewer system.

Storm drain lines that penetrate the floodwall would be outfitted with backflow prevention valves so that coastal flooding would not be able to enter the area interior of the floodwall through these pipes. As a result, any rainfall interior of the floodwall during an exterior flooding event would also be blocked from exiting the project site, resulting in ponding in the interior. This scenario was analyzed using the USACE Hydrologic Modeling Software (HEC-HMS), Version 3.5 to simulate the runoff that would occur for various storm events. Modeling was performed using the National Resources Conservation Service/ Soil Conservation Service (NRCS/SCS) Type III rainfall distribution, with storm durations of 6, 12, and 24 hours. The modeling indicates that ponding on the interior protected side of the floodwall would be sufficient to potentially cause damage and would need to be minimized through the installation of underground storage and a 3-cubic-feet-per-second pumping station or the use of temporary pumps during flooding events.

### 4.7 WILDLIFE AND HABITAT

Biological resources consist of ecological communities and the species potentially using those communities as habitat. Ecological communities are characterized in accordance with The Ecological Communities of New York, Second Edition (Edinger et al. 2002) and potential species are identified using NYSDEC resources including the New York State Breeding Bird Atlas (NYSBBA 2013) and the New York State Amphibian and Reptile Atlas Project (NYSARAP 2013).

#### 4.7.1 EXISTING CONDITIONS

An inventory of biological resources was conducted at the VAMC Manhattan on September 18, 2013, that included a characterization of ecological communities and a survey of the presence or absence of wildlife and potential wildlife habitats.

The project site consists of landscaped areas surrounding the VAMC Manhattan buildings. The building and adjacent landscaped areas are surrounded by sidewalks with trees planted along the street. In addition, a fenced construction laydown area is located at the northeast corner of the project site.

**Vegetation.** Other than paved areas, which cover most of the project site, the project site primarily includes landscaped areas surrounding the VAMC Manhattan buildings characterized by Edinger et al. (2002) as a mowed lawn with trees. The vegetative community consists of planted trees and shrubs surrounded by mowed lawn. Adjacent to the mowed lawn with trees community is a paved road/path community consisting of a sidewalk with trees planted adjacent to the curb. An early successional invasive community characterized as an urban vacant lot was also present within a closed-off construction laydown area. Vegetation communities present at the project site as characterized by Edinger et al. (2002) are depicted on Figure 4.7-1 and described in further detail in the following paragraphs.

The mowed lawn with trees community is defined as a residential, recreational, or commercial land in which the groundcover is dominated by clipped grasses and forbs, and it is shaded by at least 30 percent cover of trees. Ornamental and native shrubs might be present, usually with less than 50 percent cover. The groundcover is maintained by mowing. During the site visit, several tree species were identified and measured for diameter at breast height (dbh) as shown in Table 4.7-1. In addition to trees, yews (*Taxus* sp.) and annual flowers were also planted in the landscaped areas around the VAMC Manhattan.

The paved road/path community is defined as a road or pathway that is paved with asphalt, concrete, brick, and stone. There might be sparse vegetation rooted in cracks in the paved surface. Table 4.7-2 lists trees present within the paved road/path community. The trees identified in Table 4.7-2 were planted in planters embedded in the sidewalk along the curb and paved road.

The urban vacant lot community is defined as an open site in a developed, urban area that has been cleared either for construction or following the demolition of a building. Vegetation might be sparse, with large areas of exposed soil, and often with rubble or other kinds of debris. At the VAMC Manhattan, this community consists of debris areas and open areas near buildings where early successional invasive species have established. Herbaceous early successional species observed include tree of heaven

saplings (*Ailanthus altissima*), giant goldenrod (*Solidago gigantea*), bull thistle (*Cirsium vulgare*), white mulberry (*Morus alba*), hedge bindweed (*Calystegia sepium*), dandelion (*Taraxacum officinale*), mugwort (*Artemisia vulgaris*), common lambsquarters (*Chenopodium album*), and evening primrose (*Oenothera biennis*). Tree species identified within this community include those listed in Table 4.7-3. The trees in this community are mature and were likely to have been planted prior to the area being used for construction laydown.

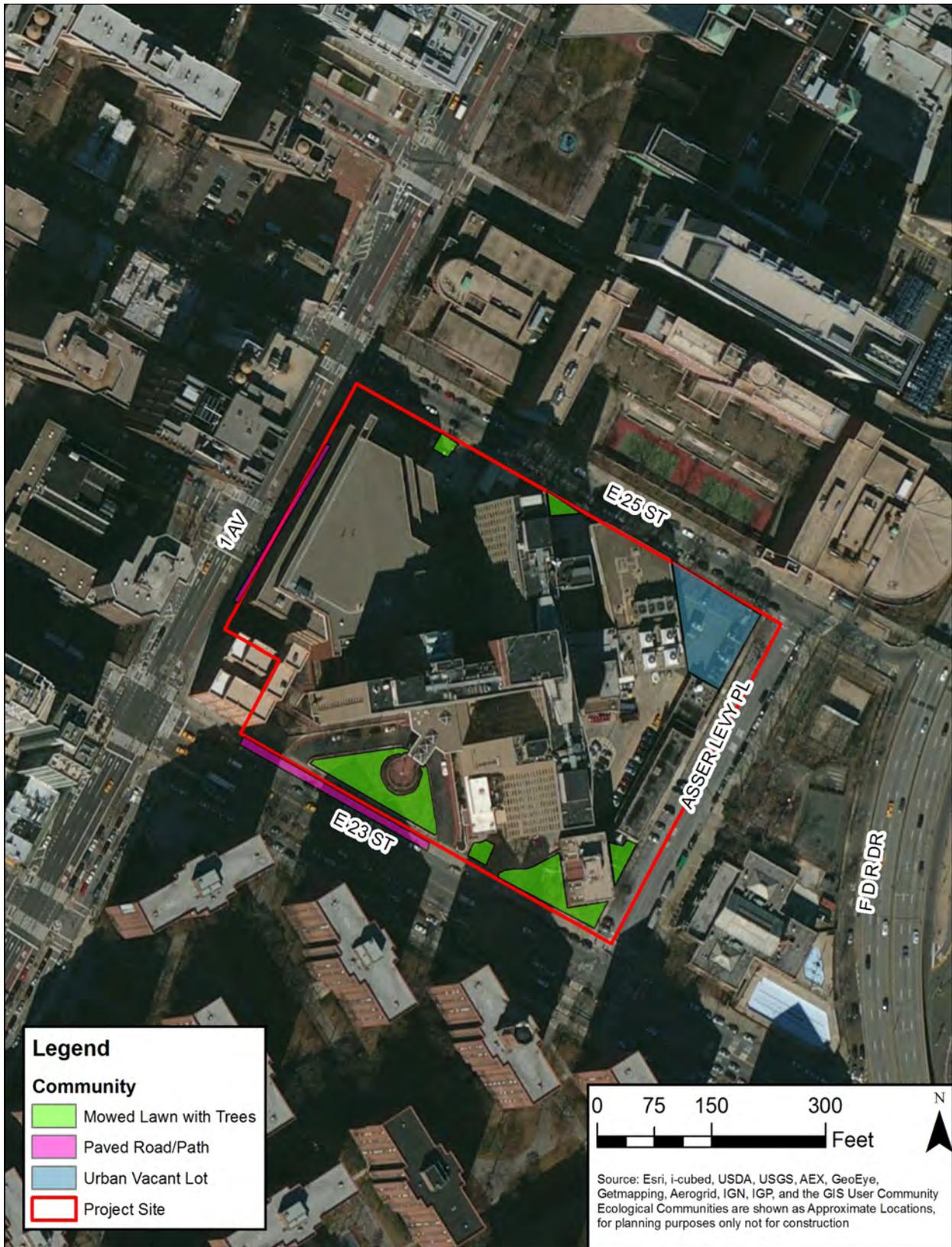
According to the New York Natural Heritage Program (NYNHP), the ecological communities identified within the project site are ranked as G5, S5. The G5 ranking indicates a community that is considered demonstrably secure globally, though it might be rare in parts of its range, especially at the periphery of its range. The S5 ranking refers to a community that is considered to be demonstrably secure in New York State. All trees identified within the communities were planted as part of the landscape of the planned urban environment and are common of most urban areas.

**Wildlife.** The potential for wildlife to colonize the project site is limited in that the area is highly urbanized and there are no corridors to adjacent habitat patches and the size of habitat patches available at the project site are small in area. Mammalian species likely to utilize the limited habitat patches available at the project site include feral cats, mice, voles, squirrels, and raccoons. Only squirrels were observed during the visit to the project site. Avian species were more abundant in the area due to the presence of nesting and foraging habitat found in the trees and vegetated areas located at the project site. Potential species in the vicinity of the project site as identified in the New York State Breeding Bird Atlas (NYSBBA) and observed species are provided in Table 4.7-4. The species observed during the visit to the project site include the rock pigeon, American robin, European starling, and blue jay.

The New York State Amphibian and Reptile Atlas Project (NYSARAP) identifies amphibian and herpetile species occurring within USGS topographic quadrangles throughout the State of New York. The project site is located within the Brooklyn quadrangle, which lists the species in Table 4.7-5.

There are no aquatic habitats located at the project site or immediately adjacent; therefore, there is no habitat present for the majority of the reptile and amphibian species listed. Potential habitat is present only for the common garter snake, which is commonly found in lawns, old fields, and woodland edges. This species preys on insects, slugs,

Figure 4.7-1. VAMC Manhattan Ecological Communities



**Table 4.7-1. Tree Species Present Within the Mowed Lawn with Trees Community**

COMMON NAME	SCIENTIFIC NAME	DBH <sup>2</sup>
Black locust	<i>Robinia pseudoacacia</i>	13.5
Black locust	<i>Robinia pseudoacacia</i>	12.5
Black cherry	<i>Prunus serotina</i>	1.0
Elm	<i>Ulmus sp.</i>	11.5
Flowering dogwood	<i>Cornus florida</i>	3.4/4.0
Flowering dogwood	<i>Cornus florida</i>	1.5
Flowering dogwood	<i>Cornus florida</i>	3.0
Black Locust	<i>Robinia pseudoacacia</i>	14.0
Black locust	<i>Robinia pseudoacacia</i>	11.0
Black locust	<i>Robinia pseudoacacia</i>	11.5
Black locust	<i>Robinia pseudoacacia</i>	8.5
Black locust	<i>Robinia pseudoacacia</i>	9.0
Black locust	<i>Robinia pseudoacacia</i>	10.5
Black locust	<i>Robinia pseudoacacia</i>	11.0
Black locust	<i>Robinia pseudoacacia</i>	9.5
Black locust	<i>Robinia pseudoacacia</i>	11.0
Black locust	<i>Robinia pseudoacacia</i>	10.0
Black locust	<i>Robinia pseudoacacia</i>	11.5
Black locust	<i>Robinia pseudoacacia</i>	10.0
Black locust	<i>Robinia pseudoacacia</i>	9.5
Black locust	<i>Robinia pseudoacacia</i>	13.0
Black locust	<i>Robinia pseudoacacia</i>	10.0
Black locust	<i>Robinia pseudoacacia</i>	13.0
Sweet gum	<i>Liquidambar styraciflua</i>	7.5
Honey locust	<i>Gleditsia triacanthos</i>	18.0
Magnolia	<i>Magnolia sp.</i>	5.5
Magnolia	<i>Magnolia sp.</i>	6.0
Black Locust	<i>Robinia pseudoacacia</i>	19.0
Honey locust	<i>Gleditsia triacanthos</i>	22.0
Black cherry	<i>Prunus serotina</i>	7.0
Honey locust	<i>Gleditsia triacanthos</i>	21.0
Norway spruce	<i>Picea abies</i>	8.5
Flowering dogwood	<i>Cornus florida</i>	3.5

<sup>2</sup> Multiple DBH provided for trees with multiple trunks.

**Table 4.7-2. Tree Species Present within the Paved Road/Path Community**

COMMON NAME	SCIENTIFIC NAME	DBH <sup>2</sup>
American sycamore	<i>Platanus occidentalis</i>	6.0
American basswood	<i>Tilia americana</i>	5.5
American basswood	<i>Tilia americana</i>	5.25
American sycamore	<i>Platanus occidentalis</i>	8.0
American sycamore	<i>Platanus occidentalis</i>	8.5
American sycamore	<i>Platanus occidentalis</i>	9.5
Sweet gum	<i>Liquidambar styraciflua</i>	4.25
Callery pear	<i>Pyrus calleryana</i>	5.0
Callery pear	<i>Pyrus calleryana</i>	4.5
Black locust	<i>Robinia pseudoacacia</i>	8.5

**Table 4.7-3. Tree Species Present within the Urban Vacant Lot Community**

COMMON NAME	SCIENTIFIC NAME	DBH2
Black cherry	<i>Prunus serotina</i>	8.5
Red oak	<i>Quercus rubra</i>	24.0
Red oak	<i>Quercus rubra</i>	24.0
Red oak	<i>Quercus rubra</i>	24.0
Red oak	<i>Quercus rubra</i>	28.0
White oak	<i>Quercus alba</i>	28.0
Black cherry	<i>Prunus serotina</i>	4.5

**Table 4.7-4. Avian Species Recorded in the Project Vicinity**

COMMON NAME	SCIENTIFIC NAME	NY LEGAL STATUS	OBSERVED
Peregrine falcon	<i>Falco peregrinus</i>	Endangered	No
Rock pigeon	<i>Columba livia</i>	Unprotected	Yes
Mourning dove	<i>Zenaida macroura</i>	Protected	No
Chimney swift	<i>Chaetura pelagica</i>	Protected	No
Downy woodpecker	<i>Picoides pubescens</i>	Protected	No
American robin	<i>Turdus migratorius</i>	Protected	Yes
Northern mockingbird	<i>Mimus polyglottos</i>	Protected	No
European starling	<i>Sturnus vulgaris</i>	Unprotected	Yes
Northern cardinal	<i>Cardinalis cardinalis</i>	Protected	No
House sparrow	<i>Passer domesticus</i>	Unprotected	No
Blue jay*	<i>Cyanocitta cristata</i>	Protected	Yes

Source: NYSBBA 2013

\* Species not listed in NYSDEC Breeding Bird Atlas.

**Table 4.7-5. Reptiles and Amphibians Recorded in the Brooklyn Quadrangle**

COMMON NAME	SCIENTIFIC NAME	OBSERVED
Painted turtle	<i>Chrysemys picta</i>	No
Eastern box turtle	<i>Terrapena carolina</i>	No
Diamondback terrapin	<i>Malaclemys terrapin</i>	No
Slider turtle	<i>Trachemys scripta</i>	No
Common snapping turtle	<i>Chelydra serpentina</i>	No
Bullfrog	<i>Rana catesbeiana</i>	No
Common garter snake	<i>Thamnophis sirtalis</i>	No

Source: NYSDEC 2013c

worms, and occasionally on small frogs or mice (Bothner and Breisch 2013). In response to a file search request, the NYSDEC Natural Heritage Program indicated in a October 18, 2013, letter that there have been no reported occurrences of threatened, endangered, or species of special concern on the project site.

#### 4.7.2 ENVIRONMENTAL IMPACTS

The significance of effects on wildlife and habitat is based on the following:

- » The importance (i.e., protected, commercial, recreational, or ecological) of the resource
- » The proportion of the resource that would be affected relative to its occurrence in the region
- » The sensitivity of the resource to proposed activities
- » The duration of ecological ramifications
- » Effects on a threatened or endangered species or its habitat.

Effects on wildlife and habitat would be considered significant if disturbances cause reductions in population size or distribution of an important species (i.e., protected, commercial, recreational, or ecological importance), if a large proportion of a resource would be affected, or if a protected species was adversely affected.

##### 4.7.2.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Existing conditions would remain the same as described in Section 4.7.1. No additional impacts on wildlife and habitat would occur.

##### 4.7.2.2 ALTERNATIVE 2 – PROPOSED ACTION

Impacts on wildlife and habitat at the project site from the Proposed Action would be minimal as few resources are present. Removal of trees along the proposed floodwall and temporary disruption of the area due to construction is anticipated as part of the Proposed Action. Avian, mammal, and reptile species utilizing the project site would likely avoid the area for the duration of construction. Comparable habitats are located in other areas in the vicinity of the project site that would be available for species avoiding the project site; thereby minimizing impacts on these resources.

**Construction.** Impacts on wildlife and habitat resulting from construction of the floodwall include temporary

disruption of the area due to construction noise, removal of trees and earth moving activities. Construction impacts are anticipated to be minimal as few resources are present at the project site. In addition, construction activities will be temporary and avian, mammal, and reptile species utilizing the project site would likely avoid the area for the duration of construction. Comparable habitats are located in other areas in the vicinity of the project site and would be available for species avoiding the project site; thereby minimizing impacts on these resources.

**Operation.** No impacts to wildlife and habitat are anticipated as a result of the operation of the floodwall.

## 4.8 FLOODPLAINS, WETLANDS AND COASTAL ZONE MANAGEMENT

Floodplains are the low, flat, periodically flooded lands adjacent to rivers, lakes and oceans. The regulatory floodplain is generally viewed as all lands that could be reached by the floodwaters of a 100 year storm event. Wetlands are lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface. The coastal management zone is the area along a waterfront where development activities are regulated under the Coastal Zone Management Act (CZMA) of 1972. Areas located on the nearest legally mapped street 300 feet landward of the High Mean Tide Line are determined to occur in New York City's Coastal Management Zone.

### 4.8.1 EXISTING CONDITIONS

**Floodplains.** FEMA has the responsibility to delineate major floodplains in support of the National Flood Insurance Program. As part of this effort, FEMA defines the base flood resulting from a storm having a 1 percent probability of occurring in any one year. The flooded area resulting from this storm is commonly referred to as the 100-year floodplain. FEMA also defines the flood that has a 0.2 percent chance of occurring in any one year which is referred to as the 500-year floodplain.

Prior to Hurricane Sandy, FEMA was nearing completion of an updated coastal analysis for the New York and New Jersey area. To provide the necessary data to guide the rebuilding efforts after Hurricane Sandy, FEMA accelerated the issuance of data from the analysis and created Advisory Base Flood Elevations (ABFEs), which include a delineation of the V-Zone and Coastal A Zone along with elevations for the 1 percent and 0.2 percent probability annual events.

The project site is located in the East River floodplain and the FEMA ABFE area defined by the post Hurricane Sandy maps (see Figure 1.1-3). The ABFE for the project site provides 1 percent probability flood height of elevation 12 NAVD88 (100-year floodplain).

Areas located within floodplains are subject to FEMA National Floodplain Insurance Program requirements. The VAMC Manhattan is located within the 100-year and 500-year floodplains (see Figure 4.2-3).

**Wetlands.** No regulated wetlands exist within the project site.

**Coastal Zone Management.** According to the CZMA, all Federal properties within or outside of the coastal zone that might impact a coastal zone resource (e.g., water resources, shoreline, flora, and fauna) are subject to a coastal zone consistency assessment and mitigations (NYDCDP 2010a). In New York State, the coastal zone consistency review is the decisionmaking process through which proposed actions and activities are determined to be consistent or inconsistent with the coastal policies of the New York State Coastal Management Program or approved WRP. New York City has its own Local Waterfront Development Program that includes the New York State policies as well as many city-specific policies. The VAMC Manhattan is located just outside of the CMZ for the East River (see Figure 4.2-3).

#### 4.8.2 ENVIRONMENTAL IMPACTS

The significance of effects on floodplains, wetlands and the coastal zone is based on the following:

- » Potential effects to neighboring properties during storm events
- » Placement of fill in regulated wetlands
- » Consistency with the policies within the new Local Waterfront Development Plan

##### 4.8.2.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Under the No Action Alternative no additional fill or structures would be developed in the floodplain or coastal zone of the East River. The VAMC Manhattan facility would remain vulnerable to flooding from 1 percent storms.

##### 4.8.2.2 ALTERNATIVE 2 - PROPOSED ACTION

The construction of the floodwall system would exclude the 1 percent storms from entering the protected side of

the floodwall. Because coastal storms are tidal in nature, however, the loss of this floodplain storage would have no discernible effect on the overall depth of the floodwaters on adjacent properties.

Wave heights were estimated using one-dimensional (uniform depth) parametric wave modeling software developed by the USACE. The wave calculations yielded an approximate significant wave height and peak period for various locations around the project site. These calculations were used in evaluating the elevation to use for the top of the floodwall. The possibility of reflective wave damage was qualitatively evaluated during design. The potential for reflective waves causing increased damages to adjacent properties appears to be unlikely given the topography of the area, the fetch for wave development, and the location of adjacent facilities.

In addition, the VA has been in coordination with FEMA since October 2013 to ensure the flood protection efforts were coordinated with the overall Sandy Disaster Recovery efforts undertaken by other federal agencies as well as New York University Hospital and Bellevue Hospital. These coordination activities will continue throughout the duration of construction.

A Coastal Zone Consistency Assessment was conducted to determine the potential impacts of the Proposed Action on the coastal zone and is attached as Appendix D. In accordance with the CZMA, New York State's Coastal Zone Management Program, and the NYC WRP, the floodwall would be constructed such that its existence and operation would not conflict with plans to conserve and enhance the coastal zone. Additionally, the floodwall would be designed to be consistent with the intent of the standards and criteria of the National Flood Insurance Program (44 CFR Part 60, Criteria for Land Management and Use) and adopted policies from the 1992 NYC CWP, and the 1997 Manhattan Borough Waterfront Plan for CB#6. Construction of the floodwall would result in a permanent above- and below-ground structural addition in the floodplains and an altered flood flow away from the VAMC Manhattan during a substantial flood event that might have short-term, direct, none-to-negligible, adverse impacts on flood storage. However, construction and continued use of the floodwall post-construction would not impact current use, property management, or future plans for development of the VAMC or surrounding properties. Therefore, no significant impacts on floodplains or CMZ would be anticipated from construction of the proposed floodwall.

**Construction.** The Proposed Action is located within the FEMA flood hazard area and in proximity to the CMZ of the East River. All construction activities would be completed in accordance with all applicable flood hazard area rules and would not result in impacts to current use, property management, or future development plans of the VAMC or surrounding properties; therefore, no significant impacts on floodplains or CMZ would be anticipated.

**Operation.** Upon completion of construction, the floodwall system would exclude the 1 percent storms from entering the protected side of the floodwall. Because coastal storms are tidal in nature, however, the loss of this floodplain storage would have no discernible effect on the overall depth of the floodwaters. Wave heights were estimated using one-dimensional (uniform depth) parametric wave modeling software developed by the USACE. The wave calculations yielded an approximate significant wave height and peak period for various locations around the project site. These calculations were used in evaluating the elevation to use for the top of the floodwall. The possibility of reflective wave damage was qualitatively evaluated during design. The potential for reflective waves causing increased damages to adjacent properties appears to be unlikely given the topography of the area, the fetch for wave development, and the location of adjacent facilities.

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## 4.9 SOCIOECONOMICS

Socioeconomics is the basic attributes and resources associated with the human environment. Three fundamental socioeconomic indicators (i.e., population, housing, and economic activity) are the primary focus of this analysis.

Population size and demographics identify the population levels and changes to population levels of a region. Economic activity typically encompasses employment, personal income, and industrial or commercial growth. Data on employment might identify gross numbers of employees, employment by industry or trade, and unemployment trends. Data on personal income in a region can be used to compare the "before" and "after" effects of any jobs created or lost as a result of a proposed project. Data on industrial or commercial growth or growth in other sectors provide baseline and trendline information about the economic health of a region. Changes in demographic and economic conditions are typically accompanied by changes in other community components, such as housing availability and the provision of community services. Community services are discussed in Section 4.10.

### 4.9.1 EXISTING CONDITIONS

The geographic area that includes the project site and adjacent area in which a majority of the socioeconomic effects of a proposed project and alternatives would occur is the socioeconomic study area. The socioeconomic study area is similar to the land use study area. For this analysis, the socioeconomic study area includes the census tract that encompasses the VAMC Manhattan and the proposed floodwall (census tract 62), and the census tracts immediately adjacent to the VAMC Manhattan (census tracts 60, 64, and 66). Data for census block 1005 in census tract 62 (i.e., the square block where the VAMC Manhattan is located) and immediately surrounding census blocks are also provided, when appropriate.

**Population.** The population of the socioeconomic study area in 2010 was 28,778 persons, which represents a 13.9 percent increase since 2000. The population of three of the four census tracts that make up the socioeconomic study area increased during this time period, with the population of census tract 62 (i.e., location of the VAMC Manhattan) more than doubling since 2000 (see Table 4.9-1). The population of census tract 66, which is immediately west of the VAMC Manhattan, decreased 0.9 percent since 2000. The study area's population accounts for 1.8 percent and 0.4 percent of the total populations of Manhattan

and New York City, respectively. The population of the socioeconomic study area increased at a faster rate (13.9 percent) between 2000 and 2010 than that of Manhattan (3.2 percent) and New York City (2.1 percent) (U.S. Census Bureau 2000, U.S. Census Bureau 2010a). There is no population in census blocks 1004 or 1005 within census tract 62 (U.S. Census Bureau 2010a). Census block 1004 is the location of Asser Levy Playground immediately adjacent to the east of the VAMC Manhattan. Population data are presented in Table 4.9-1.

**Housing.** In 2010, the socioeconomic study area had 16,081 housing units of which 1,069 units were vacant. This represented a homeowner vacancy rate of 1.6 percent and a rental vacancy rate of 4.3 percent. The average household size (i.e., average number of people per household) in the socioeconomic study area is 1.73 people, which is slightly lower than that of Manhattan (1.99 people) and New York City (2.57 people) (NYCDCP 2010b). There are no housing units at VAMC Manhattan or to the east at Asser Levy Playground (U.S. Census Bureau 2010b). Census block 1001 (in census tract 62), north of VAMC Manhattan, contains group quarters in the form of college/university student housing and other non-institutional facilities (U.S. Census Bureau 2010c). See Table 4.9-2 for housing data of the socioeconomic study area, Manhattan, and New York City.

The estimated median household incomes in the socioeconomic study area (\$101,369 in census tract 60, \$71,111 in census tract 62, \$85,098 in census tract 64,

and \$74,382 in census tract 66) were higher than those in Manhattan (\$67,204) and New York City (\$51,270) (U.S. Census Bureau 2011). Average rents in the Gramercy/Flatiron area, which is from approximately 5<sup>th</sup> Avenue east to the East River and 30<sup>th</sup> Street south to 14<sup>th</sup> Street, range from \$2,500 per month for a studio apartment to \$6,500 per month for a 3-bedroom apartment (Citi Habitats 2013).

**Economic Activity.** The labor force within the socioeconomic study area is 17,672 people, of which 21.2 percent were employed within the professional, scientific, management, administrative, and waste management services industry. The educational, health, and social services and finance, insurance, real estate, and rental and leasing industries each employ approximately 20 percent of the socioeconomic study area’s labor force (U.S. Census Bureau 2011 ) (see Table 4.9-3). These three industries also employ the most people across all other geographic areas identified in Table 4.9-3. Unemployment rates are shown in Figure 4.9-1, which illustrates that the unemployment rates for Manhattan and New York City have had similar trends but Manhattan has consistently had lower unemployment rates than New York City. As of July 2013, the unemployment rates (not seasonally adjusted) in Manhattan and New York City were 7.2 and 8.7 percent, respectively (NYSDOL 2013).

Within zip code 10010, which includes VAMC Manhattan, the professional, scientific, and technical services industry had the most establishments with 754, of which graphic

**Table 4.9-1. Population Data, 2000 and 2010**

GEOGRAPHIC AREA	2000 POPULATION	2010 POPULATION	PERCENT CHANGE
Socioeconomic Study Area	25,267	28,778	13.9
<i>Census Tract 60</i>	3,989	4,511	13.1
<i>Census Tract 62 (site of proposed project)</i>	2,103	4,437	111.0
<i>Census Tract 64</i>	7,334	8,090	10.3
<i>Census Tract 66</i>	11,841	11,740	(0.9)
Manhattan	1,537,195	1,585,873	3.2
New York City	8,008,278	8,175,133	2.1

Sources: U.S. Census Bureau 2000; U.S. Census Bureau 2010a

**Table 4.9-2. Housing Data, 2010**

GEOGRAPHIC AREA	TOTAL UNITS	VACANT UNITS	HOMEOWNER VACANCY RATE	RENTAL VACANCY RATE	AVERAGE HOUSEHOLD SIZE
Socioeconomic Study Area	16,081	1,069	1.6%	4.3%	1.73
Manhattan	847,090	83,244	4.4%	5.0%	1.99
New York City	3,371,062	261,278	2.9%	4.5%	2.57

Source: NYCDCP 2010b

**Table 4.9-3. Overview of Employment by Industry, 2007 to 2011**

EMPLOYMENT TYPES	SOCIOECONOMIC STUDY AREA <sup>a</sup>	CENSUS TRACT 60	CENSUS TRACT 62	CENSUS TRACT 64	CENSUS TRACT 66	MANHATTAN	NEW YORK CITY
Population 16 years and over in the labor force <sup>b</sup>	17,672	2,201	1,616	5,557	8,298	923,916	4,154,195
Civilian labor force	17,662	2,201	1,606	5,557	8,298	923,552	4,150,138
Employed persons in the civilian labor force	16,109	1,975	1,523	5,127	7,484	846,255	3,756,914
<b>Percent Employed Persons in Civilian Labor Force (By Industry)</b>							
Agriculture, forestry, fishing and hunting, and mining	0.1	0	0	0	0.2	0.1	0.1
Construction	1.5	0.9	0	2.4	1.4	1.7	5.1
Manufacturing	3.9	6.5	1.5	2.4	4.7	3.7	4.3
Wholesale trade	2.3	2.2	2.8	2.2	2.2	2.3	2.5
Retail trade	7.8	0.9	9.0	9.8	8	7.6	9.7
Transportation and warehousing, and utilities	1.3	0	1.9	1.0	1.7	2.5	6.1
Information	7.5	4.6	5.9	13.6	4.5	6.5	3.8
Finance, insurance, real estate, and rental and leasing	19.5	21.7	4.5	19.2	22.2	16.8	10.3
Professional, scientific, management, administrative, and waste management services	21.2	18.6	16.2	23.5	21.3	18.9	12.3
Educational, health, and social services	19.9	27.6	42.5	14.8	16.9	22.0	25.9
Arts, entertainment, recreation, accommodation, and food services	8.0	7.1	4.1	7.5	9.3	10.7	10
Other services (except public administration)	3.1	2.6	5.9	0.7	4.3	4.5	5.7
Public administration	3.9	7.4	5.7	2.8	3.4	2.9	4.1

Source: U.S. Census Bureau 2011.

Notes:

<sup>a</sup> The socioeconomic study area includes census tracts 60, 62, 64, and 66.

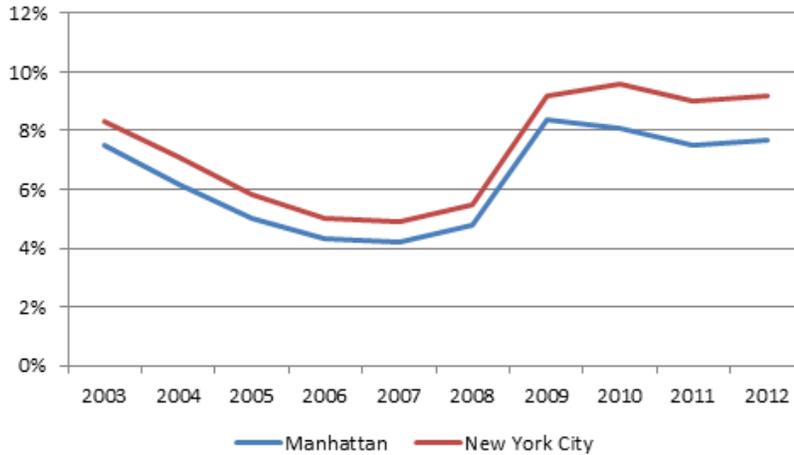
<sup>b</sup> Labor force includes all people classified in the civilian labor force plus members of the U.S. Armed Forces.

**Table 4.9-4. Business Patterns, 2011**

	ZIP CODES				MANHATTAN	NEW YORK CITY
	10003	10009	10010 (site of proposed project)	10016		
Number of establishments	4,159	1,128	3,022	5,772	103,800	222,712
Number of paid employees	77,201	9,140	68,840	101,311	1,998,051	3,322,206
Annual payroll (\$1,000)	\$4,998,605	\$381,451	\$7,866,656	\$7,751,566	\$202,981,197	\$256,672,543

Source: NYSDOL 2013.

**Figure 4.9-1. Annual Average Unemployment Rate (Percent)**



Source: NYSDOL 2013.

design services, custom computer programming services, and advertising agencies represented 32 percent of the establishments. The industries with the second and third highest number of establishments were other services (except public administration) and retail trade with 300 and 254 establishments, respectively (U.S. Census Bureau 2013a). The U.S. Census Bureau defines establishment as a business or industrial unit at a single location that distributes goods or performs services. Table 4.9-4 provides detailed information on business patterns in zip codes 10003, 10009, 10010, and 10016, which surround VAMC Manhattan; and for Manhattan and New York City.

#### 4.9.2 ENVIRONMENTAL IMPACTS

Socioeconomic changes can occur when a proposed project directly or indirectly changes population, housing, and economic activity. A proposed project can result in significant adverse socioeconomic impacts if direct or indirect displacement of residential populations or existing businesses and institutions would occur, or if adverse effects on specific industries would result. Socioeconomic changes are disclosed if they would affect land use patterns, low-income populations, the availability of goods and services, or economic investment in a way that changes the socioeconomic character of the area (NYCMOEC 2013).

Additionally, effects on the local economy can be assessed through construction expenditures. The magnitude of potential effects can vary greatly, depending on the location of a proposed project. For example, implementation of an action that creates 10 employment positions might go unnoticed in an urban area, but could have considerable effects in a rural region. If potential socioeconomic changes were to result in substantial

shifts in population trends, local business volume, or employment or a decrease in regional spending or earning patterns, those effects would be considered adverse.

##### 4.9.2.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Existing socioeconomic conditions, as discussed in Section 4.9.1, would remain unchanged. It is possible that VAMC Manhattan could be damaged during future flooding events, which could result in the closure of the facility that would adversely affect its economic viability. The No Action Alternative would continue the potential long-term, adverse impact resulting from potential future closures of the VAMC Manhattan.

##### 4.9.2.2 ALTERNATIVE 2 – PROPOSED ACTION

**Construction.** The Proposed Action would not directly displace any residents or business employees. The proposed floodwall would be constructed just inside the VAMC Manhattan property lines along East 23<sup>rd</sup> Street, East 25<sup>th</sup> Street, and the Asser Levy Playground. The sidewalk on the west side of the Asser Levy Playground (within the VAMC Manhattan property line) would be removed as a result of the Proposed Action; however, no existing residential housing units, business establishments (commercial and industrial), or other institutions would be displaced. Additionally, the Proposed Action would not add or remove any residential housing units, commercial/ industrial space, or any other inhabitable structures. The Proposed Action would not result in any other changes that would adversely affect conditions within a specific industry. Therefore, construction of the floodwall would not result in any direct impacts on socioeconomics.

Construction of the floodwall would not result in indirect displacement of residences or businesses because it would not accelerate a trend in the area toward new uses or increase property values to a degree that it would indirectly displace businesses or residents. Increases in local business volume and employment could be expected within New York City or Manhattan, and possibly within the socioeconomic study area, due to expenditures from construction of the proposed floodwall. The use of local construction workers would result in increases in local sales volumes, payroll taxes, and purchases of goods and services resulting in short-term, indirect, minimal-to-moderate, beneficial increases in the local economy. It is likely the existing construction workers in New York City would be adequate to meet the demands of the Proposed Action.

The Proposed Action would not result in indirect displacement of businesses because construction of the floodwall would not introduce trends that would make it difficult for businesses to remain in the area, or impair the economic viability of local businesses or industries. Similarly, the Proposed Action would not result in indirect displacement of residences because it would not introduce trends that would adversely affect residential uses, or increase property values to a degree that it would indirectly displace residents. The Proposed Action might prevent damage to VAMC Manhattan from future flooding events, which would establish conditions that could improve the economic viability of the facility. Therefore, the Proposed Action would result in short- and long-term, indirect, beneficial impacts on the local economy and the economic viability of VAMC Manhattan, respectively.

**Operation.** Over the long term, the presence and operation of the floodwall might prevent damage to VAMC Manhattan from future flooding events, which would establish conditions that could improve the economic viability of the facility. Additionally, during significant flood events the Proposed Action would provide direct beneficial impacts on the local community by protecting the VAMC Manhattan campus and ensuring the continued economic viability of the facility. Presence of the floodwall would not directly or indirectly displace any residents or businesses. The Proposed Action would not increase or decrease the number of persons employed at VAMC Manhattan or any other businesses. Therefore, operation of the Proposed Action would result in short- and long-term, indirect, beneficial impacts on the local economy and the economic viability of VAMC Manhattan, respectively.

## 4.10 COMMUNITY SERVICES

Community services are services and facilities offered by cities, municipalities, quasi-public entities, and other groups for use by community members. Community services include emergency response, fire and rescue, law enforcement, hospital and medical, and public transportation. Community facilities include schools, libraries, child care, health care, and fire and police. The capacity of community services and facilities to support growth is generally regarded as essential to the social and economic health of an area. Consideration of a proposed project's effect on community services is important to determine if the action changes the demand for services and facilities.

This section focuses on the potential impact of the Proposed Action on schools, libraries, child care centers, health care facilities, and fire and police protection. Public transportation is discussed in Section 4.12. Public utility services provided to the community, such as solid waste management, are discussed in Section 4.13.

### 4.10.1 EXISTING CONDITIONS

**Schools.** The New York City Department of Education operates more than 1,700 public schools in New York City serving approximately 1.1 million students (NYCDOE 2013a). The project site is within District 2, which had approximately 62,000 enrolled students in December 2012 (NYCDOE 2013b). There are 11 public schools and 6 private or parochial schools within 0.5 miles of VAMC Manhattan (Table 4.10-1) (NYCDCP 2013b, NYCDITT 2013a).

**Libraries.** The New York Public Library (NYPL) has 90 locations, including 88 circulating libraries and 4 research centers, in Manhattan, the Bronx, and Staten Island; more than 2,500 employees and volunteers; and approximately 53 million items such as books, videos, compact discs, pictures, materials for the blind, and other materials (NYPL 2011).

The Epiphany Library, located at 228 East 23<sup>rd</sup> Street, is approximately 0.2 miles west of the project site. The Epiphany Library includes adult, young adult, and children's collections with annual circulation of approximately 325,500 books and an auditorium available for community group meetings and library programs (NYPL 2013a).

**Child Care Centers.** Within 0.5 miles of the project site, there are 11 day care centers, including 1 center, Imagine Vets Kids, at VAMC Manhattan, and 3 universal pre-kindergarten facilities (NYCDITT 2013b).

**Health Care Facilities.** There are four hospitals within 0.5 miles of the project site. Bellevue Hospital Center, a public hospital operated by New York City Health and Hospitals Corporation, is located directly north of the project site. NYU Langone Medical Center (Tisch Hospital) is approximately 0.25 miles north of VAMC Manhattan, and the NYU Langone Medical Center’s Hospital for Joint Diseases and Beth Israel Medical Center (Petrie Division) are approximately 0.4 miles to the south. In total, these four hospitals provide more than 2,800 inpatient hospital beds (NYCHHC 2013, NYU 2013, BIMC 2013, NYCDITT 2013c).

**Fire Protection.** The Fire Department of the New York City (FDNY) provides fire prevention and protection; emergency medical services (EMS); search and rescue; and primary response to disasters and biological, chemical, and radiological hazards within New York City. FDNY has 10,282 uniformed fire personnel, 3,240 uniformed EMS personnel, and 1,594 civilian employees that are located throughout 218 fire houses and 34 EMS stations in New York City (FDNY 2013a).

The project site is located within the FDNY Battalion 8, Division 3, Engine Company 16 service area, which encompasses approximately 0.3 square miles and serves 28,548 residents (NYCDITT 2013d). The closest fire house to the project site is Engine 16, Ladder 7, which is at 234 East 29<sup>th</sup> Street, approximately 0.25 miles to the northwest. The project site is directly adjacent to the north of the Engine Company 5E service area; the Engine 5 fire house is approximately 0.5 miles to the southwest. The closest EMS facility to VAMC Manhattan is FDNY-EMS Station 8 (Kips Bay/Bellevue Hospital) at 470 First Avenue (i.e., First Avenue and East 28<sup>th</sup> Street), approximately 0.15 miles to the north.

In 2012, FDNY responded to 5,779 structural fires and 3,518 non-structural fires in Manhattan with average responses times of 4 minutes, 12 seconds and 4 minutes, 28 seconds, respectively (FDNY 2013b). EMS in Manhattan responded to 316,357 incidents with an average response time of 8 minutes, 44 seconds (FDNY 2013c).

**Table 4.10-1. Schools Within 0.5 Miles of VAMC Manhattan**

SCHOOL NAME	APPROXIMATE DISTANCE FROM VAMC MANHATTAN (MILES)	TYPE OF SCHOOL	ENROLLMENT
<b>Public Schools</b>			
JHS 104 Simon Baruch	0.20	Intermediate/Junior High School	150
47 American Sign Language and English (Lower School and Secondary School)	0.25	Elementary, High School	150 (Lower), 175 (High School)
PS 040 Augustus St-Gaudens	0.25	Elementary	582
MS 255 Salk School of Science	0.25	Intermediate/Junior High School	386
Institute for Collaborative Education	0.40	Junior/Senior High School	489
High School for Health Professions and Human Services	0.40	High School	1,763
PS M226	0.40	Elementary, Junior/ Senior High School	277
School of the Future High School	0.45	Junior/Senior High School	691
Manhattan Comprehensive Night and Day High School	0.50	High School	700
PS 116 Mary Lindley Murray	0.50	Elementary	789
<b>Private or Parochial Schools</b>			
British International School of New York	0.10	Elementary	115
United Nations International School	0.10	Kindergarten-12	1,549
Epiphany School	0.25	Elementary	558
Learning Spring School	0.25	Special/Other	90
Churchill School and Center	0.25	Junior/Senior High School	397
Friends Seminary	0.45	Kindergarten-12	732

Source: NYCDOP 2013b; NYCDITT 2013a, NYCDOE 2013c, NYCDOE 2013d.

**Police Protection.** The New York City Police Department (NYPD) provides law enforcement services within New York City. The NYPD has approximately 35,000 uniformed officers in various ranks and commands including Aviation, Bomb Squad, Counterterrorism, Detectives, Emergency Service, Forensic Investigations, Gang Division, Hostage Negotiation, Intelligence Division, Juvenile Crime, K9, Latent Print, Mounted Unit, Narcotics, Organized Crime Control, Patrol, Quality Assurance, Recruitment, Special Victims, Transit, Vice, and Warrants. There are 76 police precincts, 9 Police Service Areas serving New York City housing developments, and 12 transit districts covering the five boroughs of New York City (NYPD 2013a).

VAMC Manhattan is served by Precinct 13 of the Manhattan South Patrol Borough. The Precinct 13 service area is bounded by West 29<sup>th</sup> Street and East 30<sup>th</sup> Street to the north, the East River to the east, West/East 14<sup>th</sup> Street to the south, and 7<sup>th</sup> Avenue to the west encompassing 1.3 square miles and serving 93,640 residents (NYCDITT 2013e). The Precinct 13 station is at 230 East 21<sup>st</sup> Street, which is approximately 0.3 miles west of VAMC Manhattan.

Major felony crime increased slightly (approximately 6 percent) in the 13th Precinct during January through August 2013 as compared to a similar period in 2012, while some misdemeanor offenses decreased during this time period (NYPD 2013b).

#### 4.10.2 ENVIRONMENTAL IMPACTS

A proposed project can affect community services due to direct or indirect effects on the capacity and provision of services by the associated community facilities (i.e., schools, libraries, child care centers, health care facilities, and fire and police stations). Direct effects would occur if a proposed project would physically eliminate, displace, or alter community facilities. Indirect effects would occur if a proposed project would cause a change in population that could create additional demand on the provision of community services that could not be met by the existing community facilities (NYCMOEC 2013).

##### 4.10.2.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Under the No Action Alternative, existing community services and facilities, as discussed in Section 4.10.1, would remain unchanged. It is possible that VAMC Manhattan could be damaged during a future flooding event, which could result in the closure of the facility and an interruption in health care services to local and regional veterans. The No Action Alternative would continue the potential long-term, adverse impact on health care facilities due to the

possible future disruption of medical services provided by VAMC Manhattan.

##### 4.10.2.2 ALTERNATIVE 2 – PROPOSED ACTION

**Schools Construction.** Construction of the floodwall would not physically displace or alter any schools. The closest schools to the project site (i.e., British International School of New York and United Nations International School) are approximately 0.1 mile to the east, and separated from VAMC Manhattan by the Asser Levy Playground and FDR Drive. The closest public school is JHS 104 Simon Baruch, which is 0.2 miles to the southwest of VAMC Manhattan. The Proposed Action would have no direct impacts on schools.

**Operation.** Operation of the floodwall would result in the addition of new residential housing units or in an increase in population, including the school-age population (i.e., children approximately aged 4 to 17 years old that could attend area schools). Therefore, operation of the proposed floodwall would not change the demand on or increase the collective utilization rate of schools. Operation of the floodwall would have no indirect impacts on schools.

**Libraries Construction.** Construction of the floodwall would not physically displace or alter any libraries. The closest library to the project site is Epiphany Library, which is 0.2 miles to the west. The Proposed Action would not result in new residential housing units or increase population. Because the Proposed Action would not result in new residents, it would not affect or impair the delivery of existing library services. Construction of the floodwall would have no direct or indirect impacts on libraries.

**Operation.** Operation and presence of the floodwall would have no direct or indirect impacts on libraries.

**Child Care Centers Construction.** Construction of the floodwall would not physically displace or alter any child care centers. There is a child care center at VAMC Manhattan, but this facility would not be physically affected by the construction of the proposed floodwall. The Proposed Action would not result in an increase in population of children aged 6 years old and younger (i.e., those most likely to use child care centers). Additionally, construction of the proposed floodwall would not result in an increase of employees at VAMC Manhattan, who, if they had young children, might be more likely to use the onsite child care center. Therefore, because construction of the floodwall would not increase the population of young children, it would not change the demand on or

increase the collective utilization rate of child care centers. Construction of the floodwall would have no direct or indirect impacts on child care centers.

**Operation.** Operation and presence of the floodwall would not result in an increase of new residential housing units or an increase in the population of young children. Therefore, it would not change the demand on or increase the collective utilization rate of child care centers. Operation of the floodwall would have no direct or indirect impacts on child care centers.

**Health Care Facilities Construction.** Construction of the floodwall would not physically displace any health care facilities, including VAMC Manhattan. While construction of the proposed floodwall would physically alter the exterior of VAMC Manhattan, it would not be altered in a manner that would adversely affect the delivery of health care services or operation of the facility. Construction of the proposed floodwall would not close streets or prevent access to VAMC Manhattan, but it would block access to the sidewalk on the west side of the Asser Levy Playground. However, there are no public entrances to VAMC Manhattan from the Asser Levy Playground; therefore, construction of the floodwall would not affect public access to the facility. Construction of the floodwall would have no direct impacts on delivery of services at or operation of health care facilities.

**Operation.** The Proposed Action would not introduce a sizeable new neighborhood (i.e., new population center or concentration of people) that might use services at health care facilities. The proposed floodwall would not include residential housing units or other facilities that would add to the area's population. Because operation of the floodwall would not increase the area's population, it would not increase demand on the provision of services at health care facilities. Implementation of the Proposed Action would result in the removal of the sidewalk on the west side of the Asser Levy Playground; however, there is no public entrance to VAMC Manhattan from the Asser Levy Playground, and, thus, access would not be affected. The Proposed Action would have no indirect, adverse impacts on health care facilities. Operation of the floodwall could have a long-term, indirect, beneficial impact on health care facilities because it would allow VAMC Manhattan to remain operational and able to provide health care services during future flooding events.

**Fire Protection Construction.** Construction of the floodwall would not physically displace or alter an FDNY fire house or EMS station. The closest fire house to VAMC

Manhattan is Engine 16, Ladder 7, which is approximately 0.25 miles northwest, and the closest EMS station is EMS Station 8, which is approximately 0.15 miles north at Bellevue Hospital. Construction of the floodwall would have no direct impacts on fire houses or EMS stations. Construction of the proposed floodwall would not result in street closures or otherwise prevent fire and EMS vehicles and personnel from accessing VAMC Manhattan. However, fire hydrants or fire call boxes at or near the proposed location of the floodwall could be temporarily disabled or blocked during construction. All fire hydrants and call boxes would be restored to operational status after construction. Therefore, construction of the Proposed Action could have short-term, minimal-to-moderate, adverse impacts on fire protection or EMS.

**Operation.** Operation of the floodwall would not introduce a sizeable new neighborhood (i.e., new population center or concentration of buildings) to the service areas of Engine 16, Ladder 7 or EMS Station 8 that might require fire protection services or EMS. Therefore, the Proposed Action would not increase the demand for fire protection services and EMS. It might be necessary to relocate any fire hydrants or fire call boxes that are within the footprint of the proposed floodwall. However, this would not result in adverse impacts on fire protection or EMS.

**Police Protection Construction.** Construction of the floodwall would not physically displace or alter an NYPD police station. The closest police station to VAMC Manhattan is Precinct 13, which is approximately 0.3 miles to the west. Construction of the floodwall would have no direct impacts on police stations.

**Operation.** Operation and presence of the floodwall would not introduce a sizeable new neighborhood that might require police protection services. The presence of the proposed floodwall would not result in new residents or introduce new land uses, such as residential housing units or other uses that could require police protection, to the Precinct 13 service area. Therefore, operation of the floodwall would not increase the demand for police protection services. Construction of the floodwall would have no indirect impacts on police protection.

## 4.11 SOLID WASTE AND HAZARDOUS MATERIALS

Solid waste management primarily relates to the availability of systems and landfills to support a population's short-term and long-term needs.

Hazardous materials are substances that pose a threat to human health or the environment. Substances that might be of concern include the following:

- » Heavy metals
- » VOCs
- » Semi-volatile organic compounds (SVOCs)
- » Methane
- » Polychlorinated biphenyls (PCBs)
- » Pesticides
- » Polychlorinated dibenzodioxins and dibenzofurans (commonly referred to as dioxins)
- » Hazardous wastes.

#### 4.11.1 EXISTING CONDITIONS

There is no solid waste and sanitation infrastructure within or immediately adjacent to the project site. Public solid waste and sanitation services in the City are provided by the New York City Department of Sanitation (DSNY). Specifically, the DSNY handles refuse generated through municipal and residential uses, while solid waste from manufacturing, commercial uses, and construction is collected by private carters (DSNY 2006, DSNY 2012). DSNY collects solid waste and delivers it to transfer stations. From there, private carters transport the waste to solid waste disposal systems outside of the city. Removal and disposal of construction and demolition debris is typically the responsibility of the contractors performing construction activities. There are more than 100 private carters licensed to serve New York City and capable of transferring waste and recyclables (NYCMOEC 2013).

A Phase I Environmental Site Assessment (ESA) was completed in September 2013 in accordance with the ASTM International Practice E 1527-05 standards. Recognized Environmental Conditions (RECs) are defined by ASTM International E1527-05 as follows:

*The presence or likely presence of any hazardous substances or petroleum products on a project site under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the project site or into the ground, groundwater, or surface water of the project site. The term includes hazardous substances or petroleum products even under conditions of storage and use in compliance with local and state*

*laws and regulations. The term is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of regulatory governmental agencies. Conditions determined to be de minimis are not recognized environmental conditions.*

The Phase I ESA was limited to the portion of the VAMC Manhattan property that would be affected by the proposed project. The database search, aerial photograph review, fire insurance map review, and other records review were performed for the entire property. Site reconnaissance and RECs were specific to the Phase I ESA Project Site. The Phase I ESA is provided as Appendix E.

The Phase I ESA identified the following RECs:

- » Historic Uses – The project site has been developed since at least 1890 (earliest available Fire Insurance map). Prior to 1950, the project site had a number of occupants and uses including metal foundries, laundry companies, gasoline stations, factories, and coal yards. Chemicals historically used in these industries are often associated with soil and groundwater contamination. The historic uses of the project site are considered a REC.
- » Historic Fill Material – Recent excavations at the project site have identified contaminated historic fill material underneath the project site. Analytical testing has indicated the presence of SVOCs in the historic fill. The nature of the fill and concentrations of contaminants likely vary spatially across the project site. The presence of historic fill material underneath the project site is considered a REC.
- » Spills – There have been three reported spills at the project site. The spills have all been closed by NYSDEC. However, the spills represent a release of petroleum products to the soil and groundwater at the project site and are, therefore, considered a REC.
- » Leaking Underground Storage Tank (LUST) – There was a LUST reported at the project site. This indicates a release of petroleum products to the soil and groundwater at the project site and is therefore considered a REC.
- » Storage Tanks – There are three active diesel underground storage tanks (USTs), one active diesel AST, and two closed/removed diesel tanks (one UST,

one AST) reported at the project site. There is also a potential gasoline UST in front of Building No. 2 that is not reported in any database or NYSDEC petroleum bulk storage listing, but was reported by facility staff and identified by a cap observed during site reconnaissance. The presence of these storage tanks provides the material threat of release of petroleum products and, therefore, this condition is considered a REC.

- » Offsite Spills/LUSTs/USTs/ASTs – There are a large number of spills, LUST sites, and USTs/ASTs within one-eighth mile of the project site. Given the shallow depth to groundwater and tidal influence of groundwater flow, these sites have the potential to impact the groundwater at the project site and, therefore, these are considered a REC.
- » Hydraulic Car Lifts – Hydraulic car lifts used for multi-level vehicle parking are present in the northeast corner of the project site. The lift equipment was damaged during Hurricane Sandy and the lifts remain inoperable. The equipment was unable to be accessed during the site reconnaissance, but given the reported damage to the system there is potential for hydraulic fluids to have been released and, therefore, this condition is considered a REC.
- » Transformer – There is a pad-mounted transformer located next to Building No. 3 directly adjacent to the project site. Transformers often contain dielectric fluids and other oils. There is a material threat of release associated with the transformer and, therefore, this condition is considered a REC.

No solid waste was observed within the project site during the Phase I ESA site visit. Article 12 of the Navigation Law, the legislation which applies to Oil Spill Prevention, Control, and Compensation, defines a discharge as follows:

*Any intentional or unintentional action or omission resulting in the releasing, spilling, leaking, pumping, pouring, emitting, emptying or dumping of petroleum into the waters of the state or onto lands from which it might flow or drain into said waters, or into waters outside the jurisdiction of the state when damage may result to the lands, waters or natural resources within the jurisdiction of the state.*

All petroleum spills that occur within New York State must be reported to the New York State Spill Hotline (1-800-457-7362) within 2 hours of discovery, except spills that meet all of the following criteria:

- » The quantity is known to be less than 5 gallons
- » The spill is contained and under the control of the spiller
- » The spill has not and will not reach the state's water or any land
- » The spill is cleaned up within 2 hours of discovery.

A spill is considered to have not impacted land if it occurs on a paved surface such as asphalt or concrete. A spill in a dirt or gravel parking lot is considered to have impacted land and is reportable.

In addition to requirements for reporting petroleum releases, there are several requirements for reporting releases of hazardous materials and substances likely to pollute the environment. These are covered by the Chemical Bulk Storage Regulations (6 New York Codes, Rules, and Regulations [NYCRR] Parts 595, 596, and 597), Article 17 of the Environmental Conservation Law, the Federal Clean Water Act, and many parts of the CFR. In general, Federal-level notification can be made through the National Response Center at 1-800-424-8802. Most hazardous material releases also require notification to the local emergency response system (e.g., fire, police, EMS).

#### 4.11.2 ENVIRONMENTAL IMPACTS

A proposed action would have a significant effect on solid waste if the following were to occur: exceed capacity of a utility, violate a permit condition, or violate an approved plan for a solid waste utility.

Effects on hazardous materials and wastes are assessed by evaluating the degree to which a proposed action could cause worker, resident, or visitor exposure to hazardous materials; whether the Proposed Action would lead to noncompliance with applicable Federal or state regulations or increase the amounts generated or procured beyond current waste management procedures and capacities; and whether the Proposed Action would disturb a hazardous waste site, create a hazardous waste site, or contribute to a hazardous waste site resulting in adverse effects on human health or the environment.

A proposed action could have a significant effect with respect to hazardous materials if the following were to occur:

- » Noncompliance with applicable Federal and state regulations

- » Disturbance or creation of contaminated sites resulting in substantial adverse effects on human health or the environment
- » Inability to accommodate management policies, procedures, and handling capacities, impacting fuel management.

Hazardous materials might contaminate a site through several pathways:

- » Present in soil, groundwater, soil vapor, or buildings and structures as the residue of current or past uses
- » Imported to the site as fill or grading material over the years
- » Migrate to the site from offsite areas as a result of an upgradient source
- » Incorporated in onsite buildings and structures.

A direct impact is an immediate consequence to the environmental or construction program as a result of the proposed project. For this proposed project, direct impacts would include encountering existing contamination or generating regulated materials during site preparation.

An indirect impact related to hazardous materials and wastes would occur when the proposed project has the potential to affect existing contamination or produce additional sources or contamination or waste materials. Beneficial impacts would include addressing contamination encountered during the construction in accordance with state or Federal regulations.

#### **4.11.2.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE**

Existing solid waste and hazardous materials conditions at the facility, as discussed in Section 4.11.1, would remain unchanged. The VAMC Manhattan facility would remain vulnerable to damage from a future flooding event, which could result in increased risks of hazardous materials being exposed to the environment.

#### **4.11.2.2 ALTERNATIVE 2 – PROPOSED ACTION**

Construction of the VAMC Manhattan floodwall would result in the removal of up to 5,000 cubic yards (yd<sup>3</sup>) of soil (i.e., 3,900 yd<sup>3</sup> for the secant wall and 1,100 yd<sup>3</sup> for the floodwall and associated footing) and the demolition of trees, landscaping brick walls, paving, curbs and gutters, perimeter security fence, a security gate, lighting poles, and utility lines. Following construction, the Proposed

Action would not generate waste; therefore, no long-term demand for solid waste disposal services is anticipated. Because the Proposed Action would not generate more than 50 tons of solid waste per week or involve an unusual action that might exceed a component of the solid waste management capacity such as carter demand or generation of construction or demolition waste disposal beyond projections for that component in the Solid Waste Management Plan (SWMP), no solid waste and sanitary services assessment is warranted. All construction and demolition debris would be transported to appropriate landfills via private carters in accordance with the NYC SWMP. Additionally, in accordance with EO 13423, EO 13524, and the NYC-mandated recycling requirements, recyclable construction waste would be diverted to appropriate facilities. All soil removed that cannot be reused on site would be transported to a facility for reuse as fill.

Elements of the proposed construction could result in the short-term generation and transportation of hazardous substances, petroleum products, or hazardous waste if these materials are encountered during construction. The Phase I ESA indicates the potential for soil and groundwater contamination in and around the construction area based on the RECs listed in Section 4.11.1.

During construction, the following scenarios could occur that involve hazardous substances and petroleum products:

- » Chemical odors, stained soils, or free product could be found in excavations, stockpiled material, or on the water table (in the case of free product).
- » Hazardous substances could be encountered in excavations in debris mixed with soil.
- » Spills or leaks of petroleum products might result from operation of construction equipment or during refueling.

The construction contractor would notify the VA of any spills or contamination encountered during construction and the VA would perform the required notifications. Contaminated media (e.g., soil and groundwater) would be characterized and properly disposed off site at a facility licensed to accept contaminated material for treatment or disposal. The construction contractor would develop a plan for the temporary locations and procedures for staging and handling contaminated and noncontaminated soils.

Excavation dewatering would be necessary to complete the Proposed Action. It is likely that groundwater

encountered would contain concentrations of contaminants in excess of groundwater quality standards given the number of spills and leaking USTs in the surrounding area. A construction dewatering permit from NYCDEP would be required if the amount of dewatering exceeds 10,000 gallons per day. The permit would be contingent upon a chemical analysis of the groundwater. Excess groundwater would either be discharged to the municipal sewers under a dewatering permit or would be containerized and disposed off site at a licensed disposal facility.

As previously discussed, the four sanitary sewer pumping stations would normally operate via electricity; however, the pumping stations would operate via diesel fuel emergency generators if electricity is not available. Therefore, operation of the proposed floodwall would involve the long-term use of minor amounts of diesel fuel and create an additional exposure pathway to diesel fuel. Additional diesel fuel ASTs might be necessary to support the emergency generators for the four sanitary sewer pumping stations. If so, the ASTs would require registration with NYSDEC and could result in the need to develop a Spill Prevention, Control, and Countermeasure Plan for VAMC Manhattan, depending on the size of the ASTs.

## 4.12 TRAFFIC, TRANSPORTATION AND PARKING

This section includes an analysis of the potential effect of the proposed project on following impact areas:

- » Traffic Flow and Operating Conditions
- » Pedestrian Facilities
- » Parking Conditions
- » Transportation Conditions During Construction of the proposed project

### 4.12.1 EXISTING CONDITIONS

The proposed project would be constructed on a project site bounded by East 25<sup>th</sup> Street to the north, East 23<sup>rd</sup> Street to the south, Asser Levy Playground to the east, and First Avenue to the west. First Avenue is a major arterial with traffic flowing northbound only, is a local truck route, and features a protected Class 1 bike path. There is a gated ambulance entrance to the VAMC Manhattan accessible from First Avenue just south of East 24<sup>th</sup> Street. East 23<sup>rd</sup> Street is a major east-west arterial that features nearby access to the FDR Drive. The main entrance to

the VAMC Manhattan is accessed from East 23<sup>rd</sup> Street, with a one-way half-circular driveway that extends into the facility block via two drop curbs. Slip ramps exist in the eastbound direction of East 23<sup>rd</sup> Street to access the eastbound frontage road that is located directly north of Peter Cooper Village. East 25<sup>th</sup> Street is a local street with traffic flowing both eastbound and westbound east of First Avenue. There is a secondary employee entrance (“North Staff Entrance”) located along East 25<sup>th</sup> Street east of First Avenue, and a service driveway located along East 25<sup>th</sup> Street west of Asser Levy Playground. Asser Levy Playground is currently being expanded westward into the demapped right-of-way of the closed Asser Levy Place (this work is separate from this project and is being performed by the City of New York). Traffic and parking impacts as a result of the closing and demapping of Asser Levy Place is documented in a Technical Memorandum performed by Philip Habib & Associates dated September 12, 2013. Traffic signals exist at the intersections of First Avenue and East 23<sup>rd</sup> Street, First Avenue and East 24<sup>th</sup> Street, First Avenue and East 25<sup>th</sup> Street, and East 23<sup>rd</sup> Street south of Asser Levy Playground. East 25<sup>th</sup> Street north of Asser Levy Playground features stop control along both eastbound and westbound approaches.

All streets surrounding the VAMC Manhattan include sidewalks. Along the north side of East 23<sup>rd</sup> Street, the existing sidewalk is typically 20 feet wide; along the east side of First Avenue, the existing sidewalk is typically 15 feet wide; along the south side of East 25<sup>th</sup> Street, the existing sidewalk is typically 13 feet wide; and along the west side of Asser Levy Playground, the existing pedestrian path is approximately 16 feet wide. Handicap pedestrian ramps and crosswalks are provided at all intersection corners, including immediately south of Asser Levy Playground at East 23<sup>rd</sup> Street and immediately north of Asser Levy Playground at East 25<sup>th</sup> Street. Pedestrian signals are provided at the signalized intersections.

Current on-street parking regulations within the immediate study area were identified based on review of the New York City Department of Transportation (NYCDOT) traffic sign database (NYCDOT 2014). All streets surrounding the project site include on-street parking. First Avenue includes on-street parking along the west side of the roadway, between the travel lanes to the east and a protected Class 1 bike path along the west curb. Along First Avenue between East 23<sup>rd</sup> Street and East 25<sup>th</sup> Street, parking is restricted to 1 hour between 9 a.m. and 7 p.m. except Sundays along the west side of the street, with no parking allowed along the east side of the street. East 23<sup>rd</sup> Street

between First Avenue and Asser Levy Playground typically includes on-street parking along both north and south sides. Along the north curb directly in front of the project site, there is no parking allowed due to street cleaning between 8 a.m. and 8:30 a.m. except Sundays, and 2-hour parking between 8:30 a.m. and 7 p.m. except Sundays. East of First Avenue, there is no parking between 7 a.m. and 4 p.m. except for school buses. Along the south curb in front of the project site, there is no parking allowed due to street cleaning between 7:30 a.m. and 8 a.m. except Sundays, and 2-hour parking between 8 a.m. and 7 p.m. except Sundays. East 25th Street between First Avenue and Asser Levy Playground, features on-street parking along the north side, with no standing except authorized vehicles (doctors' vehicles only) along the north curb.

Bus rapid transit (i.e., select bus service [SBS]) is provided along First Avenue with the M15 SBS, and regular bus service with the M9 and M15. The M15 SBS has a stop on the east side of First Avenue south of East 25th Street, and the M15 bus has a stop on the east side of First Avenue south of the intersection with East 24th Street. SBS is also provided on East 23rd Street with the SBS 34A in the eastbound direction; by regular bus service with the M9 and M<sup>2</sup>3 in the eastbound direction only; and in both directions by MTA express bus service carrying passengers between Manhattan and Brooklyn, Queens, and Staten Island during peak commuting hours. The M34A SBS, the M9 and M<sup>2</sup>3 bus service, and X2, X5, X14, and X42 express bus service to Staten Island all have a stop on the south side of East 23rd Street, east of First Avenue.

#### 4.12.2 ENVIRONMENTAL IMPACTS

Significant adverse impacts on traffic operations, transportation systems, and parking could occur if any of the following would occur as a result of the proposed project:

- » Result in the increase of traffic volumes and decrease in travel speeds on roadways
- » Increase the demand for or reduce the supply of parking spaces with no provisions for accommodating the resulting parking deficiencies
- » Conflict with planned transportation projects in the project area.

##### 4.12.2.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Under the No Action Alternative, the existing transportation and traffic infrastructure described in Section 4.12.1 would

remain substantially unchanged. The expansion of Asser Levy Playground would be complete, which will likely result in a modification of the pedestrian path between East 23rd Street and East 25th Street that currently exists along the west end of the expanded playground (just east of the VAMC Manhattan property line).

##### 4.12.2.2 ALTERNATIVE 2 – PROPOSED ACTION

The implementation of a floodwall along portions of the north, east, and south sides of the facility would not have a significant impact on any permanent transportation or traffic items. The Proposed Action would not result in a substantial change in any of the permanent roadway geometry of the surrounding streets, nor result in any changes at any of the surrounding intersections; therefore, no traffic impacts are anticipated. It is likely that pedestrian circulation would be considered for the reconfigured eastern boundary of the VAMC Manhattan, and with no other change to any of the other sidewalks or crosswalks around the project site, no pedestrian impacts are anticipated.

Construction for the Proposed Action is anticipated to last less than 1 year. Construction activity could require temporary sidewalk closures, lane closures, or temporary loss of parking along East 23rd Street or East 25th Street, and could require temporary sidewalk closure at Asser Levy Playground.

There would be no permanent change to the on-street parking along First Avenue, East 23rd Street, or East 25th Street. The Proposed Action would not require any change in bus service in the study area and, consequently, would not have a significant adverse impact on transit.

#### 4.13 UTILITIES

Provided in this section is an assessment of the potential impact of the Proposed Action on electrical power supply distribution system, natural gas, and steam, solid waste and sanitation, water supply and sewer infrastructure, and telecommunications systems. Discussion in this section provides a brief overview of each service component that occurs in proximity to the project site and that might be reasonably impacted by implementation of the Proposed Action.

##### 4.13.1 EXISTING CONDITIONS

**Energy Systems.** The project site is located in an area served by Consolidated Edison (i.e., Con Edison), including electrical and natural gas systems (NYCMOEC 2013).

Underground electrical and natural gas/steam utility lines are networked beneath the city streets and cross through the project site at various locations (see Figure 4.13-1). Additionally, there is a pad-mounted electrical transformer in the southeast corner of the project site that is immediately adjacent to area that would be disturbed with the Proposed Action.

**Water, Storm Water, and Sanitary Sewer Infrastructure.**

An interconnected grid of 6- and 12-inch water mains runs beneath the project site and the surrounding streets (see Figure 4.13-1). This grid system equalizes water pressure and allows a section of pipe to be cut off for repair and maintenance without affecting users not directly connected to that section.

New York City's potable water supply is provided by the NYCDEP, which acquires water from the Croton, Delaware, and Catskill watersheds (NYCMOEC 2013). In 2006, NYCDEP delivered an average of approximately 1,069 million gallons per day (mgd) of water to New York City and Westchester County. The New York City Bureau of Water and Sewer Operations is responsible for maintaining, monitoring, and ensuring delivery and sufficient quantity of potable water (NYCDEP 2013).

The project site is located in an area that has combined storm water and sanitary sewerage piping. Several combined sewer lines cross through or are in the immediate vicinity of the project site (see Figure 4.13-1). There are also several storm water inlet drains within the immediately vicinity of the project site.

Most of New York City is served by a network of combined storm water and sanitary sewer lines that carry storm water collected from buildings, catch basins, and storm drains and sanitary sewage from buildings. The combined wastewater is conveyed to a drainage area that serves one of the city's 14 water pollution control plants (WPCPs). The New York City Bureau of Water and Sewer Operations is responsible for maintaining the city's sewer systems. It has overall responsibility for the approval and inspection of all public and private construction projects that could impact New York City's sewer systems.

Storm water and sanitary sewage from the VAMC Manhattan is treated at the Newtown Creek WPCP, which is located in Brooklyn. The rated capacity of this plant is 310 mgd, the largest rated capacity of any WPCP in New York City (NYCMOEC 2013). The capacity is designed to treat double the amount of average dry weather flow to avoid surges from storms (City of New York 2013).

**Telecommunication Systems.** In New York City, telecommunications lines are routed underground with the electrical lines. Several telecommunications lines cross through or are adjacent to the project site (see Figure 4.13-1). Businesses and residents in Lower Manhattan have telecommunications services ranging from telephone service to cable and Internet access. Protected by banks and casings, telephone utility lines are maintained by area service providers (e.g., Verizon and AT&T).

**4.13.2 ENVIRONMENTAL IMPACTS**

Impacts on utilities are evaluated for their potential to disrupt or improve existing levels of service and create additional needs for those utilities. An effect could be significant if the proposed project resulted in any of the following:

- » Exceeded capacity of a utility
- » A long-term interruption of the utility
- » A violation of a permit condition
- » A violation of an approved plan for that utility.

**4.13.2.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE**

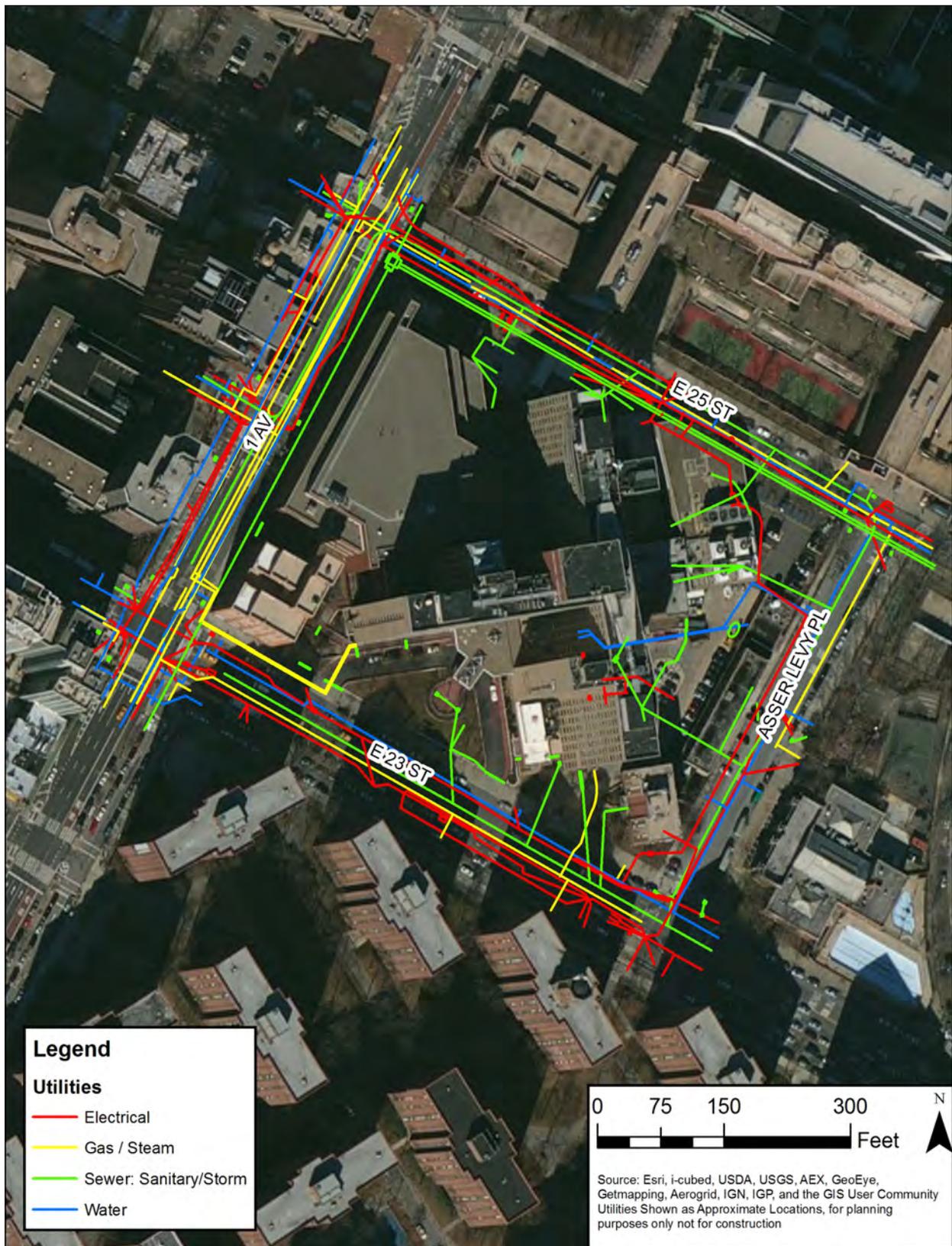
Under the No Action Alternative, the existing utility infrastructure described in Section 4.13.1 would be unchanged. The potential for adverse effects on infrastructure on the VAMC Manhattan property such as transformers from future storm events would continue.

**4.13.2.2 ALTERNATIVE 2 – PROPOSED ACTION**

All of the underground utilities within or immediately adjacent to the project site would require relocation due to implementation of the Proposed Action. Some utilities would be temporarily relocated outside of the project site prior to construction and then permanently relocated through the project site after construction, while other utilities would be permanently relocated outside of the project site prior to construction. Utilities in proximity to the project site would require protection during the construction of the proposed floodwall.

Following construction of the floodwall, utility gravity lines (i.e., sanitary and storm water) would be relocated through the floodwall to maintain the necessary elevation. The floodwall footing would be dropped in elevation at these crossings to accommodate these utility lines through the floodwall. Valves and manholes with slide gates on the interior side of the floodwall would be

Figure 4.13-1. Utilities and Infrastructure Proximal to the Project Site



used to prevent backflow of sanitary sewage and storm water into the VAMC Manhattan during a future flood. All other utility lines (i.e., electric, natural gas, water, and telecommunications) would be replaced with new lines that go under the floodwall footing but through the secant cutoff wall.

Relocated utility lines would be installed using modern materials, thereby improving the quality of infrastructure along those segments. Because the VAMC Manhattan is an active health care facility, temporary and permanent relocation of the utility lines would be conducted such that there would be no loss of utility service to the VAMC Manhattan, except for a 3-day interruption of the sanitary sewer pipeline. Additionally, there would be no loss of utility service to any structures in the vicinity of the VAMC Manhattan. The VA and its construction contractor would coordinate the temporary and permanent utility relocations with the utility service providers and the NYCDPR and the NYCDEP, as needed.

In summary, the Proposed Action could result in temporary impacts on utilities due to the temporary and permanent relocation of the utility lines. Additionally, the Proposed Action would require the relocation of portions of utilities due to replacing existing older utility infrastructure with new, modern materials. The following subsections discuss the other impacts associated with the Proposed Action that are not associated with the temporary or permanent relocation of utility lines.

**Energy Systems.** The Proposed Action would result in short-term, minimal-to-moderate, adverse and long-term, none-to-negligible, adverse effects on electricity. As previously noted, underground utility lines would require relocation during construction. It is anticipated that the construction contractors would use the existing electrical infrastructure at the VAMC property to construct the floodwall, which would slightly increase demand but not result in an adverse effect. The electrical transformer in the southeast corner of the VAMC Manhattan property would be protected during construction of the floodwall. The proposed floodwall would not consume any energy once constructed because the floodgates would be passively engaged during flood events due to their buoyancy. The four proposed sanitary sewer pumping stations would be powered via electricity. However, when electricity is not available, the sanitary sewer pumping stations would be powered via four diesel-fueled emergency generators. During an exterior flooding event, storm water from the land interior of the proposed floodwall would be evacuated via underground storage and a 3-cubic-feet-per-

second pumping station or the use of temporary pumps. Therefore, no significant impacts on electrical, natural gas, or steam utility lines would be anticipated as a result of the Proposed Action.

***Water, Storm Water, and Sanitary Sewer Infrastructure.***

The Proposed Action would result in no short-term, adverse effects associated with utility relocation that were previously discussed. The Proposed Action could require minor quantities of water during construction, which would slightly increase demand but not result in an adverse effect. The floodwall would result in no change in water demand. Demand for water resources and location of the project site was considered to determine the need for a Preliminary Infrastructure Assessment of water resources. Because the Proposed Action would neither result in an exceptionally large demand for water, nor be located in an area that experiences low water pressure, an assessment is not warranted. Therefore, no impacts on water supply are anticipated as a consequence of the Proposed Action.

The combined sewer lines that cross through the project site would be replaced and reconstructed at lower elevations in the ground so that they cross through the stem of the floodwall. Short-term disruption of service to the VAMC Manhattan typical of other construction projects in New York City could occur. Replacement, relocation outside the construction zone, or support in-place of any sewers identified as being within the project site would be performed in coordination with and under the review of the NYCDEP and the New York City Department of Parks and Recreation.

The entire length of the combined sewer pipeline along the Asser Levy Playground (approximately 180 feet in length) that runs immediately adjacent to the VAMC Manhattan property line would be permanently relocated prior to construction due to its close proximity to the proposed floodwall. Additionally, several existing site connections to the combined sewers around the VAMC Manhattan consisting of antiquated clay pipe material would be replaced with ductile iron pipe.

Only unusual actions with very large flows could have the potential for significant impacts on storm water or sewage treatment. Water discharged during relocation of the storm water and sewer pipelines would be diverted to the four proposed sanitary pumping stations. Storm water runoff from the project site during construction would result in a temporary impact on storm water and sewer demand. Storm water runoff from the project site would be controlled in accordance with the New York

Standards and Specifications for Erosion and Sediment Control (NYSDEC 2005). Additionally, the project site has shallow groundwater that would be pumped from the construction site into the storm water system during construction of the floodwall. Construction activities and existence of the floodwall into the future would not result in an increased burden on storm water, sewerage, or wastewater treatment services.

During normal rainfall events without any flooding, storm water from the land interior of the proposed floodwall would be evacuated by gravity flow into the combined sewer system. During an exterior flooding event, storm water from the land interior of the proposed floodwall would be evacuated via underground storage and a 3-cubic-foot-per-second pumping station or the use of temporary pumps.

**Telecommunication Systems.** The Proposed Action would result in no effects on the telecommunications lines, other than the effects associated with utility relocation that were previously discussed.

## 4.14 ALTERNATIVE ENERGY SOURCES

The Proposed Action and No Action Alternative would not involve any activities that would significantly impact energy consumption or the transmission of energy. The proposed floodwall would not consume any energy once constructed because the floodgates would be passively engaged during flood events due to their buoyancy. During flooding events that prevent the use of gravity flow lines, the four proposed sanitary sewer pumping stations and storm water pump would be powered via electricity, which would increase energy use negligibly. Accordingly, a detailed examination of alternative energy resources has been omitted from this EA.

## 4.15 NOISE

Sound is defined as a particular auditory effect produced by a given source, for example the sound of rain on a rooftop. Noise and sound share the same physical aspects, but noise is considered a disturbance while sound is defined as an auditory effect. Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Noise can be intermittent or continuous, steady or impulsive, and can involve any number of sources and frequencies. It can be readily identifiable or generally nondescript. Human response to increased sound levels varies according to the source type,

characteristics of the sound source, distance between source and receptor, receptor sensitivity, and time of day. How an individual responds to the sound source determines if the sound is viewed as music to one's ears or as annoying noise. Affected receptors are specific (e.g., schools, churches, or hospitals) or broad areas (e.g., nature preserves or designated districts) in which occasional or persistent sensitivity to noise above ambient levels exists.

**Noise Metrics and Regulations.** Although human response to noise varies, measurements can be calculated with instruments that record instantaneous sound levels in decibels. A-weighted decibel (dBA) is used to characterize sound levels that can be sensed by the human ear. "A-weighted" denotes the adjustment of the frequency range to what the average human ear can sense when experiencing an audible event. The threshold of audibility is generally within the range of 10 to 25 dBA for normal hearing. The threshold of pain occurs at the upper boundary of audibility, which is normally in the region of 135 dBA (USEPA 1981). Table 4.15-1 compares common sounds and shows how they rank in terms of the effects of hearing. As shown, a whisper is normally 30 dBA and considered to be very quiet while an air conditioning unit 20 feet away is considered an intrusive noise at 60 dBA. Noise levels can become annoying at 80 dBA and very annoying at 90 dBA. To the human ear, a change in noise levels of 5 dBA is generally discernible while a change of 10 dBA is perceived by the human ear as either a doubling or halving of noise levels (USEPA 1981).

**Federal Regulations.** Sound levels, resulting from multiple single events, are used to characterize noise effects from vehicle activity and are measured in Day-Night Average Sound Level (DNL). The DNL noise metric incorporates a "penalty" for nighttime noise events to account for increased annoyance. DNL is the energy-averaged sound level measured over a 24-hour period, with a 10-dBA penalty assigned to noise events occurring between 10:00 p.m. and 7:00 a.m. DNL values are obtained by averaging sound exposure levels over a given 24-hour period. DNL is the designated metric of the Federal government for measuring noise and its impacts on humans. According to the Federal Aviation Administration (FAA) and the U.S. Department of Housing and Urban Development criteria, residential units and other noise-sensitive land uses are "clearly unacceptable" in areas where the noise exposure exceeds 75 dBA DNL, "normally unacceptable" in regions exposed to noise between 65 and 75 dBA DNL, and "normally acceptable" in areas exposed to noise of 65 dBA DNL or less. The Federal Interagency Committee

on Noise developed land use compatibility guidelines for noise in terms of DNL (FICON 1992). For outdoor activities, the USEPA recommends 55 dBA DNL as the sound level below which there is no reason to suspect that the general population would be at risk from any of the effects of noise (USEPA 1974).

**State Regulations.** On October 6, 2000, NYSDEC issued a program guidance document: Assessing and Mitigating Noise Impacts. The guidance document discusses noise generation and propagation, offers methodology for performing noise assessments, and suggests ways to evaluate whether increases in noise levels are environmentally significant. An increase in noise levels of 10 dBA is perceived by most individuals to be twice as loud. The guidance document recommends that for non-industrial settings, the noise level should not exceed existing ambient noise levels by more than 6 dBA at a given receptor; however, this limit should be used as a general guideline as opposed to a regulatory limit. For example, in rural settings with low existing ambient noise levels, an increase of more than 6 dBA could be deemed acceptable because the baseline ambient noise level is low. However, the addition of any new noise source in a non-industrial setting should not raise the noise level above a maximum of 65 dBA, as 65 dBA allows for undisturbed speech at a distance of approximately 3 feet (0.9 meters) and is considered the “upper end” non-industrial ambient limit. Ambient noise levels in industrial or commercial areas should not exceed 79 dBA (NYSDEC 2001).

**City Regulations.** The New York City Noise Control Code (NYC Noise Code § 24-232), which was revised in 2005 and went into effect in July 2007, regulates noise emissions in New York City. The code limits construction activities to weekdays between 7:00 a.m. and 6:00 p.m. The code also contains sound-level standards for various sources of ambient noise and construction noise, and prohibits unnecessary noise near hospitals, schools, and courthouses. The sound-level standards limit noise levels, as they would be measured in the interior of buildings, not outdoors. Table 4.15-2 provides the applicable limits for the interior of residential structures.

**Construction Sound Levels.** Demolition and construction work can cause an increase in sound that is well above the ambient level. A variety of sounds are emitted from loaders, trucks, saws, and other work equipment. Table 4.15-3 lists noise levels associated with common types of construction equipment. Construction equipment usually exceeds the ambient sound levels by 20 to 25 dBA in an urban environment and up to 30 to 35 dBA in a quiet suburban

area. However, the New York City Noise Control Code also provides noise limits for specific construction equipment within the city (Table 4.15-3). Guidance on quieter available construction equipment and quieter construction procedures are provided in the NYCDEP Notice of Adoption of Rules for Citywide Construction Noise Mitigation. (NYCDEP 2007)

#### 4.15.1 EXISTING CONDITIONS

The ambient noise environment for the project site is mainly affected by a high population density and high traffic volumes. Natural sounds from wind, the movement of vegetation, birds, and other natural sources of sound are present but do not have a substantial effect on existing noise environment; transportation noise sources and fixed-equipment noise sources are the dominant noise sources. Existing noise sources in this area include noise originating from traffic using East 23<sup>rd</sup> and 25<sup>th</sup> Streets, First Avenue, and FDR Drive. In an urban environment, noise levels change from moment to moment. Transportation sources, such as automobiles, trucks, trains, and aircraft, are the principal sources of noise in the urban environment. Along major transportation corridors, noise levels can reach 80 dBA DNL, while along arterial streets, noise levels typically range from 65 to 70 dBA DNL (USEPA 1974). Noise-sensitive noise receptors in the vicinity of the project site include the VAMC Manhattan, the Hunter College Brookdale Health Sciences Campus (approximately 100 feet away), Asser Levy Playground (approximately 90 feet away), residences (including the Peter Cooper Village [approximately 120 feet away]), and the New York University College of Dentistry (approximately 300 feet away).

#### 4.15.2 ENVIRONMENTAL IMPACTS

Noise impact analyses typically evaluate potential changes to the existing noise environment that would result from implementation of a proposed project. Potential changes in the acoustical environment can be beneficial (i.e., if they reduce the number of sensitive receptors exposed to unacceptable noise levels or reduce the ambient sound level), negligible (i.e., if the total number of sensitive receptors to unacceptable noise levels is essentially unchanged), or adverse (i.e., if they result in increased sound exposure to unacceptable noise levels or ultimately increase the ambient sound level). Projected noise effects were evaluated qualitatively for the alternatives considered and calculated based on proposed construction equipment.

**Table 4.15-1. Sound Levels and Human Response**

NOISE LEVEL (DBA)	COMMON SOUNDS	EFFECT
10	Just audible	Negligible
30	Soft whisper (15 feet)	Very quiet
50	Light auto traffic (100 feet)	Quiet
60	Air conditioning unit (20 feet)	Intrusive
70	Noisy restaurant or freeway traffic	Telephone use difficult
80	Alarm clock (2 feet)	Annoying
90	Heavy truck (50 feet) or city traffic	Very annoying Hearing damage (8 hours)
100	Garbage truck	Very annoying
110	Pile drivers	Strained vocal effort*
120	Jet takeoff (200 feet) or auto horn (3 feet)	Maximum vocal effort
140	Carrier deck jet operation	Painfully loud

Source: USEPA 1981

Note: \* HDR extrapolation

**Table 4.15-2. New York City Noise Code - Maximum Noise Level (decibels) Inside Receiving Room**

BUILDING TYPE	OCTAVE BAND FREQUENCY (HZ)								
	31.5	63	125	250	500	1,000	2,000	4,000	8,000
Mixed Use and Residential	70	61	53	46	40	36	34	33	32
Commercial	74	64	56	50	45	41	39	38	37

Source: NYCLL, 2005. New York City Noise Code § 24-232

**Table 4.15-3. Predicted Noise Levels for Construction Equipment**

CONSTRUCTION CATEGORY AND EQUIPMENT	PREDICTED NOISE LEVEL AT 50 FEET (DBA)	NEW YORK CITY MAXIMUM NOISE LEVELS AT 50 FEET (DBA)
<b>Clearing and Grading</b>		
Bulldozer	80	85
Grader	80-93	85
Truck	83-94	84
Roller	73-75	85
<b>Excavation</b>		
Backhoe	72-93	80
Jackhammer	81-98	73
<b>Construction</b>		
Concrete mixer	74-88	85
Welding generator	71-82	73
Crane	75-87	85
Paver	86-88	85

Sources: NYCDEP 2007, USEPA 1971

#### 4.15.2.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Existing conditions would remain the same as described in Section 4.15.1.

#### 4.15.2.2 ALTERNATIVE 2 – PROPOSED ACTION

**Construction Equipment Noise.** The proposed project would consist of demolition and construction activities for the proposed floodwall at the VAMC Manhattan. Noise from these activities would vary depending on the type of equipment being used, the area the action would occur in, and the distance from the noise source. To predict how construction activities would impact adjacent populations, noise from the probable work areas was estimated. Additionally, construction usually involves several pieces of equipment in use simultaneously. The cumulative noise from the construction equipment, during the busiest day, was estimated to determine the total impact of noise from construction activities at a given distance based on typical construction equipment. Examples of expected construction noise, during daytime hours, at specified distances are shown in Table 4.15-4. These sound levels were predicted at 100, 200, 400, 800, 1,000, and 1,500 feet from the source of the noise. These sound levels were estimated by calculating the noise from several pieces of equipment and then estimating the decrease in noise levels at various distances from the source of the noise. Noise is a logarithmic function and is not calculated as simply an additive function.

**Table 4.15-4. Estimated Noise Levels from Construction and Demolition Activities**

CONSTRUCTION CATEGORY AND EQUIPMENT	PREDICTED NOISE LEVEL AT 50 FEET (DBA)
50	90 to 94 dBA
100	84 to 88 dBA
150	81 to 85 dBA
200	78 to 82 dBA
400	72 to 76 dBA
800	66 to 70 dBA
1,500	< 64 dBA

Additional pieces of construction equipment that would be used during installation of the proposed secant wall would be a drilling rig and flight auger. Noise levels anticipated with this type of equipment would be approximately 81 dBA at 50 feet (USEPA 1971). The proposed method for construction of the secant wall was selected to minimize noise and vibration effects.

Short-term, minimal-to-moderate, adverse effects on the ambient noise environment would be expected during construction of the proposed project; however, the effects would not be significant. The noise from construction equipment would be localized, short-term, and intermittent during machinery operations. Heavy construction equipment would be used periodically during construction; therefore, noise levels from the equipment would fluctuate throughout the day. The proposed construction would be expected to result in noise levels comparable to those indicated in Table 4.15-4.

Populations potentially affected by increased noise levels from the proposed construction activities would include VAMC Manhattan patients and personnel and the general public accessing buildings and areas in the immediate vicinity of the VAMC Manhattan. These individuals would be expected to experience noise levels comparable to those indicated in Table 4.15-4, depending on their proximity to construction activities. It is anticipated that residents outside buildings at the Peter Cooper Village closest to VAMC Manhattan and East 23<sup>rd</sup> Street could experience noise levels of approximately 82 to 87 dBA during construction activities. Students outside of Hunter College along East 25<sup>th</sup> Street could experience noise levels of 84 to 88 dBA during proposed construction activities. Students outside of the New York University College of Dentistry along First Avenue could experience noise levels of 74 to 78 dBA during construction activities. And the public accessing the eastern edge of Asser Levy Playground could experience noise levels of approximately 85 to 89 dBA.

Typical construction techniques used provide a minimum of approximately 20 dBA of noise reduction from outdoor to indoor areas. However, noise generation would last only for the duration of construction activities and would be isolated to normal working hours (i.e., between 7:00 a.m. and 6:00 p.m.). Construction noise would diminish as the distance between the receptor and the construction activities increased. Generally, noise levels decrease by approximately 6 dBA for every doubling of distance for point sources (such as a single piece of construction equipment), and approximately 3 dBA for every doubling of distance for line sources (such as a stream of motor vehicles on a busy road at a distance). In addition, construction equipment would be equipped with appropriate sound-muffling devices (i.e., from the original equipment manufacturer or better), and would be maintained in good operating condition at all times.

Construction workers would be working in close proximity to construction equipment and could be exposed to noise levels above 90 dBA. This is above the permissible noise exposure level defined by the Occupational Safety and Health Administration (OSHA). These levels would be reduced to permissible levels through feasible administrative or engineering controls, or the use of BMPs such as the use of hearing protection equipment. Therefore, noise effects on construction workers would be in compliance with applicable OSHA standards.

**Construction Vehicle Noise.** Short-term, minimal-to-moderate, adverse effects from construction vehicle noise would be expected from implementation of the proposed project; however, the effects would not be significant. Increases in ambient noise levels would occur intermittently during the construction period. The additional traffic resulting from construction vehicles would likely cause minor increases in noise levels on noise-sensitive populations adjacent to the roadways; however, these effects would not be considered significant.

**Operational Noise.** Once construction of the proposed floodwall is completed, the only source of noise could be the occasional use of emergency generators for the proposed sanitary sewer pumping stations. However, it is not anticipated that there would be an increase to the ambient noise levels due to daily operations.

## 4.16 ENVIRONMENTAL JUSTICE

EO 12898, Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations, stipulates that "...each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations...". According to the USEPA, "Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies" (USEPA 2013b). The USEPA defines minority populations as those identified in census data as Hispanic or Latino, Black or African American, Asian, Native Hawaiian and other Pacific Islander, some other race, or two or more races. Low-income populations are families that are living below the U.S. poverty threshold; for the 2010 Census, the U.S. Census Bureau determined that \$22,314 was the weighted average poverty threshold for a four-person household.

EO 13045, Protection of Children from Environmental Health Risks and Safety Risks, states that each Federal agency "(a) shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and (b) shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks." Children (youths) are defined as populations 16 years of age or younger.

Details on community demographics were analyzed using Federal census tract data. Census tracts are small, uniquely numbered areas that typically encompass an average of 4,000 inhabitants; tract inhabitants can range from 0 to as many as 8,000 inhabitants. Census tract data can be used to indicate population statistics for each tract, or combined to provide population statistics for an entire county, state, or the country. The U.S. Census Bureau collects, maintains, and publishes demographics data for the populations within each tract.

### 4.16.1 EXISTING CONDITIONS

To establish a baseline for environmental justice effects, income, poverty status, ethnicity, and race were examined at the census-tract level and compared to the United States, New York State, and New York County averages. The VAMC Manhattan is located entirely within Census Tract 62 (U.S. Census Bureau 2013c). In addition, the area including and immediately surrounding the VAMC Manhattan has been designated as a potential Environmental Justice Area by the NYSDEC, Office of Environmental Justice (NYSDEC 2013b). Potential Environmental Justice Areas are based on the 2000 U.S. Census block groups of 250 to 500 households that had populations that met or exceeded at least one of the following statistical thresholds:

- » At least 51 percent of the population in an urban area reported to be members of minority groups
- » At least 33.8 percent of the population in a rural area reported to be members of minority groups
- » At least 23.59 percent of the population in an urban or rural area had household incomes below the Federal poverty level. (NYDEC 2013b).

The minority population within Census Tract 62 is approximately 54.3 percent, which is a greater than minority population levels for New York County, New York State, and the United States. The percentage of persons reporting to be Asian in Census Tract 62 was 21.3 percent, which is considerably greater than those in New York County (11.2 percent), New York State (7.3 percent) and

**Table 4.16-1. Race, Ethnicity, and Poverty Characteristics for Census Tract 62, New York County, New York State, and the United States (2010)**

CHARACTERISTICS	CENSUS TRACT 62	NEW YORK COUNTY	NEW YORK STATE	UNITED STATES
Total Population	4,437	1,585,873	19,378,102	308,745,538
Population under 16 years of age (percentage)	6.8	13.1	19.6	21.2
Percentage White <sup>a</sup>	45.7	48.0	58.3	63.7
Percentage Black or African American <sup>a</sup>	14.0	12.9	14.4	12.2
Percentage American Indian & Alaska Native <sup>a</sup>	0.1	0.1	0.3	0.7
Percentage Asian <sup>a</sup>	21.3	11.2	7.3	4.7
Percentage Native Pacific Islander <sup>a</sup>	0.0	0.0	0.0	0.2
Percentage Some Other Race <sup>a</sup>	0.8	0.3	0.4	0.2
Percentage Two or More Races <sup>a</sup>	3.3	1.9	1.7	1.9
Percentage Hispanic or Latino <sup>b</sup>	15.0	25.4	17.6	16.3
Families below poverty level (percentage)	5.5	14.3	11.0	10.5
Median Household Income	\$71,111	\$67,204	\$56,951	\$52,752

Source: U.S. Census Bureau 2013d

Notes: Percentages might not sum exactly to 100 due to rounding.

<sup>a</sup>Not Hispanic or Latino origin.

<sup>b</sup>People of Hispanic or Latino origin could be of any race.

the United States (4.7 percent). The percentage of families below the poverty level within Census Tract 62 was less than those in New York County, New York State, and the United States. The median household income for Census Tract 62 was greater than the county, state, or United States. See Table 4.16-1 for race, ethnicity, and low-income data.

#### 4.16.2 ENVIRONMENTAL IMPACTS

To have an impact under EO 12898, the impact must have an adverse effect on human health or environment, and the impact must occur in a way that has a disproportionate impact on minority and low-income populations. Environmental justice impacts would be considered significant if a proposed action would result in disproportionate impacts on minority, low-income, or youth populations.

##### 4.16.2.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Impacts on minority or low-income populations could occur in the event the VAMC Manhattan is compromised during another major flooding event and vital medical services to the public provided by the facility are lost.

##### 4.16.2.2 ALTERNATIVE 2 – PROPOSED ACTION

**Construction.** Census Tract 62 generally reported higher percentages of minority populations than were

reported among the county and state’s total populations. The reported percentages of low-income and youth populations in Census Tract 62 were generally lower than those reported for the county and state’s total populations. Despite the higher percentage of minority residents in Census Tract 62, construction of the proposed floodwall would not cause minority populations to experience disproportionately high adverse human health or environmental effects as compared to the general population because construction activities would be temporary and transitory in nature. Effects from construction of the floodwall would be similar to those resulting from routine construction activities in New York City. Construction noise and dust from the proposed activities would temporarily affect adjacent areas, including residents in Peter Cooper Village to the south of VAMC Manhattan; however, construction activities would only be temporary.

**Operation.** Operation of the proposed floodwall is not anticipated to significantly increase flooding in the adjacent areas during a flooding event. Therefore, the proposed project would not cause minority, low-income, or youth populations to experience disproportionately high adverse human health or environmental effects.

## 4.17 SHADOWS

This section assesses the potential effects of the incremental shadows that would result from the proposed project on important sunlight-sensitive resources in the vicinity of the project site. Shadow impacts occur when a shadow from a proposed project falls on a publicly accessible open space, historic landscape, historic resource with features that are dependent on sunlight, or when a shadow falls on an important natural feature and affects its use or important landscaping and vegetation (NYCMOEC 2013, NYSDEC 2000).

The shadows impact study area includes the area adjacent to the project site, and includes the area that would be affected by the longest shadow that could be cast by the proposed project (see Figure 4.17-1). The shadow impact study area is calculated by multiplying the height of the proposed structure by 4.3 to estimate its longest possible shadow.

A sunlight-sensitive resource is defined as resources that depend on sunlight, including public open spaces, natural resources and vegetation, and green streets. City streets and sidewalks, unless part of the City's Green Streets program, are considered non sunlight-sensitive resources, and do not need to be included in the assessment of shadow impacts.

### 4.17.1 EXISTING CONDITIONS

The Asser Levy Playground is considered to be a sunlight-sensitive resource.

### 4.17.2 ENVIRONMENTAL IMPACTS

Adverse impacts as they relate to shadows occur when the incremental new shadow added by a proposed project falls on a sunlight-sensitive resource and substantially reduces or completely eliminates that direct sunlight, thus altering the public's use of the resource or the viability of vegetation and other resources.

#### 4.17.2.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Under the No Action Alternative, the existing shadow conditions in the area would remain unchanged. Under the No Action Alternative, the de-mapping of Asser Place and expansion of the Asser Levy Playground would likely continue and not result in any additional shadows compared to the existing condition.

#### 4.17.2.2 ALTERNATIVE 2 – PROPOSED ACTION

A preliminary screening assessment was conducted to ascertain whether the shadow cast by the proposed project could reach any sunlight-sensitive resources at any time of year. The first step in this assessment is to develop a

**Figure 4.17-1. Theoretical Shadow Buffer for the VAMC Manhattan Floodwall**



base map that illustrates the relationship of the project site in relationship to sunlight-sensitive resources in the area. After development of the base map, a Tier 1 Screening Assessment is completed. A simple radius around the proposed project was drawn to identify the longest shadow that could be cast by the proposed project, which is 4.3 times the building's height and occurs on the winter solstice, normally December 21st. If any portion of a sunlight-sensitive resource lies within the longest shadow study area, then a Tier 2 Screening Assessment must be performed.

Because of the path that the sun travels across the sky in the northern hemisphere, no shadow can be cast in a triangular area south of any project site. In New York City, this area lies between -108 and +108 degrees from true north, thereby reducing the area that could be affected by the longest shadow cast by the proposed project. If none of the sunlight-sensitive resources within the area can be shaded by the proposed project, no further assessment of shadows is necessary. However, if this assessment does not eliminate the possibility of new shadows on sunlight-sensitive resources, a further screening analysis is completed to refine the area that could be reached by the building's shadow by looking at specific representative days of the year and determining the maximum extent of shadows over the course of each representative day.

Computer-generated simulations of the shadows with the proposed project were prepared for representative times on five analysis days: March 21<sup>st</sup>, May 6<sup>th</sup>, June 21<sup>st</sup>, November 21<sup>st</sup>, and December 21<sup>st</sup> (Appendix F). Because the effect of shadows within one and one-half hours of sunrise or sunset are not significant, the analysis period on each analysis day considers only the shadows that begin one and one-half hours after sunrise and end one and one-half hours before sunset. Daylight savings time was assumed for the analysis times on the March 21<sup>st</sup>, May 6<sup>th</sup> and June 21<sup>st</sup> analysis dates. June 21<sup>st</sup>, May 6<sup>th</sup> and March 21<sup>st</sup> are representative days for the growing season for vegetation on open space. December 21<sup>st</sup> is representative of conditions during winter months. The figures in Appendix F illustrate the existing and incremental new shadows cast by the proposed floodwall. As indicated on the figure the proposed project would not result in any incremental increase in shadows except at one location since the shadows cast by the taller existing VAMC Manhattan building extend beyond the reaches of the proposed floodwall.

Incremental shadows would be cast on the Public Baths and Asser Levy Playground during each of the days

analyzed, although due to all of the existing surrounding structures this resource is already affected by existing shadows. No new shadows would be cast on March 21<sup>st</sup>, May 21<sup>st</sup>, November 21<sup>st</sup>, or December 21<sup>st</sup>. The only incremental new shadow occurs in the afternoon of June 21<sup>st</sup>. The proposed project would not, therefore, result in adverse shadow impacts.

**Construction.** Shadow impacts resulting from construction activities are limited to tall construction equipment, which would temporarily be used on-site during the construction phase of the proposed project. Most equipment would not be stationary and the location would change throughout the floodwall construction, further minimizing any potential shadow effects; therefore, no adverse shadow impacts are anticipated due to construction of the floodwall.

## 4.18 CUMULATIVE IMPACTS

CEQ regulations stipulate that the cumulative effects analysis should consider the potential environmental effects resulting from "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts can result from individually minor, but collectively substantial, actions undertaken over a period of time by various agencies (Federal, state, and local) or individuals. Informed decisionmaking is served by consideration of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

Past activities are those actions that occurred within the geographic scope of cumulative effects that have shaped the current environmental conditions of the project site. For many resource areas, the effects of past actions are now part of the existing environment and are included in the description of the affected environment.

The scope of the cumulative effects analysis involves the timeframe and geographic extent to which effects could be expected to occur, and a description of the resources that could be cumulatively affected. The geographic ROI is an important consideration when discussing cumulative effects from construction and operations. For the purposes of this analysis, the ROI was determined to be the VAMC Manhattan and the adjacent blocks. An effort was undertaken to identify other projects for evaluation in the context of the cumulative effects analysis. This was

further developed through review of public documents and information gained from the coordination with various applicable agencies.

#### 4.18.1 PROJECTS WITH THE POTENTIAL FOR CUMULATIVE EFFECTS

The following projects were identified as having the potential for cumulative effects:

- » **Initiative 22 - Install an integrated flood protection system at Hospital Row.** Bellevue Hospital and its neighboring healthcare facilities were flooded during Hurricane Sandy and remain at risk of flooding during extreme weather events. Subject to available funding, New York City would install an integrated flood protection system at Hospital Row north of East 23<sup>rd</sup> Street in Manhattan. The Office of Long-Term Planning and Sustainability (OLTPS) would work with multiple agencies to design and construct this project. The expected alignment would be along the service road of the FDR Drive, utilizing floodwalls and other localized measures where appropriate to integrate the system. The system would specifically enhance protection to Bellevue Hospital, a critical trauma facility, and could integrate with existing plans by neighboring facilities operated by New York University and the VA. The goal is to complete design in 2014 with project completion by 2016.
- » **Asser Levy Playground Expansion.** The New York City Department of Parks & Recreation has closed the Asser Levy Place to expand the Asser Levy Playground. The park property would be extended to the VAMC Manhattan property line and would include the construction of a new running track and other recreational features. Construction began fall of 2013 and is anticipated to be completed in 2014.
- » **VAMC Manhattan Access Road and Stacked Parking.** With the proposed closing of Asser Levy Place to expand Asser Levy Playground, one point of access to VAMC Manhattan and staff parking would be eliminated. The VA proposes to reroute access to parking and increase the number of staff parking places with stacked parking facilities along the eastern boundary of VAMC Manhattan. Construction is anticipated to begin upon completion of the proposed VAMC Manhattan floodwall, approximately 2015, and be completed in 2016.
- » **New York City Department of Sanitation (DSNY)**

**East 25<sup>th</sup> Street Manhattan Districts 6, 6A, and 8 Garage.** DSNY proposes to construct a garage on a site currently occupied by the Brookdale Campus of Hunter College of the City University of New York on a portion of a superblock that is bounded by First Avenue, FDR Drive, East 25<sup>th</sup> Street, and the former East 26<sup>th</sup> Street (Block 962, part of Lot 100) in the Bellevue area of Manhattan Community District 6. DSNY vehicles and equipment (e.g., refuse and recycling collection trucks, salt spreaders, snow plows) would be parked, maintained, and refueled at the proposed garage. The new facility (approximately 135 feet in height on a footprint of 76,200 square feet) would consolidate operations of three existing DSNY garages and the DSNY Manhattan Borough Office. In a gross floor area of 470,000 square feet, it would contain approximately 170 parking spaces for DSNY vehicles and approximately 145 accessory parking spaces in the basement of the site for personnel. The project is expected to be completed by 2018.

The proposed New York City Floodwall project has the potential for cumulative effects, but at this point is not reasonably foreseeable; therefore, it is not considered in the cumulative effects analysis. The proposed New York City Floodwall project includes the construction of integrated flood protection structures such as floodwalls, levees, and local storm surge barriers in Hunts Point in the Bronx to protect the Food Distribution Center; on the East Harlem Waterfront along the FDR East River Drive; at Hospital Row north of East 23<sup>rd</sup> Street in Manhattan; the Lower East Side; Chinatown; the Financial District; and in Red Hook in Brooklyn.

#### 4.18.2 CUMULATIVE EFFECTS ANALYSIS

Table 4.18-1 summarizes potential cumulative effects on resources from the proposed project's construction and operational activities when combined with other past, present, and reasonable foreseeable future activities. Only those actions that are additive to the proposed project are considered. Coordination with NYCDPR and NYCDEP would occur to limit impacts.

**Table 4.18-1. Cumulative Effects on Resources**

RESOURCE	PAST ACTIONS	CURRENT BACKGROUND ACTIVITIES	PROPOSED PROJECT	KNOWN FUTURE ACTIONS	CUMULATIVE EFFECTS
Aesthetics	The area is a highly developed urban environment with limited significant natural features, landmark structures, and distinct buildings.	Majority of the pedestrian view of natural features, landmark structures, or distinct buildings are limited by the VAMC Manhattan facility.	Pedestrian view of natural or built features primarily near the eastern and southern corners of the proposed floodwall would be limited during construction and operation.	Construction of additional facilities and flood prevention structures.	As the pedestrian view is already limited by current development, additional structures would not have a significant effect.
Land Use	Past development practices have extensively modified land use.	A mix of residential and commercial districts.	No change in overall land use, ; however access to a portion of the Asser Levy Playground would temporarily be limited during construction activities. No significant effect would result.	No changes to current zoning.	No significant effects.
Air Quality	The AQCR is listed as nonattainment for PM2.5, moderate nonattainment for 8-hour O3, and a maintenance area (moderate > 12.7 ppm) for CO. New York County has been further designated as moderate nonattainment for PM10	Emissions from vehicles and stationary sources at VAMC Manhattan and surrounding facilities.	Potential dust generation during construction and demolition activities. No significant effect would result.	Additional construction activities and increases in the volume of traffic.	Minimal-to-moderate, short-term and long-term, adverse effects on air quality. Cumulative effects would remain low beyond completion of the proposed project.
Cultural Resources	The existing VAMC Manhattan facility is not eligible for the NRHP. The Public Baths, in the adjacent Asser Levy Playground across from the VAMC is listed in the NRHP.	The presence and operation of the VAMC Manhattan have no significant impact.	No significant impact would result. A construction protection plan would be developed and implemented for the Public Baths.	General ongoing development may impact historic buildings and archaeological resources.	Minimal-to-moderate, long-term, adverse effects, but not significant.
Topography, Geology, and Soils	Extensive development.	The presence and operation of the VAMC Manhattan have no significant effects.	Removal of undocumented fill and non-native material can be considered a net benefit as the composition of this material is not fully known and could be contaminated. Bedrock, depth to bedrock, and topography are not expected to be impacted by the proposed project.	Development of area would impact the limited vegetation communities and wildlife habitat.	Possible permanent loss of vegetation and habitat. Effect not significant.

RESOURCE	PAST ACTIONS	CURRENT BACKGROUND ACTIVITIES	PROPOSED PROJECT	KNOWN FUTURE ACTIONS	CUMULATIVE EFFECTS
Hydrology and Water Resources	The area is made up predominantly of impervious surfaces. Majority of rainfall is conveyed to the combined sewer system.	Pollution from commercial and municipal sources.	Altering of existing drainage patterns to accommodate the construction and function of the floodwall.	Continued development of the area and construction of additional flood prevention structures.	Possible minimal-to-moderate, short-term and long-term, adverse effects from alteration of drainage patterns.
Wildlife and Habitat	Extensive development.	Wildlife in the area is limited because the area is highly urbanized. The site is primarily composed of landscaped areas.	Impacts on biological resources from construction and operation of the floodwall are anticipated to be minimal as few resources are present.	Limited impact on biological resources in highly urbanized area.	No significant effects.
Floodplains, Wetlands, and Coastal Zone Management	Extensive development in tidal floodplain and coastal zone.	Impervious surfaces in tidal floodplain and coastal zone. Limited tidal flooding protection.	Beneficial flooding protection for VAMC Manhattan. None-to-negligible loss of floodplain storage. No wetlands or CMZ effects.	Additional loss of floodplain storage.	None-to-negligible, long-term, adverse effects on floodplain storage.
Socioeconomics	VAMC Manhattan contributes to the local economic community.	Continued support of the local community.	Minimal-to-moderate contribution to local construction industry. No significant effect would result.	Minimal-to-moderate contribution to local construction industry.	Minimal-to-moderate stimulation of local economic community in context of increased level of service support.
Community Services	Operation of the VAMC Manhattan supports the surrounding community veterans.	Continued medical support of the community veterans.	No significant effect would result.	Potential increase in need for community services.	No significant effects.
Solid Waste and Hazardous Materials	The property has been developed since 1890, contaminated historic fill material has been identified, and three spills have been reported and closed on the property.	Presence and operation of the VAMC Manhattan.	Small quantities of materials used and wastes generated from construction and operation. Potential for workers to encounter hazardous materials and wastes. No significant effect would result.	Future construction activities would increase hazardous material use and waste generated but not to levels that cannot be managed by current practices.	Construction and demolition activities would have a minimal-to-moderate effect on hazardous materials and wastes. Effect not significant. Potential for long-term, minimal-to-moderate, beneficial effects created by possible further cleanup.

RESOURCE	PAST ACTIONS	CURRENT BACKGROUND ACTIVITIES	PROPOSED PROJECT	KNOWN FUTURE ACTIONS	CUMULATIVE EFFECTS
Traffic, Transportation, and Parking	The property is bounded on two sides by major arterials (high-capacity urban roads).	Current high traffic levels are significant due to high population density.	Construction activities might require temporary sidewalk and traffic lane closures, closure of a portion of Asser Levy Playground, and temporary loss of parking along East 23rd Street and East 25th Street.	Additional construction could require temporary sidewalk and traffic lane closures. The incorporation of Asser Levy Place into city parkland would result in the loss of some parking spaces as well, although these losses would be mitigated and a potential net gain of approximately seven parking spaces might occur as a result of the proposed access road planned for the area adjacent and interior to the floodwall along the Asser Levy Playground.	Short-term, minimal-to-moderate, adverse effects on traffic could result from construction activities.
Utilities	Utilities and infrastructure developed to support the current facility.	VAMC Manhattan continues to use existing utilities.	Minimal-to-moderate impacts associated with utility relocation during construction.	Utility improvements.	Construction of new facilities would have a minimal-to-moderate effect on some aspects of utilities and a corresponding need to upgrade existing utilities.
Noise	The area is primarily affected by a high population density and high traffic volumes.	High population density and high traffic volumes and very limited natural sounds.	Short-term noise impacts from construction and demolition.	Continued increase in population density and traffic volumes.	Population density and traffic volumes would remain high. Effect not significant.
Environmental Justice	Operation of VAMC Manhattan does not contribute to disproportionately high adverse human health or environmental effects.	The area is identified as a potential Environmental Justice Area.	No disproportionately high adverse human health or environmental effects.	No disproportionately high adverse human health or environmental effects, but increased noise and traffic due to DSNY garage.	No significant effects.
Shadows	The area is a highly developed urban environment with numerous buildings and structures.	The current VAMC Manhattan facility and surrounding buildings produce shadows on adjacent public open spaces, and natural resources and vegetation.	Incremental shadows would be cast on the Public Baths and Asser Levy Playground, although, due to all of the existing surrounding structures, this resource is already affected by existing shadows.	Additional facilities could cast incremental shadows, however existing structures area already affected by existing shadows	Construction of new facilities is not anticipated to have a significant effect on existing shadows.

### 4.18.3 UNAVOIDABLE ADVERSE EFFECTS

Unavoidable adverse impacts would result from construction and operation of the proposed project; however, none of these impacts would be significant.

**Urban Design and Visual Resources.** Construction of additional structures and flood prevention measures would further limit the pedestrian view of natural features, landmark structures, or distinct buildings. However, the current level of urban development limits current views; therefore, the additional structures would not result in a significant effect.

**Hydrology and Water Resources.** Operation of additional flood-prevention structures would result in adverse effects from alteration of drainage patterns. However, it is anticipated that design of these structures would take into consideration all existing structures, anticipated 100-year and 500-year flood levels, and wave heights.

**Solid Waste and Hazardous Materials.** Impacts on hazardous materials and wastes found on the project site would be unavoidable during construction of the proposed project. However, contaminated media (e.g., soil and groundwater) would be characterized and then properly disposed off site at a facility licensed to accept contaminated material for treatment or disposal. Therefore, the potential for this would not significantly increase over baseline conditions and is not considered significant.

**Energy Resources.** The use of nonrenewable resources during construction and operation of the proposed project is an unavoidable occurrence, although not considered significant. The proposed project would require the use of fossil fuels during construction and operation, a nonrenewable natural resource. Energy supplies, although relatively small, would be committed to the proposed project.

### 4.18.4 COMPATIBILITY OF PROPOSED PROJECT AND ALTERNATIVES WITH THE OBJECTIVES OF FEDERAL, REGIONAL, STATE, AND LOCAL LAND USE PLANS, POLICIES, AND CONTROLS

As demonstrated in the analyses included in this EA, construction and operation of the proposed project would conform to all applicable land use ordinances and policies.

### 4.18.5 RELATIONSHIP BETWEEN THE SHORT-TERM USE OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

Short-term uses of the biophysical components of the human environment include direct effects, usually related to construction activities that occur over a period of less than 5 years. Long-term uses of the human environment include those effects that occur over a period of more than 5 years, including permanent resource loss.

This EA identifies potential short-term, adverse effects on the natural environment as a result of proposed construction activities. These potential adverse effects include noise generation, air emissions, solid waste generation, soil erosion, storm water runoff, temporary loss of parking, and a temporary increase in demand for utilities during construction activities. Implementation and operation of the proposed project would help ensure that the VAMC Manhattan would not close during future storm events, which would be a long-term beneficial effect.

### 4.18.6 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The irreversible environmental changes that would result from construction and operation of the proposed project involve the consumption of material resources, energy resources, land, biological habitat, and human resources. The use of these resources is considered to be permanent.

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that use of these resources would have on future generations. Irreversible effects primarily result from use or destruction of a specific resource that cannot be replaced within a reasonable timeframe (e.g., energy and minerals).

**Material Resources.** Material resources used for the construction of the proposed project include building materials, concrete and asphalt, and various material supplies that would be irreversibly lost. Most of the materials that would be consumed are not in short supply, would not limit other unrelated construction activities, and would not be considered significant.

**Energy Resources.** No significant impacts would be expected on energy resources used as a result of the construction and operation proposed project, though any energy resources consumed would be irretrievably lost.

These include petroleum-based products (e.g., gasoline and diesel) and electricity. Consumption of these energy resources would not place a significant demand on their availability in the region.

**Human Resources.** The use of human resources for construction and operation is considered an irretrievable loss, only in that it would preclude such personnel from engaging in other work activities. However, the use of human resources for the proposed project and alternatives represent employment opportunities, and is considered beneficial.

#### 4.19 POTENTIAL FOR GENERATING SUBSTANTIAL CONTROVERSY

There are no known or anticipated issues likely to generate substantial issues among VAMC Manhattan stakeholders, regulatory agencies, or the general public from the construction or operation of the proposed project. The likely adverse impact of the proposed project on resources would be none-to-negligible. No concerns regarding the construction or operation of the proposed project were raised during agency consultation in relation to the proposed project and the environmental review process. With respect to resources, no issues arose that are believed to create conflicts with humans or with the environment that would appear to be controversial. Accordingly, a detailed examination of the potential for generating substantial controversy has been omitted from this EA.



# 05

## AGENCY COORDINATION AND PUBLIC INVOLVEMENT

NEPA requirements help ensure that environmental information is made available to the public during the decisionmaking process and prior to actions being taken. The premise of NEPA is that the quality of Federal decisions will be enhanced if proponents provide information to the public and involve the public in the planning process. The Intergovernmental Coordination Act and EO 12372, Intergovernmental Review of Federal Programs, require Federal agencies to cooperate with and consider state and local views in implementing a Federal proposal.

Through the coordination process, the VA will notify relevant Federal, state, and local agencies of the Proposed Action and provide them sufficient time to make known their environmental concerns. Agency responses will be incorporated into this EA. The VA will coordinate with such agencies as SHPO; NYCLPC; NYCDPR; and New York City Mayor's Office of Environmental Coordination. Appendix B includes all coordination letters and responses.

Once the Draft EA is finalized, a Notice of Availability/Public Notice will be published and the Draft EA will be made available to the public for a 30-day review period. The Notice of Availability will be issued to solicit comments on the Proposed Action and alternatives and involve the local community in the decisionmaking process. The Notice of Availability/Public Notice will be published in The New York Times. Copies of the Draft EA will be available for the

30-day public review period at XXX. All comments and inquiries regarding this document should be submitted to [Claudie.Benjamin@va.gov](mailto:Claudie.Benjamin@va.gov) or Claudie Benjamin, Public Affairs Officer, Department of Veterans Affairs, 423 East 23rd Street, Room 10785, New York, NY 10010, Office: (212) 686-7500. Public and agency comments on the Draft EA will be considered prior to a decision being made as to whether or not to issue a FONSI or require the preparation of an EIS.





# MITIGATION MEASURES

The proposed project would not result in significant adverse or long-term effects on the land or the surrounding area. However, the following mitigation measures and BMPs would be implemented to avoid, reduce, and mitigate potential environmental impacts caused by construction and operation of the floodwall.

General BMPs that would be implemented during the construction and long-term operation and maintenance of the proposed floodwall include the following:

- » Clearing and grubbing would be timed with construction to minimize the exposure of cleared surfaces. Such activities would not be conducted during periods of wet weather. Construction activities would be staged to allow for the stabilization of disturbed soils. These BMPs would minimize adverse impacts associated with geological resources and water resources.
- » Fugitive dust-control techniques such as watering and stockpiling would be used to minimize adverse effects. All such techniques would conform to applicable regulations. These BMPs would minimize adverse impacts associated with air quality, geological resources, and water resources.
- » Soil erosion-control measures, such as soil erosion-control mats, silt fences, and straw bales, would be

used as appropriate. These BMPs would minimize adverse impacts associated with geological resources and water resources.

- » Minimize the disturbance of environmental resources and topography by integrating existing vegetation, trees, and topography into site design, to the extent possible. These BMPs would minimize adverse impacts associated with geological resources and biological resources.
- » Provisions would be taken to prevent pollutants from reaching the soil, groundwater, or surface water. During project activities, contractors would be required to perform daily inspections of equipment, maintain appropriate spill-containment materials on site, and store all fuels and other materials in appropriate containers. Equipment maintenance activities would not be conducted on the construction site. These BMPs would minimize adverse impacts associated with geological resources, water resources, and hazardous materials and waste.
- » Physical barriers and “no trespassing” signs would be placed around the project site to deter unauthorized personnel. All construction vehicles and equipment would be locked or otherwise secured when not in use. These BMPs would minimize adverse impacts associated with health and safety.

- » Construction equipment would be used only as necessary during the daylight hours and would be maintained to the manufacturer's specifications to minimize noise impacts. These BMPs would minimize adverse impacts associated with health and safety and noise.

Additional mitigation for the following resources would include the following:

**Air Quality.** Short-term, adverse effects on air quality would be expected from the construction of the proposed floodwall; however, the effects would not be significant. The proposed construction activities would generate air pollutant emissions from site-disturbing activities and operation of construction equipment. Construction activities might also generate particulate emissions as fugitive dust from ground-disturbing activities and from the combustion of fuels in construction equipment. Construction activities, however, would incorporate BMPs to minimize fugitive particulate matter emissions. Additionally, the work vehicles are assumed to be well-maintained and could use diesel particle filters to reduce emissions.

**Noise.** Short-term, minimal-to-moderate, adverse effects on the ambient noise environment would be expected during construction of the proposed floodwall. However, the noise from construction equipment would be localized, short-term, and intermittent during machinery operations. Heavy construction equipment would be used periodically during construction. To mitigate these potential impacts, construction equipment would be equipped with appropriate sound-muffling devices (i.e., from the original equipment manufacturer or better), and would be maintained in good operating condition at all times.

**Geology and Soils.** Impacts on geological resources would be limited to the areas where ground disturbance would occur. However, applicable erosion- and sediment-control plans would limit and mitigate any potential impacts during construction.

**Biological Resources.** Proposed construction would occur in a previously disturbed urban area and have limited or no impacts on vegetation, wildlife, and protected and sensitive species. The proposed project would comply with applicable Federal and state laws and regulations regarding the management of rare, threatened, endangered, or otherwise protected species. No additional mitigation measures would therefore be needed to protect vegetation, wildlife species, or protected and sensitive species.

**Water Resources.** Potential impacts on water resources from the proposed project would consist primarily of the alteration of existing drainage patterns to accommodate the construction and function of the floodwall. The construction of the floodwall system would also exclude the 1 percent probability storms from entering the project site. As a result, the floodplain of the East River would be reduced during these coastal storm events. Because the coastal storms are tidal in nature, the loss of this floodplain storage would have no discernible effect on the overall depth of the floodwaters. In addition, the design of the floodwall has addressed the potential contribution to flood heights caused by waves. In addition, a coastal zone consistency assessment was conducted to determine the potential impacts of the proposed project on the coastal zone in accordance with the CZMA, New York State's Coastal Zone Management Program, and the New York City WRP. The floodwall would be constructed such that its existence and operation would not conflict with plans to conserve and enhance the coastal zone. Additionally, the floodwall would be designed to be consistent with the intent of the standards and criteria of the National Flood Insurance Program (44 CFR Part 60, Criteria for Land Management and Use) and adopted policies from the 1992 New York City CWP, and the 1997 Manhattan Borough Waterfront Plan for CB#6. No additional mitigation measures with respect to water resources are proposed.

**Cultural Resources.** Coordination with New York SHPO and the NYCLPC would occur prior to all proposed construction activities, limiting any significant effects on cultural resources. A Construction Protection Plan for the Public Baths would be generated to protect the Public Baths and would be reviewed by the NYCLPC. No additional mitigation measures with respect to cultural resources are proposed.

# EA CONCLUSIONS 07

The proposed construction of a floodwall with floodgates around portions of the north, east, and south perimeters of the VAMC Manhattan is not expected to result in significant adverse impacts on the human environment. The relocation of utility lines using modern materials would improve the quality of infrastructure along those segments, improvements in construction and operational material and waste management (largely due to implementation of LEED design standards), and the presence and operation of the floodwall during significant flood events would provide direct beneficial impacts on the local community by protecting the VAMC Manhattan campus and ensuring the continuity of access to quality health care in cases of emergency.

The major impact of the proposed project would be the short-term and temporary adverse effects caused by construction and demolition activities. The potential adverse impacts on land use and zoning, air quality, hydrology and water resources, solid waste and hazardous materials, traffic, transportation and parking, utilities, and noise would be largely avoided or minimized by strict adherence and monitoring of the VA's MF04 construction standards for temporary environmental controls, demolition, and waste management, and application of standard construction BMPs.

This EA concludes that a FONSI is appropriate, and that an EIS is not required.



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# 10 ACRONYMS AND ABBREVIATIONS

ABFE	Advisory Base Flood Elevation	DSNY	New York City Department of Sanitation
ACHP	Advisory Council on Historic Preservation	EA	Environmental Assessment
AQCR	Air Quality Control Region	EIS	Environmental Impact Statement
AIDS	Acquired Immune Deficiency Syndrome	EMS	Emergency Medical Services
amsl	above mean sea level	EO	Executive Order
ASPCA	American Society for the Prevention of Cruelty to Animals	ESA	Environmental Site Assessment
AST	aboveground storage tank	FAA	Federal Aviation Administration
APE	Area of Potential Effect	FAR	Floor Area Ratio
bgs	below ground surface	FEMA	Federal Emergency Management Agency
BMP	best management practice	FY	fiscal year
CAA	Clean Air Act	GHG	greenhouse gas
CB	Community Board	HAP	hazardous air pollutant
CEQ	Council on Environmental Quality	HIV	Human Immunodeficiency Virus
CEQR	City Environmental Quality Review	kW	kilowatt
CMZ	Coastal Management Zone	LEED	Leadership in Energy and Environmental Design
CO	carbon monoxide	LPC	Landmarks Preservation Commission
CO <sub>2</sub>	carbon dioxide	LUST	Leaking Underground Storage Tank
CWP	Comprehensive Waterfront Plan	mgd	million gallons per day
CZMA	Coastal Zone Management Act	mg/m <sup>3</sup>	milligrams per cubic meter
dBA	A-weighted Decibel	NAAQS	National Ambient Air Quality Standards
dbh	Diameter at Breast Height	NANSR	Nonattainment Major New Source Review
DNL	Day-Night Average Sound Level	NEPA	National Environmental Policy Act

NHPA	National Historic Preservation Act	SHPO	State Historic Preservation Office
NO <sub>2</sub>	nitrogen dioxide	SIP	State Implementation Plan
NOX	nitrogen oxides	SO <sub>2</sub>	sulfur dioxide
NRCS	National Resources Conservation Service	SBS	Select bus service
NRHP	National Register of Historic Places	SSPP	Strategic Sustainability Performance Plan
NSR	New Source Review	tpy	tons per year
NYCDEP	New York City Department of Environmental Protection	USACE	U.S. Army Corps of Engineers
NYCDOE	New York City Department of Education	U.S.C.	United States Code
NYCDOT	New York City Department of Transportation	USEPA	U.S. Environmental Protection Agency
NYCDPR	New York City Department of Parks and Recreation	USGS	U.S. Geological Survey
NYCLPC	New York City Landmarks Preservation Commission	UST	underground storage tank
NYCRR	New York Codes, Rules, and Regulations	VA	U.S. Department of Veterans Affairs
NYCSWCD	New York City Soil and Water Conservation District	VAMC	Veterans Affairs Medical Center
NYCZR	New York City Zoning Resolution	VOC	volatile organic compound
NYPD	New York City Police Department	WPCP	Water Pollution Control Plant
NYPL	New York Public Library	WRP	Waterfront Revitalization Program
NYNHP	New York National Heritage Program	yd <sup>3</sup>	cubic yard
NYSARAP	New York State Amphibian and Reptile Atlas Project	µg/m <sup>3</sup>	micrograms per cubic meter
NYSBBA	New York State Breeding Bird Atlas		
NYSDEC	New York State Department of Environmental Conservation		
NYU	New York University		
O <sub>3</sub>	ozone		
OLTPS	Office of Long-Term Planning and Sustainability		
OSHA	Occupational Safety and Health Administration		
Pb	lead		
PCB	polychlorinated biphenyl		
PM <sub>2.5</sub>	particulate matter equal to or less than 2.5 microns in diameter		
PM <sub>10</sub>	particulate matter equal to or less than 10 microns in diameter		
ppm	parts per million		
PSD	Prevention of Significant Deterioration		
RCNY	Rules of the City of New York		
REC	Recognized Environmental Condition		
SAAQS	State Ambient Air Quality Standards		
SCS	Soil Conservation Service		
SEQRA	State Environmental Quality Review Act		

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