

# DRAFT ENVIRONMENTAL ASSESSMENT

## Spinal Cord Injury/Disorders Center and Parking Garage at James J. Peters Veterans Affairs Medical Center

DVA Project No.528-315



Prepared for:

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**JAMES J. PETERS VAMC ENVIRONMENTAL ASSESSMENT  
FOR SCI/D CENTER AND PARKING GARAGE**

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## **EXECUTIVE SUMMARY**

### **BACKGROUND**

Bronx VAMC is one of only 24 VA spinal cord injury centers in the U.S. The facility provides comprehensive treatment strategy for complex spinal cord injuries that includes surgery, medical treatment, rehabilitation, and re-training. Bronx VAMC 501 Patient Care Center is the referral point for VA's Veteran Integrated Service Networks (VISN) 2, 3, and 4, a geographic area including New York, New Jersey, Pennsylvania, and West Virginia. This Medical Center is also the referral point for new Department of Defense (DOD) 501 patients and a provider under the TRICARE Military Health Care Program which provides medical services to Active Duty service members and their families.

### **PURPOSE AND NEED FOR THE PROPOSED PROJECT**

The Bronx VAMC facility is operating beyond capacity and does not meet the current Department of Veterans Affairs guidelines for Spinal cord Injury and Disorder centers. A judicious review of alternatives was conducted to ensure that the needs of the veterans were met and that taxpayers and government officials could be assured that the appropriations for this project represents the best use of public funds. This process evaluated the feasibility of providing veterans care at a leased facility in New York City or having excess patients served by other facilities. These alternatives were determined to be inadequate due to the complex medical issues addressed by the SCI/D facility. In 2007, the VA prepared a multiple year funding request for the Office of Management and Budget (OMB) that included alternatives for improving services at Bronx VAMC SCI/D facility.

### **PROPOSED ACTION**

The Proposed Action is summarized below:

- Construct a new three-story SCI/D Center approximately 183,000 sq. ft. in size in a portion of the current parking lot. The new SCI/D Center will provide services for 46 Acute Care in-patients and 46 Long Term Care in-patients, therapy spaces, outpatient clinics, administrative areas and associated support spaces.
- Convert the existing heating plant to a gas fired combined heat power (CHP) facility which would heat and provide electricity to the VAMC and provide electricity to the grid.
- Construct a new stand-alone parking structure to accommodate 805 cars for staff. The parking garage consists of a two-bay wide 35,788 square foot parking structure that will have seven (7) parking levels visible on the west side and five (5) levels visible on the east side of the garage, with six (6) stories above grade and two (2) stories below grade. The garage will extend roughly 68 feet above grade and is set back where it would not be visible from Webb Avenue, nor block any view of the main facility from the entrance to the Bronx VAMC campus. The parking garage is intended to provide covered parking for all those vehicles that are at present parked on street or in open parking lots and to provide parking spaces for 83 additional employees who will be employed due to the proposed action.
- Incorporate a small photovoltaic (PV) array and solar heating system in roof areas associated with the SCI/D Center and Parking Garage. The PV array will produce 158,730 KWH with an installed estimated cost of \$7.25/watt. A solar water heating system would be installed on the south facing wall of the SCI/D mechanical penthouse. The solar collector would cover 1,500 square feet of area and produce 270.2 MMBtu of heat annually. This heat collection would produce an estimated 30% of the anticipated annual domestic hot water load.

## **ENVIRONMENTAL ASSESSMENT**

An Environmental Assessment was prepared in conformance with the National Environmental Policy Act (Public Law 91-19042 USC 4321-4347 January 1, 1970) and the Veterans Affairs implementation requirements (38 CFR Part 26). The National Environmental Policy Act (NEPA) requires federal agencies, including the Department of Veterans Affairs, to conduct a formal review process of proposed projects prior to their decisions on their implementation. This process is designed to disclose and analyze the purposes and needs for the project, the potential alternatives to and impacts from the project, and provide for public involvement. This process helps identify alternatives with the fewest potentially adverse environmental impacts and methods that may be integrated into the decision making process to avoid, reduce, or mitigate adverse environmental impacts.

Four alternatives were evaluated in the original screening process, two of which were considered feasible and are analyzed in this EA. Alternative 1 - the No Action Alternative, considers the effect of maintaining the status quo. Alternative 2 - New Construction represents the preferred action, which consists of replacing the existing gas/oil fired heating plant with a gas-fired Combined Heat Power (CHP) facility, constructing an addition that will add 92 new SCI/D beds to the hospital, and constructing a new 805 car stand-alone parking structure. Under the No Action Alternative, Bronx VAMC would continue to serve the increasing demands in the existing facilities. As a result, many inpatient SCI Services would need to be referred to other medical facilities. Alternative 2, New Construction, considered three separate design options for the development of a multi-level Parking Garage and for the SCI/D Center. The site and design selected represented the minimal impact on the neighborhood adjacent to the medical center as well as facility operations. The Parking Garage would address the existing parking shortfalls as well as replace the parking lots to be displaced by the proposed SCI/D and Parking Garage.

This environmental assessment methodology uses the following terms in assessing environmental impacts:

Short-term Impact: Short-term impacts 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 Impact: Long-term impacts are those that are more likely to be persistent and chronic.

Direct Impact: A direct impact is caused by an action and occurs around the same time at or near the location of the action.

Indirect Impact: An indirect impact 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.

Beneficial-and-not-significant: This impact represents an improvement in existing conditions and an Environmental Impact Statement (EIS) is not required.

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 effect.

Significant-and-immitigable: A potential impact of this severity would have to be evaluated in an EIS.

Environmental impacts may be either significant or not significant environmental impacts. The following environmental impacts are not significant environmental impacts because an Environmental Impact Statement is not required for these environmental impacts:

- Beneficial-and-not-significant;
- None-to-negligible;
- Minimal-to-moderate; and
- Significant-if-not-mitigated.

A detailed assessment of the potential impacts presented in EA is summarized below:

- Impacts During Construction:
  - Beneficial and Not Significant Impacts – Socioeconomics
  - None-to-Negligible Impact – Land use and Zoning; Cultural Resources; Topography; Geology and Soils; Hydrology and Water Resources; Wildlife and Habitat; Floodplains, Wetlands and Coastal Zone Management; Community services; Utilities; and Environmental Justice
  - Minimal-to-Moderate Impacts (All Short Term Impacts) – Aesthetics; Air Quality; Solid Waste & Hazardous Materials; Noise; Traffic, Transportation and Parking; Alternative Energy Sources; Cumulative Impacts; Potential for Generating Substantial Controversy
  - Significant-if-not-Mitigated Impacts – None
  - Significant-and-Immitigable Impacts – None
- Impacts During Operations
  - Beneficial and Not Significant Impacts – Air Quality; Socioeconomics; Traffic, Transportation and Parking; Utilities; Alternative Energy Sources; Environmental Justice; Cumulative Impacts; Potential for Generating Substantial Controversy
  - None-to-Negligible Impact – Aesthetics; Land Use and Zoning; Cultural Resources; Topography, Geology and Soils; Noise; Hydrology and Water Resources; Wildlife and Habitat; Floodplains, Wetlands and Coastal Zone Management; Community Services; and Solid Waste and Hazardous Materials
  - Minimal-to-Moderate Impacts –None
  - Significant-if-not-Mitigated Impacts – None
  - Significant-and-Immitigable Impacts – None

Short term construction impacts on aesthetics, air quality, traffic and noise are temporary and will be minimized to the greatest extent possible by construction management measures. Construction impacts related to Traffic, Transportation and Parking are based on the temporary condition of insufficient number of parking spaces due to construction of the proposed buildings and garage. During this initial phase, displaced parking will be mitigated by encouraging the use of public transportation, and potentially utilizing offsite parking with shuttle transportation. Once the garage is constructed, there will be a surplus of parking on site during the building of the SCI/D.

No significant archeological features or deposits were identified in the proposed SCI/D or Parking Structure areas on the VAMC property. No historic artifacts were encountered during the site sampling efforts, nor were any evidence of the Revolutionary War-era Fort Number Six or the c. 1872 L. Valentine structure.

The project will offer numerous beneficial impacts to both the neighborhood and the facility. The highest benefit will be resolving critical gaps for specialty and ancillary care to meet the rising need for healthcare of all area Veterans.

Impacts from energy conservation efforts and development of photovoltaic array are overall beneficial to the environment. The design team has taken a “whole building approach” in the optimal design for the site, water and energy conservation, material selection, and indoor environmental quality. The new SCI/D Center would be designed in accordance with the Leadership for Energy and Environmental Design (LEED) building rating system with the goal of achieving a silver rating under the LEED for Healthcare rating system. The existing heating plant would be upgraded and converted to a cogeneration facility. This facility would be gas fired, which will lower air pollutant discharges and add electrical power to the site.

The project would have a short-term beneficial impact on employment by hiring of an estimated 160 construction workers, most of which are presumed to be from the NYC metropolitan area. Other direct positive impacts would include the purchase or leasing of construction equipment and construction materials. Once constructed and operational, approximately 83 additional personnel are expected to be required. These new workers would contribute directly and indirectly to the local economy and would boost the number of nurses, doctors, social workers, therapists and staff professional individuals involved in community services and activities. Based on the above information, the impact to socioeconomic conditions during operations would be beneficial.

## **PUBLIC INVOLVEMENT**

A Notice of Availability of draft Environmental Assessment (DEA) and draft FONSI is tentatively scheduled to be published in the Bronx Times on 17 through 19 July 2015. A public meeting is tentatively scheduled on August 5, 2015.

All substantial public comments will be addressed in the final EA, and considered in the determination of the FONSI.

## **DETERMINATION**

The environmental assessment of all project attributes considered did not find any “Significant Impact” during construction and operations. Also, the environmental assessment of all project attributes considered did not find any “significant-if-not-mitigated impacts” during construction and operations.

The construction and operation of the proposed project would not result in any adverse impacts on the natural or human environments that would require mitigation to reduce impacts to less than significant, nor preclude the issuance of a Finding of No Significant Impact (FONSI).

## **FINDING OF NO SIGNIFICANT IMPACT**

A FONSI will be finalized if a review of EA results in a determination that the implementation of the proposed project as described would not constitute a major federal action that would have significant impact upon the quality of the human environment within the meaning of Section 102(2)(C) of NEPA of 1969. IF a FONSI is determined to be appropriate for this project then the preparation of an Environmental Impact Statement for the proposed action is not required. This FONSI becomes a federal document when evaluated and signed by the responsible VA official.

## **SECTION 1.0 INTRODUCTION**

### **1.1 Project Background**

Bronx VAMC is a teaching hospital serving the Department of Veterans Affairs NY/NJ Healthcare Network (VISN 3). The facility serves veterans from the Bronx and the four Manhattan facility neighboring boroughs within the VISN and Westchester County. The facility has three Community Based Outpatient Clinics (CBOC's) in Yonkers, White Plains, and Queens. They also serve VA Hudson Valley Health Care System patients with acute care needs and other referrals to their subspecialty clinics. The Medical Center provides secondary and tertiary services to the Montrose (32 miles) and Castle Point (54 miles) VA's and is a member of the Mount Sinai Medical Center Health System. The existing Spinal Cord Injury unit at the facility serves VISN's 2, 3 and 4 as well as the Department of Defense (DOD) new SCI/D patients. The facility supports a full range of patient care services including primary care, tertiary care, and long-term care with state-of-the-art technology in areas of medicine, surgery, psychiatry, physical medicine, rehabilitation, neurology, oncology, dentistry, geriatrics, and extended care.

Bronx VAMC has housed a hospital serving veterans since 1921 making it the oldest VA facility in New York City. It is also the second largest VA facility in the nation. A nine-story replacement hospital was added to the site in the late 1970s and commissioned in 1981. This replacement hospital includes an adjoining 2-floor nursing home and a five-story Research Building. The Chapel, built in 1899, is a significant landmark on the campus and is actively used today. In 2005, the hospital was officially renamed after James J. Peters, a native New Yorker and a Second Lieutenant in the U.S. Army who sustained spinal cord injury early in his career. He became a lifelong advocate of paralyzed veterans' care and it was through his efforts that the first SCI unit was established at this facility.

The VA is preparing this Environmental assessment (EA) for determinations of the potential environmental impacts of the proposed action as required by the Council of the Environmental Quality (CEQ) and the National Environmental Policy Act (NEPA). This EA evaluates the potential environmental impacts of the proposed Spinal Cord Injury/Disorders (SCI/D) Center Addition and Parking Garage project for the James J. Peters Veterans Affairs Medical Center (Bronx VAMC) in Bronx, New York. The project site is located on the existing Bronx VAMC campus in the Kingsbridge neighborhood on the highest point in New York City. The project site is bound by Sedgwick Avenue on the northwest, West Kingsbridge Road on the northeast, Webb Avenue on the southeast and residential and commercial land uses on the southwest. Figure 1-1, "Project Location Map," illustrates the location of Bronx VAMC. Figure 1-2, "Aerial Photograph," provides an aerial view of the site in context with surrounding streets and neighborhoods.





## 1.2 Purpose and Need for Action

Bronx VAMC is among only 24 spinal cord injury centers in the U.S. These centers support 134 spinal cord injury (SCI) clinics at VA medical centers across the nation. SCI clinics perform immediate post injury surgery and provide acute and long-term care. The proposed facility will both expand and improve the SCI unit at Bronx VAMC which is one of 24 VA SCI's nationwide and provides services to a four state area, three VISNs as well as DOD patients.

The project is needed because the existing 62-bed SCI unit is not meeting current and future demands, nor does it meet the Department of Veterans Affairs new guidelines for Spinal Cord Injury and Disorder Centers (SCI/D). In addition, parking at the site is presently underserved. According to the VA parking demand model, in order to compensate for this as well as meet future parking demands, a parking garage with approximately 805 spaces will be required. This will result in approximately 90 parking spaces over the number existing presently at the facility.

## 1.3 Assessment Methodology

The National Environmental Policy Act (NEPA) of 1969 (24 U.S. Code [USC] 43211-4347, as amended), requires Federal agencies to evaluate environmental impacts associated with proposed major actions. The Council of Environmental Quality (CEQ) established regulations that govern the implementation of procedures outlined in NEPA (Title 40, Code of Federal Regulations [CFR] Parts 1500-1508). The U.S. Department of Veterans Affairs (VA) implements NEPA and the CEQ requirements through VA regulations 38 CFR, Part 26.6(c) Environmental Effect of VA Actions.

Under National Environmental Policy Act (NEPA), the VA is required to evaluate proposed action's compliance with existing environmental laws to determine whether or not the proposed action would result in unnecessary or undue degradation of the potentially affected environment. This is accomplished by developing the following documents:

- An Environmental Assessment (EA) to assess potential impacts of the proposed action and to identify mitigation measures for all environmental resources that result in "Significant-if-not-mitigated" impacts, and
- A "Finding of No Significant Action" or a recommendation that the proposed action should be further evaluated by requiring preparation of an Environmental Impact Statement (EIS).

The VA's specific requirements under NEPA are listed under 38 Code of Federal Regulations (CFR) Part 26.4, which states the following:

"(a) Veterans Administration (VA) must act with care in carrying out its mission of providing services for veterans to ensure it does so consistently with national environmental policies. Specifically, VA shall ensure that all practical means and measures are used to protect, restore and enhance the quality of the human environment; to avoid or minimize adverse environmental consequences, consistently with other national policy considerations; and to retain the following objectives:

- (1) Achieve the fullest possible use of the environment, without degradation, or undesirable and unintended consequences;
- (2) Preserve historical, cultural and natural aspects of our national heritage, while maintaining, where possible, an environment that supports diversity and variety and individual choice;
- (3) Achieve a balance between the use and development of resources, within the sustained capacity of the ecological system involved; and
- (4) Enhance the quality of renewable resources, while working toward the maximum attainable recycling of nonrenewable resources.

(b) VA element shall:

- (1) Interpret and administer the policies, regulations and public laws of the United States in accordance with the policies set forth in the NEPA and CEQ (Council on Environmental Quality) Regulations;
- (2) Prepare concise and clear environmental documents which shall be supported by documented environmental analyses;
- (3) integrate the requirements of NEPA with Department planning and decision-making procedures;
- (4) Encourage and facilitate involvement by affected agencies, organizations, interest groups and the public in decisions which affect the quality of the human environment; and
- (5) Consider alternatives to the proposed actions which are encompassed by the range of alternatives discussed in relevant environmental documents and described in the environmental impact statement.”

The assessment relies upon the project description that is contained with the S-2 Submission - Architectural and Engineering Plans for the SCI/D Center and Parking Garage. These plans provide a description of the proposed facilities and illustrate the overall design of facilities and allocate space to support the proposed program.

This EA describes the Proposed Action (Section 2.0) and Alternatives considered (Section 3.0), identifies the environmental features and resources that may be impacted during the implementation of the Proposed Action, and outlines the potentially adverse environmental impacts from the alternatives (Section 4.0). This analysis considers impacts that are expected to result from construction and routine operations, and it examines the potential for cumulative impacts among related activities in the affected areas. This analysis weighs the environmental impacts based upon the best available information utilizing impact identification, impact measurement, impact interpretation, and communication of environmental impacts to users of the information.

Effects and impacts are used in this document as synonymous. Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial. (40 CFR 1508.8)

This environmental assessment methodology uses the following terms in assessing environmental impacts:

Short-term Impact: Short-term impacts 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 Impact: Long-term impacts are those that are more likely to be persistent and chronic.

Direct Impact: A direct impact is caused by an action and occurs around the same time at or near the location of the action.

Indirect Impact: An indirect impact 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.

Beneficial-and-not-significant: This impact represents an improvement in existing conditions and an Environmental Impact Statement (EIS) is not required.

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 effect.

Significant-and-immitigable: A potential impact of this severity would have to be evaluated in an EIS.

Environmental impacts may be either significant or not significant environmental impacts. The following environmental impacts are not significant environmental impacts because an Environmental Impact Statement is not required for these environmental impacts:

- Beneficial-and-not-significant;
- None-to-negligible;
- Minimal-to-moderate; and
- Significant-if-not-mitigated.

### **Public Involvement**

The VA will issue a Notice of Availability of draft EA and draft FONSI to the general population and provide a thirty days comments period. A public meeting will be held during the public comments period and comments will be reviewed and considered in the Final Environmental Assessment.

### **Federal Environmental Requirements**

VA complies with all applicable Federal environmental requirements. Applicable Federal requirements are discussed in Section 4.

### **State and Environmental Requirements**

VA complies with all state and local environmental requirements when there is a delegated authority by a Federal agency. Applicable State environmental requirements are discussed in Section 5.0.

## **SECTION 2.0 DESCRIPTION OF PROPOSED ACTION**

### **2.1 Description of the Proposed Action**

#### **2.1.1 Spinal Cord Injury/Disorders Center**

The existing SCI unit has 62 acute care patient beds housed in a single unit. The new SCI/D addition would replace this existing unit with 92 SCI beds in two separate units comprised of 46 acute care and 46 long-term care beds. This addition would also have spaces for SCI/D outpatient clinics and related therapy support programs. The Program for Design (PFD) totals 183,000 square feet (building gross). The proposed SCI/D Center would be located on the northeast side of the Bronx VAMC site, east of the Research Building. See Figure 2-1, "Existing Condition Site Plan." The plan configuration includes a main connecting spine with four building pods radiating outward. See Figure 2-2, "Proposed Condition Site Plan." The project also includes improvements at the Central Utility Plant to accommodate the new Combined Heat Power (CHP) unit. These improvements include a new gas compressor within an insulated enclosure located outside the CUP and air handling units to the roof of the CUP. A more detailed description is found in 2.1.3.

#### **2.1.2 Parking Garage**

The parking garage is intended to provide covered parking for all those vehicles that are at present parked on street or in open parking lots and to provide parking spaces for 83 additional employees who will be employed due to the proposed action. A total of 1,100 parking spaces are provided for the 2,135 employees, 28,400 annual (VA Parking Demand, 2010) patients, and the countless visitors to Bronx VAMC. The facility would increase its existing vehicle parking by approximately 90± spaces net. Most of the increase would be achieved by the construction of the new parking structure (805 spaces) which is intended to address a current parking shortage and provide for the parking that is displaced by the new SCI/D and parking garage structures. The new parking garage would also improve environmental conditions for users since it will be ice and snow free. Figure 2-3 exhibits the mass and general appearance of both the SCI/D Center and Parking Garage in three-dimensional models.

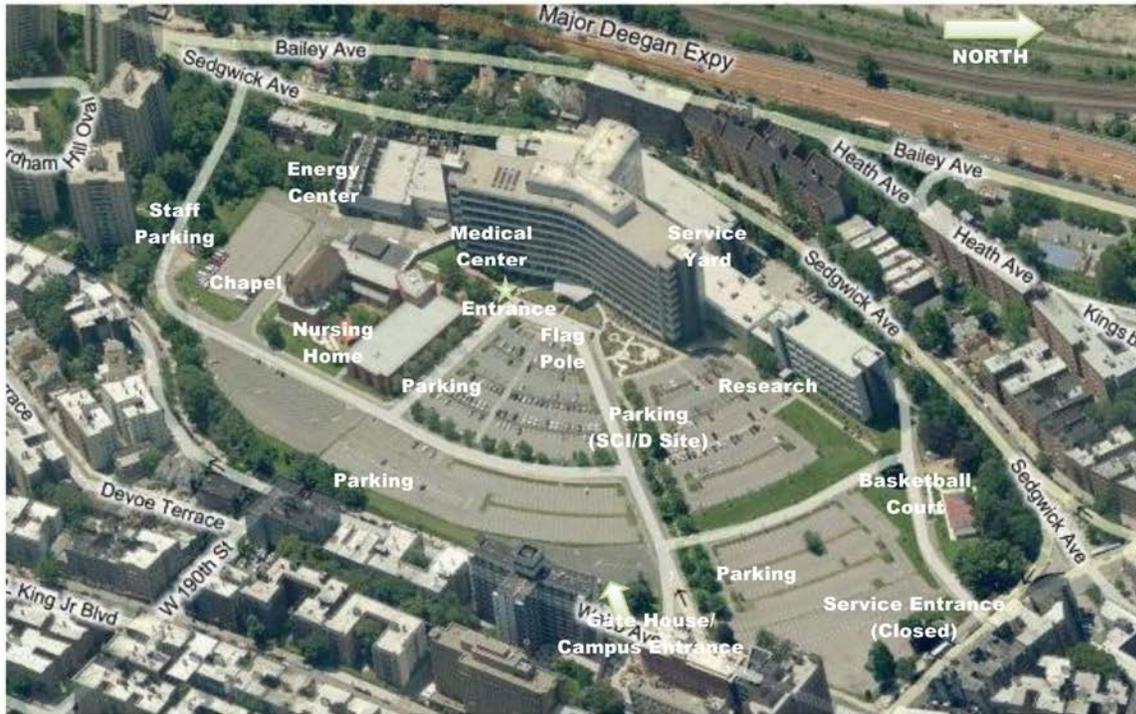
#### **2.1.3 Combined Heat Power**

The existing gas/oil fired heating plant will be replaced by a gas-fired 3.5 MW Combined Heat Power (CHP) facility consisting of a combustion turbine generator (CTG) and heat recovery system generator (HRSG). This facility would replace one of the three fuel boilers. The two boilers would remain to provide a back-up heating source in case the CHP is out of service. To properly size the CHP, energy needs from both heat and electricity were estimated for the entire campus. The size of the CHP was selected to meet approximately 88% of the electrical needs of the campus on an annual basis. This facility will be a non-exporting generator with all power that is produced on-site utilized on-site. The CHP runs in parallel with local distribution system therefore, Con Edison power is always available to the facility. Remaining power needs will be imported through existing Con Edison connections which will be maintained and upgraded. The CHP will also provide approximately 97% of the heating and cooling needs at Bronx VAMC. The remaining 3% will continue to be met by the remaining boilers.

The primary fuel for the CHP will be natural gas which is presently delivered to the site via pipeline. Operation of the CHP will require adding a new fuel gas compressor to the

site to increase the pressure of natural gas delivered to the CHP. The new CHP combustion unit, gas compressor, and heat recovery system generator will be constructed in the space that currently houses Boiler #3. This upgrade would replace a boiler that is more than 35 years old, decrease air emissions, and increase power supply. Based on current annual costs of \$4,000,000 and future estimated costs of \$3,000,000, the new CHP will save the facility approximately \$1,000,000 per year.

An evaluation of the PV and wind potential completed for the site revealed that the large roof area associated with the SCI/D Center and Parking Garage provides ample opportunity to support a small photovoltaic (PV) array that will produce 158,730 KWH with an installed cost of 7.25/watt. With each PV module producing 240 watts each, 680 panels will be required. Annual savings from these improvements are estimated at \$35,707 annually. Along with the PV array, a solar water heating system would be installed on the south facing wall of the SCI/D mechanical penthouse. The solar collector would cover 1,500 square feet of area and produce 270.2 MMBtu of heat annually. This heat collection would produce an estimated 30% of the anticipated annual domestic hot water load.



**James J. Peters VA Medical Center**  
Bronx, New York

Title  
**Figure 2-1: Existing Condition Site Plan**  
Image provided by Cannon Design

  
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1" = 200'

0 100 200 Feet

**James J. Peters VA Medical Center**  
Bronx, New York

Title  
**Figure 2-2: Proposed Condition Site Plan**

Site plan image provided by Cannon Design

  
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Date 09/16/2011



**James J. Peters VA Medical Center**

Bronx, New York

Title

**Figure 2-3: 3-D Model View of Proposed SCI/D Center**

Image provided by Cannon Design

  
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*Birdseye View of Parking Garage*



*Front Entrance of Parking Garage*

**James J. Peters VA Medical Center**  
Bronx, New York

Title

**Figure 2-4: 3-D Model View of Proposed Parking Garage**

Image provided by Cannon Design

  
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## **2.2 Detailed Project Elements**

### **2.2.1 Sustainable Design Components**

The Department of Veteran Affairs is committed to designing, constructing and operating high-performance and sustainable buildings. The design team has taken a “whole building approach” in the optimal design for the site, water and energy conservation, material selection, and indoor environmental quality. The new SCI/D will be designed in accordance with the Leadership for Energy and Environmental Design (LEED) building rating system with the goal of achieving a silver rating under the LEED for Healthcare rating system (Executive Order 13693 – Planning for Federal Sustainability in the Next Decade).

The conversion of the existing heating plant to combined heat power (CHP) or cogeneration represents a significant sustainable design component. As detailed in 2.1.3, the construction of a new CHP would increase energy efficiency, decrease energy cost, add available electricity to the site, and decrease overall air emissions at Bronx VAMC.

On each of the building pods, a portion of the roof will be constructed as a green roof. The green roof will allow establishment of low growing native plants that will survive extreme urban weather conditions. The area will be irrigated and most irrigation water will be provided by the two 20,000 gallon rain cisterns to be built on the property.

The large roof area associated with the SCI/D Center and Parking Garage will support a small photovoltaic (PV) array that will produce 158,730 KWH with an installed cost of 7.25/watt. With each PV module producing 240 watts each, 680 panels will be required. Annual savings from these improvements are estimated at \$35,707 annually.

Along with the PV array, a solar water heating system would be installed on the south facing wall of the SCI/D mechanical penthouse. The solar collector would cover 1,500 square feet of area and produce 270.2 MMBtu of heat annually producing an estimated 30% of the anticipated annual domestic hot water load for the facility.

On-site wind resources were evaluated using NYSERDA small wind explorer program. Wind at the site was found to be below average most likely due to the three nearby existing apartment buildings that are tall enough to create unpredictable variations in the direction and velocity of the wind. Based on unstable wind conditions at the site, this option was rejected (DD-2 Sustainable Design, Chapter 11-SCI/D).

### **2.2.2 Pedestrian and Vehicular Access and Circulation**

Pedestrian circulation is via sidewalks adjacent to public roadways and on-site sidewalks that link the parking deck to adjacent driveways leading to the main hospital building.

Vehicular access to the hospital is via driveways from Webb and Sedgwick Avenues, and West Kingsbridge Road. A primary access drive running in an east-west direction from the gate house leads visitors directly to the facility entrance. This access drive is used by staff, patient and visitor vehicles, public transportation buses, and VA transport services. Pedestrians access the site along a parallel walkway. Existing traffic patterns onsite provide for two-way driveway circulation to and from parking areas that are generally separated from roadways by landscaped islands. Surface parking for passenger cars is provided within areas to the south, east and north of the hospital

building. Trucks and emergency vehicles also use these driveways. The existing roadway circulation and geometry provides access for fire apparatus and emergency vehicles along the exterior of the planned Parking Garage. Fire department access will be maintained for the existing adjacent buildings. The security check is to remain unchanged with the new SCI/D and Parking Garage.

### **2.2.3 Landscaping**

The SCI/D Center building layout and site design has been selected in part to allow efficient access to outdoor spaces from various locations and allow for views to green space from as many vantage points as possible. There are five major courtyards among the building pods that make up the SCI/D Center. Two of these courtyards will be readily accessible by long-term care rooms. A separate therapy courtyard is being developed with a variety of pavement surfaces that promote mobility and are free from obstacles. An outdoor therapy area contains a gardening area with raised planters to allow easy access.

A family courtyard would be situated on the south near the main entrance of Bronx VAMC and a landscape gallery area is planned for between the SCI/D Center and the research buildings. Active recreational areas will include space for sports requiring a hard surface.

### **2.2.4 Parking**

Parking on the site will be noticeably improved by the addition of the proposed Parking Garage. The proposed 805-vehicle free-standing parking structure would provide a net increase of approximately 90 on-site parking spaces.

### **2.2.5 Storage of Construction Materials**

On-site construction areas will be enclosed with temporary fencing to provide safe pedestrian access to patient care areas. A temporary perimeter fence would enclose the construction sites and an area will be provided for the staging of construction operations for materials delivery, storage, placement of job trailers and on-site fabrication activities.

### **2.2.6 Utility Improvements**

The project site is located in a fully developed urban neighborhood. Existing utility systems within adjacent roadway right-of-way include potable water, sanitary and storm-sewer systems, natural gas, telephone and electric. The medical center is served by these systems. Relocation of some of these services will be required based on the proposed Parking Garage layout.

Existing utility systems within the building footprint will need to be abandoned and removed, and relocated as required. New sanitary sewer and storm-drainage systems will be provided in accordance with all New York City Department of Environmental Protection guidelines. Existing sanitary sewer, natural gas, electric and potable water systems will be relocated to areas outside the proposed building footprint such that services to the existing hospital will not be interrupted. An existing 30,000 gallon underground fuel-storage tank that provides backup support for the existing boiler plant will be relocated.

### **2.2.7 Municipal Wastewater**

The project site is connected to the municipal wastewater collection system. A new connection from the SCI/D Center will be made to the existing 10 and 12 inch sewer lines onsite. A 20,000cfs (149,600 gals) subsurface detention chamber and 40,000 gals of rainwater storage will be constructed to moderate stormwater flows. The storm drains from the Parking Garage will connect to a combined sewer near the project site on Sedgwick Avenue. The existing parking lot stormwater discharge is 9cfs. In order to reduce this discharge, a 3,805cfs (28,424 gal) subsurface detention system will be constructed and this system will reduce peak runoff rate to 1cfs. The NYC DEP has been contacted and a new connection to the combined sewer will not require off-site improvements to the system.

### **2.2.8 Potable Water Supply**

A new connection to the existing onsite 10-inch potable water supply line will be installed to serve the SCI/D Center. The onsite 10-inch loop line is connected to the City system at Sedgwick Avenue, West Kingsbridge Road, and Webb Avenue. For fire protection, a connection to a capped 8-inch fire service line pipe in a tunnel near the research building will be completed. A 750 gpm fire pump will be installed and connected to 120,000 gallons of underground storage. This system will pressurize sprinklers and the stand pipe. Alternatively, the existing fire pump and multiple potable water connections are satisfactory for meeting fire demand.

### **2.2.9 Electric Supply**

The SCI/D Center will require a new connection to the Con Edison manholes at Sedgwick Avenue and West Kingsbridge Road. This will be a new 13.2 kV service with three feeders. Two of the three feeders will be lines from Sedgwick Avenue and West Kingsbridge Road and the third feeder will be one of the four that exist on-site. Additional switch gear will be added to the site to support the new CHP facility. The existing 4160 V switch gear will be replaced and augmented by a switch station that contains power supply switches that will permit on-demand switching from the CHP and the grid connection to Con Edison. The substation/electrical equipment room will be located in a new sub-basement area inside the existing heating plant building.

### **2.2.10 Other Infrastructure**

In order to meet safety requirements, a 750 hp fire pump may be necessary. This fire pump will be integrated with the 300 hp fire pumps and 60 hp jockey pump that serve the site. The fire pumps insure adequate pressure and water volume is available to support the stand pipes that deliver water vertically in the building and the sprinkler system. New backup generators will be constructed in the SCI/D to supply emergency power to that facility.

### **2.2.11 Project Phasing**

The CHP is proposed for construction in Phase 1, the Parking Garage in Phase 2, and the SCI/D Center in Phase 3. Building the Parking Garage in Phase 2 will develop sufficient space for parking while the construction site for the new SCI/D Center is being prepared and the building constructed. Construction drawings and bidding will take 10-12 months to complete. The following outlines the approximate schedule once construction contracts are issued and the project is sequenced for construction:

**Phase 1: Approximately 6 Months**

Combined Heat and Power Plant

- Temporary Relocation of Existing Utilities
- Selective Demolition
- Installation of Underground MEP/FP Utilities
- Installation of MEP/FP Utilities
- Commissioning

**Phase 2: Approximately 15 Months**

Parking Garage

- Mobilization, Soil Erosion Control, Temporary Utilities
- Relocation of Below Grade Utilities at Garage, and Oxygen Tanks
- Demolition, Removals and Earthwork
- Garage Construction

**Phase 3: Approximately 36 Months**

SCI/D Center

- SCI/D Mobilization, Soil Erosion, Sediment Control, Temporary Utilities
- Relocation of Below-Grade Utilities
- Demolition, Removals, Earthwork and Rock Excavation
- Service Road Construction
- SCI/D Construction
- On-Site and Off-Site Utility Connections
- Commissioning
- Make Ready Work Existing Facility
- Connection to Existing Facility
- Final Landscaping and Parking
- Final Commissioning

## **SECTION 3.0 DESCRIPTIONS OF ALTERNATIVES**

This section discusses the alternatives selection process and defines the alternatives that were considered as part of the fiscal evaluation and during the design process. This EA will focus on the No Action and the selected design options for the SCI/D Center and Parking Garage. The implementing procedures for NEPA establish a number of policies for Federal agencies to follow in order to avoid or minimize adverse effects of their actions. Among these policies is the use of the NEPA process to identify and assess reasonable alternatives to the Proposed Action that would avoid or minimize adverse impacts (40 CFR 1500.2(e)). This policy is embraced in the VA NEPA Interim Guidance for Projects (September 2010), which recognizes the value of integrating the planning and design process for all projects.

### **3.1 Development of Alternatives**

The VA has determined that the VA Bronx facility does not have the capacity to provide the required services nor do the current facilities meet the Department of Veterans Affairs new guidelines for Spinal Cord Injury and Disorder Centers (SCI/D). Also, there is a shortage of on-site vehicle parking. A judicious review of alternatives was conducted to ensure that the needs of the veterans were met and that taxpayers and government officials could be assured that the appropriations for this project represent the best use of public funds. In 2007, the VA prepared a multiple year funding request for the Office of Management and Budget (OMB) that included alternatives for improving services at Bronx VAMC.

The OMB considered four high level alternatives for improving services. These alternatives included continuing the operation of the existing facility (No Action), purchasing services off-site, leasing space for services off-site, and, building a new on-site facility. Building a new on-site facility considered several sub-alternatives which included three versions of the SCI/D structure and three alternative parking garage locations.

The purchase and lease options were eliminated from further evaluation. The purchase option, *Contract for Services*, would contract out the demand for SCI beds plus those services that could not be accommodated at Bronx VAMC, to one or more service locations in the New York Metropolitan Area. Superficially, this alternative would increase the number of beds in VISN3 and is consistent with both the CARES initiative and the need to provide capacity for additional OEF/OIF Veterans. This alternative was dismissed from consideration for the following reasons:

- There are a limited number of facilities in the US that could handle the special needs of these veterans;
- There is no local alternative that meets VA SCI/D Center standards for specialized SCI care;
- The VA provides a comprehensive set of medical and non-medical services for veterans that cannot be duplicated at off-site facilities;
- Purchasing services off-site would be cost prohibitive due to high rents for this type of space and a related need to provide nearby parking; and
- Such a facility would not provide the level and type of service needed for these veterans.

The lease option, *Lease Space in the Community*, would lease space for some inpatient services in a non-tertiary treatment setting without a SCI/D facility. This alternative was dismissed from consideration for the following reasons:

- It would result in an overall increase in the capacity to provide for OIF/OEF veterans;
- It would be inefficient and result in a decline in the overall quality of care;

- It would be extremely difficult to find the required amount of space to lease in a single location and there are no known sites within a reasonable distance that could meet the services and specialty needs related to SCI/D;
- It would require extensive renovations should adequate space be found,
- It would be difficult to find qualified individuals in the community that meet the VA VetPro System of Credentialing and Privileging; and
- It would result in significant hardship for veterans who are not familiar with the community to travel to multiple sites.

Two design alternatives will, therefore, be evaluated in this document: Alternative 1 – The No Action Alternative considers the effect of maintaining the status quo. Alternative 2 – New Construction represents the preferred and proposed action, which consists of constructing an addition that would add 92 new SCI/D beds to the hospital (including 46 acute care and 46 long-term care beds) and a new 805 vehicle stand-alone parking structure. Within this alternative, there are three sub-alternatives (options) that consider the architectural design of the facility.

### **3.2 Alternatives Developed for Detailed Analysis**

#### **3.2.1 Alternative 1 - No Action Alternative**

The No Action Alternative maintains the current services in the existing building. Bronx VAMC would continue to serve the increasing demands of veterans without the benefits of the new facility. Many inpatient SCI Services would need to be referred as outpatients to other VISN facilities. This may lead to the separation of veterans from families and create other disruptions in care. This action also requires a series of complex Minor and Non-Recurring Maintenance (NRM) projects to mitigate the aging facility deficiencies. This alternative does not meet the needs of the veterans, CARES requirements, or VA performance measures.

The No Action alternative will be analyzed in this EA to provide a basis from which to compare the Proposed Action alternative. The impacts of the Proposed Action will be contrasted with the current condition and future condition in the absence of the project.

#### **3.2.2 Alternative 2 - New Construction (Preferred Alternative)**

The Preferred Alternative would construct a new addition to the existing medical facility for spinal cord injury patients in long-term and acute care. The scope of facilities involved includes outpatient clinical areas, therapy spaces, adding 92 new SCI/D beds to the hospital and a new 805± car stand-alone parking garage. The new SCI/D Center would include areas for acute care patients and long-term care residents, administrative areas and associated support spaces. Additional improvements include development of a CHP facility and a PV array would be constructed on the roof of the proposed Parking Garage.

Three design concepts were developed during the S-1 design process to meet the purpose and need for the proposed action. The concept development process included key members of the facility's staff, advocates for veterans, and members of the design team (architect, landscape architect, civil, structural and MEP engineers).

Alternative 2 addressed the project requirements through three design options with varying physical configurations (see Figures 3-1 through 3-3):

- SCI/D Design Option 1 (Figure 3-1), employs a design of three splayed and bent building “fingers” radiating from a multi-story circulation spine. Two internal

courtyards provide deep penetration of natural light and garden views to all patient rooms. The concept makes very efficient use of the site's wedge shaped geometry. The scheme provides a simple and direct circulation link between the existing hospital and the new SCI/D additions. This design would accommodate a 20% future expansion by constructing a free-standing wing to the north or by adding a floor above Level 2.

- SCI/D Design Option 2 (Figure 3-2), lays out four "pods" with garden views and natural light on three sides. This scheme moves the service drive toward the site perimeter to the north, creating the opportunity to develop a new basketball court as part of the SCI Outdoor Rehabilitation program. This scheme is similar to the "fingers" scheme in terms of the arrangement of courtyards. Outdoor rooftop garden terraces are provided in the corner areas between the pods.
- SCI/D Design Option 3 (Figure 3-3), places the bulk of the building program to the site's perimeter in a v-shaped arrangement similar to a geode. This complex non-rectangular form is responsive to site issues and geometry while allowing internal functional considerations to guide a simple arrangement of the building's program. A central open courtyard is the visual focal point of this scheme. Rooftop outdoor garden terraces are provided adjacent to each building unit. Future expansion could be accommodated either in a free-standing wing to the north or by adding a floor above Level 2.

SCI/D Design Option 2 was selected as the preferred design because the design:

- Creates a compact three-story building connected to the existing hospital on all floors;
- Preserves as much of the open space on the campus as possible for parking and any future expansion;
- Maintains the existing east-west entry road and tree-lined walkway;
- Makes the most efficient use of the natural drop in the terrain;
- Makes a significant addition to the campus that is compatible and complimentary with existing buildings;
- Eliminates the need for ramps between the two buildings;
- Permits the majority of the service utilities to be extended through an existing utility tunnel from the main hospital; and
- Provides a state-of-the-art facility.

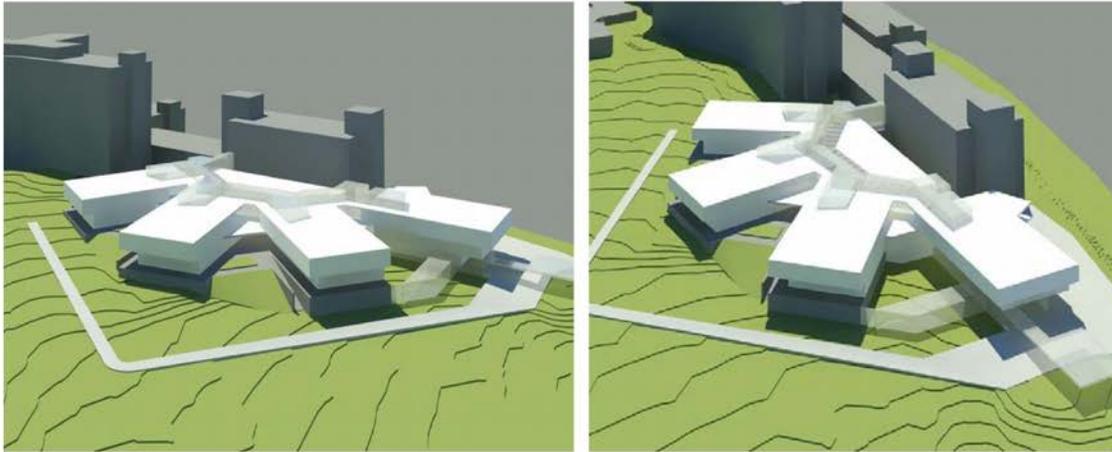


**SCHEME 1**  
SITE MAP

**James J. Peters VA Medical Center**  
Bronx, New York

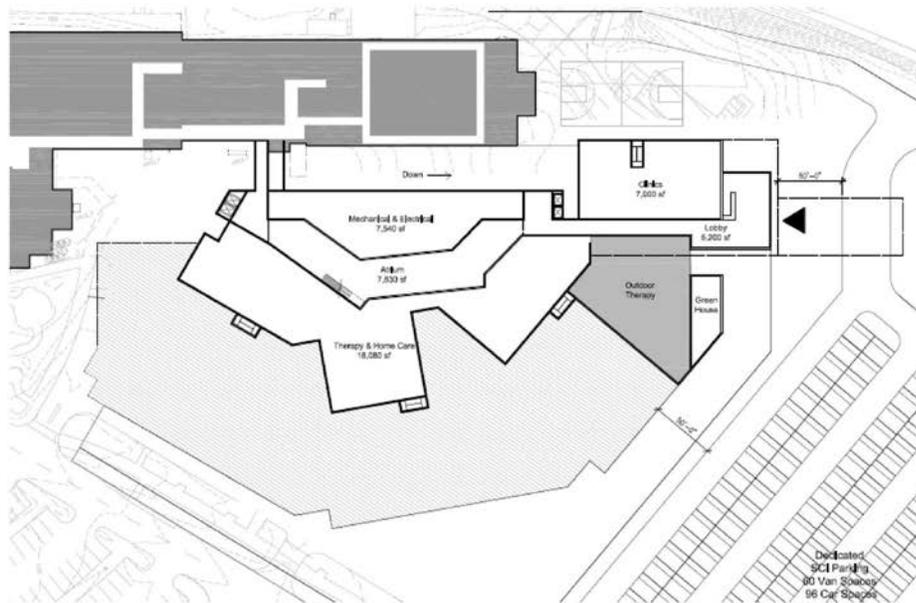
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**Figure 3-1: SCI/D Center Design Option 1**  
Image provided by Cannon Design

  
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**View from East looking West**

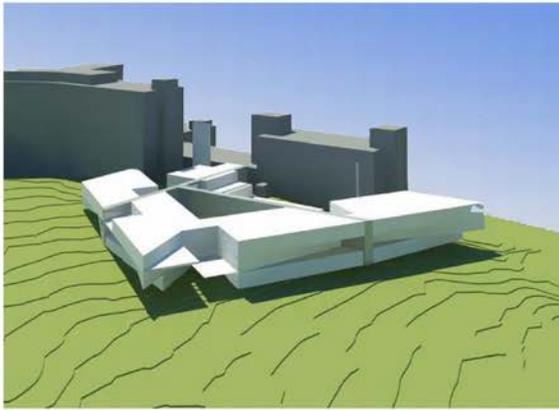
**View from East looking West (Aerial)**



**James J. Peters VA Medical Center**  
 Bronx, New York

Title  
**Figure 3-2: SCI/D Center Design Option 2**  
 Image provided by Cannon Design

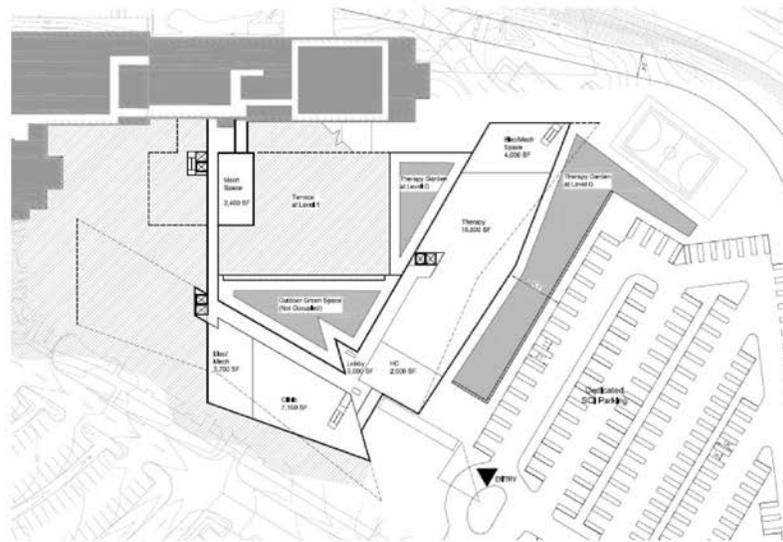
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View from East looking West



View from North looking South



**James J. Peters VA Medical Center**  
 Bronx, New York

Title  
**Figure 3-3: SCI/D Center Design Option 3**  
 Image provided by Cannon Design

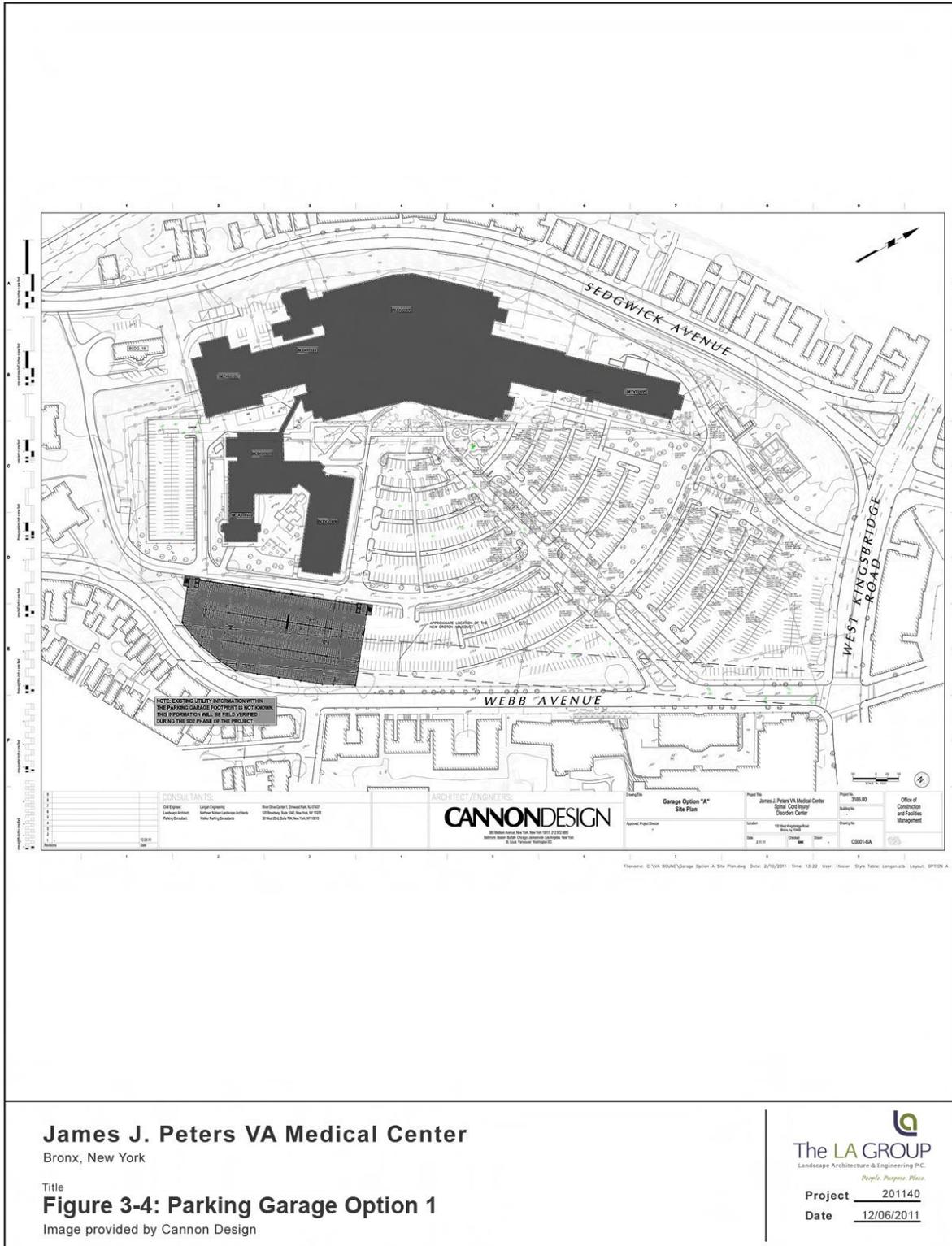
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During the S-1 and S-2 site design process, three options for the development of a multi-level Parking Garage were considered. Sizing the Parking Garage at 805 accommodates the surface lot spaces lost to the construction of the new buildings. See Figures 3-5 through 3-7. The Parking Garage would address the need for additional parking to replace parking that is displaced by construction of the SCI/D Facility, and result in an overall gain of 90 parking spaces.

- *Parking Garage Option 1* (Figure 3-5), locates the garage on the southeast corner of the site and results in a one story structure visible from the campus side and the remaining two levels below grade.
- *Parking Garage Option 2* (Figure 3-6), stretches across the eastern boundary of the site with visibility limited as surface parking from the campus side and the remaining two levels below grade.
- *Parking Garage Option 3* (Figure 3-7) is anchored in the southern end of the campus and results in an orientation that allows views into the campus while not compromising the view from the existing buildings. Six levels of this structure will be above grade and two levels will be below grade.

The VA selected *Parking Garage Option 3* as its preferred construction alternative. This design alternative represents the most compact and basic rectilinear shape, serves as the most efficient parking system, and requires the least cut, fill and retention wall system. The design is represented as a two-bay wide 35,788 square foot parking structure to be constructed on the existing 105 car surface parking lot adjacent to the heating plant and the chapel. The garage consists of seven (7) parking levels visible on the west side and five (5) levels visible on the east side of the garage, with six (6) stories above grade and two (2) stories below grade. The garage will extend roughly 68 feet above grade and is set back where it would not be visible from Webb Avenue, nor block any view of the main facility from the entrance to the Bronx VAMC campus.

Three-dimensional models have been prepared to illustrate the mass and general appearance of both the proposed SCI/D Center and Parking Garage. See Figure 2-3, "3D Model View of Proposed SCI/D Center."

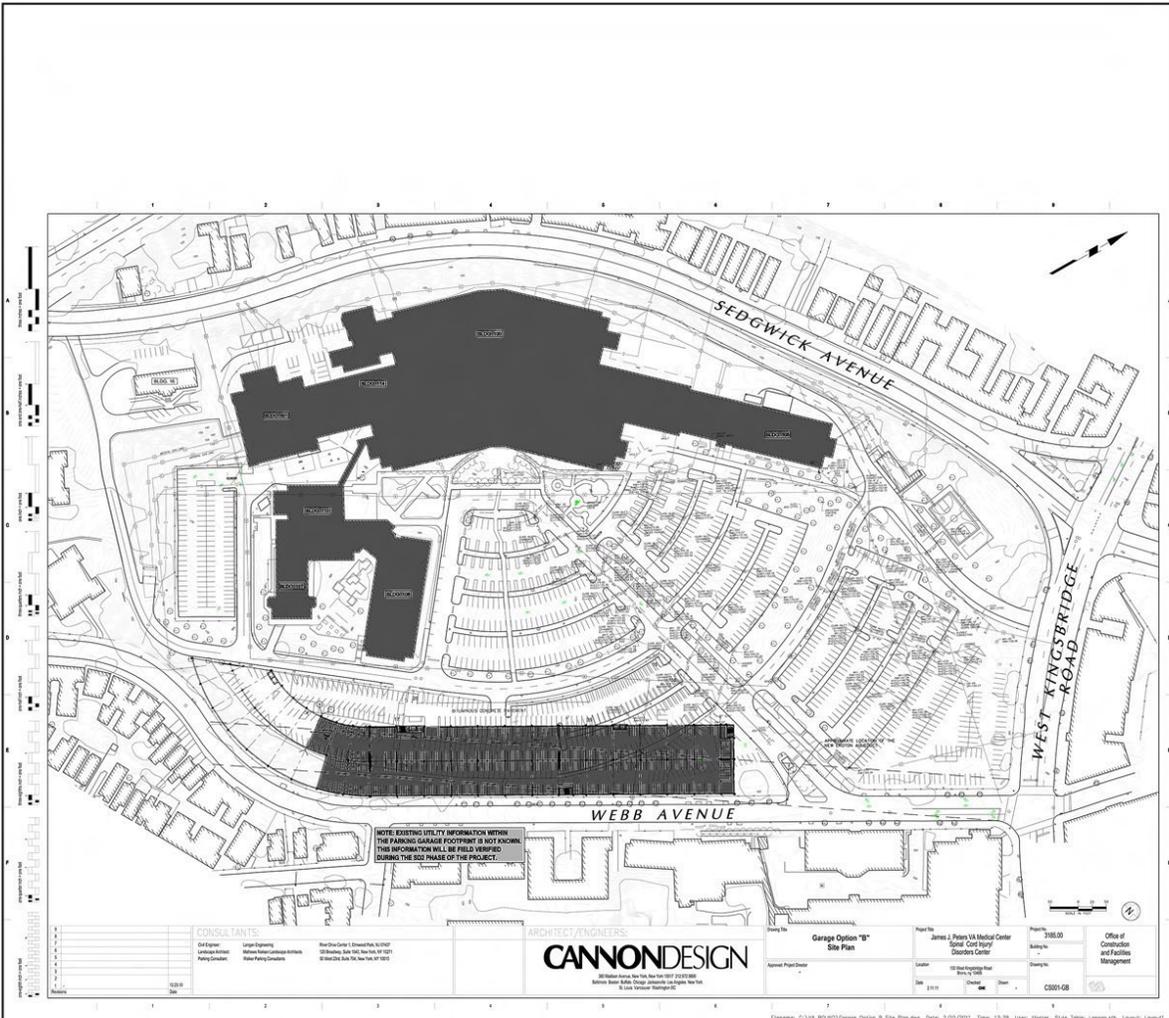


**James J. Peters VA Medical Center**  
 Bronx, New York

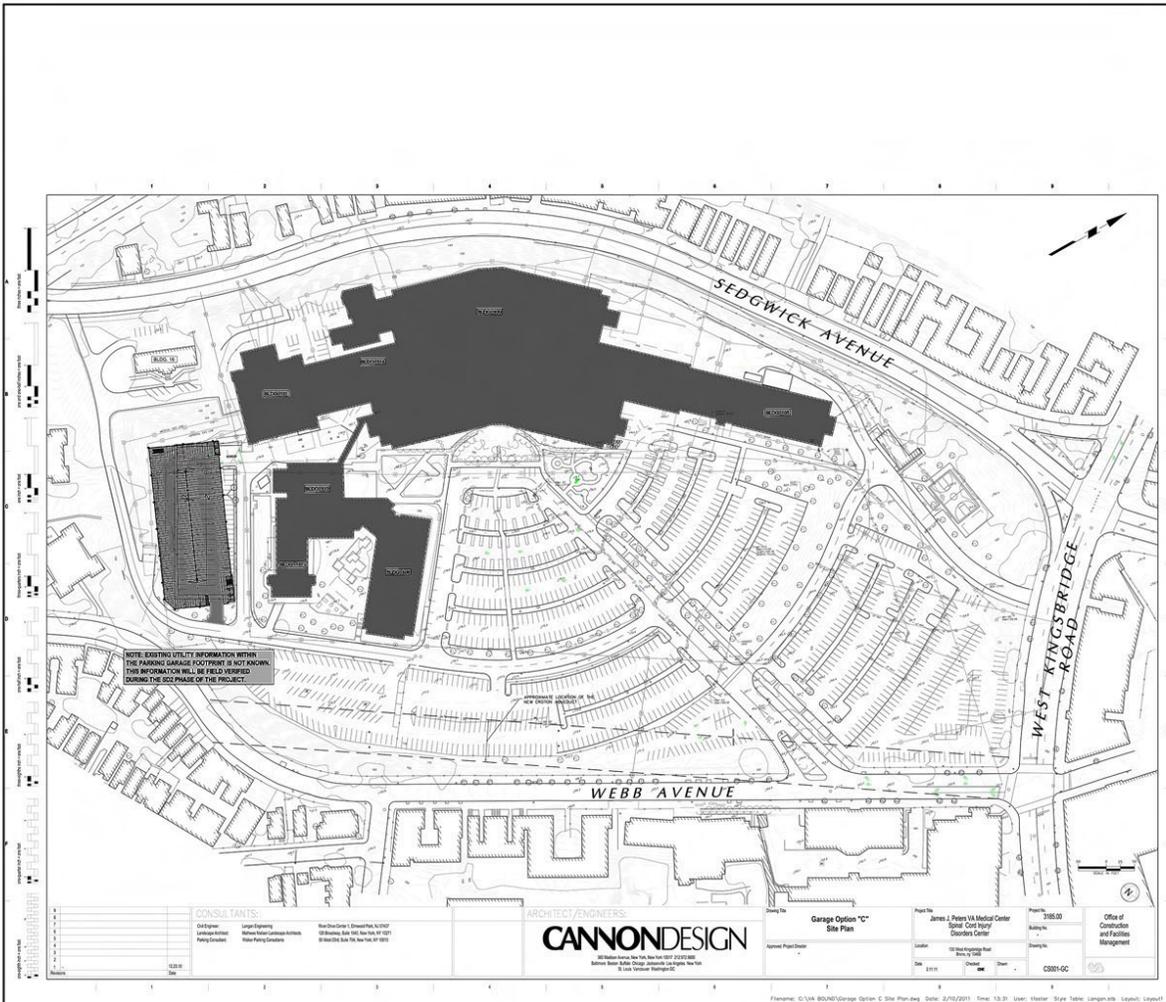
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**Figure 3-4: Parking Garage Option 1**  
 Image provided by Cannon Design



Project 201140  
 Date 12/06/2011



<p><b>James J. Peters VA Medical Center</b>                  Bronx, New York</p> <p>Title  <b>Figure 3-5: Parking Garage Option 2</b>                  Image provided by Cannon Design</p>	<p><b>The LA GROUP</b>                  Landscape Architecture &amp; Engineering P.C.  <i>People. Purpose. Place.</i></p> <p>Project <u>201140</u>                  Date <u>12/06/2011</u></p>
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**James J. Peters VA Medical Center**  
 Bronx, New York

Title  
**Figure 3-6: Parking Garage Option 3**  
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## **SECTION 4.0      AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

This section provides an assessment of the potential impact of the Proposed Action. For each attribute, the existing condition is described, followed by a discussion of the impact of the alternatives including the preferred alternative. In each of the following sections, conditions or issues related to the SCI/D Center and Parking Garage are identified separately. If mitigation is required, the specific recommended measures are described in Section 6.0. The analysis presented in this section considers direct, indirect, and cumulative impacts on the environment and potentially affected populations. The impacts described in this section may not necessarily occur, but they are considered as reasonable possibilities. The VA Checklist for Environmental Assessment was utilized to identify environmental impacts and the degree of impact they may have on a resource (see Appendix C).

### **4.1      AESTHETICS**

#### **4.1.1   Existing Conditions**

The Bronx VAMC campus is located in a densely developed urban setting: the Kingsbridge neighborhood of Bronx, New York. Bronx VAMC is bounded by Sedgwick Avenue on the northwest, West Kingsbridge Road on the northeast, Webb Avenue on the southeast and residential and commercial land uses on the southwest. Nearby land uses include restaurants, neighborhood health facilities and convenience stores. As is typical of old neighborhoods, there are a variety of building types and finishes based on the time period of construction. See Figure 4-1, "Neighborhood Photographs." While a few detached single family or duplex homes exist in the neighborhood adjacent to Bronx VAMC, the majority of housing is high-rise or includes a mix of commercial or small offices on the street level with four or more floors of residential units above the street level.

The visual setting of the campus consists of a mix of historic and contemporary buildings constructed between 1889 and 1990 (hospital and nursing home care unit). The existing exterior finishes include red brick on a few, lower scale structures, such as the nursing home and the historic chapel. The remaining buildings, including the main hospital building and the research building are contemporary, predominantly composed of brushed aluminum panels and dark stone with dark tinted glass strip windows. See Figure 4-2, "Photographs of Campus Buildings," and 4-3, "Photographs of Proposed SCI/D Center and Parking Garage Locations." The line of street trees at the site entrance provides an important visual separation between the various parking areas and will remain in their current state.

**Other Neighborhood Pictures**



Row houses on Sedgwick Avenue



Buildings on Sedgwick Avenue



Buildings on Webb Avenue



Buildings on West Kingsbridge Road

**James J. Peters VA Medical Center**  
Bronx, New York

Title  
**Figure 4-1: Neighborhood Photographs**

  
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The Parking Garage would have an exterior wall system to screen the massive concrete structural elements that are highly angular in appearance. Design selections of materials consider the need for maintenance efficiency, economy and durability. The approved structural system is precast concrete. The PV system on the top deck will not be readily visible from the ground level at Bronx VAMC. The panels will be placed below the line of sight and constructed on a 5 degree incline with the low edge towards the outside of the building which will decrease the visibility of the PV array from adjacent buildings. See Figure 4-2, "Photographs of Campus Buildings."

#### **4.1.2 Environmental Impacts**

##### **4.1.2.1 No Action Alternative**

No changes to the visual environment would be anticipated under the No Action Alternative therefore, no impacts are anticipated.

##### **4.1.2.2 Alternative 2 - New Construction (Preferred Option)**

###### Construction Impacts

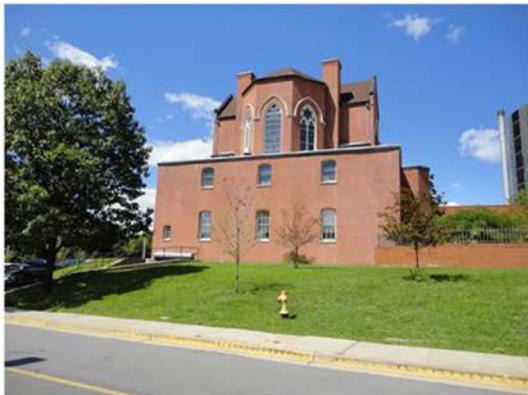
Construction activities associated with the CHP, SCI/D Center and Parking Garage and associated utility upgrades are anticipated to be completed over a three year period of time. Construction will be buffered from the neighborhood by the existing large parking lot that is to remain to the east. The west side of the Parking Garage will be buffered by the existing street trees at the perimeter of the property as well as the ring road. The ring road and former parking lot establishes the predominate use in this area. Fencing and screening devices will be required to keep the public and VA personnel safe and out of the construction site. The site will be maintained in a neat and orderly fashion. Construction-related impacts to aesthetics would be minimal-to-moderate.



View west of the east side of the James J. Peters VAMC



View north of the c. 1986 nursing home north of the c. 1899 orphanage chapel



View west of the east side of the c. 1899 girls' dormitory chapel associated with the Roman Catholic Orphan Asylum formerly on the VAMC property



View northeast of the c. 1899 chapel from the Proposed Parking Garage

**James J. Peters VA Medical Center**

Bronx, New York

Title

**Figure 4-2: Photographs of Campus Buildings**

  
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Long View of the SCI/D Center Site



Long View of Parking Garage Site

**James J. Peters VA Medical Center**  
Bronx, New York

Title

**Figure 4-3: Photographs of Proposed SCI/D Center  
and Parking Garage Locations**

  
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### Operational Impacts

The selected arrangement of the SCI/D and Parking Garage structures minimize changes in the functional relationship of the various areas on the site. The SCI/D is to be located adjacent to the wings of the hospital and Research Facility and the Parking Garage is to be sited on an existing parking lot. The existing Research Building would have minimal involvement in this project which would minimize the disruption of activity on the site.

The preferred option architecturally focuses on a design that is compatible with the existing hospital building, most efficiently utilizes campus space to allow for future expansion, and preserves as much open space as possible. The four pods are to be three-stories tall as viewed against the nine-story hospital building and five-story Research Facility.

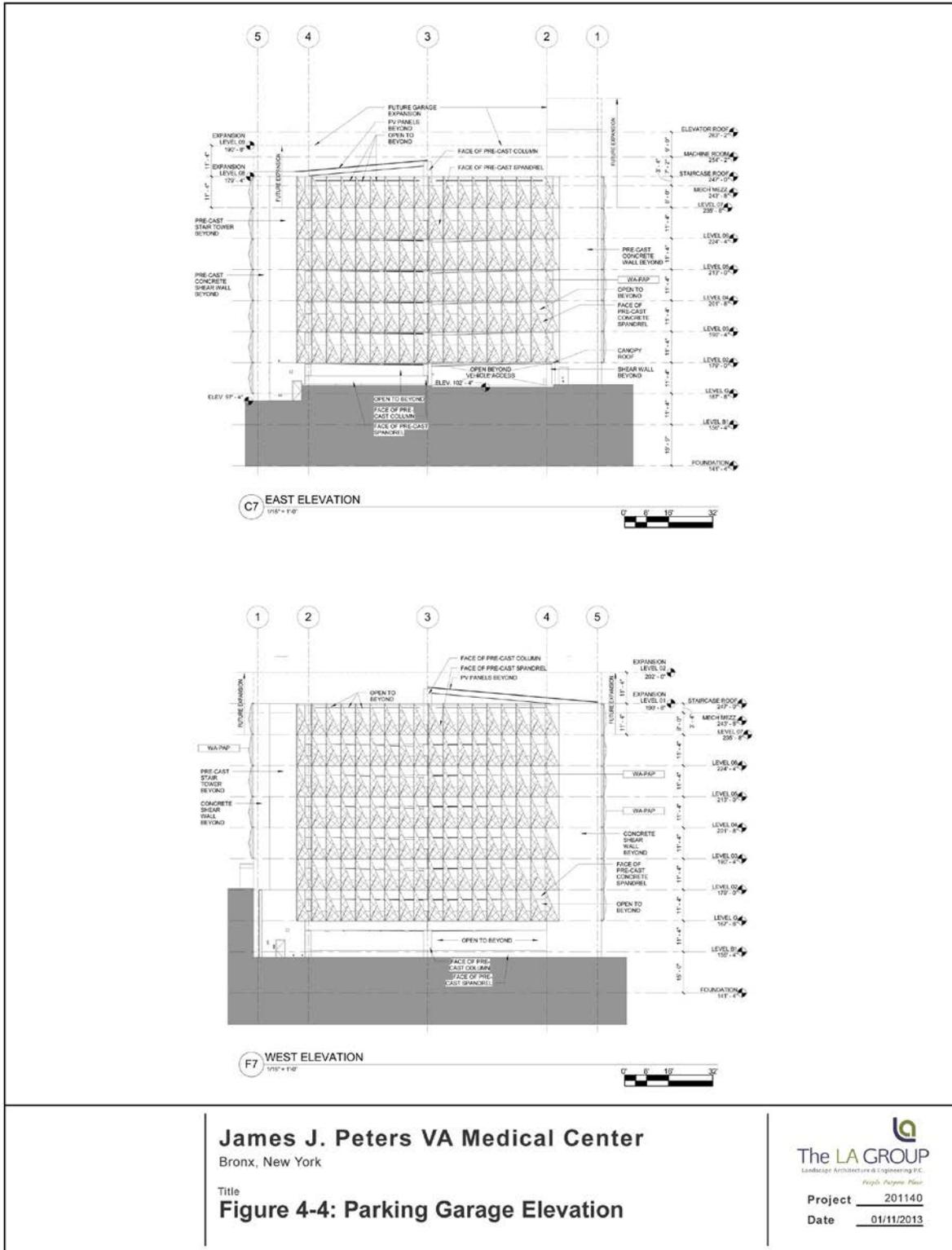
Visibility of the existing VAMC entrance and the new SCI/D unit's entrance would be maintained from the gatehouse and access drive. A series of on-site mature trees and established vegetated perimeters provide environmental and visual benefits to the overall area. The existing row of pin oak trees along the main entrance pedestrian path would be maintained as an established visual corridor.

The concept for the new Parking Garage is an eight level limited footprint structure consisting of 6-7 levels above grade oriented to allow views into the campus while not compromising views from existing buildings. The exterior of the Parking Garage concrete structure would be screened by the three dimensional perforated triangular panels. Each panel would cover the floor to ceiling space to allow air flow to occur. These three dimensional shapes would allow sunlight to enter the building. The variation in shadows and natural light would change the appearance of the building from a continuous series of rectangles to a multi-pattern façade. The location of the Parking Garage is set back far enough so that it would not be visible from Webb Avenue or block any views of the main facility from the main campus entrance. See Figure 4-4, "Parking Garage Elevation."

A solar thermal collector (PV) would be located on the west side of the highest parking level of the Parking Garage. The height of the north wall would be at an elevation of approximately 247 feet. At this elevation, the garage wall would be taller than the chapel walls. This is necessary to minimize rock excavation associated with having additional floors below grade. The garage is to the west of the chapel and would not produce significant shadows on the stained glass during the AM or early PM hours. Some shadows will occur in the late afternoon; however, organized services will not be impacted by the changes in lighting as a result of the shadow.

The outdoor landscape has also been sensitively designed to maximize the benefits of the available green space for use by residents and visitors. Outdoor spaces would be accessible to both acute and long-term residents and these would be separate areas for these groups of residents. Landscape area provides passive recreation space for family gatherings and secluded/semi-private outdoor spaces for residents and active recreational uses. A variety of regional native plant materials that are suitable for urban areas would be utilized. Due to physical limitations, many patients cannot experience the outdoor spaces therefore, views from patient rooms are a very important design consideration.

Focal points have been established throughout the site and landscaping is used to direct views to the green spaces and distant views both horizontally as well as from above the garden areas from the SCI/D. These views would be maximized through circulation paths, tree and shrub placement, and the layout of soft and hardscape areas. These pathways provide opportunities for providing a variety of surfaces that residents may encounter outside of the medical setting. A green roof design will be employed to maximize planted areas. Aesthetic impacts related to the operational phase are considered to be none-to-negligible.



## **4.2 LAND USE AND ZONING**

### **4.2.1 Existing Conditions**

Bronx VAMC exists within the R-6 General Residential Zoning District under the New York City Zoning Resolution. Based on the ten standard residential districts in New York City ranging from R1 (lowest density) through R10 (highest density), this neighborhood district is moderately dense. According to the Resolution, hospital and hospital staff dwellings are allowable uses within this zone and there are no restrictions regarding bulk requirements for building setbacks, floor to area ratio, or building and impervious coverage. Bronx VAMC is generally in compliance with the zoning description in the Resolution.

Having provided over 75 years of service to veterans at this location, Bronx VAMC is well integrated into and accepted by the existing neighborhood. The campus of the medical center currently consists of an existing hospital, research center, nursing home, chapel and parking. Operation of Bronx VAMC is not a significant source of noise, traffic, air pollutants, or other disturbances that would degrade the quality of daily life in the immediate community.

A portion of the New Croton Aqueduct passes along the eastern portion of the medical center property. Information provided by the NYC Department of Environmental Protection (NYCDEP) indicates that the Aqueduct lies between 80 and 100 feet below grade. No access shafts are located on the hospital property.

### **4.2.2 Environmental Impacts**

#### **4.2.2.1 No Action Alternative**

No changes to land use and zoning are anticipated under this alternative. Any deficit in parking spaces will continue to exist on the property. This is an existing impact to the neighborhood and will not change nor does it impact the local zoning. Impacts would be none to negligible.

#### **4.2.2.2 Alternative 2 - New Construction (Preferred Option)**

##### Construction Impacts

The New Croton Aqueduct easement and structure would not be changed or impacted by construction. Potential construction-related vibration issues will be resolved with NYCDEP to ensure that appropriate measures are in place to avoid damage to the new Croton Aqueduct. To ensure there is no inference with hospital operations, monitoring of construction-related vibration would be conducted during the entire construction project. Impacts to land use and general community character would be none to negligible due to the long history of the use of this site to serve veterans and short-term nature of impacts of the construction. The impact of construction on land use and zoning is none-to-negligible.

### Operational Impacts

The Proposed Alternative is not anticipated to have adverse impacts on land use in the vicinity of the project, including residential and commercial uses. The Parking Garage represents an improved land use condition since it would accommodate more parking and permits a more efficient use of space. The use is also consistent with the existing on-site land uses and is consistent with zoning therefore, impacts would be none-to-negligible.

## **4.3 AIR QUALITY**

### **National and State Ambient Air Quality Standards**

As required by the Clean Air Act (CAA), National Ambient Air Quality Standards (NAAQS) have been established for the following air pollutants of concern: carbon monoxide, nitrogen dioxide, ozone, respirable particulate matter (PM10 and PM25), sulfur dioxide, and lead. Table 4-1, "National and New York State Ambient Air Quality Standards," illustrates the primary and secondary standards for these pollutants. According to the USEPA, the primary standards are intended to protect the public health and represent levels at which there are no identified significant effects on human health. The secondary standards are intended to protect the nation's welfare and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the environment. See Table 4-2 for General Conformity *de minimis* Emissions Thresholds.

### **Other National Standards**

The USEPA also publishes the National Emission Standards for Hazardous Air Pollutants (NESHAP), which limits the emission rates of certain highly toxic compounds, in most cases for specifically selected processes or operations. NESHAP includes emission limitations for arsenic, asbestos, benzene, beryllium, mercury, radionuclides, and vinyl chloride. See 40 CFR 61. In addition, the U.S. Occupational Safety and Health Administration (OSHA) and National Institute for Occupational Safety and Health's (NIOSH) Short-Term Exposure Levels (STELs) may be used as a guideline for emissions typically present for short periods of time, such as emissions resulting from chemical spills. In addition, the USEPA has promulgated regulations that govern emissions of 189 listed Hazardous Air Pollutants (HAPs) from major facilities and area sources. Major sources are defined as sources that emit either 10 tons per year of any of the listed pollutants or 25 tons per year of a mixture of listed air pollutants.

Under the CAA, New York State requires the implementation of Reasonably Available Control Technology (RACT) at facilities in the New York City metropolitan area that have the potential to emit volatile organic compounds (VOC) of 25 tons or more per year.

### **State Standards**

#### **New York State Ambient Air Quality Standards**

NAAQS have been adopted as the ambient air quality standards for the State of New York (Source: NY CEQR Technical Manual, Table 171). In addition to NAAQS, there are New York State Ambient Air Quality Standards (NYAAQS) for total suspended particulate matter (TSP), settleable particles, non-methane hydrocarbons (NMHC), and ozone, which correspond to federal standards that have since been revoked or replaced; and for beryllium, fluoride, and hydrogen sulfide (H<sub>2</sub>S), which are generally associated with industrial projects (6 NYCRR 257).

#### **Noncriteria Pollutants**

The New York State Department of Environmental Conservation (NYSDEC) also publishes maximum allowable guideline concentrations for certain pollutants, known as "noncriteria pollutants," for which the USEPA has no established standards. The NYSDEC's guidelines are

published in the DAR-1 AGC/SGC Tables. DAR-1 presents Annual and Short-Term Guideline Concentrations (AGCs and SGCs, respectively) for contaminants that range in toxicity from high to low. The AGCs and SGCs are annual and 1-hour guideline concentrations, respectively, for potentially toxic or carcinogenic air contaminants. AGCs and SGCs are guideline concentrations for noncriteria pollutants that are considered acceptable concentrations below which there should be no adverse effects on the general public's health. AGCs and SGCs within the DAR-1 are updated periodically, therefore, the latest available NYSDEC DAR-1 AGC/SGC Tables must be used when employing AGC5 and SGCs for analyses.

### **Odors**

The NYSDEC enforces regulations that generally state that no facility should emit measurable amounts of airborne pollutants that result in the detection of bad odors by the general public. These regulations prohibit "emissions of air contaminants to the outdoor atmosphere of such quantity, characteristic or duration which . . . unreasonably interfere with the comfortable enjoyment of life or property. Notwithstanding the existence of specific air quality standards or emission limits, this prohibition applies, but is not limited, to any particulate, fume, gas, mist, odor, smoke, vapor, pollen, toxic or deleterious emission, either alone or in combination with others." (6 NYCRR 211.1).

New York State has a one hour ambient air quality standard for hydrogen sulfide of 10 parts per billion (ppb). The 1-hour New York State ambient air standard is nuisance-based and is applicable at all off-site locations when analyzed under CEQR.

### **Compliance with Standards**

The USEPA designates areas that do not meet one or more of the NAAQS as nonattainment areas (NAA). The CAA, as amended in 1990, requires that each state with a NAA to submit a State Implementation Plan (SIP) that delineates the control strategies to achieve compliance with the NAAQS. New York City complies with the NAAQS for SO<sub>2</sub>, NO<sub>2</sub>, CO and lead, but is designated as a NAA for 8-hour ozone and PM<sub>2.5</sub>. The New York County is also designated as a NAA for PM<sub>10</sub>.

Historical monitoring data for New York City indicate that the ozone 8-hour standard is exceeded. To be in compliance, the 3-year average of the annual fourth highest maximum 8-hour average concentration should not exceed the ozone 8-hour standard. In August 2007, the state submitted the final proposed revision of the SIP for ozone, documenting how the area will attain the 8-hour ozone standard by 2013. In March 2008, the USEPA revised the 8-hour ozone NAAQS to 0.075 parts per million (ppm). Separately, in June 2011, the state petitioned the USEPA to make a binding determination that the NY-NJ-CT metropolitan area (NYMA) has attained the 1997 8-hour ozone NAAQS of 0.08 ppm.

**Table 4-1. National and New York State Ambient Air Quality Standards**

Pollutant	Primary <sup>2</sup>		Secondary		NYS Standards	
	PPM	Micrograms Per Cubic Meter	PPM	Micrograms Per Cubic Meter	PPM	Micrograms Per Cubic Meter
Carbon Monoxide (CO) Maximum 8-Hour Concentration <sup>3</sup> Maximum 1-Hour Concentration <sup>3</sup>	9 35	10,000 40,000	None		9 35	10,000 40,000
Lead (Pb) <sup>4</sup> Rolling 3-month Average	NA	0.15	NA	0.15	None	
Nitrogen Dioxide (NO <sub>2</sub> ) Annual Arithmetic Average Maximum 1-Hour Concentration <sup>5</sup>	0.053 0.100	100 188	0.053	1100	0.05	1100
Ozone (Photochemical Oxidants-O <sub>3</sub> ) 8-Hour Maximum <sup>6</sup>	0.075		0.075		None	
Inhalable Particulates (PM <sub>10</sub> ) Maximum 24-Hour Concentration <sup>7</sup>		150		150	None	
Fine Particulate Matter (PM <sub>2.5</sub> ) Average of 3 Consecutive Annual Means 24-Hour Concentration <sup>8</sup>		12 35		15 35	None	
Sulfur Dioxide (SO <sub>2</sub> ) Annual Arithmetic Mean Maximum 24-Hour Concentration Maximum 3-Hour Concentration <sup>3</sup> Maximum 1-Hour Concentration <sup>9</sup>	0.03 0.14 10.075	80 365 1196	0.50	1300	0.03 0.14 0.50	80 365 1300
None						
<p><b>Note:</b></p> <p>1 New York State also has standards for beryllium, fluorides, hydrogen sulfide, and settleable particulates (dustfall). Ambient monitoring for these pollutants is not currently conducted.</p> <p>2 Gaseous concentrations for Federal standards are corrected to a reference temperature of 25°C and to a reference pressure of 760 millimeters of mercury.</p> <p>3 Not to be exceeded more than once a year. A violation of standards occurs if these are exceeded more than once.</p> <p>4 Federal standard is not to be exceeded. Federal standard for lead not yet officially adopted by NYS. Based upon the November 22, 2011 EPA designation for areas of New York State, which became effective on 12/31/11, the 0.15 µg/m<sup>3</sup> standard will be effective throughout New York State on 1/1/2013 and will replace the previous level of 1.5 µg/m<sup>3</sup>. The 1978 lead standard (1.5 µg/m<sup>3</sup> as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard (12/31/12 throughout New York State).</p> <p>5 The 0.100 ppm standard is effective 1/22/2010. 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.</p> <p>6 Former NYS 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 NYS 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 three years - which cannot exceed 0.084 PPM or 0.075 PPM, effective May 27, 2008).</p> <p>7 Federal standard for PM<sub>10</sub> not yet officially adopted by NYS, but is currently being applied to determine compliance status. Not to be exceeded more than once per year on average over 3 years.</p> <p>8 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 three years, which cannot exceed 35 µg/m<sup>3</sup>.</p> <p>9 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.</p>						
<p><b>Source:</b> "National Ambient Air Quality Standards (NAAQS)." <a href="http://www.epa.gov/air/criteria.html">http://www.epa.gov/air/criteria.html</a> "New York State and Federal Standards." <a href="http://www.dec.ny.gov/chemical/8542.html">http://www.dec.ny.gov/chemical/8542.html</a>; NY CEQR Technical Manual, Table 17-1</p>						

The USEPA designated New York County (Manhattan) as a nonattainment area for respirable particulate matter (PM<sub>10</sub>). The other four New York City boroughs are designated as in attainment for the PM<sub>10</sub> standards. All five New York City boroughs have been designated as a PM<sub>2.5</sub> non-attainment area under the CAA by exceeding both the 24-hour and annual average standard. New York State has withdrawn the PM<sub>10</sub> SIP and requested a clean air finding in January 2013. New York State also submitted a re-designation demonstration and a maintenance plan to the USEPA in June 2013 for PM<sub>2.5</sub>. On December 14, 2012, the USEPA promulgated a new annual primary NAAQS for PM<sub>2.5</sub> of 12 micrograms per cubic meter based on the annual arithmetic mean, averaged over 3 years. The USEPA anticipates initial designations of NAAs will become effective in early 2015. New York would have until 2020 (5 years after designations are effective) to meet the revised annual PM<sub>2.5</sub> NAAQS, if it is designated as a non-attainment area.

Monitoring data for the other four national criteria pollutants (SO<sub>2</sub>, NO<sub>2</sub>, CO, and lead) demonstrate that New York City is in compliance with the corresponding NAAQS for these pollutants.

On February 9, 2010, the USEPA revised the Clean Air Act's primary NAAQS for NO<sub>2</sub> by supplementing the existing annual primary standard of 53 parts per billion (ppb) with a new 1-hour primary standard of 100 ppb based on the 3-year average of the 98th percentile of the daily maximum 1-hour average concentrations, and establishing a new monitoring program (75 Fed. Reg. 6475). The final rule became effective on April 12, 2010. The USEPA intends to promulgate initial NO<sub>2</sub> designations of attainment, nonattainment, and unclassifiable areas, using the 3 most recent years of quality-assured air quality data from the current monitoring network. The USEPA will designate as "nonattainment" any areas with NO<sub>2</sub> monitors recording violations of the revised NO<sub>2</sub> NAAQS, and intends to designate all other areas of the country as "unclassifiable" to indicate that there is insufficient data to determine whether or not they are attaining the revised NO<sub>2</sub> NAAQS. The current monitoring network focuses upon concentrations for general population exposure at neighborhood and larger scales to support the current annual NO<sub>2</sub> standard, and therefore, does not include monitors near major roadways that could measure the localized concentrations, which are estimated to be responsible for the majority of 1-hour peak NO<sub>2</sub> exposures (75 Fed. Reg. 6479). The 2010 rule required states to site NO<sub>2</sub> near-roadway monitors and have them operational by January 1, 2013. The USEPA proposed revisions to this rule on October 5, 2012 to require states to begin operating the near-road component of the NO<sub>2</sub> monitoring network in phases between January 1, 2014 and January 1, 2017. This means that sufficient air quality data from the new network will not be available to determine compliance with the revised NAAQS until after 2015 at the earliest.

Until the NO<sub>2</sub> designations are made, the USEPA rule states that major new and modified sources applying for New Source Review (NSR)/Prevention of Significant Deterioration (PSD) permits "will initially be required to demonstrate that their proposed emissions increases of NOx will not cause or contribute to a violation of either the annual or 1-hour NO<sub>2</sub> NAAQS and the annual PSD increment." (75 Fed. Reg. 6525) (referring to 40 C.F.R. 51.166(k)). The USEPA may provide additional guidance in the future, as necessary, to assist states and emissions sources to comply with the CAA requirements for implementing new or revised NO<sub>2</sub> NAAQS.

On June 22, 2010, the USEPA promulgated a new 1-hour NAAQS for SO<sub>2</sub> of 75 ppb. The final rule became effective on August 23, 2010. New York submitted a letter to the USEPA on June 1, 2011 recommending that New York City be designated as "attainment" for the new 1-hour NAAQS. Once areas are designated as "attainment," "nonattainment" or "unclassifiable" for the new 1-hour NAAQS, the USEPA plans to approve plans needed to provide for attainment and maintenance of the new 1-hour NAAQS by approximately August 2017 in all areas of the state, including any area initially designated "nonattainment," and also including any area designated

“unclassifiable” that has SO<sub>2</sub> sources with the potential to cause or contribute to a violation of the NAAQS.

The limited monitoring data available for non-criteria compounds show that annual monitored arsenic, cadmium, and nickel concentrations are greater than the current AGCs for these substances in New York City. In addition, based on data reported from other urban areas, it is expected that the annual formaldehyde concentrations are greater than the current AGC.

It is recommended that the lead agency check with DEP for the latest background levels and compliance status prior to commencing detailed analyses.

### **Conformity**

Conformity, a process mandated by the CAA, requires that air pollution emissions from federal actions not contribute to state air quality violations. Conformity is defined in Section 176(c) of the CAA as conformity to the SIP’s purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards, and ensuring that federal actions will not: (i) cause or contribute to any new violation of any standard in any area; (ii) increase the frequency or severity of any existing violation of any standard in any area; or (iii) delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.

The USEPA has promulgated criteria and procedures for determining conformity of all proposed projects that a federal agency is supporting, licensing, permitting, or approving. The purpose of these rules is to determine whether or not the proposed project would interfere with the clean air goals stipulated in the SIP. The criteria and procedures developed for this purpose are called “general conformity” rules (40 CFR 93.150-65). Currently, the general conformity requirements apply only in areas that are designated “nonattainment” or “maintenance” for CO, lead, NO<sub>2</sub>, ozone, PM<sub>10</sub>, PM<sub>2.5</sub> and SO<sub>2</sub>. A “maintenance” area that has been re-designated to “attainment” from “nonattainment” must maintain the NAAQS for 20 years by following two sequential 10-year plans.

In addition to general conformity rules, the USEPA has promulgated special “transportation conformity” rules, which support the development of transportation plans, programs, and projects that enable areas to meet and maintain national air quality standards for ozone, PM, and CO, which impact human health and the environment (40 CFR 93.100-29). Transportation conformity is a CAA requirement that calls for the USEPA, the U.S. Department of Transportation (USDOT), and various regional, state and local government agencies to integrate the air quality and transportation planning development process. New York State has also adopted transportation conformity regulations (6 NYCRR 240), which are coordinated by the NYSDEC Division of Air Resources.

### **Greenhouse Gas Emissions**

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

Section 8 of 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 June 30, 2014) include reducing Scope 1 and Scope 2 GHG emissions by 29.8% by 2020, relative to Fiscal Year (FY) 2008 emissions, and reducing Scope 3 GHG emissions by 10% by 2020, relative to FY 2008 emissions (VA 2014).

In 2013, the President issued EO 13653, *Preparing the United States for the Impacts of Climate Change*, to build upon the progress made by agencies subsequent to EO 13514. EO 13653 requires that agencies update their climate change adaptation policies and plans. In June 2014, the VA fulfilled this requirement by preparing the Climate Change Adaptation Plan.

#### **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 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.

**Table 4-2. General Conformity *de minimis* Emissions Thresholds**

Pollutant	Status	Classification	<i>de minimis</i> Limit
O <sub>3</sub> (measured as NO <sub>x</sub> or VOCs)	Nonattainment	Extreme	10
		Severe	25
		Serious	50
		Moderate/marginal	50 (VOCs)/100
		All others	100
	Maintenance	Inside ozone transport	50 (VOCs)/100
		Outside ozone transport	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

### 4.3.1 Existing Conditions

The Clean Air Act established the National Ambient Air Quality Standards (NAAQS) and associated permits including NYSDEC's Air Permitting and Regulation Program. Air quality is evaluated by the USEPA and the New York State Department of Environmental Conservation (NYSDEC) under the Clean Air Act (CAA). Pollutants including particulate matter, ozone and carbon monoxide are measured and if they exceed applicable criteria, the area is designated a non-attainment maintenance area. New York State is a delegated state and administers the CAA.

Bronx County is designated as a non-attainment area for particulate matter (PM<sub>10</sub>) and ozone. NYSDEC monitors the local air quality from seven sampling stations in the Bronx. The comparison of the pollutant concentrations with the EPA standards indicates that carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), particulate matter (PM<sub>10</sub>), Ethylene Oxide Sterilizers, and sulfur dioxide (SO<sub>2</sub>) are consistently below the established

standards. Fine particulate matter (PM<sub>2.5</sub>) exceeds the annual standard at some stations but not the 24-hour standard. Two pollutants, ozone and sulfur dioxide concentrations, have strong seasonal variations. Ozone (O<sub>3</sub>) concentrations sometimes exceed the 1-hr standard during the summer months when temperatures are at their highest levels. SO<sub>2</sub> has its highest concentrations in winter due to fuel combustion in the winter months for space heating.

NYSDEC issued an Air Permit to Bronx VAMC (Permit ID 2-6004-00065/00009) for discharges from the heating plant, bio-waste incinerator, and emergency generators. The VA Steam Production Design Manual requires peak loads to be established based on a metered steam flow. The James J. Peters VA plant steam production records indicate a peak steam consumption of approximately 56,000 pounds of steam per hour. The total annual occurrence of a load exceeding 40,000 pounds per hour is only 72 hours, or <1%. The design manual requires that the boiler plant be sized and designed to meet design flow with the largest boiler off line.

The existing boiler plant consists of three boilers at 40,000 pounds per hour each. The cogeneration system will replace boiler #3, leaving boilers #1 and #2. The CHP system (turbine plus Heat Recovery System Generator) has a steam production capacity of 22,000 – 24,000 pounds per hour with no supplemental Heat Recovery System Generator (HRSG) firing – meaning this capacity is available on either oil or gas since the turbine will be designed for dual fuel firing. Considering the CHP system as the third boiler, the overall plant has N+1 capability, since one 40,000 pound per hour can be off line and the remaining capacity of 62,000 pounds per hour capacity exceeds the design load.

In order to provide a level of backup and reliability comparable to boilers #1 and #2, the gas turbine will be dual fuel and all plant auxiliaries will be connected to backup or emergency power, making that system's steam production available on emergency or normal power, and on either gas or oil fuel.

A Combined Heat Power Plant or Combined Heat Power (CHP) is proposed to be built to support the SCI/D as well as the existing medical center building. The primary fuel will continue to be natural gas, which does not contribute to PM 2.5 or ozone levels. See Section 4.14, "Alternative Energy Sources," for additional evaluation of CHP.

#### **4.3.2 Environmental Impacts**

##### **4.3.2.1 No Action Alternative**

The current heating plant would continue to operate in accordance with the existing permits. An additional emergency generator would not be required. No changes to permitted air discharges would be anticipated; therefore, no impacts would be anticipated.

##### **4.3.2.2 Alternative 2 - New Construction (Preferred Option)**

Air emission findings are provided in Appendix D and the findings of those calculations are summarized in Tables 4-3, 4-4, and 4-5 below.

**Table 4-3. Air Emissions for Bronx VAMC for Existing Conditions and No Action Option – Based on Capacity of Boilers)**

Emission Source	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
Combustion							
Boiler #1	5.553	0.054	1.26	39.22	0.56	0.06	6406.95
Boiler #2	5.553	0.054	1.26	39.22	0.56	0.06	6406.95
Boiler #3	3.805	0.210	32.00	0.02	0.291	0.031	4271.30
Total, lbs/hr	14.911	0.318	34.520	78.460	1.411	0.151	17,085.20
TOTAL, Tons/Yr	65.31	1.39	151.20	343.65	6.18	0.66	74,833.18

**Table 4-4. Air Emissions for Bronx VAMC Resulting from Construction of Proposed Action (tons per year)**

Emission Source	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM (Total)	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
Combustion	9.545	4.181	6.792	0.011	0.678	0.000	0.000	937.036
Fugitive Dust					51.797	8.201	0.8201	
Haul Truck On-Road	0.112	0.013	0.033	0.000	0.000	0.004	0.003	49.364
Commuter	0.258	0.277	2.603	0.004		0.036	0.023	434.634
TOTAL	9.914	4.470	9.428	0.016	52.475	8.242	0.847	1421.031

**Table 4-5. Air Emissions for Bronx VAMC during Operations of Proposed Action (tons per year)**

Emission Source	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
Combustion							
Boiler #1, lbs/hr	3.805	0.210	31.996	0.023	0.291	0.039	4271.300
Boiler #2 lbs/hr*	-	-	-	-	-	-	-
Boiler #3 lbs/hr	2.352	0.130	19.776	0.014	0.180	0.024	2640.000
Commuter	0.26	0.277	2.603	0.004	0.000	0.000	1.103
TOTAL, lbs/hr	6.415	0.617	54.375	0.041	0.471	0.063	6912.403
TOTAL, Tons/yr	28.098	2.702	238.163	0.181	2.063	0.276	30276.323

\*Standby Unit

Construction Impacts

Construction air quality impacts will be temporary and will primarily be in the form of emissions from diesel-powered construction equipment and dust from earth moving operations. Air pollution associated with the creation of airborne particles will be effectively controlled through the use of watering or the application of other controlled materials in accordance with NYS Standards and Specifications for Erosion and Sediment Control (NYSDEC, August 2005), and as directed by the project engineer. Based on the above-mentioned facts, minimal-to-moderate impacts would result for this resource during construction of the proposed action.

Operational Impacts

The Proposed Action includes a CHP facility that would provide heat to Bronx VAMC and electricity to the site. This combined cycle plant will be fueled by

natural gas which would lower the amount of air pollutant discharged at the site (see Section 4.14). The new CHP would replace one of three existing natural gas/oil fired boilers. The remaining two heat-only boilers will be left at the site for emergency backup of the CHP. Overall air pollutant load reduction from the proposed conversion of boiler heating to CHP would result in an estimated 35% decrease in the discharge of nitrogen oxide pollutants. The most effective means of understanding co-generation is to consider it simply as using the same heat energy twice, once for heat and a second time for a steam power generator. This process is inherently efficient since the production of electricity occurs at centralized power plants and there is a large loss in energy efficiency due to venting of heat at high temperatures at the stack. Evaporative coolers are used in a CHP to heat or cool the building. Production of SO<sub>2</sub> occurs only when back-up fuel oil is utilized. To meet sulfur dioxide emission requirements of the state and federal air discharge permit, it is necessary to store low sulfur fuel oil on-site for the boilers. Fuel oil is a backup energy source for the boilers which normally operate on natural gas that is delivered to the site by pipeline. The emergency diesel generators are also supplied with low sulfur fuel. Combined cycle generation is 80% energy efficient ([www.epa.gov/basic/efficiency](http://www.epa.gov/basic/efficiency)).

A comparison of natural gas air pollution load verses oil air pollution load shows the lower rates of pollution from natural gas. Table 4-6 demonstrates the air pollutant reduction by the use of natural gas. Implementation of the natural gas fired CHP will reduce air pollution and lower overall consumption of fuels.

**Table 4-6. Pollution Load Comparisons**

Pollutant	Natural Gas Fired	Oil Fired
CO <sub>2</sub>	1135 lbs./MWH	1672 lbs./MWH
SO <sub>2</sub>	0.1 lbs./MWH	12 lbs./MWH
NO <sub>2</sub>	1.7 lbs./MWH	4 lbs./MWH

Source: EPA [www.epa.gov/cleanenergy](http://www.epa.gov/cleanenergy)

The efficiency of the CHP creates better energy use. A typical power plant is only 30% efficient while a CHP is 60-80% efficient. The consumption of an increased volume of natural gas on site will produce carbon dioxide at increased levels at this facility. The discharge of carbon dioxide will be slightly higher but well below regulated limits. Production of power on site at the CHP will allow the regional utility to optimize selection of sources of electricity to those that produce the lowest possible levels of pollutants. Con Ed will still have to provide a 100% replacement source of electricity for the site at all times. This redundant power should be selected from sources that are available regionally. In New York, electricity is primarily generated by petroleum, natural gas, followed by nuclear, hydroelectricity and other sources. The facility will be meeting the energy conservation requirements of Executive Order 13514, Energy Star, and the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) guidelines. Energy needs at SCI/D will be lower on a per square foot basis and will therefore meet all of the above program requirements and guidelines.

#### **General Conformity**

Calculated air emissions from construction of the proposed action would be well below de-minimis threshold limits therefore a General Conformity determination would not be required.

### **Greenhouse Gases (GHG)**

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. EPA estimates that 2013 gross CO<sub>2</sub> emissions in New York was 42.5 million metric tons (<http://ghgdata.epa.gov>; accessed May 19, 2015) and in the United States (in 2012, most recent data available) was 5,505.2 million metric tons (total of 6,673 MMT CO<sub>2</sub>-equivalent GHG in the US) (<http://www.epa.gov/climatechange/ghgemissions/usinventoryreport.htm>).

The calculated CO<sub>2</sub>-equivalent emissions from the proposed action represent an insignificant contribution towards the statewide and national inventories.

### **PSD and Title V Permits**

The proposed project would not be subject to PSD and Title V permitting requirements because the proposed action does not meet with significance criteria for these permit programs. Also, emissions from the CHP would be lower than the current operations.

### **Parking Garage**

Emissions of carbon monoxide (CO) from vehicles were analyzed to ensure that the health and safety of the local community would not be threatened. The project site is located in a CO attainment area; thus, the potential ambient CO concentrations from the traffic generated by the proposed project, when summed with the existing background CO concentrations, are required to be less than the U.S. Environmental Protection Agency (EPA) National Ambient Air Quality Standards (NAAQS) for CO. The air quality analysis confirmed that the CO level at the pedestrian level would be within the permissible limit of 9 ppm.

### **Mobile Sources**

Since there is a slight increase in number of employees (83 additional employees), further mobile source air quality evaluation is not necessary. The operation of the new SCI/D Center and Parking Garage would improve the flow of traffic into and out of the site and would be more efficient. The impact on regional air quality would be negligible from the temporary increase in vehicular traffic. Traffic patterns would be established to ensure smooth traffic flow, which would, in turn, reduce the generation and concentration of emissions to the greatest extent practicable.

The existing air permit will be modified to include changes in the air pollution loads at the site. There would be a reduction in nitrogen oxide pollutants.

At this time, Bronx VAMC research staff is beginning the planning stage to entirely phase out the use of the onsite biohazard incinerator, which would eliminate the discharge of combustion products.

Based on the above-mentioned facts, a beneficial-and-not-significant impact would result for this resource during operations of the proposed action.

## 4.4 CULTURAL RESOURCES

### 4.4.1 Existing Conditions

#### Site History

Bronx VAMC campus is the oldest VA facility in New York City and is situated on an historic site. Located on the highest point in New York City, the site served as a strategic vantage point during the Revolutionary War. Several structures originally built by the American army and overtaken by the British in 1776 were located in the immediate vicinity and within Bronx VAMC property. Fort Number Six was located about 380 feet northeast of the main house on the Bailey Estate, later rendered on the 1872 Beers map of this area. This information places the fort within the southwest corner of the SCI/D Center in the Area of Potential Effect (APE) as outlined Phase 1A Literature Review and Archeological Sensitivity Assessment in Appendix A. Remains and artifacts associated with the fort were uncovered in 1899 while excavating the foundations for the Orphan Asylum that was built on the property before the purchase of the property in 1921 by the federal government.

In 1847 William H. Bailey, partners with P.T. Barnum of the Barnum and Bailey Circus fame, bought 26 acres of land where the hospital now stands as a country home. In 1889 Bailey's heirs sold the estate to the Sisters of Charity Archdiocese of New York, who constructed an orphanage on the site. The c. 1899 Roman Catholic Orphan Asylum Girls' Chapel remains in use on the medical campus today. In 1921 the Treasury Department purchased the property from the Archdiocese of New York for use by the U.S. Public Health Service as a hospital for veterans suffering from mental and nervous disorders. The purchase was turned over to the newly formed U.S. Veterans' Bureau by Executive Order on April 20, 1922. By adding several buildings throughout the years, the Bureau made the Bronx hospital the second largest VA facility in the nation and the first Veteran's hospital in New York City. In 1981, new construction produced a modern, well-equipped facility, and in 1986 a newly constructed 120-bed nursing home care unit was opened.

#### Historic Resources

The historic sensitivity of an area is based largely on the examination of historical maps as well as the presence of documented historical archeological sites in the vicinity and other historical development on Bronx VAMC property. The earliest historical development on the property was likely Revolutionary War-era Fort Number Six, which was located near the southwestern portion of the SCI/D Center APE. In the 19<sup>th</sup> century, the 1851 map shows a structure labeled as L. Valentine located on the northern edge of the SCI/D Center Area Potential Effect. In 1899, a portion of the Orphan Asylum boys' dormitory and the boys' chapel were constructed in the southern portion of the SCI/D Center APE. A gatehouse associated with the Orphan Asylum was also located along West Kingsbridge Road near the northwest corner of the APE. A portion of the girls' dormitory was located in the Parking Structure APE. The 1986 Sanborn map shows that all of the c. 1899 former orphanage buildings and c. 1950 hospital buildings had been demolished except for the chapel in the southern portion of the property, the gatehouse along West Kingsbridge Road, and the c. 1950 apartment building in the southwest corner of the property. See Appendix A, "Supporting Reports."

The photographic documentation of the chapel requested by SHPO shows that the chapel area is well maintained and the sanctuary area is intact and is used for

nondenominational services and for services of specific faiths. The chancel has a rotating platform that allows for Christian, Jewish, and Muslim worship in the sanctuary. See "Chapel Documentation Letter," in Appendix A.

There is one property in the vicinity of Bronx VAMC that is listed on the State/National Registers of Historic Places – the Old Croton Aqueduct – which extends beneath University Avenue and the east edge of the Bronx VAMC campus. In addition, the Major Deegan Expressway, which is located about 700 feet west of the campus, is eligible for listing on the historic registers.

### **Archeological Resources**

The following archeological resource review and sensitivity assessment is based on the Phase IA Literature Review and Archeological Sensitivity Assessment which was completed January 2012 for the SCI/D Center and Parking Garage at the James J. Peters Veterans Affairs Medical Center (VAMC).

The project is located within an area designated on the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) website as a known archeologically sensitive area. Generally, this designation is based on the proximity of reported archeological sites. The OPRHP and New York State Museum (NYSM) files contain seventeen archeological sites that are precontact or contain precontact components located within one mile (1.6 km) of the VAMC site. Thirteen of these sites are located directly across the Harlem River from the project in the Inwood Hill Park area of Manhattan and along the Spuyten Duyvil and Harlem River. The other four precontact sites are located to the north in the Bronx on elevated terrain similar to the VAMC property. In addition to the previously reported sites in the vicinity, the project's location on an elevated overlook along the Harlem River would suggest a potential for occupation or use of the area by Native Americans. Therefore, the areas of potential effects (APEs) have a high sensitivity for the presence of precontact archeological deposits.

The combined site file and environmental data also suggest the project APEs have a high sensitivity for both precontact and historic cultural resources. The SCI/D Center APE has a high sensitivity for 19<sup>th</sup> century deposits and features associated with the L. Valentine house and the c. 1899 boys' dormitory orphanage structures. The Parking Structure APE has a high sensitivity for encountering deposits associated with the c. 1899 girls' dormitory.

However, documentary research and modern conditions indicate that much of the project APEs have undergone substantial disturbance associated with construction and reconstruction of buildings at the site. Therefore, there is only a low to moderate potential for encountering historic or precontact deposits. The archeological potential is the actual likelihood of locating intact archeological remains within the project APEs. Remains of the 18<sup>th</sup>-century Fort Number Six were encountered during the c.1899 construction of the Orphan Asylum, which may have impacted or destroyed the deposits. The late 20<sup>th</sup>-century razing of the orphanage buildings and re-grading for parking lots may have impacted the deposits further. Nonetheless, portions of the fort deposits and other 19<sup>th</sup>-century structures could have been preserved by filling after the demolition of the c.1899 buildings. The northwestern portion of the SCI/D Center APE appears to have remained relatively undeveloped throughout most of the map-documented history of the parcel. This area has a greater potential for encountering any possible precontact deposits or perhaps deposits associated with earlier historical developments. Phase IB archeological testing was conducted to assess the presence or absence of archeological deposits.

### **Archeological Testing**

In order to assess the presence or absence of archeological deposits and/or prior disturbance in the project APEs, limited Phase IB archeological testing was completed in March 2012. Eight hand-excavated shovel test pits were placed in the undeveloped northwest corner of the SCI/D Center APE. Two backhoe-excavated trenches were used to assess the presence or absence of archeological deposits associated with Fort Number Six and the 19<sup>th</sup>-century structures in the paved portions of the SCI/D Center APE. One backhoe trench was placed in the existing parking lot at the Parking Structure APE to assess the presence or absence of archeological deposits related to 19<sup>th</sup>-century structures documented on historical maps. Testing was completed and did not detect significant cultural resources in either APE. Overall, testing revealed that historic soil despoths were removed or disturbed by the 1970s construction of the VAMC campus. No further testing was recommended. See "Phase 1B Archeological Field Reconnaissance," in Appendix A.

### **4.4.2 Environmental Impacts**

#### **4.4.2.1 No Action Alternative**

No changes to cultural resources would occur under this alternative therefore, no impacts would be anticipated.

#### **4.4.2.2 Alternative 2 - New Construction (Preferred Option)**

##### Construction Impacts

The construction area is well away from and will not impact the Old Croton Aqueduct and Major Deegan Expressway, which are listed or eligible to be listed on the State/Federal historic registers. Therefore, no impacts would be anticipated.

##### Operational Impacts

The chapel is the most important cultural resource remaining on the site and has always been a part of an institution whether an orphanage or a VA Hospital, therefore, the population that it has served is first associated with the parent facility. This will remain unchanged as a result of this project. Portions of the chapel have been converted to offices and meeting rooms on the first floor while the sanctuary is on the second floor.

Construction of the Parking Garage will not change light quality in the altar or chancel area since these areas are on the east end of the building. Lighting will change in the afternoon on the south side of the chapel closest to the Parking Garage. Seasonally, the greatest change in lighting will occur in the months of November-January when the sun is lowest in the sky. Current schedules of service in the chapel should not be impacted since the most significant shadows will occur after 3PM. Scheduled religious services occur Monday-Friday at 11:30-noon and Friday at 1PM-2PM.

NY SHPO determined that no historic properties will be affected by the project (see Letter dated July 13, 2015 in Appendix B). None-to-negligible impacts to cultural resources would therefore be anticipated as a result of the project.

## 4.5 TOPOGRAPHY, GEOLOGY AND SOILS

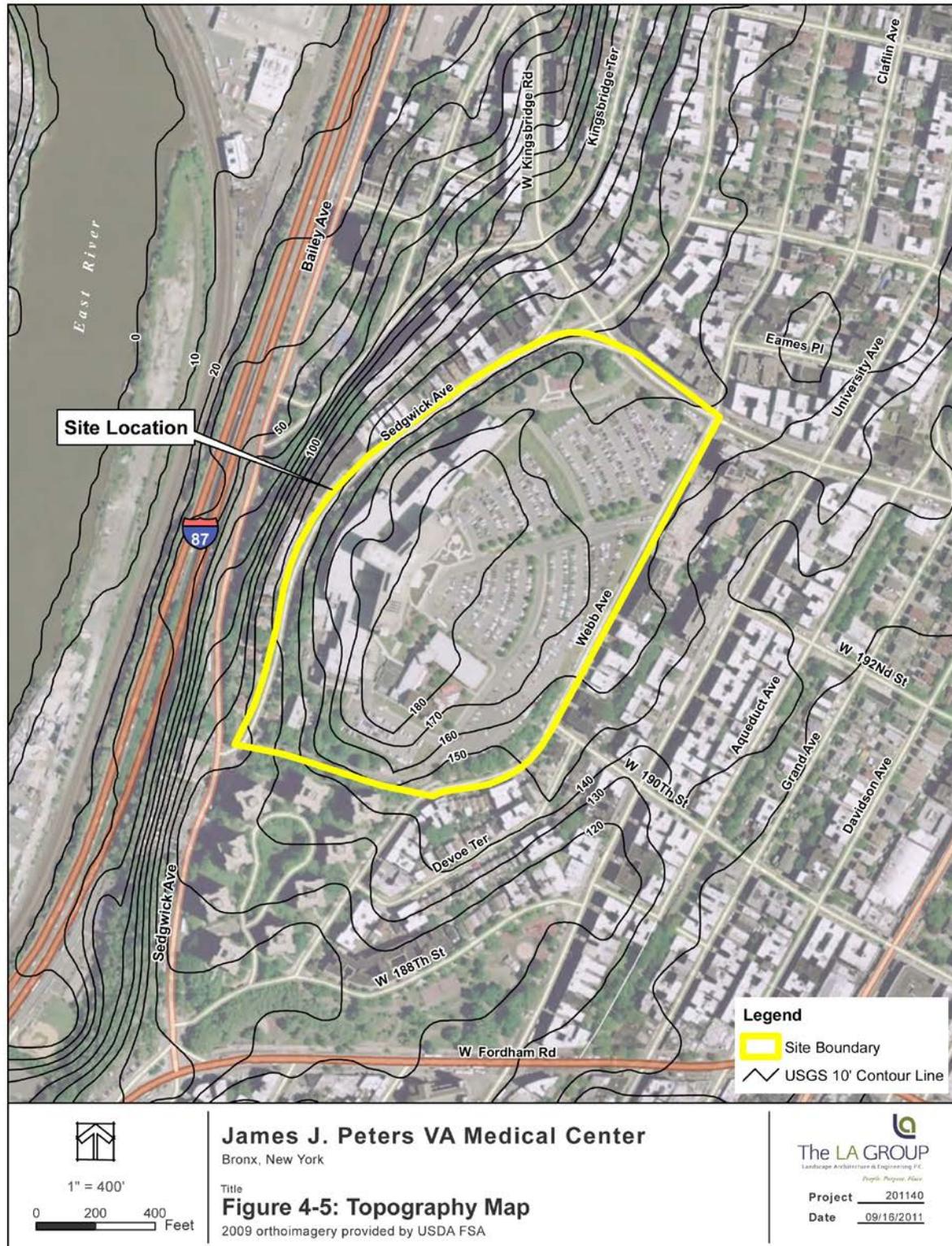
### 4.5.1 Existing Conditions

At approximately 125-180 feet above mean sea level (MSL), Bronx VAMC is located on an elevated area known as the highest point of the five boroughs of New York. The south end, western edge, and southeast corner of the site are steeply sloped. The center of the site is relatively level with the slope falling gradually towards the northeast. See Figure 4-5, "Topography Map."

Site conditions indicate that there are small areas of bedrock outcroppings along the western edge of the property. Preliminary geotechnical analysis indicates that rock is located fairly close to the ground surface in other site locations. The Geologic Map of New York City (Brock, P.C. et al., 2001) shows the vicinity of the existing Bronx VAMC site to be underlain by the Fordham Gneiss of the Middle Proterozoic period. The surrounding areas are shown to be underlain by the Inwood Marble of the Paleozoic Period and the Manhattan Schist of the Late Neoproterozoic Period, which is the typical geology for the New York City area.

The Fordham Gneiss is a very old and hard metamorphosed rock that has alternating bands of darker colored hornblende or biotite mica and lighter colored quartz and feldspar. The Inwood Marble is a white colored rock that is metamorphosed limestone which is softer than gneiss and schist and is easily erodible. The Manhattan schist is metamorphosed hard bedrock schist with a high content of mica. Many of the taller buildings in New York City are anchored into this schist due to its durability and strength. Subsurface conditions are expected to consist of a fill layer underlain by natural soils over rock, and the depth to rock is expected to be about 12-20 feet below surface (or approximately 150 feet MSL). The New York City Soil and Conservation District has produced a soil survey of New York City (New York City Soil Survey Staff, 2005), which show that the existing Bronx VAMC is located in an area mapped as "204 Pavement and Buildings-Charlton and Greenbelt Complex" soil. This complex is made up of the Charlton and Greenbelt soil series.

The Charlton soil series is a very deep, well-drained soil formed from glacial till derived from Gneiss and Schist. This series has a moderate to moderately rapid permeability and consists of loam to loamy sand textured soil. The Greenbelt soil series is a very deep, well-drained soil formed from loamy fill and till of a depth greater than 40 inches. This series has a moderate to slow permeability depending on the amount of compaction and is made of silt loam to sandy loam textured soil. This soil complex is described by the New York City Reconnaissance Soil Survey as being nearly level to gently sloping urbanized areas of till plains that have been substantially cut and filled, mostly for residential use and a mixture of gneissic till soils and anthropogenic soils (fill), with up to 80% impervious pavement and buildings covering the surface. See Figure 4-6, "Soils Map."





## **4.5.2 Environmental Impacts**

### **4.5.2.1 No Action Alternative**

No changes to geology and soils would occur under this alternative as no new construction would take place therefore, impacts are none to negligible.

### **4.5.2.2 Alternative 2 - New Construction (Preferred Option)**

#### Construction Impacts

Construction plans will require Best Management Practices (BMPs) for soil erosion and sediment control. A construction SPDES general permit will also be required due to soil disturbance activities. Specifically, as part of a construction Stormwater Pollution Prevention Plan (SWPPP), plans would address clearing, grubbing, grading, excavating and temporary stockpiling of site soils. BMPs will also address requirements for proper maintenance of construction equipment and spill response procedures to reduce the potential for discharge of petroleum or other hazardous materials to the environment. The proposed Parking Garage was modified through design to minimize interaction with rock on site to avoid chipping and blasting. Impacts from construction on geology and soils are therefore, none-to-negligible.

#### Operational Impacts

The Bronx VA site is fully developed and has only limited pervious areas of landscape vegetation or lawns. The proposed site development has minimized new disturbances by building the SCI/D on an existing paved parking lot and using a very compact design for the Parking Garage. Both of these buildings are multiple stories which also reduce the building footprints and impervious areas. The project is a redevelopment and is meeting the green infrastructure practices and meets NPDES requirements.

The proposed SCI/D Center and Parking Garage, uses and proposes to continue using Best Management Practices (BMPs) to eliminate the potential for subsurface soil discharge of any hazardous wastes. Existing underground petroleum storage tanks are closely monitored to detect leaks as early as possible. Routine maintenance activities such as landscaping, irrigation system maintenance and pavement maintenance utilize BMPs to reduce sediment (such as street sweeping), and oil and grease and other pollutants from being discharged to site soils. Stormwater facilities would be inspected and maintained in accordance with the Stormwater Pollution Prevention Plan. It is anticipated that none-to-negligible impacts would result Topography, Geology and Soils, due to mitigation is proposed as required by the applicable regulations.

## **4.6 HYDROLOGY AND WATER RESOURCES**

### **4.6.1 Existing Conditions**

Bronx VAMC is located approximately 1,000 feet east of the East River. No waters of the United States, including wetlands, are located on the site. Currently, stormwater departs the VAMC site by discharge to the combined stormwater and wastewater collection system. Groundwater is controlled by bedrock which is exposed on-site and is within 12-20 feet of the surface. Groundwater moves within the natural fracture plains of rock and may accumulate in the fractures.

## 4.6.2 Environmental Impacts

### 4.6.2.1 No Action Alternative

No changes to hydrology and water resources are anticipated under this alternative; therefore, impacts are none-to-negligible.

### 4.6.2.2 Alternative 2 - New Construction (Preferred Option)

#### Construction Impacts

During construction of the SCI/D Center and Parking Garage, there is the potential for surface water impacts from sediment-laden runoff or from hazardous materials spill (oil, gas, hydraulic fluids). Erosion protection and minimization of runoff during construction will be included as part of the design and construction of the project. Construction will require that temporary erosion controls be implemented in accordance with regulations for stormwater prevention. A permit for stormwater discharge from a construction site in excess of one acre is required and a SWPPP must be prepared. Construction will include grading, and re-vegetation as part of permanent erosion control. The project will utilize BMPs (best management practices) to minimize the potential for surface water impacts from sediment laden runoff or hazardous materials spills. BMPs will include use of silt fence to manage wet soils, dust control, pumping of stormwater to dewater the site into mud bags to remove sediments prior to discharge to the storm sewers, and other standard methods to manage construction site runoff. A Spill Prevention, Control and Countermeasure (SPCC) plan will be implemented during construction by the selected contractor as well as a comprehensive SWPPP. Localized dewatering during construction should be expected to manage surface water runoff.

Portions of the building may extend below the top of rock. In order to construct the SCI/D Center it will be necessary to remove demolition debris from the former orphanage and VA Hospital. Removing the debris will expose the top of the bedrock. In other locations of the SCI/D Center and Parking Garage it will be necessary to excavate into the bedrock prior to pouring the structural slabs or large footings for the building foundations. Excavating a cellar cavity into the bedrock may create "bathtub" conditions under which surface water runoff or water traveling through rock fractures can accumulate in depressed areas carved in the rock mass. For this reason, the proposed slabs can be constructed as a conventional slab-on-grade, provided that an under slab drainage system is constructed. If discharging accumulated groundwater into the city sewer system is not feasible, then a structural pressure slab with waterproofing should be considered.

Based on the above information, the construction SPDES permit, use of Best Management Practices (BMPs), and implementation of an SPCC plan, significant impacts to hydrology and water resources during construction are not anticipated. Impacts are anticipated to be minimal to moderate due to implementation of required mitigation measures found in the SWPPP and SPCC. The facility is connected to the local water supply and wastewater disposal systems. These are very large municipal utilities that have very large networks with adequate capacity even in emergency situations to meet any demands of Bronx VAMC. See Section 4.13, "Utilities." Because of the size and capacity for

service by the existing municipal utility providing the water supply source for the project, impacts are anticipated to be none-to-negligible.

#### Operational Impacts

The normal operation of the SCI/D Center and the Parking Garage utilizes stormwater management protection by use of oil water separators in the Parking Garage and development of a compliant stormwater management system. Operation of the facility will not require further modification to site hydrology or water resources. The impact to hydrology and water resources is anticipated to be none-to-negligible.

## **4.7 WILDLIFE AND HABITAT**

### **4.7.1 Existing Conditions**

The site is part of an urbanized area and, other than a limited number of trees and lawn areas, the entire site is fully developed. The development pattern does not provide habitats for any significant wildlife population.

The threshold of significance for the Wildlife and Habitat attribute is the Endangered Species Acts or the NYSDEC list of rare, threatened or endangered species. The US Fish and Wildlife Service were consulted on known occurrences of federally-listed endangered and threatened species. The shortnose sturgeon (*Acipenser brevirostrum*) is listed as endangered for Bronx County. The habitat of this fish species is the Hudson River which should not be impacted by the project. NYSDEC's Natural Heritage Program was also consulted and reported on the rare or state-listed animals and plants, significant natural communities, and other significant habitats in the vicinity of Bronx VAMC. Report findings included the endangered Peregrine falcon (*Falco peregrinus*). Follow-up communication with NYSDEC indicated that there is a Peregrine falcon nest of concern, however it is located a considerable distance from the project site and would not be impacted. See Appendix B, "Letters of Record."

### **4.7.2 Environmental Impacts**

#### **4.7.2.1 No Action Alternative**

No changes to wildlife and habitat are anticipated under this alternative therefore, impacts are none-to-negligible.

#### **4.7.2.2 Alternative 2 - New Construction (Preferred Option)**

##### Construction Impacts

The use of best management practices to limit or eliminate sediment in the stormwater runoff, minimizing degradation of water quality during site construction, will protect water quality in the Hudson River (shortnose sturgeon habitat). No changes to wildlife and habitat are anticipated under this alternative therefore, impacts are anticipated to be none-to-negligible.

##### Operational Impacts

The site is already completely developed. Construction of the SCI/D and Parking Garage will occur on previously developed land. The project will result in a net increase in trees and vegetated areas on the site. No changes to wildlife and

habitat are anticipated under this alternative, therefore, impacts to wildlife and habitat are anticipated to be none-to-negligible.

## **4.8 FLOODPLAINS, WETLANDS AND COASTAL ZONE MANAGEMENT**

### **4.8.1 Existing Conditions**

The site is nearly completely developed as buildings, parking lots, and landscaped areas. None of the landscaped areas or the very small undeveloped areas supports wetland plants, soils, or hydrology. Approximate site elevations range from 125 feet MSL in the southwest portion of the site to 180 feet MSL in the northwest part (the finished-floor elevation of the main hospital). This site is known as the highest point of the five boroughs of New York. The nearest bodies of water include the Harlem River, approximately one-quarter mile west, and the Hudson River approximately one mile northwest. According to the Federal Emergency Management Agency (FEMA) maps, the project site is not located within a flood zone. No portion of the site contains either tidal or Section 404 wetlands.

Section 307 of the "Coastal Zone Management Act of 1972" (CZMA), called the "federal consistency" provision, gives a state a strong voice in federal agency decision making for activities that may affect a state's coastal uses or resources that a state would not otherwise have through other federal programs. Generally, federal consistency requires that federal actions, within and outside the coastal zone, which have reasonably foreseeable effects on any coastal use (land or water) or natural resource of the coastal zone be consistent with the enforceable policies of a state's federally approved coastal management program. Since the state and federal coastal zone boundary is located along the Major Deegan Expressway, the project site is outside the boundary and not subject to state and federal consistency.

### **4.8.2 Environmental Impacts**

#### **4.8.2.1 No Action Alternative**

No changes to floodplains, wetlands and coastal zone management anticipated under this alternative, therefore, impacts are none to negligible.

#### **4.8.2.2 Alternative 2 - New Construction (Preferred Option)**

##### Construction Impacts

The project site is not within a designated floodplain nor does it have areas of federally-regulated wetlands. No changes to floodplains, wetlands and coastal zone management are anticipated under this alternative therefore, no impacts are anticipated to be none-to-negligible.

##### Operational Impacts

The project site is not within a designated floodplain nor does it have areas of federally-regulated wetlands. The project site is outside the state and federal coastal zone boundary and not subject to state and federal consistency. No changes to floodplains, wetlands and coastal zone management are anticipated under this alternative therefore, impacts are anticipated to be none-to-negligible.

## **4.9 SOCIOECONOMICS**

### **4.9.1 Existing Conditions**

The 2010 Census reported a population of 1.38 million for Bronx County representing the fifth most populated county in the state. Between 2000 and 2010, the population increased by 52,458 or 3.9%. Population estimates developed by the US Census Bureau indicate the Bronx County population rising by 23,365 between 2010 and 2012. Bronx VAMC is part of Bronx Community District 7, one of 12 districts that represent Bronx residents. District 7 reported a 2010 population of 139,286 which represents a 1.5% decrease from the 2000 population of 141,911. District 7 is predominately Hispanic and 53% of its residents are female. The average household size is 2.78 persons and more than 92% of occupied household units are rentals. In 2011, the New York City Department of City Planning reports that 52.3% (72,894 people) of District 7 residents receive some kind of income support. This represents a nearly 6% rise in need since 2005.

The Bronx County 2010 median household income was \$34,744. Approximately 28.4% of the population is at or below poverty level considerably higher than the New York City level of 17%. As reported in March 2013, the unemployment rate in Bronx County was 11.6%, the highest in New York State. In comparison, the overall New York City rate was 8.5% and was 8.1% statewide.

### **4.9.2 Environmental Impacts**

#### **4.9.2.1 No Action Alternative**

No changes to socioeconomics are anticipated under this alternative, therefore, impacts are none-to-negligible.

#### **4.9.2.2 Alternative 2 - New Construction (Preferred Option)**

##### Construction Impacts

It is anticipated that socioeconomic impacts from implementation of the proposed SCI/D Center and Parking Garage will have a short-term (roughly three year) beneficial impact on employment due to hiring of an estimated 160 construction workers. Direct impacts will include payroll spending for mortgages, rent, food, transportation and utilities, etc. Secondary impacts will be generated from the goods and service businesses in the general neighborhood that will sell supplies to workers. Other direct positive impacts will include the purchase or leasing of construction equipment and construction materials. Construction workers will be primarily retained from the New York Metropolitan Area, and, therefore the benefits will multiply within rather than outside the community. Based on these conditions, socioeconomic conditions during construction will be beneficial-and-not-significant.

##### Operational Impacts

The new SCI/D unit will generate the need for approximately 83 additional personnel. Bronx VAMC will seek to employ personnel from within the surrounding New York Metropolitan Area. A number of hospital facilities have closed or consolidated in New York City and it is anticipated that most of the workers will come from this workforce.

The VA developed a state-of-the-art online training and employee development system that encourages current VA employees to: Search and register for courses from an online course catalog; track professional development through a single, integrated database; and develop an online Individual Development Plan. Formal employee training is primarily learning through traditional methods, such as formal courses, e-learning, blended learning or other formalized programs. Most informal learning occurs through on-the-job work experiences.

New workers will contribute directly and indirectly to the local economy and will boost the number of nurses, doctors, social workers, therapists and staff professional individuals involved in community services and activities. Socioeconomic conditions during operations will be beneficial-and-not-significant.

## **4.10 COMMUNITY SERVICES**

### **4.10.1 Existing Conditions**

#### **Fire, EMS and Police Response**

The New York City Fire Department responds to fire calls from Bronx VAMC. Emergency vehicular access to the hospital is via driveways from Webb Avenue. The existing roadway circulation system and geometry provides full accessibility for fire apparatus and emergency vehicles along the exterior of the four pods. Fire department access will be maintained for the existing building. Access to the west courtyard between the new addition and Building 105, as well as areas to the east, will be maintained via fire hose from a truck parked along the service drive to the west. Operations and usage of at the entry gate (currently closed) is coordinated by VAMC Campus Police.

The facility will have a fire protection system that includes full sprinkler protection in accordance with the National Fire Protection Association (NFPA) standards. The existing required smoke detection and manual and automatic fire alarm system will be expanded into the new addition. Voice alarm communications systems will be evaluated and reviewed with the VA. The new facility will be provided with a code compliant Lightning Protection System that meets NFPA standards.

Bronx VAMC has its own Campus Police force that is primarily responsible for maintaining law and order and protecting patients, visitors, and employees. They provide security and emergency response to all emergency situations at the facility and enforce compliance with all laws, including speed limits and proper parking.

#### **Catastrophic Event Preparation**

The facility is what is known as a "Mission Critical" facility meaning it is required to continue operation during a natural or man-made extreme event and abide by the *Physical Security Design Manual for VA Facilities, Final Draft dated July 2007* (see Section 4.6.2.2 for discussion of waiver requests for potable water and wastewater onsite storage requirements). Design and construction standards provide for the physical security of new buildings, additions, and major alterations and include the use of landforms, bollards, walls, fences, screens and vegetation. This includes specific protective measures against blast damage or severe building damage associated with partial collapse. In addition, recommendations and strategies are provided to improve physical security. There are design and construction requirements for the mitigation of other hazards, such as earthquakes and hurricanes. It is mandatory that construction or equipment be in an area that is not subject to flooding (see Section 4.8.2.2).

Emergency drilling and training remain a vital function at Bronx VAMC. In order to reduce street congestion and parking demand, and to allow for more efficient snow removal during severe weather events, employees are encouraged to use public transportation.

#### **4.10.2 Environmental Impacts**

##### **4.10.2.1 No Action Alternative**

No changes to community services will occur under this alternative therefore, none-to-negligible impacts are anticipated.

##### **4.10.2.2 Alternative 2 - New Construction (Preferred Option)**

###### Construction Impacts

No substantial changes to community services are anticipated under this alternative therefore, none-to-negligible impacts are anticipated.

###### Operational Impacts

Bronx VAMC has an on-site security force that addresses many routine issues related to traffic, minor disturbances, and perimeter and building security. The VA security staff will continue to provide on-site perimeter security which will minimize impacts on the workload of the NYC Police Department. The existing building and new structures have both sprinklers and alarm systems that provide early warning and immediate fire suppression as necessary. The staff at the site is well-trained and appropriate in-service emergency drills are completed on an annual basis. Impacts to local emergency service providers are anticipated to be none-to-negligible.

#### **4.11 SOLID WASTE AND HAZARDOUS MATERIALS**

##### **4.11.1 Existing Conditions**

Bronx VAMC has a management system to accommodate five different waste streams: general waste; confidential waste; regulated medical waste treatment; hazardous waste; and recyclable waste. The facility is a Small Quantity Generator of Hazardous Waste generating less than 2,200 pounds of less than acute hazardous waste each calendar month and less than 1kg of acute hazardous waste each calendar month.

General waste is comprised of mostly food, plastics, glass, paper products, and cardboard. This waste stream does not require any special processing and is picked up by local contractors, tipped at in-City Transfer Stations, and transferred by truck or rail to disposal facilities throughout the region. There is an active program to recycle cardboard and office paper. General waste comprises approximately 69% of the total waste stream of the hospital.

The Health Insurance Portability and Accountability Act (HIPAA) Waste Program handles the confidential waste that is generated on the campus. Bronx VAMC maintains lockable containers throughout the facility and will continue the practice of shredding these documents on site and placing the shredded material into the recyclable waste stream. This waste stream is included in the above general waste stream quantities.

Regulated medical waste for the facility comprises 12% of the waste stream and is currently disposed of by New England Industrial Engineering for disposal. Biomedical and pathological waste is decontaminated by sterilization and/or incineration at regionally approved facilities. Chemicals may be incinerated or landfilled in secure, specifically designed landfills.

Hazardous waste includes any other waste that must be collected and manifested separately including pharmaceutical waste and chemo toxic waste. Bronx VAMC operates a Hazardous Waste Program which has space for 180 days accumulation of hazardous waste, including chemotherapy waste.

Recycling of several materials such as corrugated cardboard is actively practiced at Bronx VAMC. Recyclable waste is collected in bags, compacted on-site, and stored until picked up by a vendor. The facility is regularly improving their recycling practices of solid waste-type materials including plastics, glass, and metals, along with the current cardboard program. Among the future waste management options that may be implemented will be elimination of patient use non-recyclable utensils.

#### **4.11.2 Environmental Impacts**

##### **4.11.2.1 No Action Alternative**

No changes to solid waste and hazardous materials are anticipated under this alternative therefore, none-to-negligible impacts are anticipated.

##### **4.11.2.2 Alternative 2 - New Construction (Preferred Option)**

###### Construction Impacts

In order to ensure that environmentally sound waste management practices occur on the site during construction, contractors will be required to submit a waste management plan within 15 days of contract award. This plan must meet VA Directive 0057 (VA Environmental Management System and Governing Environmental Policy), Executive Order 13693 (Planning for Federal Sustainability in the Next Decade). This Project's specific plan must be coordinated with waste management objectives for Bronx VAMC as a whole. Contractors must also make every effort to reduce overall construction and demolition waste by recycling materials whenever possible. Soil testing has been completed in areas where prior buildings were demolished on-site and the samples of the soil were non-hazardous. The sample did contain polyaromatic hydrocarbons, polychlorinated biphenol metals and pesticides but at levels determined to be non-hazardous. Normal construction practices to minimize dust will be followed in order to reduce movement of fine particles and the above contaminants. Based on the management practices noted above, impacts are anticipated to be minimal-to-moderate.

###### Operational Impacts

The SCI/D will utilize the existing Waste Management Center (WMC) and the existing loading dock to centralize bulk holding, cart cleaning and dispatch of soiled linen, recyclables, solid waste, hazardous wastes and regulated medical waste. The SCI/D Building expansion will generate an estimated 1,500 lbs. of additional waste per day at the site. Table 4-7 below reports the waste amounts by type for the entire hospital for 2010 and projected amounts for the proposed SCI/D Center. The waste stream represents an increase of approximately 19 %

in the hospital's total overall daily volume. This amount will have an insignificant impact on solid waste and hazardous materials.

**Table 4-7. Bronx VAMC Campus Waste Volumes**

Existing Hospital Waste Stream	2010 Estimated Hospital Annual Waste Volume	2010 Estimated Hospital Daily Waste Volume	Estimated Daily Waste Volume: SCI/D
General Waste	1,941,840 lbs.	5,320 lbs. - 69%	992 lbs.
Regulated Medical Waste	176,672 lbs.	484 lbs. - 6%	209 lbs.
Recyclables	707,829 lbs.	1,939 lbs. - 25%	279 lbs.
Hazardous Waste	5,542 lbs.	15 lbs. - <1%	2.6 lbs.
<b>Total</b>	<b>2,831,883 lbs.</b>	<b>7,759 lbs.</b>	<b>1,483 lbs.</b>

*\*The May 11, 2011 S-2 Submission reports general wastes for SCI/D includes confidential waste (86lbs.).*

Bronx VAMC is implementing new recycling programs to reduce the volume of solid waste that is sent out as mixed municipal solid waste. While current efforts are focused on cardboard recycling, future management will focus on beverage containers and some medical disposable items. Due to improved recycling and waste minimization, impacts to the site and local waste stream are anticipated to be none-to-negligible.

## 4.12 TRAFFIC, TRANSPORTATION AND PARKING

### 4.12.1 Existing Conditions

Micro scale traffic air quality analyses are used by regulatory agencies to determine the air quality impact of proposed projects for comparison to the state and federal ambient air quality standards. For a traffic air quality study, information is needed regarding the street locations and geometry, traffic volumes, intersection traffic signal parameters, local meteorological conditions, and the location of receptors (areas where impacts will be calculated). To simplify the process, the NYSDOT has developed screening procedures to assist applicants in determining if a refined air quality modeling analysis is necessary for CO, the primary pollutant of concern from vehicular related emissions. According to the NYSDOT's EPM (NYSDOT, 2001), a refined air quality modeling analysis is only required if the project characteristics do not meet certain criteria. These criteria provide a three-step screening procedure to determine if a refined air quality modeling analysis is required. These three steps are:

#### Level of Service (LOS) Screening

Intersections impacted by the project are generally excluded from air quality modeling when they have a LOS of A, B, or C. The LOS levels are as defined by the Highway Capacity Manual. Other factors such as the proximity to sensitive receptors (e.g., schools, hospitals, etc.) are also taken into consideration with intersections with a LOS of A, B, or C. If no LOS information is available, the intersection is deemed to have a LOS of D or worse.

#### Capture Criteria Screening

- Intersections with a LOS of D, E, or F are then screened using the following five criteria:
- Is there a 10 percent or more increase in traffic volume on affected roadways?
- Is there a 10 percent or more reduction in the source-receptor distance?
- Is there a 10 percent or more increase in vehicle emissions due to changes in posted speeds, operating conditions (i.e., number of hot/cold starts), vehicle types, etc.?

- Is there any increase in the number of queued lanes (i.e., stoplight intersections)?
- Is there a 20 percent reduction in speed where the average speed is already at 30 miles per hour or less?

If none of these criteria are met by the intersections with a LOS of D, E, or F, then no air quality modeling is required. However, if one or more of these criteria is met, then a volume threshold screening is necessary.

### **Volume Threshold Screening**

The volume threshold screening analysis uses emission factors determined by project area-specific vehicle speed, thermal states, and emission control strategies to determine the volume threshold level. A wind speed of 1 meter per second and an atmospheric stability of E (slightly stable) are conservatively assumed in the development of the emission factors. Tables 3a through 3c in the NYSDOT EPM (NYSDOT, 200 1) provide the volume thresholds based on the emission factors determined for each type of intersection. The volume thresholds establish traffic volumes below which a potential violation of the CO NAAQS is extremely unlikely. Therefore, as long as the project has peak hour traffic volumes that are less than the volume thresholds, a refined air quality modeling analysis is not necessary.

If an intersection fails these three criteria, then a refined air quality modeling analysis is required. Each of the intersections potentially affected by the proposed project was analyzed for the 2015 Build Year using this three-step screening procedure. The following section details the micro-scale screening analysis for CO emissions conducted for the project.

### **Traffic Conditions**

Traffic conditions in the vicinity of the local roads around Bronx VAMC generally follow the classic traffic patterns of most urban environments. High traffic exists during commuter times and low to moderate traffic exists at most other times. Bronx VAMC presently generates a significant amount of traffic to the site. Operating 24 hours a day on a year-round basis requires multiple shifts and employees arrive at the site throughout the day. The major shift is during normal business hours of 8:00AM-4:30PM. There are shifts for food service (6:00AM-8:00PM), housekeeping (7:00AM-3:30PM and 3:00PM-11:00PM), and facility management (8:00AM-4:30PM and 7:00PM-3:30AM). The arrival and departure of employees is therefore, spread across the entire morning and afternoon peak hours.

The project site is located within an urban area that is fully developed with respect to roadways, sidewalks and mass transit infrastructure. Access to the Bronx VAMC campus is provided by a main entrance from Webb Avenue and a restricted secondary access entrance from Sedgwick Avenue. Under proposed conditions, ingress/egress will continue from these roadways. Circulation along Webb Avenue is two-way northeast of the main entrance and one-way southwest of this entrance. Circulation along Sedgwick Avenue is one-way to the southwest. Data was collected on the mode and travel distance for employees, patients, and visitors through a point of access survey. Additional information from the survey indicated that the majority of employees, patients, and visitors travel from a radius of 10 miles from the facility.

Approximately 2,135 employees serve the majority of the veterans at the VA Bronx Medical Center. Based on a survey conducted by Bronx VAMC, doctors arrive by private car, there is an unknown amount of private carpools or workers that arrive by walking.

There are 611 designated employee parking spaces. At times, these spaces are all full, but during one study, the observed peak occupancy was 460 spaces.

Approximately 730 employees use mass transit. This leaves 1,243 employees using private vehicles. The largest shift involves 66% of the 1,409 employees (162 doctors plus 1,243 commuting employees). This creates a significant parking space deficit during core business hours.

Bronx VAMC is near I-87, a north-south route and I-95, an east-west route. These highways, as well as Routes 1 and 9, provide excellent access to the site which facilitates the use of private vehicles.

### **Public Transportation**

The entire region is served by a network of subways and bus routes. The subway station nearest the project site is at West Kingsbridge Road and Jerome Avenue, approximately 0.3 mile to the southeast. The MTA Red (1), Green and Orange lines, service the area with the 1, 4, and B Trains which are all within 5-6 blocks from the campus. Bus service runs along Broadway approximately 0.3 mile to the northwest. The Metropolitan Transportation Authority (MTA) city bus #9 stops at the Kingsbridge Road just outside the medical center. The Liberty Lines #3 Sedgwick and #4 Grand Concourse bus stops are at Kingsbridge Road. The BX32 bus makes its last stop inside the campus.

### **Public Parking**

Bronx VAMC provides free on-campus public parking for patients and visitors in three surface parking lots closest to the main entrance to the hospital off the Main Gate road entrance. Employee parking is controlled by signage and provided in three parking areas at the outer rim of the campus. Supplemental parking is available at a public parking garage located at 2545 Sedgwick Avenue. On-street parking on Sedgwick Avenue and Webb Avenue are also available. Campus parking lots provide over 1,000 free parking spaces to employees, patients and visitors. Table 4-8, "Bronx VAMC Parking Inventory by User Group," indicates the inventory of parking spaces per user group and the occupancy of those spaces as observed in August 2010.

Locating a parking space at peak times can be challenging since the few spaces that are available tend to be scattered widely throughout the campus. This necessitates the repeated circling of vehicles around the site and associated frustration for patients and visitors.

Bronx VAMC provides 1,109 parking spaces, 62 of which are handicapped-accessible. Construction of the Parking Garage is intended to address the current parking shortage. A shortage of approximately 400 parking spaces has been identified by the VA for the current hospital parking capacity. In addition, the existing parking spaces to be displaced by the proposed SCI/D (493) will require replacement. Approximately 805 parking spaces will be provided in the Parking Garage. The proposed SCI/D provides for 138 dedicated spaces. Thus, an overall gain of approximately 90 parking spaces will be achieved at the hospital. Ramps and curb cuts that are barrier-free are located where appropriate to provide full accessibility to all buildings on the site.

**Table 4-8. Bronx VAMC Parking Inventory by User Group**

<b>Parking Type</b>	<b>Inventory of Parking Spaces</b>	<b>Peak Period Occupancy</b>
ADA	62	62
Patient Parking	151	110
Employee Parking	611	460
Patient/Visitor Parking	218	212
Contractor parking	50	43
Reserved Parking	7	7
VISN Parking	10	8
<b>Total Parking Spaces</b>	<b>1,109</b>	<b>902</b>

There are several active programs that are designed to address parking limitations at Bronx VAMC. Approximately one-third of employees take advantage of the reimbursement program for mass transit fees. Another traffic reduction program at the facility is the provision of shuttle van services that connect Bronx VAMC to the other VA medical facilities in the VA Network 3 including facilities in ten communities. They also provide transportation to community-based outpatient clinics in Yonkers, White Plains, and Queens. The van fleet consists of 8 vans. All vans use E-85 ethanol fuel. Approximately 300 patients a month arrive at the site by shuttle van. This reduces individual vehicle trips and public transit use by at least that number of trips.

Contact has been made with local authorities (Departments of Transportation and Environmental Protection) to identify issues that may affect off-site roads. Initial inquiries have indicated that no new improvements to existing roadways are anticipated.

#### **4.12.2 Environmental Impacts**

##### **4.12.2.1 No Action Alternative**

As no action would occur under this alternative, the existing conditions related to traffic, transportation and parking will continue to occur. This includes continued driver frustration with an underserved parking demand and vehicles circling the campus multiple times looking for a parking space. No changes to traffic, transportation and parking are anticipated under this alternative therefore, none to negligible impacts are anticipated.

##### **4.12.2.2 Alternative 2 - New Construction (Preferred Option)**

###### Construction Impacts

###### **Traffic Conditions**

Construction of the Parking Garage will take place along the southern end of the campus, therefore the existing entrance road will not be changed during the construction of the Parking Garage. Signage will direct users to appropriate parking locations both on and off the campus. Barriers will be installed where necessary to control access to construction areas. In order to minimize any disruption, regular updates on construction progress would be distributed to facility employees and users. Information would include changes in traffic patterns or rearrangement of parking fields. The contractor would need to schedule deliveries of large structural components to the site during off-peak hours for commuter traffic.

### **Public Transportation**

The VA will encourage employees to use public transportation, especially during the construction phase.

### **Public Parking**

Construction of the Parking Garage will cause a temporary shortage of onsite parking spaces due to the loss of existing spaces in the building footprint and the need for additional space for construction staging. This could be relieved by an off-site temporary parking site for employees and visitors. Shuttle buses or vans may be required to facilitate access to the temporary parking area(s). Secondary restricted access from Sedgwick Avenue will remain unchanged during the project.

In order to minimize disruptions of operation at the medical center, regular updates on construction progress will be distributed to facility employees and users. Information will include changes in traffic patterns or rearrangement of parking fields.

The Air Quality section of this EA (4.3) evaluated a construction related air quality analysis. Emissions of inhalable particulate matter will be mitigated through the use of wetting of exposed soil, covered trucks for soils and other dry materials, and controlled storage of spoils on the construction site. There are no current plans for construction diversions and/or detours of roadways however, if necessary, the diversions and detours will not occur for more than two years at a given location and, as such, no further air quality analysis for construction related impacts were required as per the NYSDOT EPM (NYSDOT, 2001).

Impacts to traffic, transportation and parking are anticipated to be minimal-to-moderate.

### **Operational Impacts**

Approximately 2,135 employees serve veterans at the VA Bronx Medical Center. Based on a survey conducted by Bronx VAMC, nearly all 162 doctors arrive by private cars, there is an unknown amount of private carpools or workers that arrive by walking. There are 611 designated employee parking spaces. At times, these spaces are all full, but during one study conducted by the DVA Office of Construction & Facilities Management (November 2010) the observed peak occupancy of these designated employee parking spaces was 460 spaces.

As indicated in Table 4-9, approximately 805 parking spaces will be provided in the Parking Garage. The proposed SCI/D provides for 138 dedicated spaces. Thus, an overall gain of approximately 90 parking spaces will be achieved at the hospital. Ramps and curb cuts that are barrier-free are located where appropriate to provide full accessibility to all buildings on the site.

**Table 4-9. – Bronx VAMC Parking Garage Analysis**

Parking Area Changes	Number of Parking Spaces	
Number of Existing Parking Spaces (Paved and Striped Only)	1,109	
Parking Spaces Lost Due to Construction	499	
Number of existing employee Spaces	631	
Number of parking spaces Lost due to construction that will be provided in the new employees only parking garage		499
Number of existing employee spaces that will be provided in the new parking garage		306
Total parking spaces in the new employees only parking garage		805

**Traffic Conditions**

Local traffic conditions will improve as a result of the new Parking Garage. Since there will be adequate on-site parking, drivers will no longer have to continually circle the local streets and on-site parking lots looking for a free space. Once the new SCI/D is fully operational, an additional 82 persons will be added to the workforce. During core business hours, the peak turning movement will change from 888 vehicles to 928 vehicles over one to three hours. This small increase will not change the level of service at the entry on Webb Avenue. Also, the provision of ample parking will reduce delays that could occur due to vehicles having to search for a parking space. This will take the pressure off any nearby on-street parking off the campus and reduce the amount of vehicles on Sedgwick Avenue and Webb Avenue.

The shuttle van transportation system will continue to operate, which will be convenient for patients coming to the site from other regional facilities or program sites. This would reduce the number of private vehicles coming to the site. The VA is constructing a Parking Garage, operating a shuttle van system, and encouraging the use of mass transit by reimbursing employees for the cost of public transit. These mitigation measures are already in place therefore, additional mitigation is not required at this time. No new improvements to the existing roadway systems on campus are anticipated.

**Public Transportation**

Once completed, the Parking Garage employees will reduce anxiety in obtaining a parking space, regular visitors. Reimbursement for public transport and van pools will continue as it is a powerful incentive to motivate employees to minimize use of POVs.

**Public Parking**

The proposed Parking Garage will relieve the existing parking that is under capacity at the site and generate capacity to meet future demands. Also, an additional 138 parking spaces will be developed at the SCI/D Center. Future on-site parking will provide over 1,500 parking spaces. This will adequately meet the needs of the facility.

The air quality analysis in Air Quality section of this EA focused on assessing changes in the air quality surrounding the parking garage on the pedestrian. Emissions of carbon monoxide (CO) from vehicles were analyzed to ensure that the health and safety of the local community would not be threatened. The Project site is located in a CO attainment area; thus, the potential ambient CO concentrations from the traffic generated by the proposed Project, when summed with the existing background CO concentrations, are required to be less than the U.S. Environmental Protection Agency (U.S. EPA) National Ambient Air Quality Standards (NAAQS) for CO. The air quality analysis confirmed that the CO level at the pedestrian would be within the permissible limit of 9 ppm.

A traffic study for the Kingsbridge Road was found on the internet (see at [http://www.nyc.gov/html/oec/downloads/pdf/dme\\_projects/08DME004X/FEIS/08DME004X\\_FEIS\\_13\\_Traffic\\_and\\_Parking.pdf](http://www.nyc.gov/html/oec/downloads/pdf/dme_projects/08DME004X/FEIS/08DME004X_FEIS_13_Traffic_and_Parking.pdf)). As per this study Level of Service (LOS) is D at the Kingsbridge Road outside the James J. Peters Veterans Affairs Medical Center. There will be an addition of 83 new employees and many of these employees, like other VAMC employees, will utilize public transport system and car pools, to the maximum extent to take advantage of the current incentives provided to minimize the use of the privately owned vehicles (POVs). It is assumed that the existing employees will continue to utilize the ongoing incentives to minimize use of the POVs. Capture criteria screening was applied to the traffic generated from the new employees only parking garage and it was determined that an additional traffic due to hiring of 83 new employees does not require additional traffic analysis of intersections in the vicinity of the James J. Peters Veterans Affairs Medical Center.

As a result, a refined air quality modeling analysis is not required for any intersection per NYSDOT Guidance, and it can be concluded that it is highly unlikely that the Project will violate the CO NAAQS.

Beneficial-and-not-significant impacts would result for this resource during operations of the proposed action.

## **4.13 UTILITIES**

### **4.13.1 Existing Conditions**

#### **Water Supply**

Municipal potable public water supply source, by the NYC Department of Public Works Water System, is provided to Bronx VAMC. An existing 10-inch looped water distribution system main operates on-site to supply potable water for all water use on the campus. This system includes water for all buildings, equipment, fire protection and irrigation. The 10-inch water distribution system loop is fed from a 12-inch main on Sedgwick Avenue, an 8-inch main on West Kingsbridge Road, and a 12-inch main on Webb Avenue, ensuring a continuous potable water supply to the site, according to the utility system regulations.

The campus utilizes approximately 38,600,000 gallons of water (38.6 MG) annually. Potable water supports the normal consumption of drinking, sanitary waste disposal, and culinary uses and accounts for approximately 3.4 MG annually (Facility Engineering Manager, December 2011). The remaining water (35.2 MG annually) is used to operate the heating and cooling plant.

### **Sanitary Sewer**

There are no existing site sanitary sewers within the footprint of the new SCI/D Center. Existing sanitary sewers exiting the main hospital and research building discharge directly to the sewer pipes on Sedgwick Avenue at multiple locations. This is a combined stormwater and wastewater system that is typically found in NYC and other old urbanized areas. Wastewater is conveyed to the Wards Island Water Pollution Control Plant where it is treated and eventually released into the East River. The Ward Island Wastewater Treatment Plant is the second largest treatment plant in New York City and has a capacity of 275 MGD. The wastewater treatment plant operates under a current NYDEC SPDES permit.

### **Stormwater**

Stormwater from the site discharges into the Sedgwick Avenue sewer main. New York City operates a combined sewer system which collects both stormwater and sanitary wastewater in the same system. Bronx VAMC is on a combined sewer.

The proposed SCI/D Center includes plans for a green roof. The proposed green roof design is a shallow, intensive system with a six-inch depth soil medium. There will be a perimeter maintenance path with additional diagonal paths to allow for access to plants, as needed, for care or replacement. The planted area will be irrigated.

The design team will work to maximize the square footage of green roof on the site and minimize the overall impervious surface. Retained stormwater will be used for irrigation requirements. A metered backup connection to the domestic cold water system will be provided to supplement the system. As the design progresses, there may also be opportunities to establish areas of bio-retention and filtration for onsite stormwater.

The facility is connected to the local water supply and wastewater disposal systems. These are very large networks that have adequate capacity even in emergency situations to meet any demands of Bronx VAMC. See Section 4.13, "Utilities."

### **Electric Supply**

The electric supply to Bronx VAMC campus is served by Consolidated Edison (Con Edison). The construction of a new CHP facility will have grid connections to support the regional power supply when all on-site needs are met.

## **4.13.2 Environmental Impacts**

### **4.13.2.1 No Action Alternative**

As no action would occur under this alternative, impacts to utilities would be none-to-negligible.

### **4.13.2.2 Alternative 2 - New Construction (Preferred Option)**

Existing utility systems within the construction footprint will need to be abandoned, removed, and/or relocated. New storm drainage systems will be provided as necessary. Existing systems will be relocated such that services to the existing hospital will not be interrupted. Temporary services for one or more utilities would be provided if deemed necessary based upon final sequencing of construction activities.

## Construction Impacts

### **Water Supply**

A portion of the 10-inch water campus loop is within the new footprint of the SCI/D Center and will be relocated. Maintenance of service through work sequencing, and temporary services as well as proper testing and disinfection of the new water line, and approved disposal of chlorinated water would result in negligible or minimal environmental impacts. The existing water main at the Parking Garage site will remain, therefore there are no environmental impacts related to this utility.

### **Sanitary Sewer**

There are no existing site sanitary sewers within the footprint of the new SCI/D Center. New sewer laterals would be extended from the new building and connected to existing city mains located in adjacent streets. Compliance with utility purveyor construction standards for installation and testing of new services, as well as compliance with all City standards for work within the road ROW, would result in minor or minimal environmental impacts, including minor traffic disruption, and noise during construction. The existing sanitary main and the two existing manholes within the system located north of the Parking Garage will continue to be utilized. Maintaining the use of these utility system elements at this location has no environmental impacts related to this utility.

### **Stormwater**

Before any construction of the stormwater facilities would be undertaken for this project with a construction site in excess of one acre, a Stormwater Pollution Prevention Plan (SWPPP) would have to be prepared. Any construction would include grading and re-vegetation as part of the permanent erosion control requirements. The project would utilize BMPs (best management practices) to minimize the potential for surface water impacts from sediment laden runoff or hazardous materials spills. BMPs would include use of silt fence to manage wet soils, dust control, pumping of stormwater into mud bags to dewater the site to remove sediments prior to discharge to the storm sewers, and other standard methods to manage construction site runoff. A Spill Prevention, Control and Countermeasure (SPCC) Plan would be implemented during construction by the selected contractor as well as a comprehensive SWPPP. These documents would be incorporated into the site plans and as a part of the construction contracts.

There are numerous existing storm sewers within the footprint of the new SCI/D building. The existing stormwater main is located just north of the Parking Garage and will continue to be utilized. The stormwater drain will need to be relocated and, if necessary, a new manhole for the Parking Garage stormwater system connection to the storm sewer connection will be provided. The work described herein would be performed according to the same permits and plans identified for the work at the SCI/D. As a result, the stormwater utility system work at this location would result in a negligible environmental impact the same as described for the SCI/D building stormwater work.

The implementation of the indicated requirements would result in negligible impacts on the existing stormwater/sanitary sewer combined flow infrastructure and treatment facilities due to the control and treatment of stormwater runoff complying with the requirement of the above mentioned permits and plans.

### **Electric Supply**

During construction of the SCI/D Center, it will be necessary to disconnect, remove and relocate all existing underground electrical services and utilities within the footprint or adjacent to the footprint of the proposed SCI/D Center. Con Edison will supply a dedicated electrical service originating at the west side of the intersection of Sedgwick Avenue and West Kingsbridge Road. Con Edison will provide a dedicated electrical service for the Parking Garage from services located on Webb Avenue. Based on the above findings impacts on utilities would be none to negligible.

### Operational Impacts

#### **Water Supply**

The water supply source purveyor to the current Bronx VAMC campus would not be changed by the addition of the SCI/D Center. The total yearly water supply quantity delivered to Bronx VAMC would be increased. Original estimates for yearly water use for this project at the (S-2 Schematic Design) level of evaluation would be 3.6 MG per year based upon flow rates from standard fixtures. The current design estimates for yearly water usage based upon high efficiency low flow fixtures at the sinks, toilets, urinals and showers for the 92-bed SCI/D Center would be 2.5 MG per year. The water use estimates based upon the lower water use fixtures, would result in an additional water supply requirement which is 30% less than with standard fixtures, and use of the improved fixtures does create requirements for less water use.

In addition, the construction of the SCI/D Center would include the construction of two 40,000-gallon water reservoirs to collect rainwater. The collected rainwater would be used as the primary source of irrigation for the new planting being created as part of the project. Municipal water would be a supplemental irrigation source of water. It is anticipated that there will be a reduction in industrial water demand due to the new CHP.

Based upon discussions with the existing municipal potable water system purveyor, and Bronx VAMC staff, the on-site potable water distribution system as well as the source of supply can meet this added demand. Based upon this information, the SCI Center project would have no or negligible impact on the operational impacts for the water system.

#### **Sanitary Sewer**

The environmental operational impacts of the new sanitary sewer system for the SCI/D Center project are negligible. The purveyor for the collection and treatment of the combined storm/sanitary sewer system has been contacted. There would be no carrying or treatment capacity issues related to the estimated additional flows from this project. A complete gravity waste and vent system would be installed to accommodate all new plumbing fixtures and equipment. A duplex sanitary ejection pumping system with each pump sized for 100% of the load would be installed for any area of the facility which cannot be drained by gravity flow. In addition, multiple 6-inch sewer connections would be provided. A holding tank for 20,000 gallons of raw wastewater would be constructed at the site in case wastewater cannot be discharged during an emergency. A waiver of this requirement has been requested.

### **Stormwater**

Stormwater will be collected for the new developed project areas. The stormwater collection and discharge conditions would be regulated as follows:

New York State is a delegated state and implements all provisions of the Clean Water Act (CWA) as required by the Environmental Protection Agency. In New York City the Department of Environmental Protection is involved with implementation of non-point source stormwater runoff from construction and operation as it relates to CWA.

The NYS Stormwater Design Manual (August 2010) requires that 90% of the average annual stormwater runoff volume receive treatment prior to discharge. In NYC, rainfall between 1.2-1.3 inches is equivalent to the 90% event; therefore, only 10% of storms will have rainfall greater than 1.25 inches. Storms of 1.25 inches or less must be treated to reduce discharges of suspended solids by 80% and 40% reduction in phosphorus content.

The VA and federal agencies have to comply with National Pollution Discharge Elimination Systems (NPDES) requirements. Stormwater requirements are located in Section 438 (USEPA 841-B-09-001). See Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects as required under Section 3 of the Energy Independence and Security Act.

The normal operation of the SCI/D Center and the Parking Garage would employ stormwater management protection by use of oil water separators in the Parking Garage and development of a compliant stormwater management system. The impact to hydrology and water resources would be none to negligible.

### **Electric and Energy Consumption**

Presently there is not adequate spare power available to service the new SCI/D Center. This is based upon the facility's peak demand rating of 5.083 Megawatts (MW), the rating of the four 3,000 KVA transformers, and the requirement by Con Edison for a second contingency. Second contingency is defined by Con Edison as the ability to still provide power to the facility upon loss of any two 1.3 KV primary utility feeds serving the complex. To address this, a new connection between the Bronx VAMC and the Con Edison power grid will be constructed. In addition, a new CHP facility will be constructed to provide electricity and heat to the site. With these improvements, the facility will meet all of the normal electrical demands of the Bronx VAMC. On an average annual basis, the CHP facility will supply power to the site 97% of the time.

The building envelope, lighting and mechanical systems are all going to be designed using efficient technologies and are targeting a whole building energy use reduction 30% below an American Society of Heating, Refrigeration, and Air-conditioning (ASHRAE) 90.1-2004 baseline. The new SCI/D building will incorporate the following energy efficiency measures:

#### **Electrical Energy Efficiency Measures**

- Premium efficiency motors
- High efficiency lighting design using low energy fixtures
- Automatic day-lighting controls
- Occupancy sensor controls

#### **Mechanical / HVAC Energy Efficiency Measures**

- CO2 based demand control ventilation where applicable
- Variable Speed Fans and pump motors

- Control strategies that automatically adjust airflow rates, chilled water and hot water set points based on building demand
  - Low velocity ductwork and piping to reduce fan and pump energy
  - Chilled water and hot water systems with high design delta-T's to reduce flow rates and pipe sizes
  - Occupancy sensor control of HVAC and lighting
  - Unoccupied night setback/setup
  - Variable air volume systems
- Architectural Energy Efficiency Measures
- Increased exterior wall insulation
  - Increased roof insulation
  - High performance windows designed to minimize solar heat gain and thermal discomfort while maximizing daylight.
  - Cool roof / Green roof
  - External façade shading system

Tables 4-10 and 4-11 illustrate the estimated target ranges for the proposed energy performance on this project.

**Table 4-10. ASHRAE 90.1-2004 30% Reduction-Building Performance Target Range**

	CBECS 2003	ASHRAE 90.1-2004 baseline (estimate)	30% Better than ASHRAE 90.1-2004
	Health Care / Inpatient	SCI	SCI
Electric Consumption (kWh/sq. ft.)	22.9 / 27.5	21.3 -25.5	14.9 – 17.9
Fossil Fuel (kBtu/sq. ft.)	95.3 / 113.2	73.4 -80.2	51.4 – 56.1
Annual EUI (kBtu/sq. ft.)	187.7 / 249.2	145.9 – 167.2	102.1 – 117.2

**Table 4-11. EAct 2005 60% Fossil Fuel Reduction-Building Performance Target Range**

	CBECS 2003	60% Better than 2003 baseline
	Health Care / Inpatient	Health Care / Inpatient
Fossil Fuel Consumption (kBtu/sq. ft.)	95.3 / 113.2	38.12 / 45.28

\*EAct: Energy Efficient Commercial Buildings Deduction

Based on the above findings impacts on utilities would be beneficial and not significant during the operational phase.

#### 4.14 ALTERNATIVE ENERGY SOURCES

##### 4.14.1 Existing Conditions

Presently there are no alternative energy sources in use at Bronx VAMC.

## **4.14.2 Environmental Impacts**

### **4.14.2.1 No Action Alternative**

As no action would occur under this alternative, no change in energy usage and alternative energy resources would occur, therefore there will be none to negligible impacts.

### **4.14.2.2 Alternative 2 - New Construction (Preferred Option)**

#### Construction Impacts

During construction, there will be an increase in energy use associated with the construction activity. During the excavation phase, more diesel fuel and gasoline will be consumed to remove excess earth material from the site. Construction impacts will be minimal-to-moderate.

#### Operational Impacts

The conversion of the existing heating plant to combined heat power (CHP) or cogeneration represents a significant sustainable design component. Construction of the CHP will result in greater volumes of natural gas consumption at the site however, this higher volume will be offset by use of heat energy and production of electricity for use at the site. The operation of the CHP will result in a 35 % reduction in the discharge of nitrogen oxide pollutants. Total NO<sub>2</sub> emissions will be reduced from 13.5 tons to 8.5 tons. As detailed in 2.1.3, the construction of a new CHP would increase energy efficiency, decrease energy cost, add available electricity to the site, and decrease overall air emissions at Bronx VAMC.

A small photovoltaic (PV) array will be erected on the SCI/D roof that will produce 158,730 KWH with an installed cost of 7.25/watt. With each PV module producing 240 watts each, 680 panels will be required. Annual savings from these improvements are estimated at \$35,707 annually.

Along with the PV array, a solar water heating system would be installed on the south facing wall of the SCI/D mechanical penthouse. The solar collector would cover 1,500 square feet of area and produce 270.2 MMBtu of heat annually producing an estimated 30% of the anticipated annual domestic hot water load for the facility.

The site will continue to be regulated as a minor source under state facility permit. Impacts from energy usage and alternative energy sources are therefore, overall beneficial-and-not-significant.

## **4.15 NOISE**

### **4.15.1 Existing Conditions**

Noise conditions in and around Bronx VAMC includes normal sounds associated with urban life including vehicular traffic, trains, airplanes, and people activities. Since the site is close to both the Major Deegan Expressway and the Harlem River, there is highway truck noise, and noise associated with industrial activity, shipping and railroads at the site. Sound data was last collected at the site in 2011 and reflected an average level of 57dB (DD2-May 21, 2012 Building Engineering System Acoustics Chapter II SCI/D).

## **4.15.2 Environmental Impacts**

### **4.15.2.1 No Action Alternative**

As no action would occur under this alternative, no change in the noise environment would occur, therefore, there would be no impacts to noise.

### **4.15.2.2 Alternative 2 - New Construction (Preferred Option)**

#### Construction Impacts

During the construction phase, additional on-site noise will be generated on a temporary basis. Construction work sites are expected to generate many differing types of noise such as background noise, idling noise, impact noise, rotating noise, intermittent noise, howling, and noise from construction equipment such as mounted impact hammers (ram hoes). Construction equipment such as heavy earth moving equipment moves from location to location and is likely to vary considerably in its intensity throughout a work day. Noise can be controlled through time restrictions, by modifying the equipment or the work area, substituting existing equipment with quieter equipment, retro-fitting existing equipment with damping materials, mufflers, or enclosures, erecting barriers, and performing regular maintenance. The project construction manager will be required to comply with NYC rules for construction noise mitigation.

In order to estimate the impacts of construction noise on the campus and neighboring apartment complexes, a simulation utilizing a standard acoustic model was developed. The simulated situation assumed a receptor to be at the existing entrance of the main building and two groups of machinery in operation. Each excavation site to remove rock is assumed to be operating a ram hoe (mounted impact hammer) and a grapple mounted on a backhoe. These represent two of the loudest construction machines and therefore would represent the worst case scenario.

In the model, the excavation operation was situated 100 feet from the receptor, and the other operation was 500 feet from the receptor. On average, the ram hoes were in use 100% of the time and the grapples were in use 50% of the time. According to the CEQR Technical Manual, Chapter 22, "Construction Impacts," the noise emission reference level at 50 feet for a ram hoe is 90 dB and for a grapple, 85dB. The differences between these sound levels are imperceptible to the average person.

The findings in the model indicated that the existing sound levels (assumed to be in the range of 45-55 dB) would increase by 6 dB or less; therefore, any impacts during construction would be acceptable. If a larger number of ram hoes are operated at the same time with prolonged noise, then additional sound mitigation may be required. These on campus impacts would be significant if not mitigated.

The entire campus and the apartment buildings across the street are sensitive noise receptors that may be impacted by the construction noise generated by the project. The contractor and construction managers will be required to evaluate construction noise prior to the start of work and prepare a Construction Noise Mitigation Plan. Compliance with construction hours of 7AM to 6PM required by the New York City Department of Environmental Protection (NYCDEP) will

decrease impacts to both the campus and neighboring apartment complexes. Minimal-to-moderate impacts are anticipated during construction due to noise.

#### Operational Impacts

On campus operational noise will be generated by employee, patient and service vehicles entering and exiting the site plus normal street noise from local traffic and the occasional ambulance siren. This noise would blend into the general noise level of the urban area in which the project is located. Impacts related to noise would be none-to-negligible.

## **4.16 ENVIRONMENTAL JUSTICE**

### **4.16.1 Existing Conditions**

This section includes a discussion of minority and/or low income populations that are in the vicinity of the site. The threshold for significance for environmental justice is Executive Order 12898. Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low Income Populations*, requires agencies to determine whether their proposed actions will result in disproportionate adverse impacts on minority or low-income populations.

Bronx VAMC currently provides needed services to an underserved population of local and regional veterans. The facility hosts a number of beneficial programs that cover many services including the Veterans Employment Coordination Service that oversees the recruitment of new veterans into the VA workforce, especially recently disabled combat veterans; the Homeless Veterans Community Support Services Program which provides outreach, crisis intervention, case management services, and housing and vocational services; the Incarcerated Veterans Outreach Initiative which provides transition planning and linkage to treatment programs to formerly incarcerated veterans with histories of serious mental illness and/or substance abuse and who are homeless; Women Veterans Resources offering medical, mental, transitional, and sexual trauma services; and Minders Keepers Program that provides a structure and stimulating program for veterans who are experiencing memory loss or dementia.

Additionally, the Bronx Polytrauma Network Site is one of twenty-two facilities in the country designed to provide long-term rehabilitative care to veterans and service members who experienced multiple severe injuries). Compensated Work Therapy opportunities are available for patients receiving care from the Polytrauma department. This program is designed to help patients successfully re-enter their communities and live secure and productive lives.

According to NYSDEC, Bronx VAMC is located in a Potential Environmental Justice Area. These areas represent census block groups of 250-500 households each of which includes populations that have, according to the 2000 Census, at least 51% respondents reporting themselves to be members of a minority group and at least 23.59% that had household incomes below the federal poverty level. Potential Environmental Justice Areas indicate populations that may not be provided equal access to information about proposed projects that may have an impact in those communities. DEC Environmental Justice Policy CP 29 requires enhancing public participation requirements for proposed projects; establishing requirements for projects with the potential for at least one significant adverse environmental impact; and providing alternative dispute resolution opportunities to allow communities and project sponsors to resolve issues of concern to the community.

## **4.16.2 Environmental Impacts**

### **4.16.2.1 No Action Alternative**

Impacts under Environmental Justice would be none-to-negligible.

### **4.16.2.2 Alternative 2 - New Construction (Preferred Option)**

#### Construction Impacts

In order to prevent low-income and minority communities from being excluded from construction jobs, all contractors must follow the Equal Opportunity Employment and Affirmative Action considerations (29 CFR 1608.1). Impacts to the temporary local construction job market will be beneficial. Construction on the hospital addition is contained inside the existing parking lot closest to the hospital. This will minimize noise, dust and other potential impacts to the neighborhood. The location for the Parking Garage was selected because of its location at the south end of the site where exposure to the residential neighborhood is mitigated by distance and landscaping. There are no significant issues related to environmental justice therefore, impacts would be none-to-negligible.

#### Operational Impacts

Once operational, the project will provide beneficial impacts to all veterans in the vicinity of Bronx VAMC by resolving critical gaps for specialty and ancillary care and by providing additional space to meet the rising need for Veteran healthcare in the region. The NEPA process provides a fair and open process for public review and comment on the Proposed Action. The Draft EA will be available in multiple formats in convenient locations and online. Every effort will be made to encourage the review and comment on the Draft EA by using online and social media. Operation of the SCI/D Center and Parking Structure will have an overall beneficial-and-not-significant impact on minority and low-income populations in the vicinity.

## **4.17 CUMULATIVE IMPACTS**

### **4.17.1 Existing Conditions**

Bronx VAMC has a number of ongoing waste reduction programs to improve recycling in the cafeteria and in the facility itself. Improved methods to collect cardboard, beverage containers and paper products are the current focus of the effort. This is creating positive benefits by reducing overall waste disposal.

### **4.17.2 Environmental Impacts**

#### **4.17.2.1 No Action Alternative**

No changes to cumulative impacts are anticipated under this alternative therefore, no impacts would be expected.

#### **4.17.2.2 Alternative 2 - New Construction (Preferred Option)**

### Construction Impacts

No changes to cumulative impacts are anticipated under this alternative therefore, impacts would be minimal-to-moderate.

### Operational Impacts

The construction of the new 92 bed SCI/D Center will replace the existing 62 bed unit that is currently operated at Bronx VAMC. The facility will be repurposed to support the mission to serve the veteran population.

At this time, there are no specific plans or any schedule for the reuse of the existing SCI/D Center 62 beds at the hospital. Given that there are no plans, there is no requirement under NEPA to prepare plans for future actions (Part 1500.2(c)). Any future changes may become subject to additional NEPA review or be a part of the normal ebb and flow of programs at the facility. Eventually, some space will be used to expand existing services or provide new services. The closure of the existing SCI facility will allow that space to be repurposed to support the mission of the facility by a variety of medical services, therapies, and education. The existing SCI may be converted to a suite of conference rooms and lecture halls to aid in training, education, outreach to small groups of veterans and allow better interaction between medical staff and patients. The former conference room and lecture hall will be absorbed into various existing medical services. The Bronx VAMC is a comprehensive full service facility, therefore, it is unlikely that an entirely new service will be added to the site.

In either case, reuse of the space will occur over a period of years. Expanding or improving this space for the purposes of providing medical or therapies to the veterans will not necessarily cause an increase in staff or change utility needs at the Bronx VAMC. As described in Section 4.13 and 4.14, due to implementation of Executive Order 13514, water use and sewer discharges are being decreased due to conservation practices (see Section 4.13). This trend will continue and apply to the area occupied by the 62 bed unit which may eventually be converted into additional beds for existing or new services. At the same time, implementation of a new CHP would add electricity to the site and decrease air emissions from Bronx VAMC (see Section 4.3).

In the absence of future plans for the space allocated to the existing 62-bed SCI/D, and the fact that any repurposing of those beds will occur in 2016 or later, it is not appropriate to evaluate action further at this time. The repurposing, reuse, and conversion of the existing SCI is speculative as to the results of that activity. Further, it is appropriate to consider the benefits of improving veterans' services as a VA core practice and a national obligation to veterans. This EA demonstrates that improving veteran's services at this facility leads to both improvement in care, reduction of impacts to utilities, and a decrease in water usage and sewage discharges. At the same time, there will be a small increase in employment opportunities which is a benefit to the region and especially in the Bronx (see Section 4.9 and 4.16). There may also be a small increase in vehicle traffic from reuse of the space now occupied by a 62-bed SCI/D, but its impact (even if all beds are used) will be similar to those described for this project (see Section 4.12). The Research Building is a multiple year process to shut down the bio-waste incinerator which will decrease air pollution loading. In the coming years, as more refueling sites become available, vans used to transport patients will include vehicles fueled by compressed natural gas.

Cumulative impacts also examine the impacts of the Bronx VAMC project in conjunction with other projects in the neighborhood that are proposed or underway. Bronx VAMC exists as an independent campus with its own security force and maintenance staff which limits the interaction of the facility with the greater community. However, Bronx VAMC keeps abreast of community projects and incorporates public outreach into each of its own campus projects, including the proposed SCI/D Center and Parking Garage.

There are several substantial planning initiatives underway in the Bronx. Land use and transportation opportunities near Metro-North Stations in the Bronx as part of the U.S. Department of Housing and Urban Development's (HUD) Sustainable Communities Regional Planning Grant Program will generally improve mass transit opportunities for the site. Also, a master plan for the South Bronx Greenway, a key component of the Hunts Point Vision Plan, will encompass 1.5 miles of waterfront greenway, 8.5 miles of inland green streets, and nearly 12 acres of new waterfront open space throughout Hunts Point and Port Morris. This project will have no direct impact on the Proposed Action.

There are a number of projects in Bronx Community District 7 that are proposed or underway including:

- Botanical Gardens' Native Plant Garden Pavilion; and
- Redevelopment of the Kingsbridge Armory, located at 29 West Kingsbridge Road. Two ideas for the Kingsbridge Armory are a Chelsea Market-style complex with shopping, food stalls and offices versus a celebrity-backed hockey arena.

These projects will not generate peak hour traffic and therefore would not impact traffic in the vicinity of Bronx VAMC. All of the projects are redevelopment at some level so the impacts on utility systems will potentially be minimal. The impacts of these projects are considered highly beneficial to the community and, therefore, would generate a positive contribution to cumulative impacts related to community and economic development.

There are also projects in greater Bronx County that are proposed or underway including:

- Development of 60 units of affordable housing at 3160 Webster Avenue;
- West Farms Road development site, which is to include 1,325 units of housing and 10 buildings near the Cross Bronx Expressway and the Sheridan Expressway;
- 1,325 units of housing and 46,000 square feet of retail space near Starlight Park;
- A 370,000-square-foot mixed-use office/hotel/retail complex at 42-acre Hutchinson Metro Center Campus in the Pelham Bay section;
- A 517,000-square-foot retail complex that is part of the 1.3 million-square-foot Bay Plaza Shopping Center;
- Marriott at Metro Center Atrium to include 125 rooms and will operate under the Residence Inn flag;
- 780,000-square-foot Mall at Bay Plaza; and
- Greek and Mediterranean specialty-food importer to develop a roughly \$20 million facility on what is currently a city-owned site in the Tremont neighborhood;

These projects are in other districts or in area well removed from Bronx VAMC therefore, cumulative impacts would be beneficial-and-not-significant.

#### **4.18 POTENTIAL FOR GENERATING SUBSTANTIAL CONTROVERSY**

##### **4.18.1 Existing Conditions**

The project is the expansion of an existing hospital facility. This facility has been a part of the local and regional community for over 80 years providing needed medical services and support.

##### **4.18.2 Environmental Impacts**

###### **4.18.2.1 No Action Alternative**

No substantial controversy is anticipated under this alternative therefore, none-to-negligible impacts would be anticipated.

###### **4.18.2.2 Alternative 2 - New Construction (Preferred Option)**

###### Construction Impacts

In order to avoid impacting neighbors of the site, the construction manager will have to be proactive to minimize traffic interruptions, noise, parking conflicts, litter and debris. Delivery of steel or concrete components should be scheduled for non-peak hour traffic. Sound monitoring and mitigation including a sound management plan will be in place prior to the start of construction. Monitoring results of preconstruction and construction should be posted on the Bronx VAMC website. Keeping the site clear of debris and containing all waste will prevent windborne debris from entering the neighborhood. Minimal-to-moderate impacts would be anticipated under the construction phase.

###### Operational Impacts

Controversy about traffic during the operational phase will be minimized by the fact that the majority of drivers will be drawn to the Parking Garage and will not be driving around looking for entrances and parking lots. No substantial controversy is anticipated during operations therefore, no impacts are anticipated. The incremental increase caused by 92 beds in the SCI/D is small. The increased employment associated with the new facility is only 82 additional employees. This will lead to a small increase in traffic that will not be significant. Beneficial-and-not-significant impacts would be anticipated under operations.

## **SECTION 5.0 AGENCY COORDINATION AND PUBLIC INVOLVMENT**

### **Agency Coordination**

Conceptualization and development of the Bronx VAMC took place over several years and involved VA staff, other governmental officials and consultants. The following agencies were contacted and/or consulted during the preparation of this EA:

- New York City Mayor's Office of Environmental Coordination
- NYC Landmarks Preservation Commission
- New York State Office of Parks, Recreation and Historic Preservation
- New York State Department of Environmental Conservation
- New York State Department of State (Coastal Consistency)
- U.S. Fish & Wildlife Service
- US Environmental Protection Agency (Consultation with Indian Nations)

Bronx VAMC coordinated with and sought comments on the Draft EA from the New York City Mayor's Office of Environmental Coordination. The SCI/D project is an "unlisted action" under SEQR/CEQR. The City's Full Environmental Assessment Form will be submitted with the Draft EA to the MOEQ along with the two checklists (environmental and compliance with federal legal authorities). The City may elect to conduct an independent SEQR review, and may wait until NEPA is substantially complete before making a finding of no impact. The process will be a coordinated review with the City provided notification of public meetings and public notices.

The project was presented at a meeting of the City Wide Environmental Quality Review Task Force on April 30, 2015. The following NYC agencies were represented at the meeting:

- NYC Dept. of City Planning
- NYC Dept. of Transportation
- NYC Dept. of Housing Preservation and Development
- NYC Dept. of Parks and Recreation
- NYC Dept. of Environmental Protection
- NYC Dept. of Health and Mental Hygiene
- NYC Dept. of Small Business Services
- NYC Dept. of Law NYC Board of Standards and Appeals
- NYC Landmarks Preservation Commission
- NYC School Construction Authority
- NYC Department of Sanitation
- NYC Office of the Deputy Mayor for Housing and Economic Development, Capital Projects Group
- NYC Economic Development Corporation

### **Permits and Non-Permit Modifications Required**

Bronx VAMC will coordinate with agencies requiring permits and other agreements for the facility. This will include modifications to the Clean Air Act State Facility Permit issued by NYSDEC as a delegated authority (Clean Air Act – NYS DEC Air State Facility Permit Renewal 1 Mod 1, DEC ID 2-6004-00065/00009).

The facility has various permits for storage of petroleum products in underground tanks. These permits would also be modified as necessary for additional storage tanks. No change in the status of the facility as a generator of waste will occur as a result of this project. The existing driveway will continue to be the main entrance and the engineer of record for site civil design will file a drawing with the NYC Department of Public Works for the minor modification of the site entrance. Water and sewer improvements will require submittal of plans and coordination with the NYC DEP.

Clean Water Act – NYS State Pollution Discharge Elimination System Permits GP-0-10-001 Construction Activity. Requires connection to municipal utility (ministerial action).

Safety Drinking Water Act – Requires connection to municipal system (ministerial action).

Petroleum Bulk Storage – NYS is a delegated state. Tank registration (ministerial action).

Hazardous Waste Site Generator – Small added volume and mass of waste to be tracked by facility. No change in status (no action required).

Local Municipal Street Cut – Certified by Project Engineer.

Site Connection Proposal – SD1 and SD2 preparation for review and approval by the DEP for sewer connection.

### **Public Involvement**

NEPA promotes a decision-making process that is open to the public. Public comments on the EA are solicited, encouraged and anticipated. Copies of the EA will be made available at the VAMC Medical Library Room 5A-14. A 30-day comment period will be provided and all public comments will be considered and a Final EA will be issued. The Finding of No Significant Impact (FONSI) will document the findings regarding the Proposed Action. In accordance with VAMC policy, unless comments are received that necessitate a change to this EA, the present document will be considered final as of the end of the 30-day comment period.

## **SECTION 6.0 MITIGATION MEASURES**

### **Summary of Potential Environmental Impacts**

Potential Environmental impacts presented in this EA are summarized below:

#### Impacts during Construction:

- Beneficial and Not Significant Impacts – Socioeconomics
- None-to-Negligible Impact – Land use and Zoning; Cultural Resources; Topography; Geology and Soils; Hydrology and Water Resources; Wildlife and Habitat; Floodplains, Wetlands and Coastal Zone Management; Community services; Utilities; and Environmental Justice
- Minimal-to-Moderate Impacts (All Short Term Impacts) – Aesthetics; Air Quality; Solid Waste & Hazardous Materials; Noise; Traffic, Transportation and Parking; Alternative Energy Sources; Cumulative Impacts; Potential for Generating Substantial Controversy
- Significant-if-not-Mitigated Impacts – None
- Significant-and-Immitigable Impacts – None

#### Impacts during Operations

- Beneficial and Not Significant Impacts – Air Quality; Socioeconomics; Traffic, Transportation and Parking; Utilities; Alternative Energy Sources; Environmental Justice; Cumulative Impacts; Potential for Generating Substantial Controversy
- None-to-Negligible Impact – Aesthetics; Land Use and Zoning; Cultural Resources; Topography, Geology and Soils; Noise; Hydrology and Water Resources; Wildlife and Habitat; Floodplains, Wetlands and Coastal Zone Management; Community Services; and Solid Waste and Hazardous Materials
- Minimal-to-Moderate Impacts –None
- Significant-if-not-Mitigated Impacts – None
- Significant-and-Immitigable Impacts – None

### **Mitigation Measures**

Mitigation measures are project-specific requirements, not routinely implemented as part of construction projects, and necessary actions to reduce identified potentially significant adverse environmental impacts to less-than-significant levels. Environmental Assessment must have mitigation measures when an environmental resource has Significant-If-Not-Mitigated impact. The CEQ regulations define mitigation as:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

In the planning, designing and construction of large complex facilities, thousands of decisions are made to avoid impacts to the environment and community. This category of good design and implementation of standard best management practices has already been incorporated into this design process. The entire EO 13514 Federal Leadership in Environmental Energy and Economic Performance Program, and USEPA Phase II Nonpoint Source Stormwater Controls are examples of elevating design and implementing best management practices to a level that avoids or mitigates numerous environmental impacts.

Per established protocols, procedures, and requirements, the construction contractor would implement BMPs and would satisfy all applicable regulatory requirements in association with the design, construction, and operation of the SCI/D Center and Parking Garage. These “management measures” are described in this EA, and are included as components of the Proposed Action.

Since this project does not have Significant-if-Not Mitigated or Significant-And-Immitigable impacts for any environmental resource, no additional mitigation measure is required and the adherence to general Best Management Practices (BMPs) and compliance with the terms and conditions of permits from federal, state and local authorities would be sufficient for all resources in this project .

## **Best Management Practices**

### General BMPs

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

- Clearing and grubbing would be timed with construction to minimize the exposure of cleared surface. 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 repairing 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 soil-containment material 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.
- The VA has several Directives and specifications that the contractor must adhere which will protect human health and environment.

## Resource-Specific BMPs

### **6.1 Aesthetics**

It will be the general contractor's responsibility to maintain the construction site in a clean and orderly condition during the construction process. This is a requirement of SWPPP (Section 4.13). As a part of site preparation and demolition of existing parking fields, it will be necessary to sweep on-site roads and at times, adjacent streets in order to reduce the transport of dust, soil, and debris from the site. The contractor will be required to have appropriate street cleaning equipment on the site during demolition and available during the remainder of the project. In this medical setting, it is necessary to reduce dust so sweeping and water spray for dust suppression will be necessary.

Architectural components have been selected to be compatible with existing site characteristics, neighborhood character, and ease of maintenance, all contributing to protection of aesthetic resources. No significant impacts on aesthetic resources are anticipated and no additional mitigation is required.

### **6.2 Land Use and Zoning**

The property has been used by veterans for over 80 years and has been a care institution for over 100 years. Bronx VAMC is in a mixed-use community of neighborhood retail facilities, residential uses, and hotels. During construction, in order to avoid impacts on day to day activities, it will be necessary to schedule deliveries, especially those that will impact traffic, to off-peak commuting hours. Construction time periods required by the NYCDEP will be followed (7AM to 6PM, Monday through Friday). The contractor will be required to give notice to the community if work outside these hours is to occur. Normally, a contractor has to obtain authorization from NYC for work outside of the above hours, however, the VA is not subject to local regulatory controls. It is the VA's goal to minimize community impacts. No significant impacts to local land use and community character are anticipated, and no additional mitigation measures would be required.

### **6.3 Air Quality**

During construction, the contractor will be required to implement dust control measures as presented in the SWPPP. Changes to the heating plant, addition of backup generators, and emergency fire pumps will require modification to existing air permits. These updated permits will be obtained by the VA. To meet sulfur dioxide emission requirements of the state and federal air discharge permit, it is necessary to store low sulfur fuel oil on-site for the boilers. Fuel oil is a backup energy source for the boilers which normally operate on natural gas that is delivered to the site by pipeline. The emergency diesel generators are also supplied with low sulfur fuel. No significant impacts to local or regional air quality are anticipated and no additional mitigative measures are required.

### **6.4 Cultural Resources**

Necessary testing and evaluation of the site has been completed to detect the presence of any historical and archeological cultural resources. Testing determined that cultural artifacts were not likely to be discovered due to post construction and building demolition activities that have taken place on the property. The site is not eligible for listing on the State or National Historic Register.

Protocols for discovery of human remains required by federal, state, and local government will be followed. No significant impacts to cultural resources are anticipated, and no additional mitigative measures are required.

### **6.5 Topography, Geology, and Soils**

The site topography and soils will be changed as a result of construction. The geology of the site would not be altered. No additional mitigation measures beyond those already incorporated into the project will be necessary.

### **6.6 Hydrology and Water Resources**

Excavation into the bedrock will contact the local water table and this may intercept groundwater which may have to be managed by the general contractor in accordance with local rules and regulations. No significant impacts to hydrology or water resources are anticipated, and no additional mitigative measures will be necessary.

### **6.7 Wildlife and Habitat**

No rare, threatened, or endangered species exist on this site. No significant impacts are anticipated, and no additional mitigative measures are necessary.

### **6.8 Floodplains, Wetlands, and Coastal Zone Management**

The project site does not contain any floodplains, waters of the United States, wetlands, and is outside the state or federal coastal zone. No significant impacts will occur since the identified resources are not present on the site.

### **6.9 Socio-economics**

Construction and operation of Bronx VAMC will continue to provide employment opportunities both locally and regionally. Employees using the various local shops and restaurants create income for those businesses. Impacts on socio-economics would be considered positive.

### **6.10 Community Services**

The general contractor will be required to have in place a plan to respond to injury of construction workers and procedures for securing equipment in case of severe weather events. No additional mitigative measures are required and no significant impacts are anticipated.

### **6.11 Solid Waste and Hazardous Materials**

During construction the general contractor will be required to have in-place, a recycling program to minimize materials that will be landfilled as construction debris. Petroleum will be managed in accordance with the Construction Spill Prevention Plan and containment materials to address any potential petroleum spills will be available on-site. No additional mitigative measures are required, and no significant impacts are anticipated.

### **6.12 Traffic, Transportation, and Parking**

The general contractor will schedule deliveries of oversized building components in order to minimize traffic disruption. Both Bronx VAMC and the contractor will implement a parking plan that minimizes neighborhood and patient impacts as a result of construction activities. Mitigation

measures will be implemented to the extent practical to reduce inconvenience to the adjacent neighborhoods, patients and facility staff associated with the construction process including delivery of large building components.

### **6.13 Utilities**

Connection and improvements to local utilities will be planned and schedule in order to minimize local outages in the neighborhood and on-site. The contractor will be required to have contingency plans in place in case service interruption becomes prolonged due to construction issues. No significant impacts are anticipated, and no additional mitigative measures are required.

### **6.14 Energy Use and Alternative Energy**

The project is constructing a new CHP plus both PV and solar water heating panels. These facilities will moderate the increased amount of energy required to operate the facility. No significant impacts are anticipated, and no additional mitigative measures are required.

### **6.15 Noise**

The general contractor will be required to have in place a construction noise mitigation plan. No significant impacts are anticipated, and no additional mitigative measures are required.

### **6.16 Environmental Justice**

The site provides services to veterans who may have minor to very severe disabilities, which benefit those individuals and their community. The facility has been established at this location for nearly 100 years and the community has grown around the Bronx VAMC. The SCI/D provides important services and is being constructed to modern standards. This will reduce impacts to air water quality, minimize intrusive noise, provide employment and local spending in the community and region, and is providing additional parking. The project will not have a significant impact on the environment or human health of a low income or minority community. No additional mitigative measures are required.

**Table 6-1. Summary of BMPs/Mitigation Measures**

<b>Resource</b>	<b>Mitigation / Management Measures</b>
Aesthetics (4.1)	Design is compatible with either architecture in the area and has a variety of landscape areas. No additional mitigation measures are proposed.
Land Use and Zoning (4.2)	Complies with local zoning. No additional mitigation measures are proposed.
Air Quality (4.3)	Air pollutant discharges are expected to be lower. No additional mitigation measures are proposed.
Cultural Resources (4.4)	Site investigation completed and determined that there were no eligible subsurface cultural resources. No additional mitigation measures are proposed.
Topography, Geology, and Soils (4.5)	Standard engineering practices will protect resources. No additional mitigation measures are proposed.
Hydrology and Water Resources (4.6)	Standard engineering practices will protect resources. No additional mitigation measures are proposed.
Wildlife and Habitat (4.7)	No additional mitigation measures are proposed.
Floodplains, Wetland, and Coastal Zone (4.8)	No additional mitigation measures are proposed.
Socio-economic (4.9)	No additional mitigation measures are proposed.
Community Services (4.10)	No additional mitigation measures are proposed.
Solid Waste and Hazardous Waste (4.11)	Facility has a comprehensive approach to minimization and control of these materials. No additional mitigation measures are proposed.
Traffic Transportation Parking (4.12)	Parking Garage remediates existing deficit in parking. Mitigation includes use of shuttle vans, employee transit, reimbursement, and limited increase in traffic. Construction managers will have to provide offsite parking during construction. No additional mitigation measures are proposed.
Utilities (4.13)	Water conservation is being implemented and rainwater is being collected for irrigation. CHP will provide added power supply and use of natural gas will lower air emission. No additional mitigation measures are proposed.
Alternative Energy (4.14)	CHP will efficiently provide heat and electrical power to the site and region. No additional mitigation measures are proposed.
Noise (4.15)	Construction operation will require use of temporary sound barriers during rock removal and when multiple operations are occurring. No additional mitigation measures are proposed.
Environmental Justice (4.16)	This facility service is an advantage group and other beneficial impacts due to increased employment are expected. No additional mitigation measures are proposed.
Cumulative Impacts (4.17)	Project reduces water, sewer demands, and decreases air pollution discharges. Project will add jobs. No additional mitigation measures are proposed.
Potential to Create Public Controversy (4.18)	Longstanding part of the community fabric. Parking Garage will reduce on-street parking and traffic. No additional mitigation measures are proposed.

## **SECTION 7.0 EA CONCLUSIONS**

The proposed construction and operation of the SCI/D Center, Parking Garage and CHP at Bronx VAMC will provide needed additional medical services to accommodate veterans and bring the existing SCI/D unit in compliance with the Department of Veterans Affairs new guidelines for Spinal Cord Injury and Disorder Centers. The Project will also fulfill the VA Strategic Plan goals to provide high quality, reliable, accessible, timely and efficient health care that maximizes the health and function of all enrolled veterans. The new CHP plus both PV and solar water heating panels will serve to moderate the increased amount of energy required to operate the facility.

### **DETERMINATION**

The implementation of the No Action Alternative would have no adverse impacts to the natural or human environment, but it would not provide any of the benefits associated with the Preferred Alternative. Maintaining the status quo would mean that issues related to the availability of medical services for veterans in the area of service would escalate. It also means that the VA would not meet its goal of adhering to the VA's new guidelines for Spinal Cord Injury and Disorder Centers.

The environmental assessment of all project attributes considered did not find any "Significant Impact" during construction and operations. Also, the environmental assessment of all project attributes considered did not find any "significant-if-not-mitigated impacts" during construction and operations.

The construction and operation of the proposed project would not result in any adverse impacts on the natural or human environments that would require mitigation to reduce impacts to less than significant, nor preclude the issuance of a Finding of No Significant Impact (FONSI).

### **FINDING OF NO SIGNIFICANT IMPACT**

A FONSI will be finalized if a review of EA results in a determination that the implementation of the proposed project as described would not constitute a major federal action that would have significant impact upon the quality of the human environment within the meaning of Section 102(2)(C) of NEPA of 1969. IF a FONSI is determined to be appropriate for this project then the preparation of an Environmental Impact Statement for the proposed action is not required. This FONSI becomes a federal document when evaluated and signed by the responsible VA official.

## **SECTION 8.0 LIST OF PREPARERS**

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## **SECTION 9.0 REFERENCES CITED**

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NYSDEC Non-Attainment Areas. Taken from the Department's February 13, 2004 "Analysis in Support of New York State's Boundary Recommendation for the New York City Fine Particulate (PM<sub>2.5</sub>) Nonattainment Area." <http://www.dec.ny.gov/chemical/40748.html>

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VA New Spinal Cord Injury/Disorders Center (SCI/D) and Parking Garage Schematic S-2 Submission, May 27, 2011, September 30, 2011, and July 20, 2012.

## **SECTION 10.0 LIST OF ACRONYMS AND ABBREVIATIONS**

APE	Area of Potential Effect
ASHRAE	American Society of Heating, Refrigeration, and Air-conditioning
BMP	Best Management Practices
CAA	Clean Air Act
CARES	Capital Asset Realignment for Enhanced Services
CEQ	Council of Environmental Quality
CEQR	City Environmental Quality Review
CFR	Code of Federal Regulations
CHP	Combined Heat Power
dB	Sound Energy Measurement
DOD	U.S. Department of Defense
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EPAct	Energy Efficient Commercial Buildings Deduction
FONSI	Finding of No Significant Impact
FTEE	Full Time Employee Equivalent
HIPAA	Health Insurance Portability and Accountability Act
MMBtu	British Thermal Units
MOEC	Mayor's Office of Environmental Coordination
MW	Megawatts
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
NYCDEP	New York City Department of Environmental Protection
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSM	New York State Museum
NYSPSC	New York State Public Service Commission
OEF/OIF	Operation Enduring Freedom/Operation Iraqi Freedom
OPRHP	New York State Office of Parks, Recreation, and Historic Preservation
PV	Photovoltaic
SCI/D	Spinal Cord Injury/Disorders Center
SHPO	State Historic Preservation Officer
SPCC	Spill Prevention, Control and Countermeasure
SWPPP	Stormwater Prevention Pollution Plan
WMC	Waste Management Center
VA	U.S. Department of Veterans Affairs
VAMC	Veterans Affairs Medical Center
VISN 3	Veterans Affairs NY/NJ Healthcare Network

**Appendix A Supporting Reports**

**Phase 1A Literature Review and Sensitivity Assessment**

**Phase 1B Archeological Field Reconnaissance**

**Chapel Documentation Letter**



**HARTGEN**

archeological associates inc

## **PHASE IA LITERATURE REVIEW AND SENSITIVITY ASSESSMENT**

**James J. Peters, Veterans Affairs Medical Center  
Spinal Cord Injury/Disorder Center and Parking Structure**

130 West Kingsbridge Road  
New York City, Borough of the Bronx  
Bronx County, New York

HAA 4446-11

**Submitted to:**

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September 2011

## **MANAGEMENT SUMMARY**

SHPO Project Review Number: not assigned yet  
Involved State and Federal Agencies: United States Department of Veteran Affairs  
Phase of Survey: IA

## **LOCATION INFORMATION**

Location: 130 West Kingsbridge Road  
Minor Civil Division: Borough of Bronx (00501)  
County: Bronx County

## **SURVEY AREA**

Spinal Cord Injury/Disorder (SCI/D) Center:  
Approximate Length: 850 ft (260 m)  
Approximate Width: 570 ft (174 m)  
Approximate Number of Acres Surveyed: 8.6 acres (3.4 ha)

Parking Structure:  
Approximate Length: 370 ft (113 m)  
Approximate Width: 160 ft (49 m)  
Approximate Number of Acres Surveyed: 1.5 acres (0.6 ha)

7.5 Minute Quadrangle Map: Central Park

## **RESULTS OF RESEARCH**

Sites within one mile: 24  
Surveys in adjacent vicinity: 0  
NR/NRE properties in or adjacent: 2  
OPRHP inventoried structures in or adjacent: 0  
Precontact Sensitivity: high  
Historic Sensitivity: high

## **RECOMMENDATIONS**

In order to assess the presence or absence of archeological deposits and/or prior disturbance in the project APEs, limited Phase IB archeological testing is recommended for a limited area in both the SCI/D Center and Parking Structure APEs. The hand excavation of screened shovel tests is recommended for the northwest corner of the SCI/D Center APE.

Report Authors: Tracy Shaffer Miller  
Date of Report: September 2, 2011

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5. Sidney & Neff 1851
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1. View west of the east side of the James J. Peters Veterans Affairs Medical Center hospital.
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3. View west of the east side of the c. 1899 girls' dormitory chapel associated with the Roman Catholic Orphan Asylum formerly on the VAMC property.
4. View northeast of the c. 1899 chapel from the Parking Structure APE.
5. View north within the parking lot that occupies the proposed Parking Structure APE.
6. View southwest of the c. 1950 apartment building currently the VISN administration building at the VAMC.
7. View north of the recently constructed shipping and receiving building north of the hospital building.
8. View southwest of the picnic area in the northwest corner of the SCI/D Center APE.
9. View southwest from the northeast corner of the SCI/D Center APE. Most of the SCI/D Center APE is existing parking lots.
10. View north of the eastern edge of the SCI/D Center APE where the New Croton Aqueduct extends through the VAMC property.
11. View west of the slope along the southern edge of the Parking Structure APE.
12. View northwest of the northwest corner of the VAMC property where a gatehouse was located from about 1900 to 1977 (MDS 2 and 2a).
13. View southeast of the western edge of the VAMC property along Sedgwick Avenue. The area beyond the fence is a short steep slope of with exposed bedrock and vegetation up to the west side of the hospital.
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## PHASE IA LITERATURE REVIEW AND ARCHEOLOGICAL SENSITIVITY ASSESSMENT

### INTRODUCTION

The LA Group retained Hartgen Archeological Associates, Inc. (HAA, Inc.) on behalf of the United States Department of Veterans Affairs to conduct a Phase I archeological investigation for the proposed Spinal Cord Injury/Disorder Center and Parking Structure at the James J. Peters Veterans Affairs Medical Center located at 130 West Kingsbridge Road, Bronx, New York. The United States Veteran Affairs Department is funding this project. Therefore, this investigation was conducted to comply with Section 106 of the National Historic Preservation Act and will be reviewed by the New York State Office of Parks, Recreation and Historic Preservation (OPRHP). The investigation was conducted according to the New York Archaeological Council's *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections* (1994), which are endorsed by OPRHP. This report has been prepared according to OPRHP's *State Historic Preservation Office (SHPO) Phase I Archeological Report Format Requirements* (2005).

### PROJECT INFORMATION

A site visit was conducted by Tracy Shaffer Miller on August 22, 2011 to observe and photograph existing conditions within the project area. The information gathered during the site visit is included in the relevant sections of the report.

#### Project Location

James J. Peters Veterans Affairs Medical Center (VAMC) is located southwest of West Kingsbridge Road between Sedgwick Avenue to the north and west and Webb Avenue to the east and south.

#### Description of the Project Area

The existing hospital buildings are located along the western portion of the property. Parking lots currently occupy most of the eastern portion of the property. The existing main hospital building is located along the western side of the property. The hospital is a nine-story structure built in the late 1970s. The maximum elevation of the project area is about 180 feet (55 m) above the National Geodetic Vertical Datum (NGVD) of 1929. Southeast of the existing hospital building, the landscape gradually slopes towards Webb Avenue and West Kingsbridge Road. West and south of the hospital the landscape slopes steeply downward in these directions.

#### Description of the Area of Potential Effects (APE)

The area of potential effects (APE) includes all portions of the property that will be directly or indirectly altered by the proposed undertaking. There are two separate APEs for the two proposed developments within the VAMC property:

- Spinal Cord Injury/Disorder (SCI/D) Center northeast of the existing hospital
  - Encompasses approximately 8.6 acres (3.4 ha)
  - New free-standing multi-level building with connecting corridors to the main existing hospital building
  - Parking lot reconstruction and new basketball court and picnic area
- Parking Structure southeast of the hospital
  - Encompasses approximately 1.5 acres (0.6 ha)
  - Six-story parking garage with two levels below grade
  - Reconstruction of surrounding retaining walls and roadways

## **ENVIRONMENTAL BACKGROUND**

The environment of an area is significant for determining the sensitivity of the APEs for archeological resources. Precontact and historic groups often favored level, well-drained areas near wetlands and waterways. Therefore, topography, proximity to wetlands, and soils are examined to determine if there are landforms in the project area that are more likely to contain archeological resources. In addition, bedrock formations may contain chert or other resources that may have been quarried by precontact groups. Soil conditions can provide a clue to past climatic conditions, as well as changes in local hydrology.

### **Present Land Use and Current Conditions**

The two APEs encompass existing buildings, parking lots, roadways, wooded areas, and lawn areas (Map 2). The main hospital building is located along the eastern portion of the property (Photo 1). In addition, there is a nursing home built c. 1986 in the southwestern portion of the property (Photo 2). The nursing home lies about 1,000 ft (305 m) north of the c. 1899 chapel associated with the former orphanage on this site (Photos 3 and 4). A surface parking lot lies south of the chapel (Photo 5).

A c. 1946 three-story brick building now occupied by administrative offices is located in the southwest corner of the property (Photo 6). A recently-constructed building used for shipping and receiving is located immediately north of the hospital (Photo 7). A picnic pavilion and a basketball court are also located in the northwest corner of the property (Photo 8). Parking lots occupy most of the eastern portion of the property.

The SCI/D Center project area mostly consists of existing surface parking lots (Photo 9). The New Croton Aqueduct extends through the eastern edge of this area, although there is no surface indication of the conduit's location (Maps 7-10 and Photo 10). The Parking Structure project area is currently a parking lot perched at the top of an embankment that drops steeply to the south (Photo 11).

The portions of the project area not currently developed are the very northwest corner (Photos 8 and 12), the western edge along Sedgwick Avenue (Photo 13), the southern end (Photo 11), and the very southeastern corner (Photo 14), which are all partially wooded (Map 2).

### **Soils**

Soil surveys provide a general characterization of the types and depths of soils that are found in an area. This information is an important factor in determining the appropriate methodology if and when a field study is recommended. The soil type also informs the degree of artifact visibility and likely recovery rates. For example, artifacts are more visible and more easily recovered in sand than in stiff glacial clay, which will not pass through a screen easily.

The *New York City Reconnaissance Soil Survey* shows that the VAMC property is comprised of pavement and buildings and the Charlton-Greenbelt complex (Map 3). Areas of this soil type are characterized as nearly level to gently sloping urbanized areas of till plains that have been substantially cut and filled, mostly for residential use. The soil is a mixture of gneissic till soils and anthropogenic soils, with up to 80 percent impervious pavement and buildings covering the surface. This soil type is mostly located in Manhattan and the Bronx (USDA NRCS 2005:13).

Table 1. Soils in VAMC property

Symbol & Name	Depth	Color	Textures	Slope	Drainage	Landform
204 Pavement & buildings/ Charlton-Greenbelt complex	<b>Charlton Series:</b> 0-5 inches (0-13 cm) 5-10 inches (13-25 cm) 10-14 inches (25-36 cm) 14-24 inches (36-61 cm) <b>Greenbelt Series:</b> 0-3 inches (0-8 cm) 3-13 inches (8-33 cm) 13-57 inches (33-145 cm)	<b>Charlton:</b> Vy Dk Gr Br Dk Br Dk Yw Br Strong Br <b>Greenbelt:</b> Br Re Br Re Br	<b>Charlton:</b> Lo Lo Lo Sa Lo <b>Greenbelt:</b> Lo Lo Gr Lo	0 to 8 percent slopes	Well drained	Till plains, hills, and anthropogenic fill areas on urbanized till plains

Key: Color: Br-Brown, Dk-Dark, Gr-Gray, Re-Red, Y-Yellow, Bk-Black, Ol-Olive  
Texture: Co-Coarse, Fi-Fine, Gv-Gravelly, Lo-Loam, Sa-Sand, Si-Silt, Vy-Very

## Bedrock Geology

The underlying bedrock consists of Inwood marble, a blend of dolomite marble, calc-schist, granulite, and quartzite overlying calcite marble. There are small areas of bedrock outcroppings along the western edge of the property (Photo 13). Although, the Inwood marble is not known to be chert-bearing, other nearby bedrock types are known to be cherty. Chert is one of the most common materials used by Native Americans to manufacture lithic tools.

## Physiography and Hydrology

Steeply sloped areas are considered largely unsuitable for human occupation. As such, the standards for archeological fieldwork in New York State generally exclude areas with a slope in excess of 12% from archeological testing (NYAC 1994). Exceptions to this rule include steep areas with bedrock outcrops, overhangs, and large boulders that may have been used by precontact people as quarries or rock-shelters. Such areas may still warrant a systematic field examination.

The VAMC property is located on an elevated area about 760 feet (232 m) east of the Harlem River. The south end, western edge, and southeast corner of the property are steeply sloped. The center of the property is relatively level with the slope falling gradually towards the northeast.

## DOCUMENTARY RESEARCH

### Archeological Sites

Previously reported archeological sites provide an overview of both the types of sites that may be present in the project APEs and relation of sites throughout the surrounding region. The presence of few reported sites, however, may result from a lack of previous systematic survey and does not necessarily indicate a decreased archeological sensitivity within the project APEs.

An examination of the archeological site files at the Office of Parks, Recreation and Historic Preservation (OPRHP) and the New York State Museum (NYSM) identified 24 reported archeological sites within a one mile (1.6 km) radius of the project APEs (Table 2). Of these sites, seventeen were precontact Native American archeological sites or contained precontact components. Thirteen of the nearby precontact sites were located directly across the Harlem River from the project APEs in Inwood Hill Park area of Manhattan and along the Spuyten Duyvil and Harlem River. The remaining four precontact sites are located north of the project APEs.

Six previously reported historical archeological sites dating from the 18<sup>th</sup> and 19<sup>th</sup> centuries are located within one mile of the project APEs. Four of the historic sites were British forts associated with the Revolutionary War era. According to Jenkins' *The Story of the Bronx* (1912), the original source cited on the site inventory form, Fort Number Six (00501.000054) was located 380 feet (116 m) northeast of the house on the Bailey Estate (Jenkins 1912:344), which is the 19<sup>th</sup>-century estate where the VAMC is now located (Map 12).

One site (OPRHP 06101.000114) is a multi-component site comprised of a Native American shell midden and extensive pottery deposit overlaid by an African-American burial ground. One site (NYSM 711) did not have enough information recorded in the site files to determine the culture or context.

Table 2. OPRHP/NYSM archeological sites within one mile (1.6 km) of the VAMC

OPRHP Site No.	NYSM Site No.	Site Identifier	Description	Proximity to the VAMC
-	711	West 218 <sup>th</sup> Street (HAR 2-3)	No other information provided	4,500 ft (1372 m) west
-	2838	ACP BRNX 16	Precontact Native American village site covering large area at the mouth of Tibbit Brook	2,400 ft (732 m) to 1 mile (1.6 km)
-	2839	ACP BRNX 17	Precontact Native American village site covering large at the east end of Sedgwick Avenue along the west side of the reservoir	3,000 ft (914 m) to 1.25 miles (2 km) north
-	4068	ACP NYRK No#	Precontact Native American village site	1 mile (1.6 km) southwest
-	4069	ACP NYRK No#	Precontact Native American traces of occupation	3,000 ft (914 m) southwest
-	4056	ACP NYRK 6A	Precontact Native American trail	1,700 ft (518 m) northwest
-	5320	ACP BRNX No#	Precontact Native American traces of occupation covering a large area in the vicinity of the Spuyten Duyvil Creek	1 mile (1.6 km) northwest
-	5321	ACP BRNX No#	Precontact Native American traces of occupation covering a large area in the Kingsbridge neighborhood of the Bronx	2,600 ft (793 m) to 1.4 miles (2.3 km) north
-	5322	ACP BRNX No#	Precontact Native American traces of occupation in three locations near the south end of the Jerome Park Reservoir	2,000 to 3,000 ft (610 to 914 m) northeast
-	8369	ACP NYRK No#	Precontact Native American shell midden site	1,600 ft (489 m) west
-	8371	ACP NYRK No#	Precontact Native American camp site	2,700 ft (823 m) southwest
00501.000053	-	Kings Redoubt	Revolutionary War-era redoubt (May be a misreported location of Fort Number 6, which was also known as the "King's Battery" [Jenkins 1912:344])	600 ft (183 m) north
<i>00501.000054</i>	-	<i>Fort Number Six</i>	<i>Revolutionary War-era fort located near the intersection of West Kingsbridge Road and Sedgwick Avenue</i>	<i>Within or immediately south of the SCI/D Center APE</i>
00501.000055	-	Fort Number Eight	Revolutionary War-era fort located on the current Bronx Community College campus	2,700 ft (823 m) southwest
00501.000056	-	Fort Number Four	Revolutionary War-era fort located near the southwest corner of Jerome Reservoir and a "few rods east of Sedgwick Avenue"	2,500 ft (762 m) northeast
06101.000113	4052	Harlem Ship Canal	Precontact shell midden site	2,500 ft (762 m) northwest
06101.000114	4053, 4055	Harlem River Shellheap	Precontact Native American shell midden with extensive pottery deposit, Historic African-American cemetery overlies the Precontact deposits	2,500 ft (762 m) west

OPRHP Site No.	NYSM Site No.	Site Identifier	Description	Proximity to the VAMC
06101.000115 (two locations)	-	Negro Graveyard	Historic African-American cemeteries	2,500 and 2,800 ft (762 to 853 m) west
06101.000119	-	Seaman Avenue Indian Burial Ground/Village Site	Precontact Native American village site and burial grounds presumably associated with the Inwood Park rockshelters site.	5,000 ft (1524 m) west
06101.000121	-	Inwood Park Rockshelters	Precontact Native American rock shelters, shell heaps and village; 18 <sup>th</sup> -century British regiment encampment; and Revolutionary War-era Fort Cox	4,400 ft (1341 m) northwest
06101.000127	-	Nagle House (Century House)	c. 1736 farmhouse at the intersection of 9 <sup>th</sup> Avenue and 213 <sup>th</sup> Street demolished in 1907	1,700 ft (518 m) west
06101.000532	-	"Shorakapkok" (Cold Spring)	Precontact Native American rockshelter site and shell midden dating from the Archaic to Woodland periods	3,800 ft (1158 m) west
06101.000533	-	213 <sup>th</sup> Street Village Site	Precontact Archaic period village site	3,200 ft (975 m) northwest
06101.000534	4054	Isham's Garden	Precontact shell midden	4,000 ft (1219 m) northwest

### State and National Register

A search of the computer files at OPRHP identified one property listed on the State/National Registers of Historic Places (NR) located in the general vicinity. Also, one property determined eligible (NRE) for listing on the registers is located within the immediate vicinity of the project APEs. The locations of and a brief description of both properties is provided below in Table 3.

Table 3. NR/NRE Properties and Inventoried Buildings within or Nearby (<1000ft) to the VAMC

NR/OPRHP Number	Property Name	Status	Description	Location and Proximity to the VAMC
90NR02435	Old Croton Aqueduct*	NR	40-mile long water conduit constructed between 1837 and 1842 running from a dam on the Croton River in Westchester County to central Manhattan.	Beneath University Avenue about 600 feet (183 m) east
00501.001485	Major Deegan Expressway	NRE	An initial 1.5-mile segment of this limited-access expressway was built in 1939. The entire 8.5-mile length of the expressway was opened in 1956.	600 feet (183 m) east

\*The New Croton Aqueduct extends through the eastern edge of the VAMC property (Maps 2, 7-11). It was constructed in 1885 to extend from the Jerome Park Reservoir in the Bronx to carry water to the distribution plants in Bronx and Manhattan before joining with the Catskill Aqueduct in Manhattan. This is a separate conduit from the Old Croton Aqueduct under University Avenue. The New Croton Aqueduct is still an active part of the water supply system for New York City.

### Previous Surveys

OPRHP files did not include any archeological surveys completed immediately adjacent (<200 feet [61 m]) to or within the VAMC property in the Borough of the Bronx.

### New York City Landmarks Preservation Commission (NYCLPC)

There are no New York City designated landmarks or districts within or near the VAMC property. The nearest designated properties include the c. 1912-1917 Eighth Coastal Artillery Armory or the Kingsbridge Armory at 29 West Kingsbridge Road about 1,200 feet (366 m) northeast of the VAMC and the c. 1864-56 Saint James Episcopal Church at 2500 Jerome Avenue about 2,000 feet (610 m) southeast of the VAMC (NYCLPC 2004:313-4).

The NYCLPC was contacted by email in regards to the archeological sensitivity of the VAMC property. In a response dated August 29, 2011, the NYCLPC identified the VAMC property as having no archeological significance based on sensitivity models and historic maps.

### BRIEF HISTORICAL OVERVIEW AND HISTORICAL MAP REVIEW

Eighteenth to 20<sup>th</sup>-century historical maps were examined to observe the pattern of development and identify historical structures in and around the project APEs.

The historic maps were scanned as jpgs from our collections and from collections at the New York State Library. All historic maps were georeferenced in Arc View 9.1 using orthoimagery as a base map; historic road intersections were matched to the location of the intersection on the orthoimagery. Historical maps are not as accurate as modern day maps. Therefore, the locations historical map-documented structures within the project APEs are approximate. The two separate project APEs for the SCI/D Center and the Parking Structure were located on each map.

### Map-Documented and Existing Structures

Each past or current structure within the project APEs were assigned a unique Map-Documented Structures (MDS) number. The MDSs within the project APEs are listed in Table 4. Structures shown outside of the project APEs were not assigned an MDS number. Map 11 shows the approximate location of the MDSs overlaid on a current orthoimage of the site.

Table 4. Summary of map-documented and existing structures within the project APEs

MDS #	Map 4 (1851)	Map 5 (1872)	Map 6 (1891)	Map 7 (1900)	Map 8 (1950)	Map 9 (1977)	Map 10 (1986)
1	-	L. Valentine	-	-	-	-	-
2	-	-	-	Gate House	Gate House	Gate House	Gate House
3	-	-	-	Male Dormitory of the R.C. Orphan Asylum	Veteran's Hospital	Veteran's Hospital	-
4	-	-	-	Chapel	Warehouse	Warehouse	-
5	-	-	-	Female Dormitory of the R.C. Orphan Asylum	Veteran's Hospital	Veteran's Hospital	-
6	-	-	-	-	Administration Building	Administration Building	-

## 17<sup>th</sup> and 18<sup>th</sup> Century

The borough of the Bronx was named for a pioneer Swedish settler named Jonas Bronck who settled in the area in 1639 and established a farm (Shonnard and Spooner 1900:87). The earliest Bronx settlement was located in the vicinity of what is now Mott Haven in the South Bronx. Other European settlers followed and hostilities with the Native Americans ensued. The western portion of the Bronx in the vicinity of the Fordham was settled around 1667 when John Archer purchased a large tract of land from the Native Americans (Shonnard and Spooner 1900:139). However, there is no record of specific developments in the vicinity of the project area. In 1683, colonial New York was divided into counties and the Bronx became part of Westchester County (Shonnard and Spooner 1900:197).

The Bronx played an integral part in the Revolutionary War. The British landed at Throg's Neck on October 12, 1776 then withdrew to land on Pell's Point in Pelham Bay Park in the Bronx. There British troops were met by the Americans under Colonel John Glover. They fought to a standstill, enabling George Washington, with the main American army, to withdraw safely to White Plains. The British begin an occupation of New York City and the Bronx that lasted until 1783 (Shonnard and Spooner 1900:365-379, Jenkins 1912:148).

Prior to the British invasion the American army had hastily built several forts in the area of the Spuyten Duyvil and throughout the Bronx. These forts were all taken by the British after the American evacuation to White Plains. The 1777 map surveyed by Claude Joseph Sauthier (Map 4) depicts the layout of the New York City and Bronx area at the time of the Revolutionary War. The American Fort Washington is shown southwest of the project vicinity in Manhattan. The area of the Bronx is described as “Very High and Broken Lands which were occupied and fortified by the Rebels when the Kings Troops landed at Frog’s Point [Throg’s Neck].” The red bars and dashed lines southeast of the project vicinity are likely depictions of troop movements and battle engagements.

According to historian Stephen Jenkins, the Revolutionary War-era Fort Number Six was located within the property of the VAMC (See Table 2). Fort Number Six was located upon the grounds of the 19<sup>th</sup>-century Bailey Estate, which became the Roman Catholic Orphan Asylum and later the VAMC. According to historian Stephen Jenkins, Fort Number Six, also called the “King’s Battery” by the British, was located about 380 feet (116 m) northeast of the house on the Bailey Estate (Map 12). The 1872 Beers map (Map 6) shows the Bailey House. This places the fort location at the south end of the SCI/D APE (Map 12). Remains of the fort were uncovered in 1899 while excavating the foundations for the Orphan Asylum (Jenkins 1912:344). The location of Fort Number Six on the grounds of the VAMC was a strategic elevated vantage point. Fort Number Eight located on a high point south of the project APEs on the current grounds of the Bronx Community College south of the VAMC.

## 19<sup>th</sup> Century

Development in and around New York City grew rapidly following the American Revolution. Growth in the area of the Bronx increased throughout the 19<sup>th</sup> century. The construction of railroads through the Borough including the New York and Harlem River Railroad in 1841 (later the Harlem Division of Metro-North) helped encourage the spread of settlement in the western portion of the Bronx (Jenkins 1912:229).

The 1851 Sidney and Neff *Map of Westchester County, New York* (Map 5) shows the VAMC project area was undeveloped around the mid-19<sup>th</sup> century. The area along the Harlem River west of the project APEs was known as “Berrian’s (or Berrien’s) Landing” an early 19<sup>th</sup>-century stopping place for boats on the Harlem River (Jenkins 1912:346). A roadway and unlabeled structure are shown south of the Parking Structure APE. A structure labeled J. Valentine is located southeast of the project area. In general, development seems to be concentrated along the railroad tracks to the east.

The 1872 Beers map from the *County Atlas of Westchester, New York* shows three structures in the VAMC property (Map 6). A structure labeled L. Valentine (MDS 1) is located within the northern portion of the SCI/D Center APE. The N.P. Bailey structure is located immediately north of the Parking Structure APE. The H.B. Day structure is located near the present day location of the Webb Avenue entrance to the VAMC.

Likely unpaved roadways connect the structures to West Kingsbridge Road and Sedgwick Avenue. Development density increased in the vicinity by the 1870s.

The 1891 United States Geological Survey quadrangle shows the New Croton Aqueduct extending through the eastern portion of the VAMC property (Map 7). Between 1837 and 1842 the Old Croton Aqueduct was constructed from the Croton River Dam in Westchester County, through the Bronx (along what would become University Avenue), and into the Croton Reservoir in central Manhattan. The aqueduct served to bring fresh water supply to New York City, which needed an unpolluted water source for its burgeoning population. Construction of the New Croton Aqueduct began in 1885 to meet the growing demands of the city. The new aqueduct extended from the New Croton reservoir in Westchester County to the Jerome Park Reservoir in the Bronx. A conduit for the New Croton Aqueduct extended from the Jerome Park Reservoir through the eastern edge of the VAMC property to carry water to the distribution plants in Bronx and Manhattan before joining with the Catskill Aqueduct in Manhattan (Maps 7-11). The New Croton Aqueduct is still an active part of the water supply system for New York City. According to the Draft New York City Department of Environmental Protection, the aqueduct lies about 80 to 100 feet (23 to 30 m) below the existing grade and there are no access shafts on the VAMC property.

On July 1, 1895, the areas of Westchester lying east of the Bronx River were annexed to New York City and were made part of the 24<sup>th</sup> Ward. In 1898, the city of Greater New York is created as a federation of five boroughs with the 23<sup>rd</sup> and 24<sup>th</sup> Wards of the city becoming the Borough of The Bronx (Jenkins 1912:7).

## **20<sup>th</sup> Century**

In 1899, the Sisters of Charity purchased the N.P. Bailey estate containing twenty eight and a half acres for \$290,000. The erection of buildings began for a new Roman Catholic Orphan Asylum shortly thereafter. Two buildings, a male dormitory (MDS 3 and 4) and a female dormitory (MDS 5) were constructed east of the Bailey mansion house, which was located northwest of the Parking Structure APE. The 1900 Sanborn Map (Map 8) shows the layout of the grounds. Each structure was a five-stories-tall stone building with a basement. Each was about 385 feet (117 m) long 50 feet (15 m) deep with two wings 50 feet (15 m) by 125 feet (35 m) and a chapel at the center. The buildings could accommodate 800 children each (Jenkins 1912:344). A gate house (MDS 2) was located at the north end of the property along West Kingsbridge Road. The buildings were still under construction when they were depicted on the 1900 Sanborn map. The orphanage was occupied by 1902. The Sisters of Charity, a congregation of Roman Catholic nuns who ministered to the needs of the poor, operated the orphanage until 1921.

In October 1921, the Archdiocese sold the property to the United States government, who planned to convert the facilities into a hospital for disabled veterans. The remaining orphans were transferred to other facilities and the buildings were converted to accommodate 1,000 to 1,200 patients (NYT 1921). The purchase was turned over to the newly formed U.S. Veterans' Bureau by Executive Order on April 20, 1922.

The Sanborn maps from the second half of the 20<sup>th</sup> century show the subsequent development of the modern day VAMC hospital grounds. The 1950 Sanborn map (Map 9) rendered two former orphanage structures attached to a central wing containing the hospital kitchen. An administrative building (MDS 6) was also added to the north end of the hospital. Additional buildings were added to the property, although none of the lie in the current APEs. A nurses' dormitory, laundry building, garage, and storage buildings were located in the eastern portion of the site. An apartment building was constructed in the southwest corner of the property.

The 1977 Sanborn map (Map 10) shows the beginning of the modern-day two to eight-story-tall hospital building in the western portion of the property. The c. 1899 former orphanage buildings (MDS 3, 4, and 5) and a gate house along West Kingsbridge Road (MDS 2) still existed in the western portion of the site.

The most recent Sanborn map from 1986 (Map 11) shows that all of the c. 1899 and c. 1950 buildings have been demolished (MDS 3-6) except for the chapel that was formerly part of the female dormitory of the orphanage and the apartment building in the southwest corner of the property. The gatehouse along West

Kingsbridge Road (MDS 2) is still extant. A new nursing home structure constructed between 1977 and 1986 is about 130 feet (40 m) north of the chapel.

### **Current Conditions**

All of the structures depicted on the 1986 Sanborn map are currently extant except for the former gatehouse (MDS 2) near the northwest corner of the property (Photo 12). In addition, there is a new shipping and receiving building located north of the main hospital (Photo 7) and a picnic pavilion and a basketball court in the northwest corner of the property (Photo 8).

## **ARCHEOLOGICAL SENSITIVITY ASSESSMENT**

The New York Archaeological Council provides the following description of archeological sensitivity:

Archaeologically sensitive areas contain one or more variables that make them likely locations for evidence of past human activities. Sensitive areas can include places near known prehistoric sites that share the same valley or that occupy a similar landform (e.g., terrace above a river), areas where historic maps or photographs show that a building once stood but is now gone as well as the areas within the former yards around such structures, an environmental setting similar to settings that tend to contain cultural resources, and locations where Native Americans and published sources note sacred places, such as cemeteries or spots of spiritual importance (NYAC 1994:9).

The archeological potential of an area consists of its sensitivity modified by modern disturbance and environmental factors such as alluvial scours and deposition. Recommendations for additional investigation are based on the archeological sensitivity and potential within the project APEs, and are discussed below.

### **Precontact Archeological Sensitivity**

The project is located within an area designated on the OPRHP website as a known archeologically sensitive area. Generally, this designation is based on the proximity of reported archeological sites. The OPRHP and NYSM files contain seventeen archeological sites that are precontact or contain precontact components located within one mile (1.6 km) of the VAMC. Thirteen of these sites are located directly across the Harlem River from the project in Inwood Hill Park area of Manhattan and along the Spuyten Duyvil and Harlem River. The other four precontact sites are located to the north in the Bronx on elevated terrain similar to the VAMC property terrain.

In addition to the previously reported sites in the vicinity, the project's location on an elevated overlook along the Harlem River would suggest a potential for occupation or use of the area by Native Americans. Therefore, the project APEs have a high sensitivity for the presence of precontact archeological deposits.

### **Historic Archeological Sensitivity**

The historic sensitivity of an area is based largely on the examination of historical maps as well as the presence of documented historical archeological sites in the vicinity and other historical development within the VAMC property. Histories of the Bronx indicate that this area was first utilized during the Revolutionary War. Three forts originally built by the American army and overtaken by the British in 1776 were located in the immediate vicinity and within the property of the VAMC. Fort Number Six was located about 380 feet (116 m) northeast of the mansion house on the Bailey Estate, which is shown on the 1872 Beers map (Map 6). This places the fort at the south end of the SCI/D Center APE (Map 12). Remains and artifacts associated with the fort were uncovered in 1899 while excavating the foundations for the Orphan Asylum (Jenkins 1912:344).

In the 19<sup>th</sup> century, the 1951 map shows a structure labeled as L. Valentine (MDS 1) located on the northern edge of the SCI/D Center APE (Map 6). In 1899, a portion of the boys' dormitory and the boys' chapel

(MDSs 3 and 4) were constructed in the southern portion of the SCI/D Center APE (Map 8). A gatehouse associated with orphanage (MDS 2) was also located along West Kingsbridge Road near the northwest corner of the APE. A portion of the girls' dormitory (MDS 5) was located in the Parking Structure APE.

By 1986, all of the c. 1899 former orphanage buildings and c. 1950 hospital buildings had been demolished except for the girls' chapel in the southern portion of the property, the gatehouse along West Kingsbridge Road (MDS 2), and the c. 1950 apartment building in the southwest corner of the property (Map 10). The construction of the modern-day VAMC hospital had commenced in the late 1970s and the building was dedicated in 1981 (U.S. Department of Veterans Affairs 2011).

Deposits associated with the 18<sup>th</sup>-century Fort Number Six within the SCI/D Center APE and the 19<sup>th</sup>-century developments including MDSs 1-5 could be encountered within the APEs. Therefore, the SCI/D Center APE has a high sensitivity for encountering 18<sup>th</sup>-century fort deposits and 19<sup>th</sup>-century deposits and features associated with the L. Valentine house (MDS 1) and the c. 1899 boys' dormitory orphanage structures (MDS 2-4). The Parking Structure APE has a high sensitivity for encountering deposits associated with the c. 1899 girls' dormitory (MDS 5).

## **ARCHEOLOGICAL POTENTIAL**

The archeological potential is the likelihood of locating intact archeological remains within the project APEs. The combined site file and environmental data suggest the project APEs have a high sensitivity for both precontact and historic cultural resources. However, documentary research and modern conditions indicate that much of the project APEs have undergone substantial disturbance associated with construction and reconstruction of buildings at the site.

### **Spinal Cord Injury/Disorder (SCI/D) Center APE**

The 18<sup>th</sup>-century Fort Number Six was encountered during the c. 1899 construction of the Orphan Asylum, which may have impacted or destroyed the deposits. The late 20<sup>th</sup>-century razing of the orphanage buildings and regrading for parking lots may have impacted the deposits further. Nonetheless, portions of the fort deposits and MDSs 1-4 could have been preserved by filling after the demolition of the c. 1899 structures. Demolition of c. 1899 structures in the Parking Structure APE and construction of the existing parking lot may have impacted deposits associated with any 19<sup>th</sup>-century buildings there.

The northwestern portion of the SCI/D Center APE appears to have remained relatively undeveloped throughout most of the map-documented history of the parcel. This area has a greater potential for encountering any possible precontact deposits or perhaps deposits associated with earlier historical developments.

The New Croton Aqueduct extends through the eastern edge of the SCI/D Center APE. However, according to the New York City Department of Environmental Protection, the Aqueduct lies between 80 and 100 feet (24 and 30 m) below grade and there no access shafts located on the VAMC property. It is not anticipated that the proposed project will reach to the depth of the aqueduct. Therefore, there is little or no potential of impacting this historic feature.

### **Parking Structure APE**

Demolition of c. 1899 structures in the Parking Structure APE and construction of the existing parking lot may have impacted deposits associated with any 19<sup>th</sup>-century buildings there. However, demolition and construction in this area may have consisted of filling, which could have preserved archeological features and deposits in the APE.

## **RECOMMENDATIONS**

In order to assess the presence of absence of archeological deposits and/or prior disturbance in the project APEs, limited Phase IB archeological testing is recommended.

### **Spinal Cord Injury/Disorder (SCI/D) Center APE**

The hand excavation of screened shovel tests is recommended for the undeveloped northwest corner of the SCI/D Center APE. Backhoe-excavated trenches should be used to assess the presence of absence of archeological deposits associated with Fort Number Six and the 19<sup>th</sup>-century structures in the paved portions of the APE.

### **Parking Structure APE**

Backhoe excavated trenches should be placed in the existing parking lot at the Parking Structure APE to assess the presence or absence of archeological deposits related to 19<sup>th</sup>-century structures documented on historical maps.

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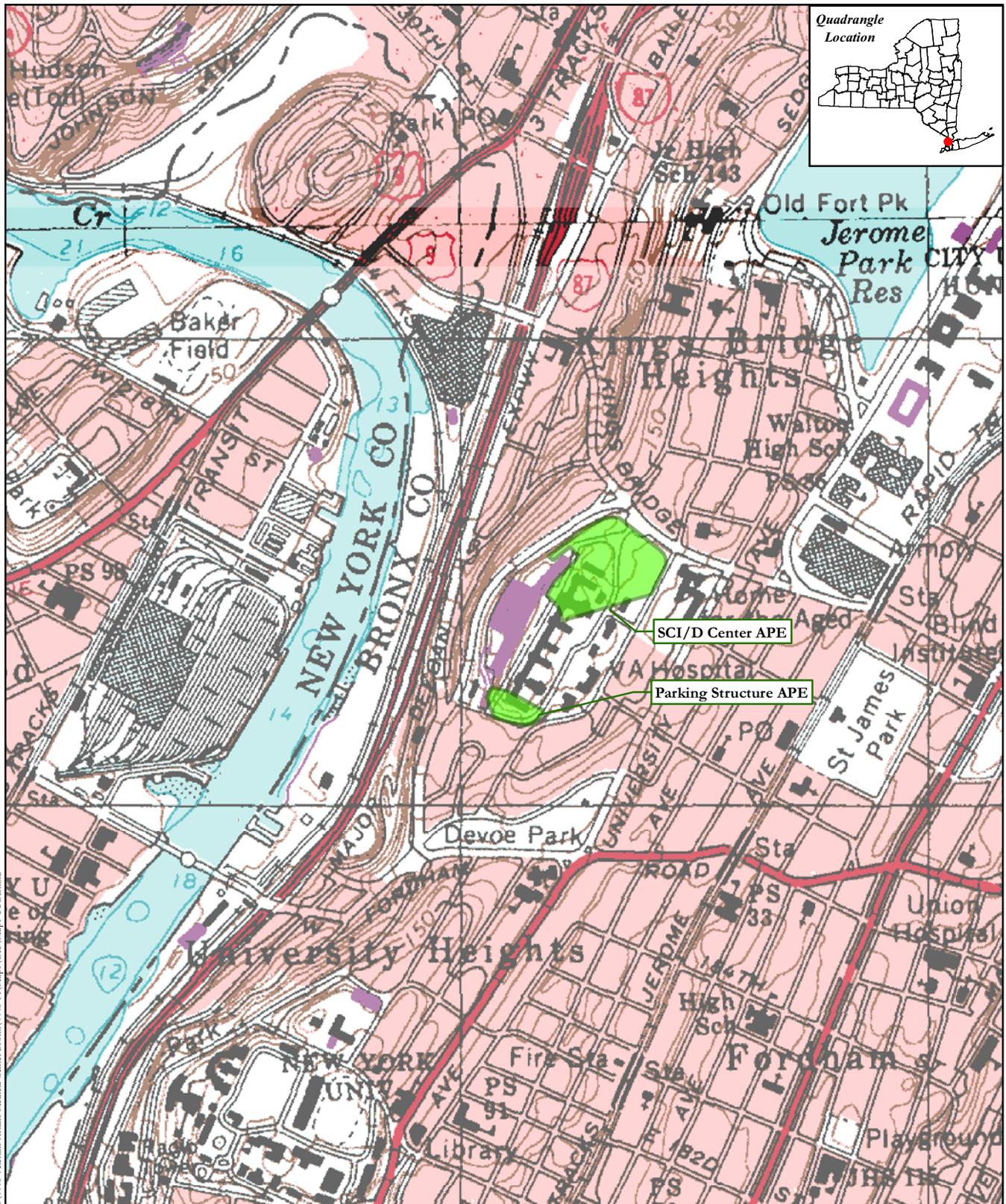
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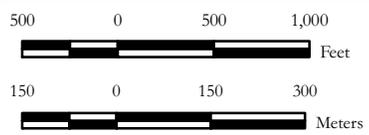
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**MAPS**



August 31, 2011, R:\Active Projects\4446 Veterans Affairs Medical Center Bronx\4446-11\Maps\GIS\Map1-USGS.mxd

**3**



Note: Contour interval is 10 feet.

Project Location (USGS 1998 and 1995)

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Map 1

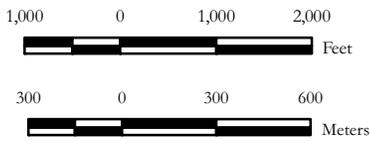


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3



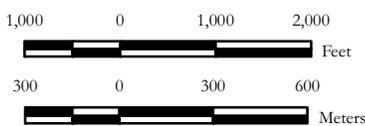
Soil Map (USDA NRCS 2006)



Map 3



**Legend**  
 Vicinity of Project APEs



Note: Scale is on this map is approximate

Sauthier 1777

Map 4



September 1, 2011 R:\Active Projects\4446 Veterans Affairs Medical Center Bronx\4446-11\Maps\GIS\Map 4-1851SIHscymal

APEs



1,000 0 1,000 2,000

Feet

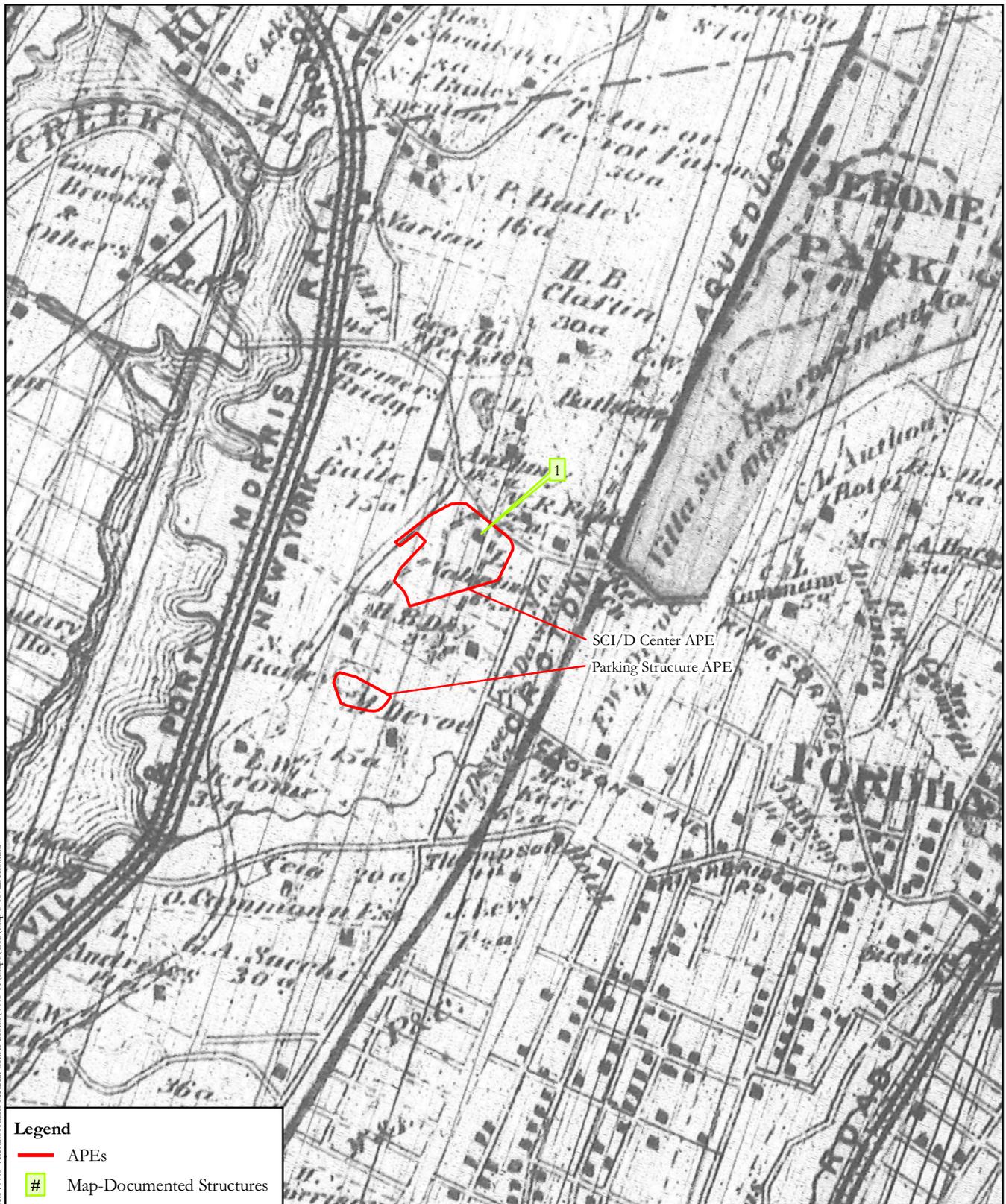
300 0 300 600

Meters

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Sidney & Neff 1851

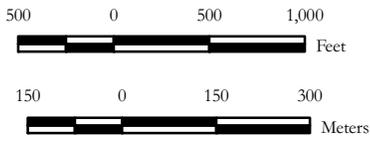
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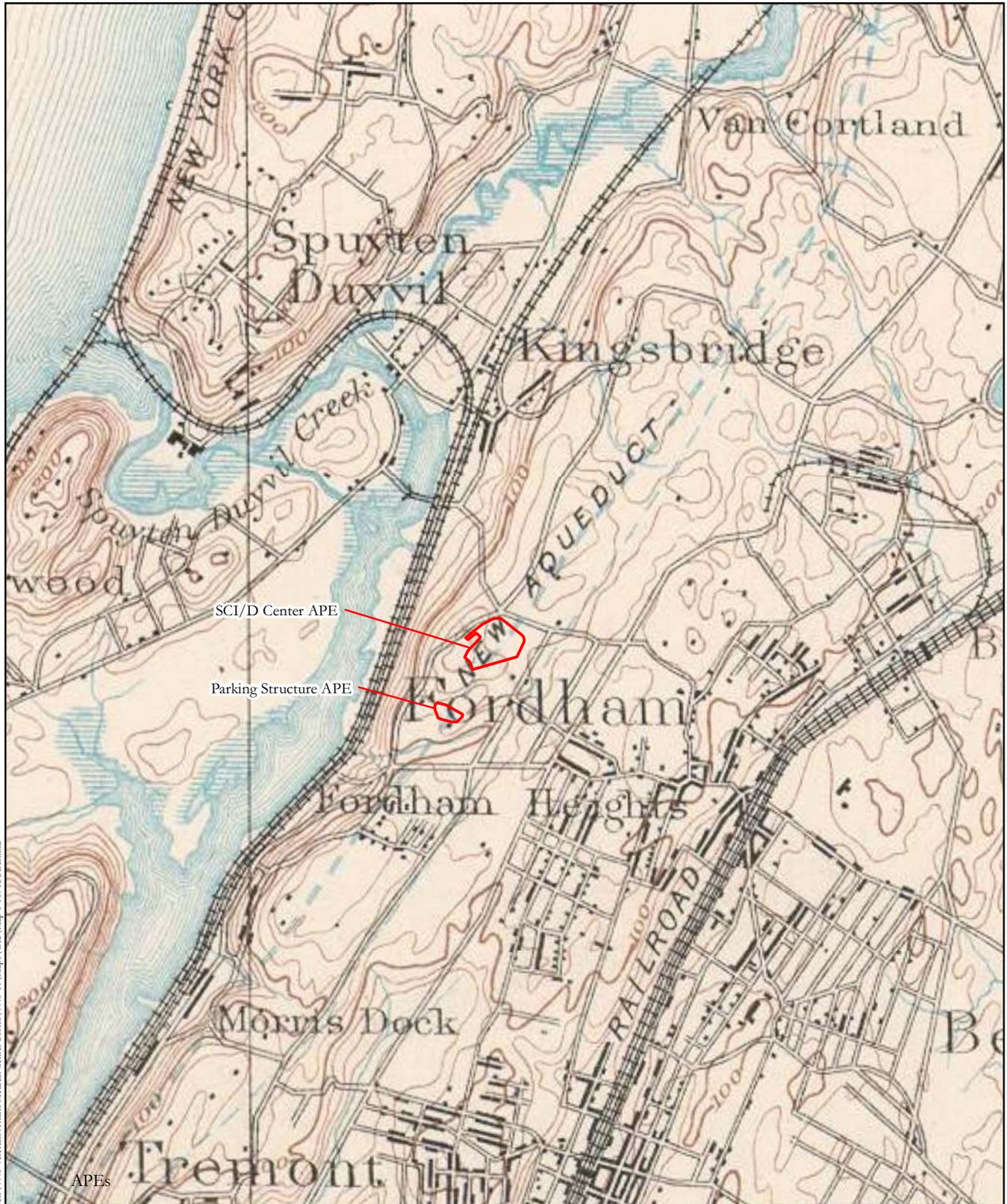
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**Legend**

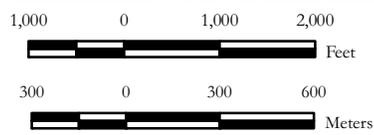
- ▬ APEs
- # Map-Documented Structures



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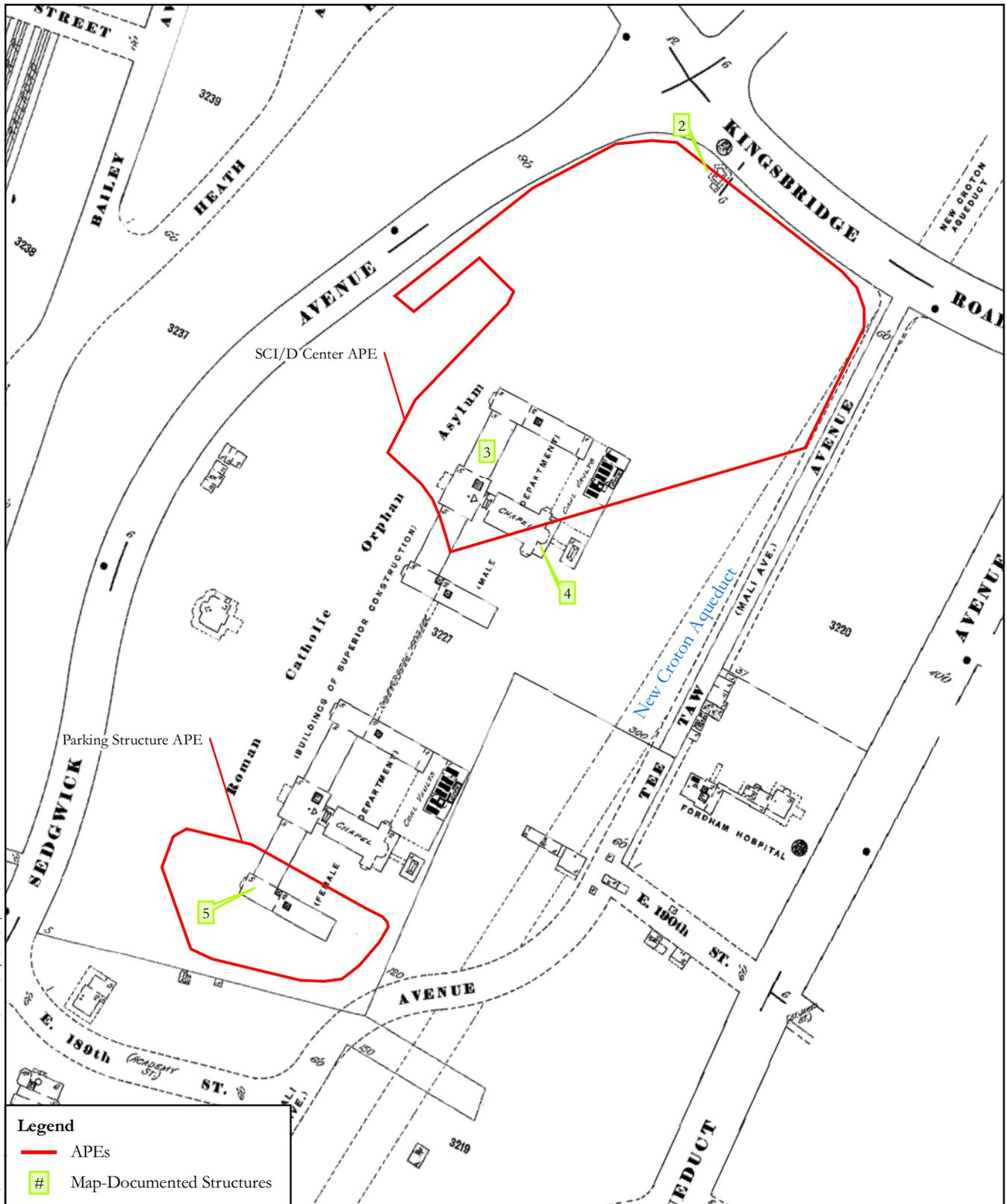


Note: Contour interval is 20 feet.

USGS 1891

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Map 7



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**Legend**

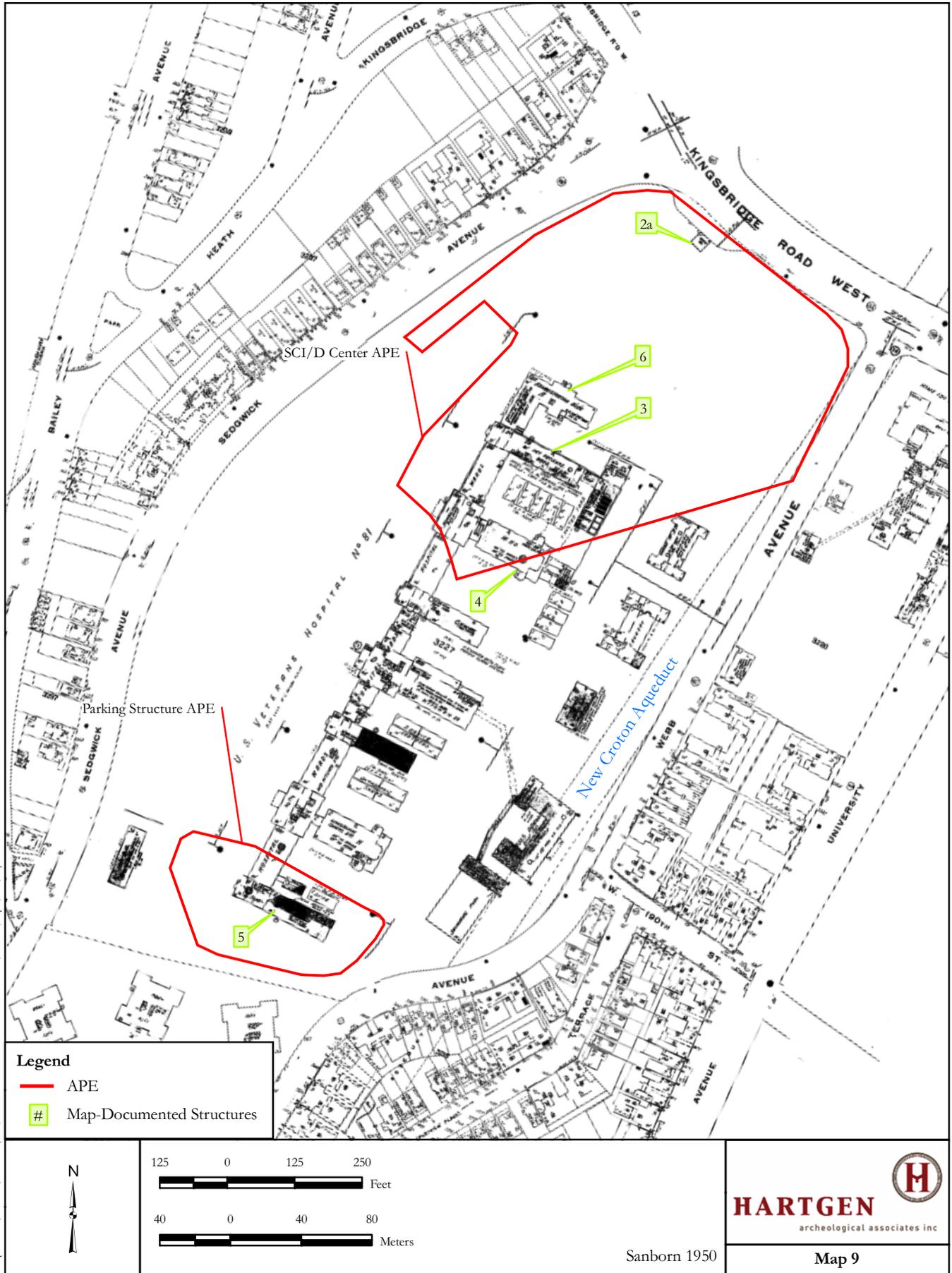
- APEs
- # Map-Documented Structures



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Sanborn 1900

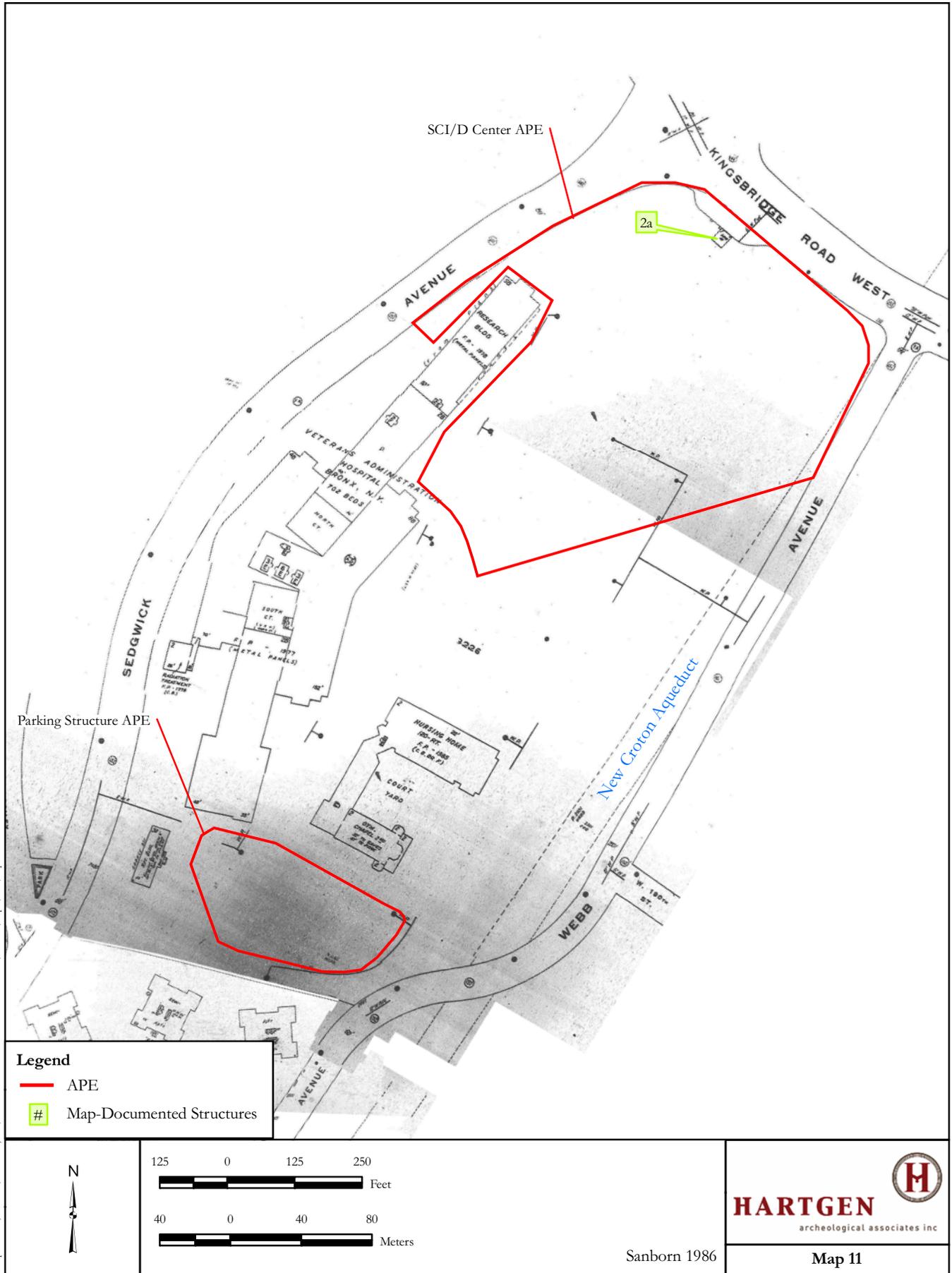
Map 8



September 1, 2011 R:\Active Projects\4446 Veterans Affairs Medical Center Bronx\4446-11\Maps\GIS\Map 8-1950Sanborn.rxd



September 1, 2011: R:\Active Projects\4446 Veterans Affairs Medical Center Bronx\4446-11\Maps\GIS\Map 9-1977Sanborn.rxd



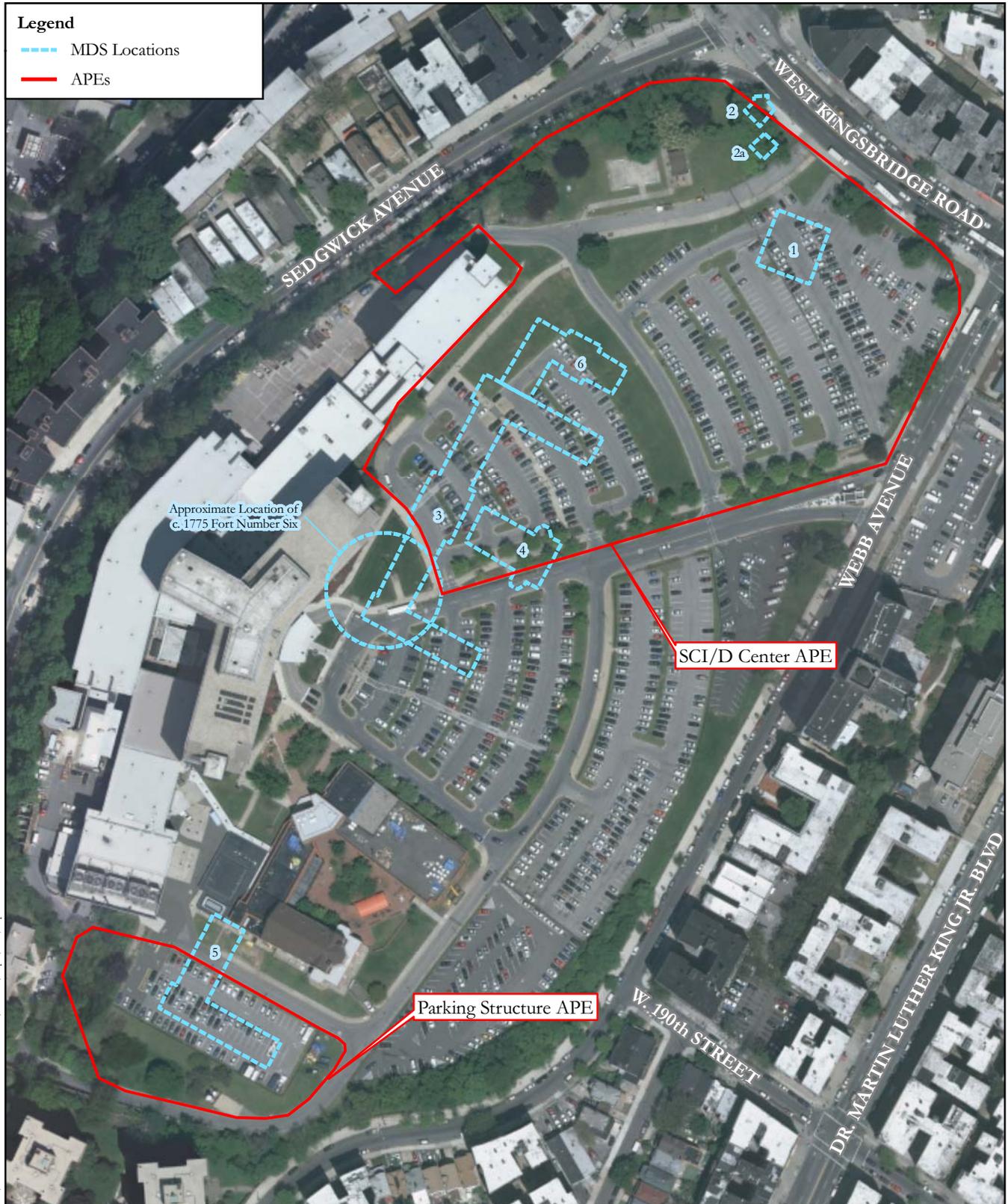
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**Legend**  
 — APE  
 # Map-Documented Structures



Sanborn 1986

Map 11



**Legend**

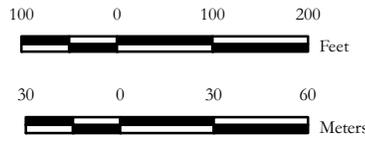
- - - MDS Locations
- APEs

Approximate Location of  
 c. 1775 Fort Number Six

SCI/D Center APE

Parking Structure APE

September 1, 2011 - R:\Active Projects\4446 Veterans Affairs Medical Center Bronx\4446-11\Maps\GIS\Map 11-ortho.mxd



Project Map showing MDS Locations  
 (NYSCSIC 2009,  
 Hartgen 2011)

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## **PHOTOGRAPHS**



Photo 1. View west of the east side of the James J. Peters Veterans Affairs Medical Center hospital.



Photo 2. View north of the c. 1986 nursing home north of the c. 1899 orphanage chapel.



Photo 3. View west of the east side of the c. 1899 girls' dormitory chapel associated with the Roman Catholic Orphan Asylum formerly on the VAMC property.



Photo 4. View northeast of the c. 1899 chapel from the Parking Structure APE.



Photo 5. View north within the parking lot that occupies the proposed Parking Structure APE.



Photo 6. View southwest of the c. 1950 apartment building currently the VISN administration building at the VAMC.



Photo 7. View north of the recently constructed shipping and receiving building north of the hospital building.



Photo 8. View southwest of the picnic area in the northwest corner of the SCI/D Center APE.



Photo 9. View southwest from the northeast corner of the SCI/D Center APE. Most of the SCI/D Center APE is existing parking lots.



Photo 10. View north of the eastern edge of the SCI/D Center APE where the New Croton Aqueduct extends through the VAMC property.



Photo 11. View west of the slope along the southern edge of the Parking Structure APE.



Photo 12. View northwest of the northwest corner of the VAMC property where a gatehouse was located from about 1900 to 1977 (MDS 2 and 2a).



Photo 13. View southeast of the western edge of the VAMC property along Sedgwick Avenue. The area beyond the fence is a short steep slope of with exposed bedrock and vegetation up to the west side of the hospital.



Photo 14. View west of the slope and wooded area along the south edge of the VAMC property.

**APPENDIX 1: OPRHP Project Review Cover Form**



**PROJECT REVIEW COVER FORM** Rev. 10-04

*Please complete this form and attach it to the top of any and all information submitted to this office for review.  
 Accurate and complete forms will assist this office in the timely processing and response to your request.*

This information relates to a previously submitted project.

**PROJECT NUMBER** \_\_ PR \_\_\_\_\_  
**COUNTY** \_\_\_\_\_

If you have checked this box and noted the previous Project Review (PR) number assigned by this office you do not need to continue unless any of the required information below has changed.

**2. This is a new project.**  If you have checked this box you will need to complete ALL of the following information.

**Project Name** VA Medical Center, Spinal Cord Injury/Disorder Center and Parking Structure

**Location** 130 West Kingsbridge Road  
You MUST include street number, street name and/or County, State or Interstate route number if applicable

**City/Town/Village** Bronx  
List the correct municipality in which your project is being undertaken. If in a hamlet you must also provide the name of the town.

**County** Bronx  
If your undertaking\* covers multiple communities/counties please attach a list defining all municipalities/counties included.

**TYPE OF REVIEW REQUIRED/REQUESTED** (Please answer both questions)

**A. Does this action involve a permit approval or funding, now or ultimately from any other governmental agency?**

No  Yes

If Yes, list agency name(s) and permit(s)/approval(s)

Agency involved	Type of permit/approval	State	Federal
<u>U.S. Dept. of Veteran Affairs</u>	<u>Funding</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	<input type="checkbox"/>	<input type="checkbox"/>

**B. Have you consulted the NYSHPO web site at <http://www.nysparks.state.ny.us/shpo> to determine the preliminary presence or absence of previously identified cultural resources within or adjacent to the project area? If yes:**

Yes  No

Was the project site wholly or partially included within an identified archeologically sensitive area?  Yes  No

Does the project site involve or is it substantially contiguous to a property listed or recommended for listing in the NY State or National Registers of Historic Places?  Yes  No

**CONTACT PERSON FOR PROJECT**

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**Firm/Agency** The LA Group

**Address** 40 Long Alley **City** Saratoga Springs **STATE** NY **Zip** 12866

**Phone** (518) 587-8100 x250 **Fax** (518) 587-0180 **E-Mail** dlong@thelagroup.com



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## **PHASE IB ARCHEOLOGICAL FIELD RECONNAISSANCE**

**James J. Peters, Veterans Affairs Medical Center  
Spinal Cord Injury/Disorder Center and Parking Structure**

130 West Kingsbridge Road  
New York City, Borough of the Bronx  
Bronx County, New York

HAA 4446-31  
OPRHP 12PR00473

**Submitted to:**

The LA Group  
40 Long Alley  
Saratoga Springs, NY 12866

**Prepared by:**

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[www.acra-crm.org](http://www.acra-crm.org)

March 2012

## **MANAGEMENT SUMMARY**

SHPO Project Review Number: 12PR00473

Involved State and Federal Agencies: United States Department of Veteran Affairs

Phase of Survey: IB

## **LOCATION INFORMATION**

Location: 130 West Kingsbridge Road

Minor Civil Division: Borough of Bronx (00501)

County: Bronx County

## **SURVEY AREA**

### Spinal Cord Injury/Disorder (SCI/D) Center:

Approximate Length: 850 ft (260 m)

Approximate Width: 570 ft (174 m)

Approximate Number of Acres Surveyed: 8.6 acres (3.4 ha)

### Parking Structure:

Approximate Length: 370 ft (113 m)

Approximate Width: 160 ft (49 m)

Approximate Number of Acres Surveyed: 1.5 acres (0.6 ha)

7.5 Minute Quadrangle Map: Central Park

## **ARCHEOLOGICAL SURVEY OVERVIEW**

Backhoe Trenches: 3 backhoe-excavated trenches between 23.0 and 32.8ft (7-10 m) long, 4-feet (1.2 m) wide,  
and between about 7.9 and 9.8 ft (2.4-3 m) deep

Shovel Test Pits: 8 STPs placed at maximum 50-ft (15-m) intervals in the northeast corner of the property.

## **RESULTS OF ARCHEOLOGICAL SURVEY**

Number and Name of Precontact Sites Identified: none

Number and Name of Historic Sites Identified: none

Number and Name of Sites Recommended for Phase II or Avoidance: none

## **RECOMMENDATIONS**

No further archeological investigation is recommended for the James J. Peters VAMC SCI/D Center and Parking Structure project.

Report Author: Tracy Shaffer Miller

Date of Report: March 23, 2012

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- 2. Project Map (NYSCSCIC 2009, Cannon Design 2011, Hartgen 2011)
- 2a. Phase IB Testing, SCI/D Center APE (Cannon Design 2011, Hartgen 2011)
- 2b. Phase IB Testing, Parking Structure APE (Cannon Design 2011, Hartgen 2011)

**Photograph List**

- 1. The foundation under the extant chapel that was part of the early 20th-century Roman Catholic Orphan Asylum at the VAMC property. This stone appears to be Fordham gneiss, a black-and-white banded, metamorphic rock that underlies this area of the Bronx. Stone similar to the type shown here were found in the 1970s demolition layer from the razing of the Roman Catholic Orphan Asylum in Trenches 1-3.
- 2. View west of an archeologist excavating STP 7 in the grassy area near the north end of the SCI/D APE.
- 3. View north of the existing picnic pavilion and the filled elevated area it is located upon. This area was not tested.
- 4. View southwest of the south portion of the grassy area at the north end of the SCI/D Center APE. A filled elevated area was constructed for the small one-story building in the mid-ground between the photographer and the main hospital building. This area was not tested.
- 5. View east of STP 1 (screen and pile of soil in the foreground) and STP 2 being excavated by two archeologists in the distance.
- 6. View south of Trench 1 being excavated.
- 7. View southwest of two archeologists measuring and documenting Trench 2.

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## **PHASE IB ARCHEOLOGICAL FIELD RECONNAISSANCE**

### **INTRODUCTION**

The LA Group retained Hartgen Archeological Associates, Inc. (HAA, Inc.) on behalf of the United States Department of Veterans Affairs to complete a Phase IB archeological field reconnaissance for the proposed Spinal Cord Injury/Disorder Center and Parking Structure at the James J. Peters Veterans Affairs Medical Center located at 130 West Kingsbridge Road, Bronx, New York. The United States Veteran Affairs Department is funding this project. Therefore, the investigation was conducted to comply with Section 106 of the National Historic Preservation Act and will be reviewed by the New York State Office of Parks, Recreation and Historic Preservation (OPRHP). The investigation was conducted according to the New York Archeological Council's *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections* (1994), which are endorsed by OPRHP. This report has been prepared according to OPRHP's *State Historic Preservation Office (SHPO) Phase I Archeological Report Format Requirements* (2005).

### **PROJECT INFORMATION**

Hartgen completed a Phase IA archeological sensitivity assessment for the project in January 2012 and recommended a Phase IB archeological field reconnaissance in order to assess the presence or absence of archeological deposits and/or prior disturbance in the project APEs. The project area has a high sensitivity for precontact and historical deposits, particularly a Revolutionary War-era fort. However, documentary research and modern conditions indicate that much of the project APEs have undergone substantial disturbance associated with late 19<sup>th</sup> through 20<sup>th</sup>-century construction and demolition of buildings at the site (Hartgen 2012).

In particular, the Phase IB archeological field reconnaissance concentrated on determining the presence or absence of deposits or features associated with potential precontact activity, the Revolutionary War-era Fort Number Six, a c. 1872 structure (MDS 1), and early 20<sup>th</sup>-century use of the parcel by the Roman Catholic Orphan Asylum or the old U.S. Veterans' Bureau hospital in the old orphanage buildings (Map 2).

OPRHP reviewed the Phase IA report and concurred with Hartgen recommendations for a Phase IB in a letter dated February 15, 2012.

#### **Project Location**

James J. Peters Veterans Affairs Medical Center (VAMC) is located southwest of West Kingsbridge Road between Sedgwick Avenue to the north and west and Webb Avenue to the east and south (Map 1).

The existing hospital buildings are located along the western portion of the property. Parking lots currently occupy most of the eastern portion of the property. The existing main hospital building is located along the western side of the property. The hospital is a nine-story structure built in the late 1970s.

The maximum elevation of the project area is about 180 feet (55 m) above the National Geodetic Vertical Datum (NGVD) of 1929. Southeast of the existing hospital building, the landscape gradually slopes towards Webb Avenue and West Kingsbridge Road. West and south of the hospital the landscape slopes steeply downward towards the Harlem River.

#### **Description of the Area of Potential Effects (APE)**

The area of potential effects (APE) includes all portions of the property that will be directly or indirectly altered by the proposed undertaking. There are two discrete areas within the project where extensive ground disturbing activities will take place for the proposed developments within the VAMC property:

- Spinal Cord Injury/Disorder (SCI/D) Center northeast of the existing hospital (Maps 2 and 2a)

- Encompasses approximately 8.6 acres (3.4 ha),
- New free-standing multi-level building with connecting corridors to the main existing hospital building,
- Parking lot reconstruction and new basketball court and picnic area.
- Parking Structure southeast of the hospital (Map 2 and 2b)
  - Encompasses approximately 1.5 acres (0.6 ha),
  - Six-story parking garage with two levels below grade,
  - Reconstruction of surrounding retaining walls and roadways.

## **BEDROCK GEOLOGY**

The Phase IA report described the bedrock geology in the project area as Inwood Marble. However, upon closer field inspection of bedrock outcrops, as well as bedrock encountered in the trenches and reexamination of the bedrock geology map (Fisher et al. 1970) it was determined that Fordham Gneiss is the bedrock type underlying the project area. This is notable as this is the type of stone used to construct the c. 1899 orphanage building foundations (Photo 1).

## **METHODOLOGY**

The Phase IB archeological field reconnaissance was conducted on March 6 and 7, 2012. The field crew consisted of John Ham and Sarah Fisher. Tracy S. Miller was the project director. The weather was cool and clear providing excellent conditions for excavation and visibility. The ground was not frozen at the time of fieldwork.

The field program consisted of three backhoe-excavated trenches and eight hand-excavated shovel test pits (STPs). The Phase IB testing program presented in the Phase IA report proposed four backhoe excavated trenches. One trench that was to be excavated in the grassy area at the north end of the SCI/D Center APE was replaced with STPs due to the ground not being frozen as was anticipated.

### **Shovel Testing**

Archeologists excavated eight STPs at a maximum interval of 50-ft (15-m) in a lawn at the north end of the SCI/D Center APE (Map 2a). STPs were placed in areas that were not characterized by obvious fill or other disturbance, existing paving, or existing utilities (Map 2b, Photos 2-5).

Each STP was 16 inches (40 cm) in diameter. All excavated soil was passed through 0.25-inch hardware mesh and examined for both precontact (Native American) and historic artifacts. The stratigraphy of each test was recorded including the depth, Munsell color, soil description, and artifact content (Munsell Soil Color Charts 2000). The location of each STP was plotted on the project map. Test excavation was photographed.

### **Backhoe Trenching**

The Phase IA literature review research and historical map overlays were utilized to place backhoe trenches in locations most likely to encounter archeological deposits or features. Proposed trench locations were also strategically located to avoid the cellar holes and deep demolition debris associated with the footprint of the orphanage/old hospital buildings (Maps 2-2b). Other factors including existing underground utilities, existing parking lot features, trees, and maintaining access within the hospital grounds informed the trench locations (Photos 6 and 7).

Backhoe trench excavation was directed by the archeological crew. Trenches were excavated stratigraphically and soils were piled next to each trench and examined for artifacts. Soils were troweled to inspect the deposits for both precontact (Native American) and historic artifacts. Trench walls were cleaned and

examined for artifacts in trenches that were less than four feet deep, and the walls were profiled and photographed (Photo 7, Figures 1-3). Trenches greater than four feet deep were documented from the surface. Trench locations were mapped and plotted on the project map.

### **Artifacts and Laboratory**

At the laboratory, shovel test records and other provenience information were entered into a Microsoft Access database (Appendix I: Shovel Test Records). No artifacts were collected during the Phase IB.

## **RESULTS**

### **Shovel Testing**

The eight STPs revealed some moderate disturbance in the area. Archeologists encountered compact, gravelly fill between 6.3 and 22.1 inches (16-56 cm) deep in the STPs. Modern materials such as plastic, wire nails, and window glass were noted in this layer. Dark brown loamy sand buried A horizon between about 5.9 and 15.4 inches (15 and 39 cm) thick was identified below the fill in STPs 1-7. Dark yellowish brown loamy sand subsoil was identified in STPs 1 and 3-7. STP 2 terminated at 29.5 inches (75 cm) due to dense roots in an apparent A-horizon below fill. STP 8 terminated at 13.8 inches (35 cm) due to compact fill.

Heavy rocks that may be the top of the regolith layer (exfoliating bedrock in soil) and subsoil resting above bedrock were encountered at the bottom of STP 3-6. During the Phase IA site visit, exposed bedrock was noted along the west edge of the property along Sedgwick Avenue.

Some modern materials, brick fragments, and two window glass fragments were noted in the bottom of the fill layers and top of the A-horizon. No artifacts were collected from the STPs.

STPs were a very appropriate means for testing this portion of the APE due to the absence of paving, minimal amount of fill, and shallow bedrock, and general lack of historical development. All but two of the tests encountered natural subsoil. No intact historic deposits or features were encountered in the area tested.

### **Backhoe Trenches**

Trenches 1 and 2 were excavated in the SCI/D Center APE. Trench 3 was excavated in the Parking Structure APE. Although the three backhoe trenches were spread across the project area they uncovered similar general stratigraphy.

1. Modern asphalt parking lot/compacted gravel fill.
2. 1970s demolition debris fill from the razing of the old orphanage/hospital buildings.
3. Pre-1970s fill/natural topsoil.
4. Buried natural subsoil (intact in Trench 3 only).
5. Subsoil mixed with large pieces of broken bedrock (regolith).

### **Trench 1 (Figure 1)**

Trench 1, located in the parking lot near the southwest portion of the SCI/D APE was placed between two of the orphanage wings to look for deposits associated with the occupation of the orphanage or earlier deposits associated with the Revolutionary War-era fort adjacent to the APE (Maps 2 and 2a, Photo 6, Figure 1). Beneath about 17.7 inches (45 cm) of parking lot asphalt and modern crushed stone fill, the trench uncovered a brown sandy loam fill layer about 6.3 to 19.7 inches (16 to 50 cm) thick with large gneiss cobbles interspersed (Figure 1, Level 2). Beneath this fill layer there was a thick deposit of yellowish brown loamy sand with large gneiss cobbles. This layer represents the razing of the old orphanage/hospital buildings in the 1970s. Examination of the foundation in the basement of the extant c. 1899 chapel at the site revealed that

this variety of gneiss was used in the construction of the old orphanage/hospital buildings (Photo 1). A layer of dark yellowish brown loamy sand subsoil was uncovered below the demolition layer at about 8.2 ft (2.5 m) below current ground surface. The trench terminated when large fragments of gneiss bedrock were encountered at about 9.5 ft (2.9 m) below ground surface.

No historical or precontact artifacts were identified in Trench 1. The stratigraphy in this trench indicates that the 1970s demolition and grading of the site removed or disturbed any pre-1970s deposits or soils, as the natural subsoil was immediately below the demolition layer.

### **Trench 2 (Figure 2)**

Trench 2 was excavated in the northeastern portion of the SCI/D Center APE in order to identify remains associated with MDS 1, a structure attributed to L. Valentine on the 1872 Beers map (map not shown in this report, see Phase IA Map 6) (Maps 2 and 2a, Photo 7, Figure 2). The first layer below the asphalt was the 1970s demolition layer represented by 29.5-inch (75 cm) thick dark yellowish brown loamy sand with large gneiss cobbles (Figure 2, Level 1). Mottled light olive brown and dark brown loamy sand about 24 inches (60 cm) thick was encountered below the demolition layer (Level 2). This layer was likely associated with the early 20<sup>th</sup>-century construction of the orphanage. A 9-inch diameter c. 1920-30s terracotta drain was uncovered in this layer. The construction type and location of the drain buried beneath the 1970s demolition layer indicated that it was associated with early 20<sup>th</sup>-century orphanage/hospital buildings. Below the early 20<sup>th</sup>-century construction layer was a mottled yellowish brown and dark yellowish brown sand about 15.8 inches (40 cm) thick. This deposit represents a disturbed layer of natural subsoil. Subsoil consisting of dark yellowish brown loamy sand with large fragments of gneiss bedrock was encountered about 6.2 ft (1.9 m) below the current ground surface. The east end of Trench 2 terminated at about 6.9 ft (2.1 m) below current ground surface when the backhoe encountered large fragments of gneiss bedrock. The west end of the trench was not excavated any deeper than the terracotta drain at about 3.3 ft (1 m) below ground surface.

The intact c. 1920-30s drain tile below the 1970s demolition layer evidenced that pre-1970s deposits were intact in Trench 2. However, examination did not uncover artifacts or other indications of historical or precontact activity in the trench. Levels 2 and 3 were also mottled indicating some disturbance perhaps associated with historical construction on the site.

### **Trench 3 (Figure 3)**

Trench 3 was excavated in the northeastern portion of the Park Structure APE (Map 2b, Figure 3). The purpose of this trench was to uncover intact historic deposits associated with the early 20<sup>th</sup>-century orphanage. Level 1 below the parking lot asphalt was 11.8 to 21.7 inches (30 to 55 cm) of dark yellowish brown cobbles and sand modern fill (Figure 3, Level 1). A concrete slab foundation associated with a c. 1950 storage building shown on the 1950 Sanborn map (not shown in report) was uncovered about 19.7 inches (50 cm) below ground surface at the east end of the trench. The 1970s demolition layer was uncovered at about 22 to 31.5 inches (56 to 80 cm) below ground surface (Level 2). The cellar hole and stone rubble associated with an outbuilding shown on the 1914 and 1950 Sanborn maps was identified in the center of the trench (Level 3). The outbuilding was a toilet room probably constructed between 1900 and 1914 for the girls' side of the orphanage. The label of "toilet," rather than privy or outhouse, as well as the close proximity to the main building, suggests that the facilities had running water and flushing toilets rather than a waste vault. The archeology also confirms that there was no waste vault under the building. When the orphanage was built around the turn of the century, indoor flush toilets were just beginning to become standard in urban areas. Providing accommodations for 1,600 children without such facilities could have been dangerously unsanitary. In addition, toilet facilities at an institution such as an orphanage would have been deemed even more imperative as an opportunity to educate children from indigent circumstances on the relatively new ideas of sanitation and health.

Dark yellowish brown loamy sand with lenses of light olive brown sand about 27.6 inches (70 cm) thick underlaid the demolition layer (Level 4). This layer was likely associated with the early 20<sup>th</sup>-century construction of the orphanage. Dark brown loamy sand that likely represented a buried A horizon (Level 5)

that predated the early 20<sup>th</sup>-century orphanage was uncovered below the early 20<sup>th</sup>-century construction layer at about 5 ft (1.5 m) below current ground surface. Level 5 was about 6.3 to 9.1 inches (16 to 23 cm) thick. A dark wood stain likely associated with a buried tree stump or roots was evident at the west end of the trench in Level 5. Dark yellowish brown loamy sand subsoil was identified at about 5.9 ft (1.8 m) below current ground surface. Trench 3 terminated at about 9.5 ft (2.9 m) below ground surface when the backhoe encountered large fragments of gneiss bedrock.

No artifacts were identified in Trench 3. The stone rubble (Level 3) in the center of the trench was a feature associated with a c. 1900 toilet building attached to the orphanage. This building was likely in use until the 1970s and was demolished with the adjacent portions of the orphanage/old hospital. No structural remains or artifacts were apparent in the rubble. Although portions of the pre-20<sup>th</sup> century buried A horizon were intact (Level 5) no artifacts or features were noted in the layer.

## SUMMARY AND RECOMMENDATIONS

Archeological test excavations uncovered a pre-20<sup>th</sup>-century buried A horizon between 6.3 to 22.0 inches (16 to 56 cm) below current ground surface in STPs 1-7 and about 5 ft (1.5 m) below current ground surface in Trench 3. The buried A horizon predates the c. 1899-1902 construction of the Roman Catholic Orphan Asylum. Subsoil was encountered between about 21.7 and 31.3 inches (55 and 77 cm) below current ground surface in STPs 1 and 3-7 and between 5.9 and 8.2 ft (1.8-2.5 m) below current ground surface in Trenches 1-3. The maximum depth of excavation ranged from 1.1 to 3.2 ft (35-99 cm) below ground surface in the STPs and 6.9 to 9.5 ft (2.1-2.9 m) below ground surface in the trenches (Table 1).

Table 1. Excavation results from STPs 1-8 and Trenches 1-3.

Site Stratigraphy	STPs	Trench 1	Trench 2	Trench 3
	Depth Below Current Ground Surface			
Asphalt/modern fill	6.3 and 22.1 inches (16-56 cm)	0-2.6 ft (0-78 cm)	0-4.7 inches (0-12 cm)	0-2.5 ft (0-75 cm)
c. 1970s demolition debris/fill		2.6-8.2 ft (78 cm-2.5 m)	4.7 inches-2.6 ft (12-80 cm)	2.5-3.3 ft (75 cm-1 m)
Early 20 <sup>th</sup> -century fill/disturbance	<i>not present</i>	<i>not present</i>	2.6-4.6 ft (0.8 m-1.4 m) [Level 2] 4.6-6.2 ft (1.4-1.9 m) [Level 3]	3.3-5.6 ft (1-1.7 m)
Pre-20 <sup>th</sup> -century buried A horizon	6.3 to 22.0 inches (16 to 56 cm)	<i>not present</i>	<i>not present</i>	5.6-6.2 ft (1.7-1.9 m)
Subsoil	21.7 and 31.3 inches (55 and 77 cm)	8.2-9.5 ft (2.5-2.9 m)	6.2-6.9 ft (1.9-2.1 m)	6.2-9.5 ft (1.9-2.9 m)
Base of Excavation	1.1-3.2 ft (35-99 cm)	9.5 ft (2.9 m) (Bedrock)	6.9 ft (2.1 m) (Bedrock)	9.5 ft (2.9 m) (Bedrock)

No significant archeological features or deposits were identified in the SCI/D or Parking Structure APEs in the VAMC property. No artifacts were collected from the STPs or trenches, but modern artifacts were noted in several of the excavations. The only features identified were the early 20<sup>th</sup>-century terracotta drain was in Trench 2 and the rubble hole in Trench 3 associated with the c. 1900 toilet building. Although these features were associated with the early 20<sup>th</sup>-century orphanage/old hospital complex, neither feature warrants further investigation.

Excavation revealed that the historic soil deposits associated with the orphanage were disturbed or removed by the 1970s construction. In particular archeologists were looking for artifact scatters or trash middens that may have been in the yard area of the orphanage. However, even if early 20<sup>th</sup>-century yard deposits were intact, it is not likely that there were extensive sheet middens associated with this property. As a charitable institution and later as a hospital the grounds of the property were not likely to have collected the

concentrated middens typical of contemporaneous domestic properties. In addition, features such as the toilet buildings indicate that privies were likely not used at the site.

A buried A horizon that pre-dated the early 20<sup>th</sup>-century orphanage was found intact in the grassy area at the north end of the SCI/D Center APE and deeply buried in Trench 3 (Table 1). This layer had been removed or significantly disturbed in the areas of Trenches 1 and 2. No artifacts or evidence of past activity was noted in the layer.

Testing did not uncover any evidence of the Revolutionary War-era Fort Number Six. According to Bronx historian Stephen Jenkins, Fort Number Six was located upon the grounds of the 19<sup>th</sup>-century Bailey Estate, which became the Roman Catholic Orphan Asylum and later the VAMC. Fort Number Six, also called the “King’s Battery” by the British, was located about 380 feet (116 m) northeast of the mansion on the Bailey Estate. This placed the fort near the southwest corner of the SCI/D APE (Map 2). However, remains of the fort were encountered in 1899 while excavating the foundations for the boys’ side of the Orphan Asylum. Jenkins stated, “In excavating the foundations of the Asylum buildings, it was necessary to destroy the old redoubt; and in doing so several relics of the British occupation were brought to light” (Jenkins 1912:344). The purpose of the archeological field reconnaissance was to confirm Jenkins assessment that the fort was destroyed by the construction of the orphanage. Based on the depth or disturbance and lack of intact buried A horizon in Trenches 1 and 2 is apparent that the 1899 to early 20<sup>th</sup>-century construction of the orphanage buildings did remove or disturb any 18<sup>th</sup>-century fort remains.

In addition, no historic deposits or remains associated with the c. 1872 L. Valentine structure (MDS 1) were uncovered. Again, Based on the results of testing in the SCI/D APE, significant disturbance associated with the 1899 to early 20<sup>th</sup>-century construction of the orphanage removed or destroyed earlier deposits or remains.

No additional archeological testing is recommended for the proposed SCI/D Center and Parking Structure at the James J. Peters VAMC.

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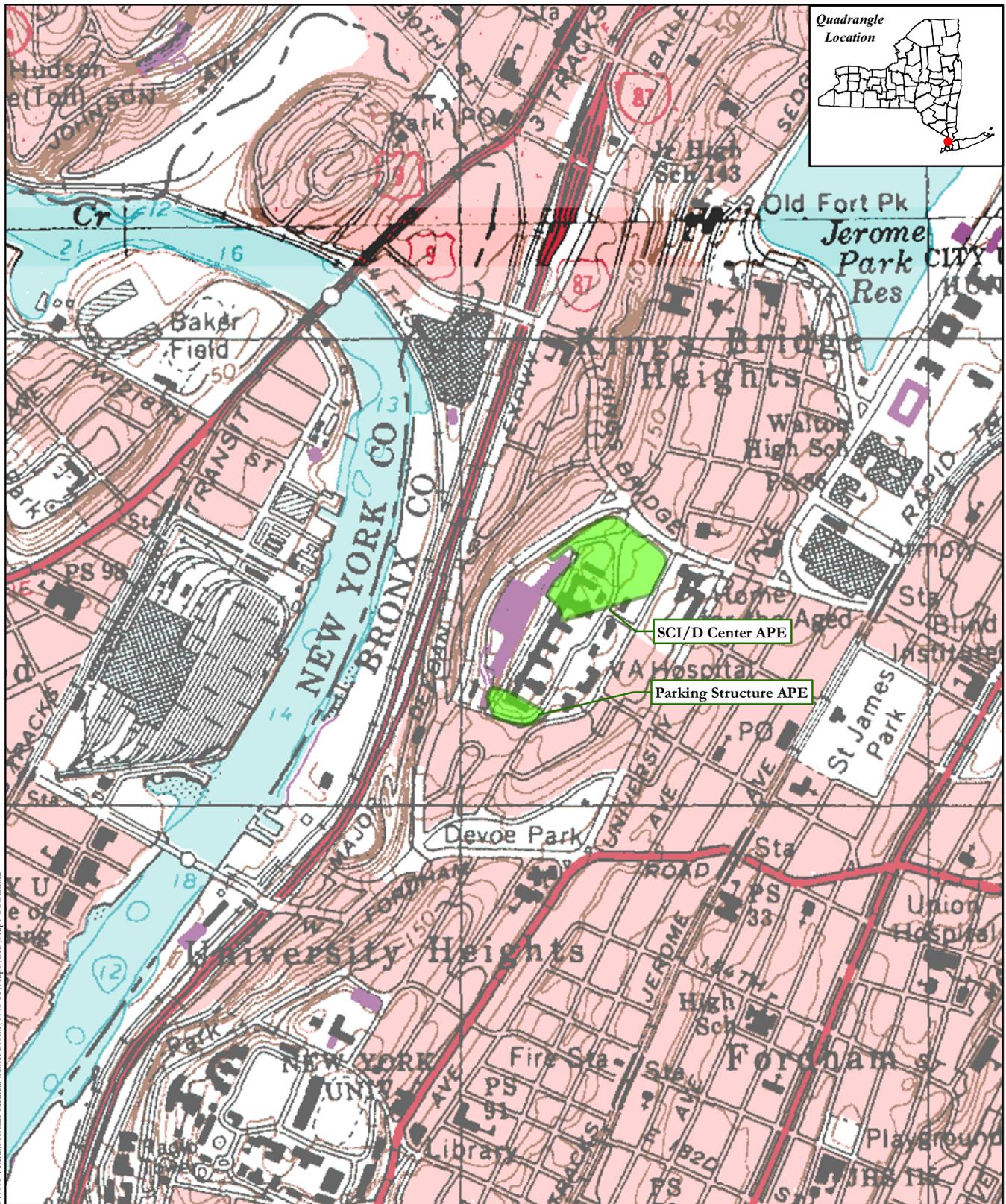
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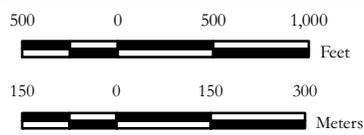
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VAMC Spinal Cord Injury/Disorder Center and Parking Structure, Bronx, New York  
Phase IB Archeological Field Reconnaissance

## **MAPS**



August 31, 2011 R:\Active Projects\4446 Veterans Affairs Medical Center\Bronx\4446-11\Maps\GIS\Map1-USGS.mxd

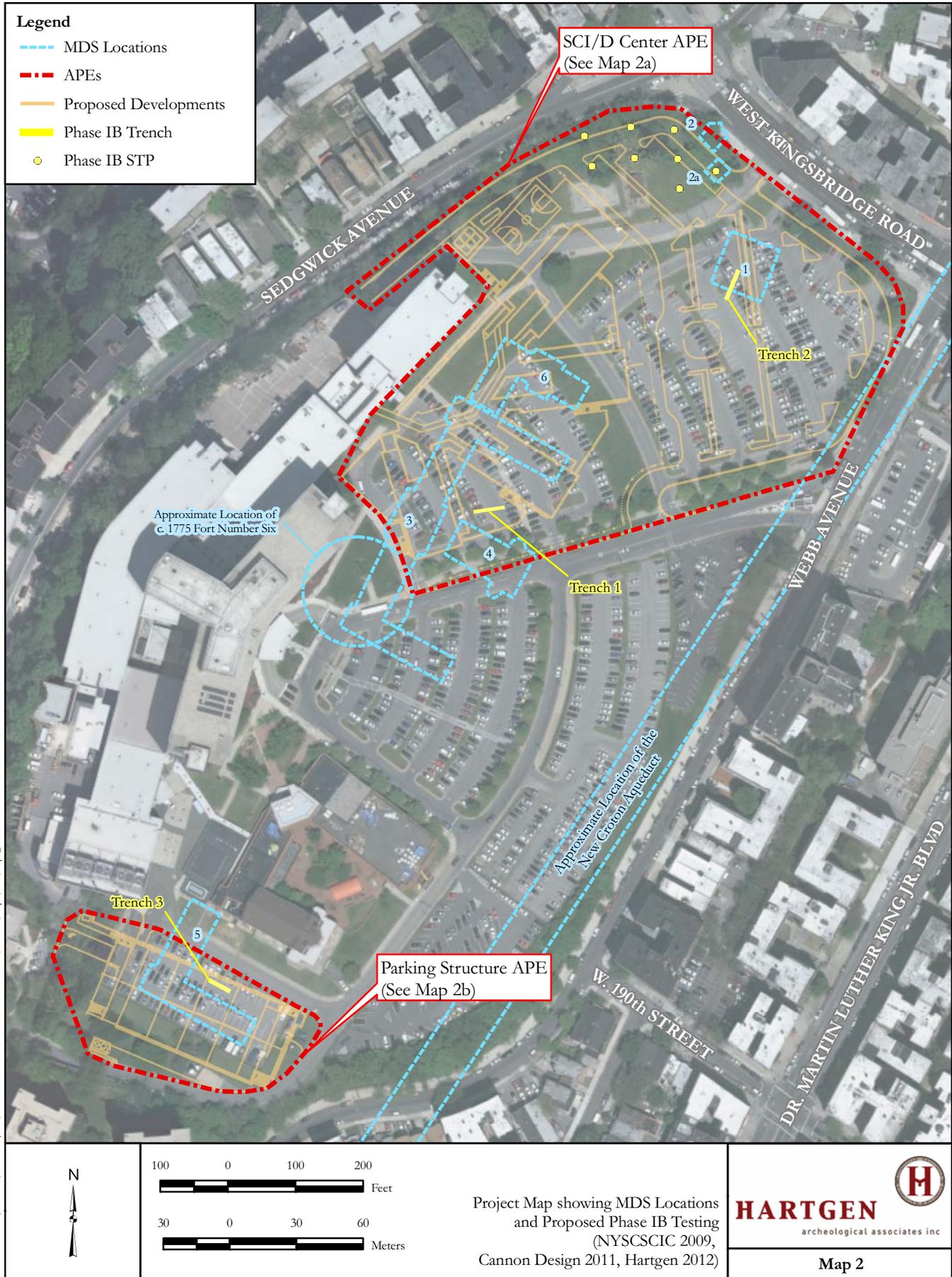


Note: Contour interval is 10 feet.

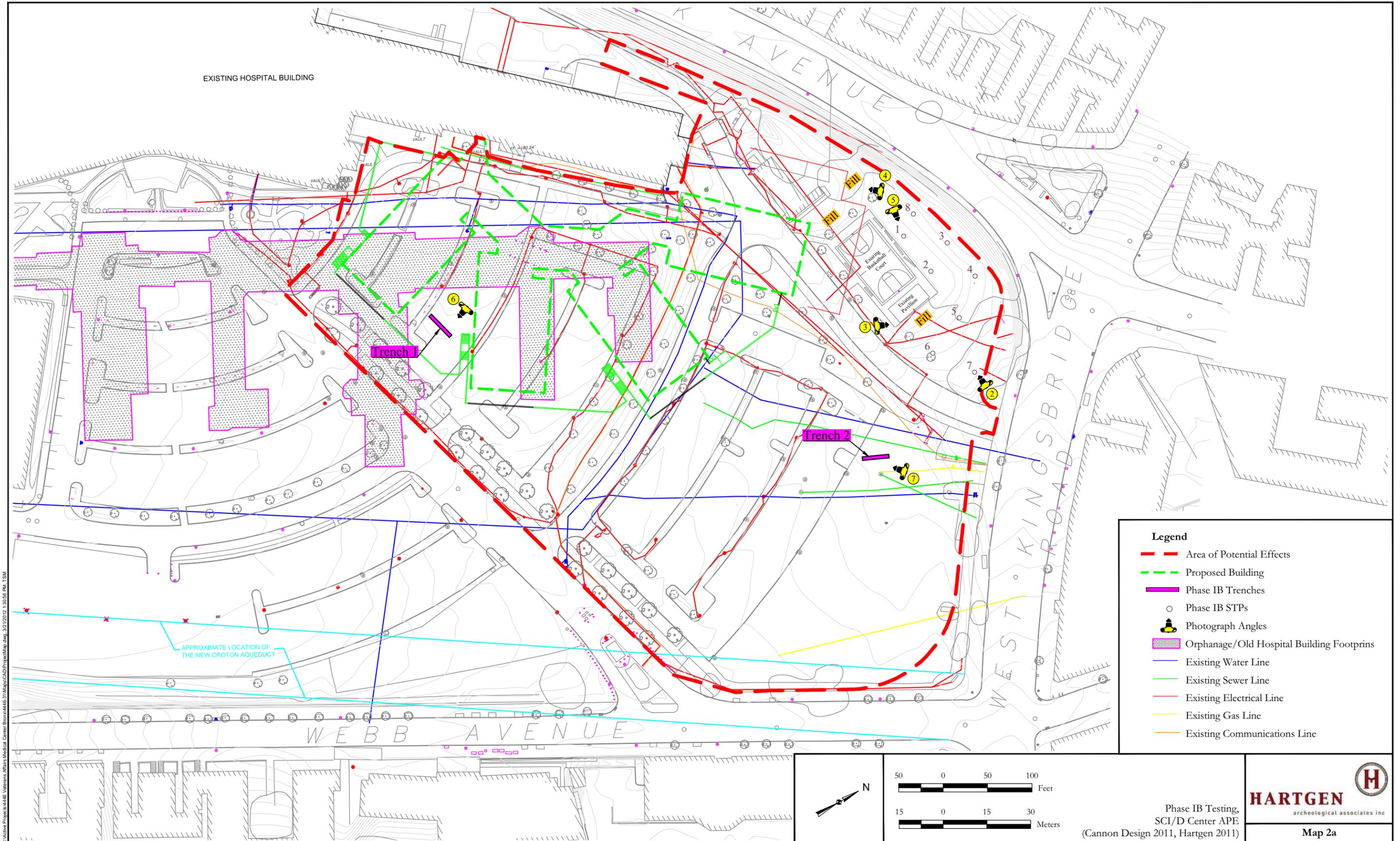
Project Location (USGS 1998 and 1995)



Map 1



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**Legend**

- Area of Potential Effects
- Proposed Building
- Phase IB Trenches
- Phase IB STPs
- Photograph Angles
- Orphanage/Old Hospital Building Footprints
- Existing Water Line
- Existing Sewer Line
- Existing Electrical Line
- Existing Gas Line
- Existing Communications Line

North Arrow (N)

Scale Bars:

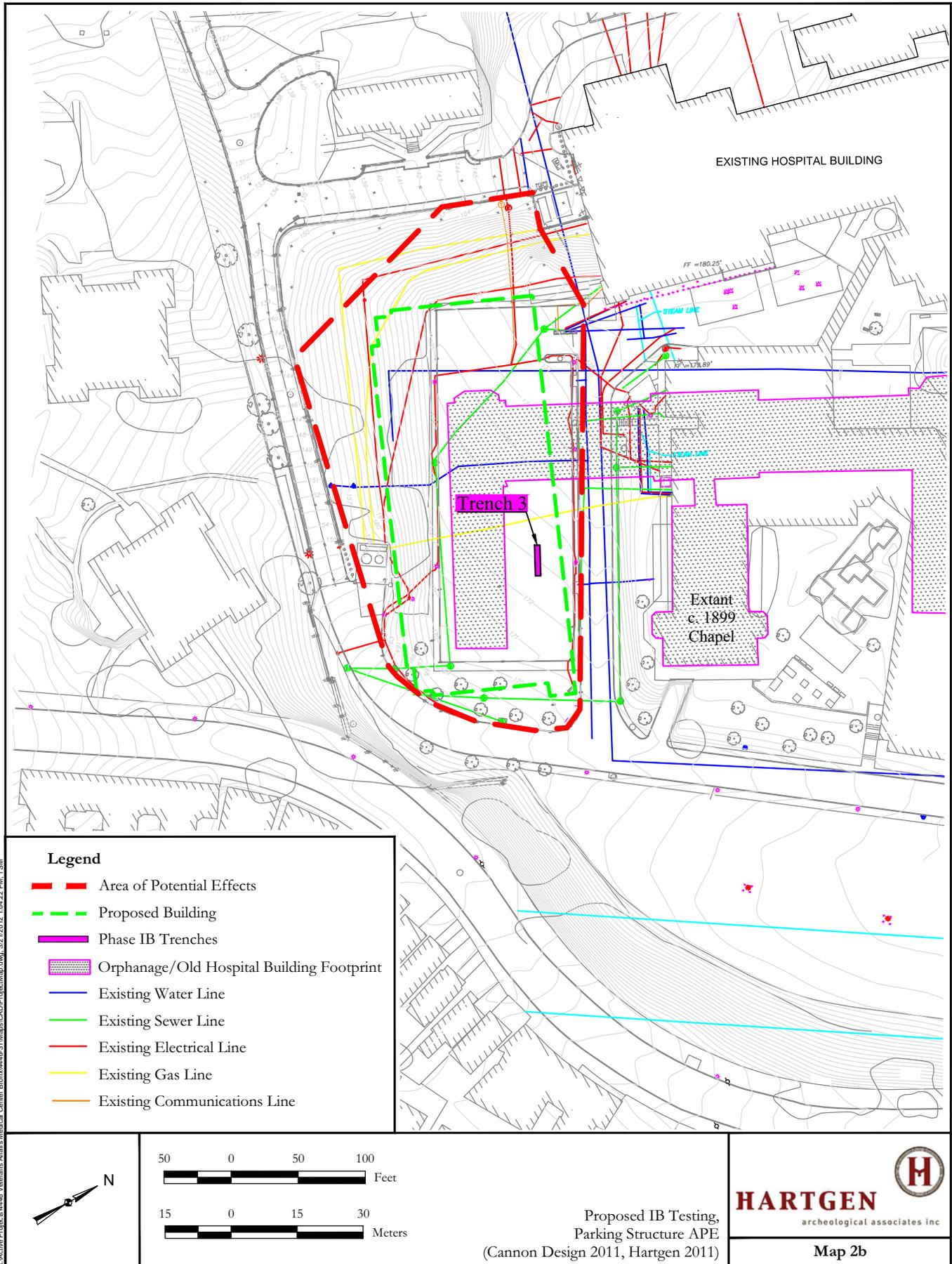
- 0 50 100 Feet
- 0 15 30 Meters

Phase IB Testing,  
SCI/D Center APE  
(Cannon Design 2011, Hartgen 2011)

**HARTGEN**  
archeological associates inc

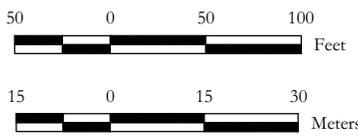
Map 2a

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- Legend**
- - - Area of Potential Effects
  - - - Proposed Building
  - - - Phase IB Trenches
  - Orphanage/Old Hospital Building Footprint
  - Existing Water Line
  - Existing Sewer Line
  - Existing Electrical Line
  - Existing Gas Line
  - Existing Communications Line



Proposed IB Testing,  
 Parking Structure APE  
 (Cannon Design 2011, Hartgen 2011)

**HARTGEN**  
 archaeological associates inc



**Map 2b**

VAMC Spinal Cord Injury/Disorder Center and Parking Structure, Bronx, New York  
Phase IB Archeological Field Reconnaissance

## **PHOTOGRAPHS**



Photo 1. The foundation under the extant chapel that was part of the early 20<sup>th</sup>-century Roman Catholic Orphan Asylum at the VAMC property. This stone appears to be Fordham gneiss, a black-and-white banded, metamorphic rock that underlies this area of the Bronx. Stone similar to the type shown here were found in the 1970s demolition layer from the razing of the Roman Catholic Orphan Asylum in Trenches 1-3.



Photo 2. View west of an archeologist excavating STP 7 in the grassy area near the north end of the SCI/D APE.



Photo 3. View north of the existing picnic pavilion and the filled elevated area it is located upon. This area was not tested.



Photo 4. View southwest of the south portion of the grassy area at the north end of the SCI/D Center APE. A filled elevated area was constructed for the small one-story building in the mid-ground between the photographer and the main hospital building. This area was not tested.



Photo 5. View east of STP 1 (screen and pile of soil in the foreground) and STP 2 being excavated by two archeologists in the distance.

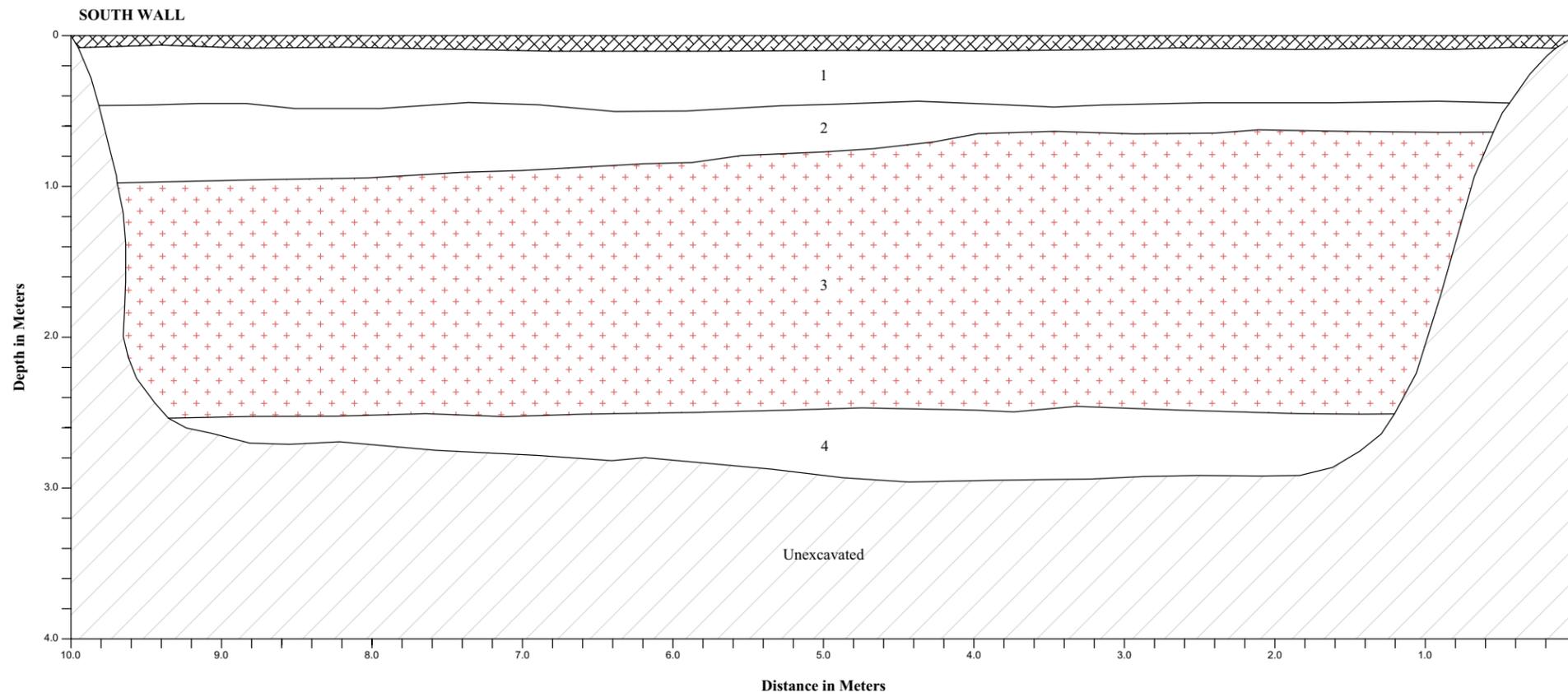


Photo 6. View south of Trench 1 being excavated.

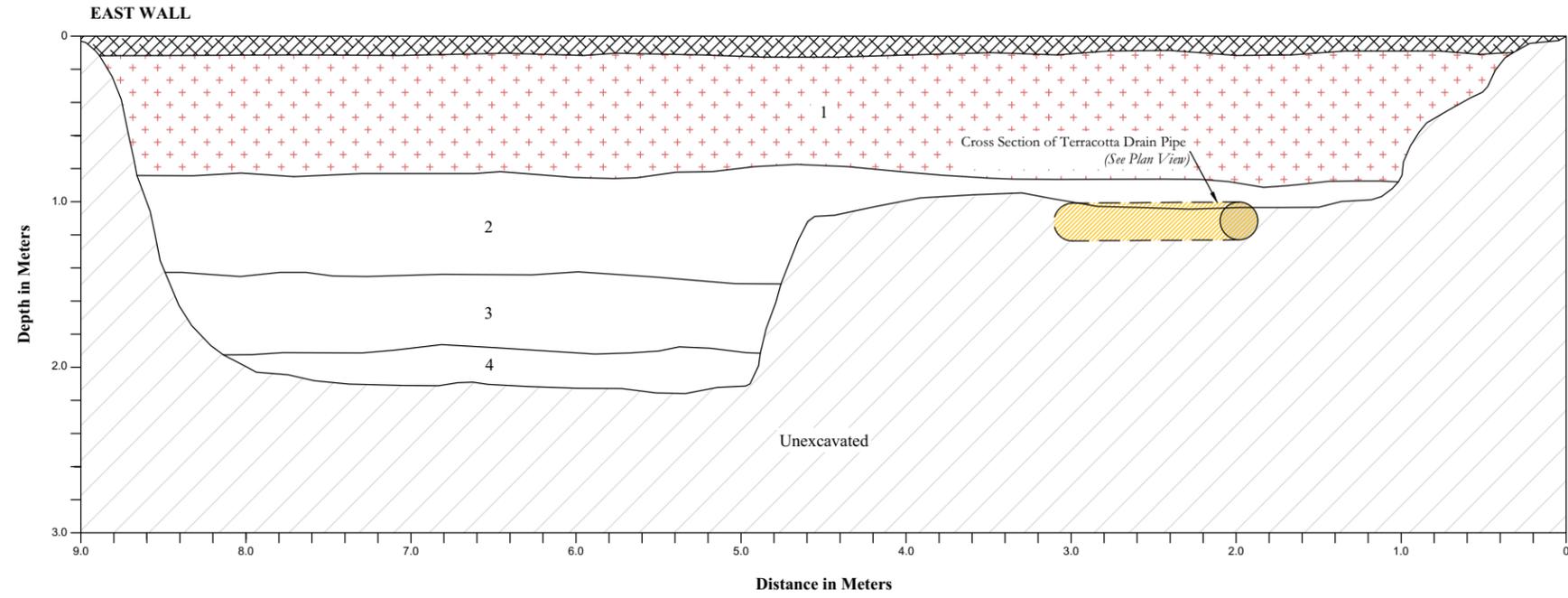


Photo 7. View southwest of two archeologists measuring and documenting Trench 2.

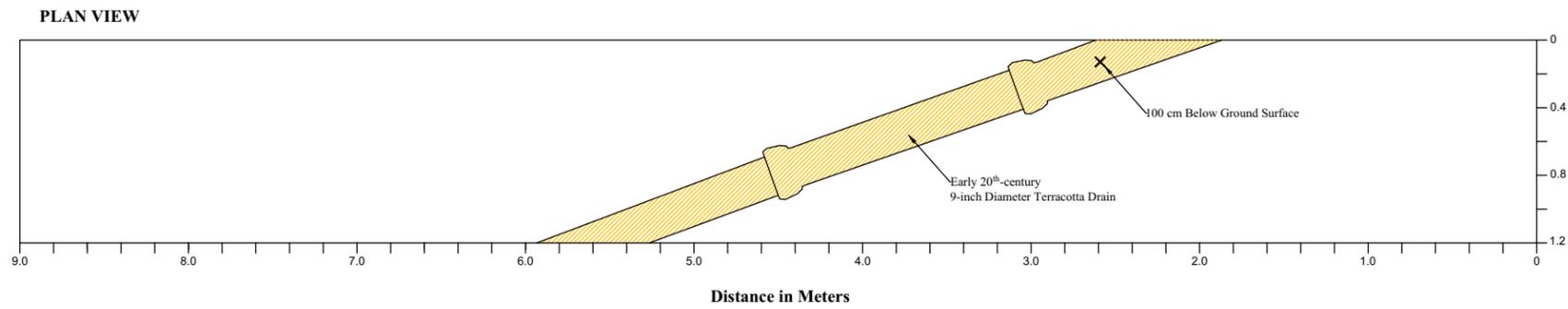
## **FIGURES**



View southeast of the south wall of Trench 1 from the west end of the trench.



- Asphalt parking lot surface
- 1970s demolition rubble/fill
- Level 1: Dark yellowish brown (10YR 4/4) loamy sand with large gneiss cobbles (1970s demolition layer)
- Level 2: Light olive brown (2.5Y 5/3) and dark brown (10YR 3/3) loamy sand (early 20<sup>th</sup>-century construction layer/fill)
- Level 3: Yellowish brown (10YR 5/6) and dark yellowish brown (10YR 4/6) sand with small cobbles (early 20<sup>th</sup>-century disturbance/construction layer mixed with buried subsoil)
- Level 4: Dark yellowish brown (10YR 4/6) loamy sand with large fragments of gneiss bedrock (subsoil)

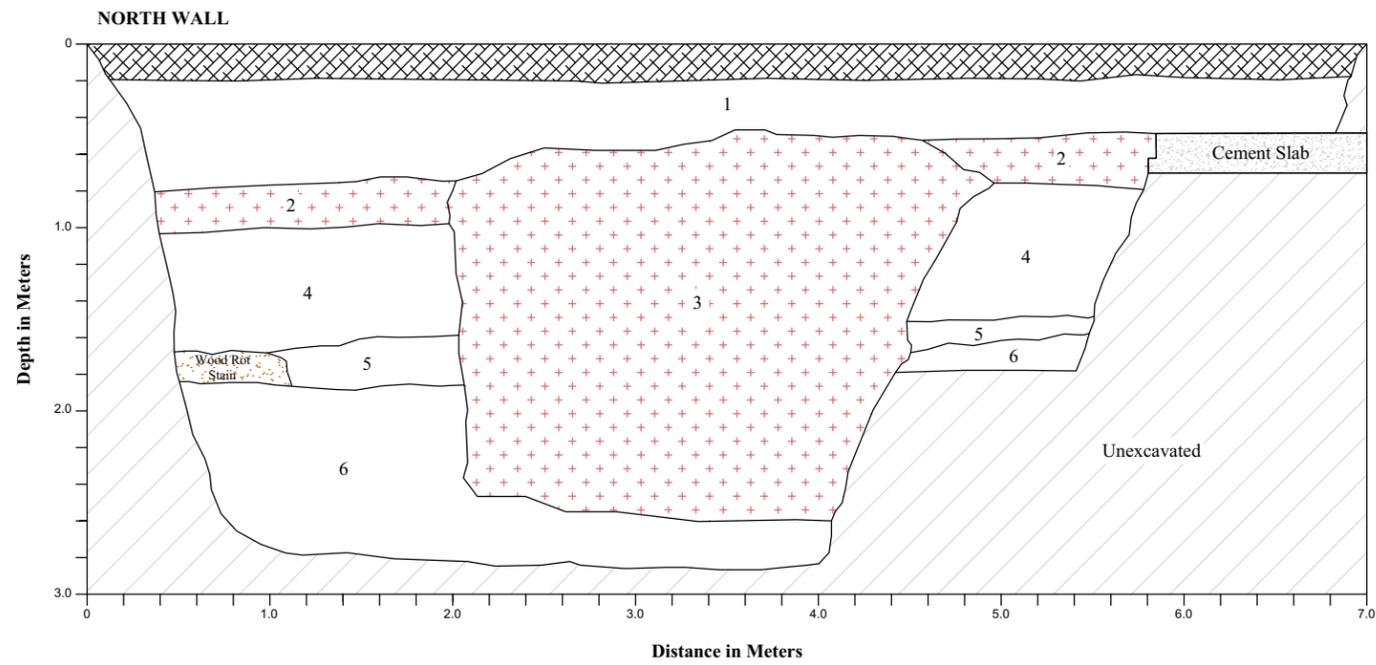


View northeast of the east wall of Trench 2 near the north end of the trench



View northeast of the east wall of Trench 2 showing the terracotta drain.





- Asphalt parking lot surface
- 1970s demolition fill/rubble
- Level 1: Dark yellowish brown (10YR 4/4) cobbles and sand (modern parking lot fill)
- Level 2: Yellowish brown (10YR 5/6) sand and dark brown (10YR 3/3) sandy loam (1970s demolition layer)
- Level 3: Large gneiss cobbles (hole rubble associated with c. 1914 outbuilding)
- Level 4: Dark yellowish brown (10YR 4/6) loamy sand with lenses of light olive brown (2.5Y 5/4) sand (early 20<sup>th</sup>-century construction layer)
- Level 5: Dark brown (10YR 3/3) loamy sand (pre- 20<sup>th</sup>-century buried A horizon)
- Level 6: Dark yellowish brown (10YR 4/6) loamy sand (subsoil)



View southwest of the south wall of Trench 3 near the east end of the trench.

**APPENDIX 1: Shovel Test Records**

**Phase IB VAMC SCI/D Center and Parking Structure, Bronx, New York**  
**Shovel Test Records**

	<u>Depth (cm)</u>	<u>Soil Type</u>	<u>Soil Inclusions</u>	<u>Munsell Color</u>	<u>Termination Reason</u>
1	0 - 40	sandy loam	fill	10YR 2/2	very dark brown
	40 - 77	sandy loam		10YR 3/3	dark brown
	77 - 99	sandy loam	cobbles	10YR 4/6	dark yellowish brown subsoil
2	0 - 47	sandy silt	fill	10YR 4/3	brown
	47 - 75	sandy loam	roots	10YR 3/3	dark brown roots
3	0 - 20	loamy sand	fill	10YR 5/6	yellowish brown
		loamy sand	fill	10YR 3/3	dark brown
	20 - 31	crushed stone	fill	10YR 3/2	very dark grayish brown
	31 - 56	loamy sand	fill	10YR 4/3	brown
		loamy sand	fill	10YR 4/6	dark yellowish brown
	56 - 77	sandy loam	cobbles	10YR 3/3	dark brown
	77 - 87	sandy loam		10YR 4/6	dark yellowish brown subsoil/rock
4	0 - 12	loamy sand	fill	10YR 5/6	yellowish brown
		loamy sand	fill	10YR 3/3	dark brown
	12 - 20	gravel	fill	10YR 2/2	very dark brown
	20 - 29	loamy sand	fill	10YR 3/3	dark brown
		loamy sand	fill	10YR 4/6	dark yellowish brown
	29 - 57	sandy loam		10YR 3/3	dark brown
	57 - 69	loamy sand		10YR 4/6	dark yellowish brown rock
		loamy sand		10YR 4/3	brown subsoil/rock
5	0 - 16	loamy sand	fill	10YR 4/6	dark yellowish brown
		loamy sand	fill	10YR 4/3	brown
	16 - 55	sandy loam	cobbles	10YR 3/3	dark brown
	55 - 84	sandy loam		10YR 4/6	dark yellowish brown subsoil
6	0 - 23	sandy loam	fill	10YR 3/3	dark brown
	23 - 40	loamy sand	fill	10YR 3/4	dark yellowish brown
		loamy sand	fill	10YR 5/6	yellowish brown
	40 - 55	loamy sand		10YR 3/4	dark yellowish brown
	55 - 62	loamy sand		10YR 4/6	dark yellowish brown subsoil/rock
7	0 - 37	sandy loam	fill	10YR 3/3	dark brown
	37 - 70	loamy sand		10YR 3/4	dark yellowish brown
		loamy sand		10YR 5/6	yellowish brown
	70 - 85	loamy sand		10YR 4/6	dark yellowish brown subsoil
8	0 - 35	sand	fill and gravel	10YR 3/3	dark brown compact fill
		sand	fill and gravel	10YR 4/4	dark yellowish brown compact fill

**Appendix 2: OPRHP Project Review Cover Form**



**PROJECT REVIEW COVER FORM** Rev. 10-04

*Please complete this form and attach it to the top of **any and all information submitted to this office** for review.  
 Accurate and complete forms will assist this office in the timely processing and response to your request.*

**This information relates to a previously submitted project.**

**PROJECT NUMBER** 12 **PR** 00473

**COUNTY** Bronx



If you have checked this box and noted the previous Project Review (PR) number assigned by this office you do not need to continue unless any of the required information below has changed.

**2. This is a new project.**



If you have checked this box you will need to complete ALL of the following information.

**Project Name** \_\_\_\_\_

**Location** \_\_\_\_\_  
 You MUST include street number, street name and/or County, State or Interstate route number if applicable

**City/Town/Village** \_\_\_\_\_  
 List the correct municipality in which your project is being undertaken. If in a hamlet you must also provide the name of the town.

**County** \_\_\_\_\_  
 If your undertaking\* covers multiple communities/counties please attach a list defining all municipalities/counties included.

**TYPE OF REVIEW REQUIRED/REQUESTED** (Please answer both questions)

**A. Does this action involve a permit approval or funding, now or ultimately from any other governmental agency?**

No  Yes

If Yes, list agency name(s) and permit(s)/approval(s)

Agency involved	Type of permit/approval	State	Federal
_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	<input type="checkbox"/>	<input type="checkbox"/>

**B. Have you consulted the NYSHPO web site at <http://www.nysparks.state.ny.us/shpo> to determine the preliminary presence or absence of previously identified cultural resources within or adjacent to the project area? If yes:**

Yes  No

**Was the project site wholly or partially included within an identified archeologically sensitive area?**  Yes  No

**Does the project site involve or is it substantially contiguous to a property listed or recommended for listing in the NY State or National Registers of Historic Places?**  Yes  No

**CONTACT PERSON FOR PROJECT**

**Name** \_\_\_\_\_ **Title** \_\_\_\_\_

**Firm/Agency** \_\_\_\_\_

**Address** \_\_\_\_\_ **City** \_\_\_\_\_ **STATE** \_\_\_\_\_ **Zip** \_\_\_\_\_

**Phone** (\_\_\_\_) \_\_\_\_\_ **Fax** (\_\_\_\_) \_\_\_\_\_ **E-Mail** \_\_\_\_\_



March 26, 2012

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Subject: Additional Documentation of the c. 1899 Chapel at the James J. Peters VAMC,  
130 West Kingsbridge Road, Bronx, New York  
HAA 4446-81, OPRHP 12PR00473

Dear Mr. Mackey,

The following letter briefly outlines the findings of the additional documentation of a c. 1899 chapel at the James J. Peters Veterans Affairs Medical Center (VAMC) in Bronx County, New York (Map 1). In a response letter dated February 15, 2012, OPRHP noted that the 1899 Chapel may be indirectly (visually) affected by the adjacent proposed Parking Structure (Map 2). OPRHP requested additional information in the form of interior photographs of the chapel so that they may provide supplementary comments on this aspect of the project.

I took the following photographs on March 7, 2012. The attached plan views for the second floor, first floor, and basement show the angle and location of each photo (Figures 1-3). The sanctuary is located on the second floor of the chapel. The chancel in the sanctuary has a rotating platform that allows for Christian, Jewish, and Muslim worship in the sanctuary. The first floor of the chapel has recently been remodeled and is now occupied by offices and meeting rooms. The basement is currently used as storage space.



Photo 1. View southeast from the modern hospital into the entrance of sanctuary on the second floor of the chapel.

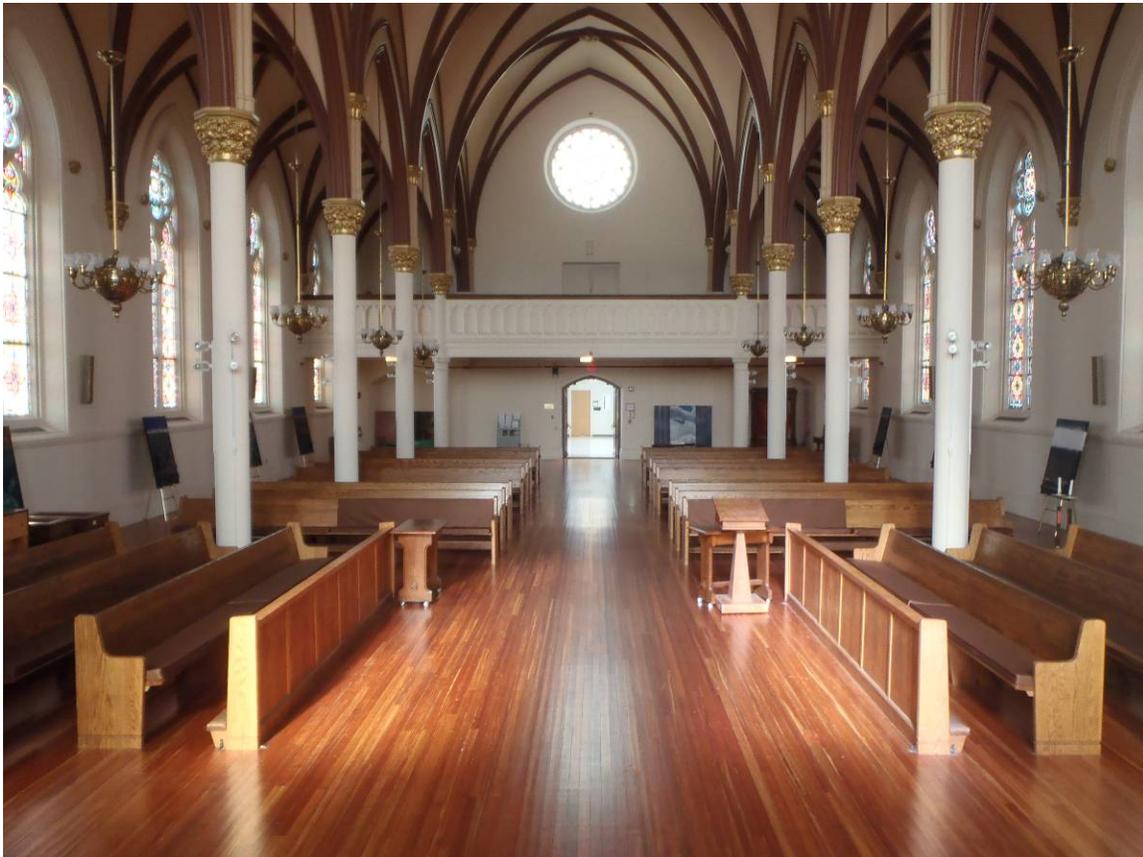


Photo 2. View northwest from the chancel down the central aisle into the nave of the sanctuary.

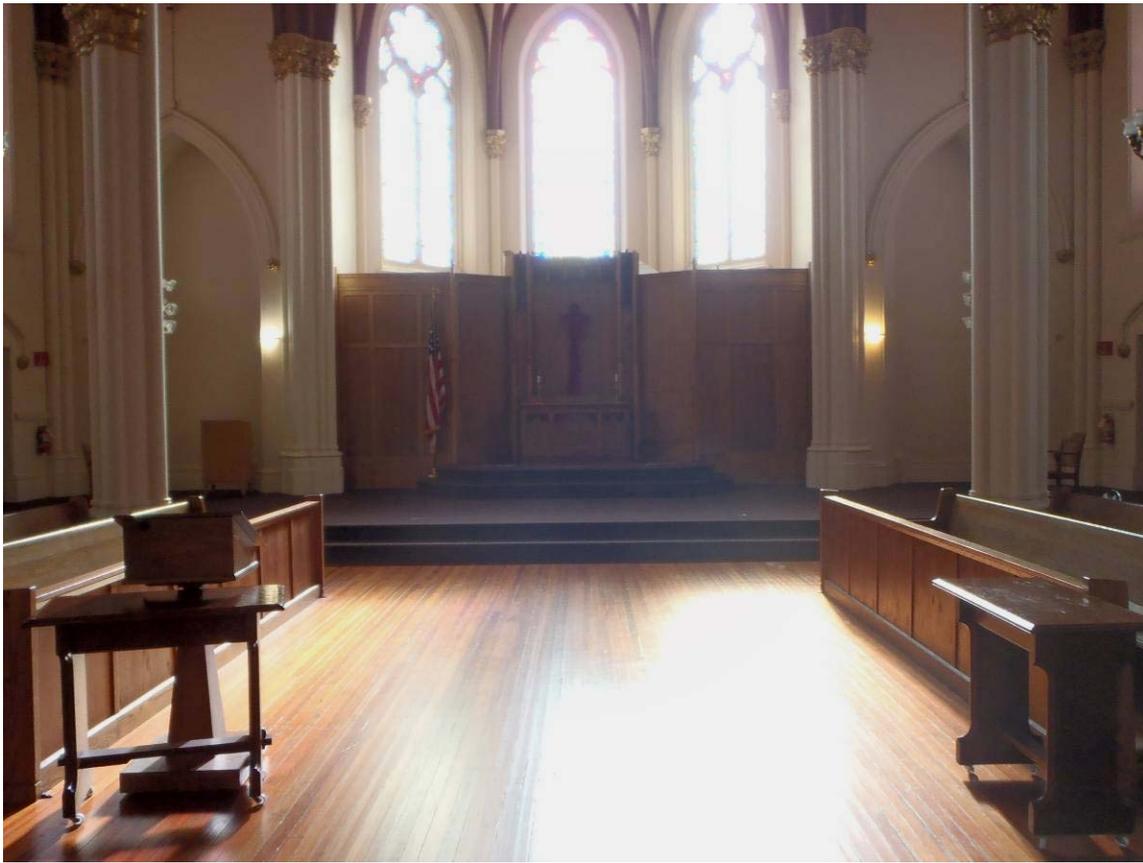


Photo 3. View southeast from the nave towards the altar and chancel at the east end of the sanctuary.

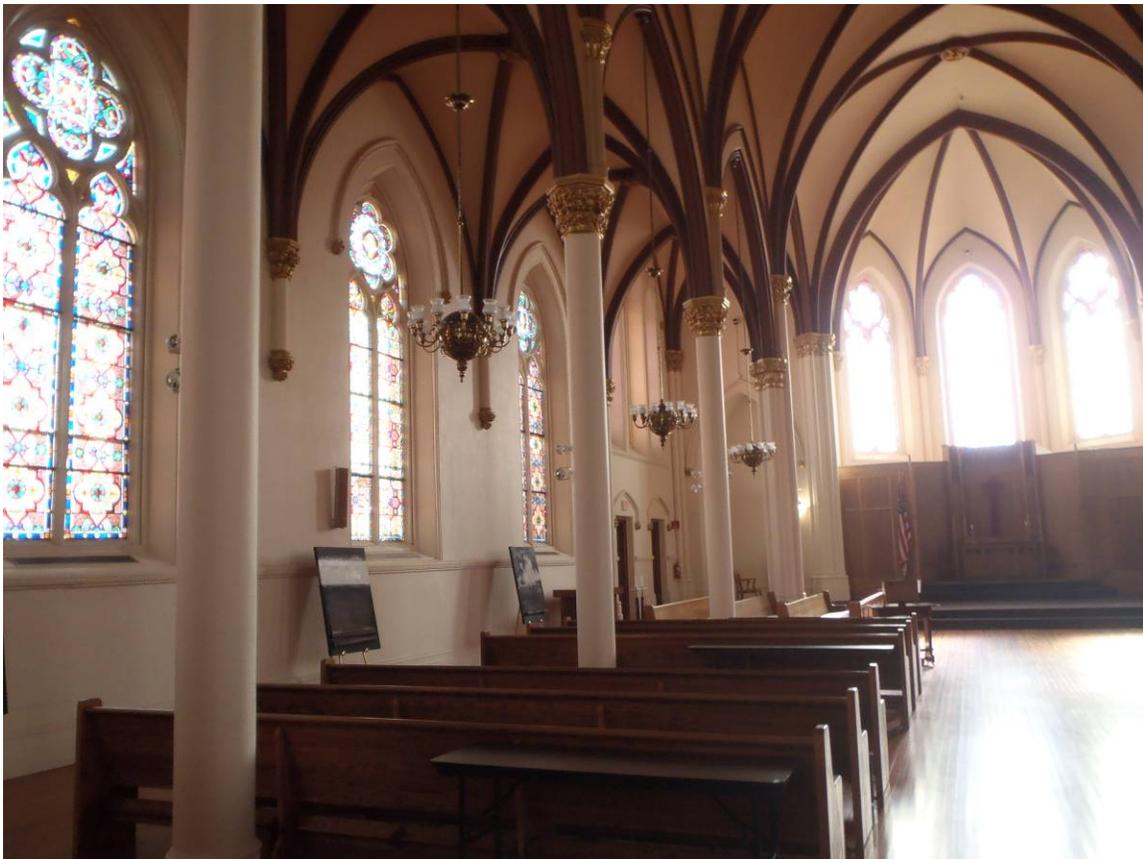


Photo 4. View east of the north side of the sanctuary from the nave. The windows, columns, pews, and lamps on the north and south sides of the nave are laid out as mirror images of each other.



Photo 5. View west from the northeast corner of the nave towards of south side of the sanctuary showing the balcony at the west end of the chapel above the narthex.



Photo 6. View west into the south end of the narthex at the west end of the sanctuary.



Photo 7. View north of the base of a typical wooden column in the north side of the sanctuary.



Photo 8. The top of the typical column in the north side of the sanctuary supporting a rib vault.

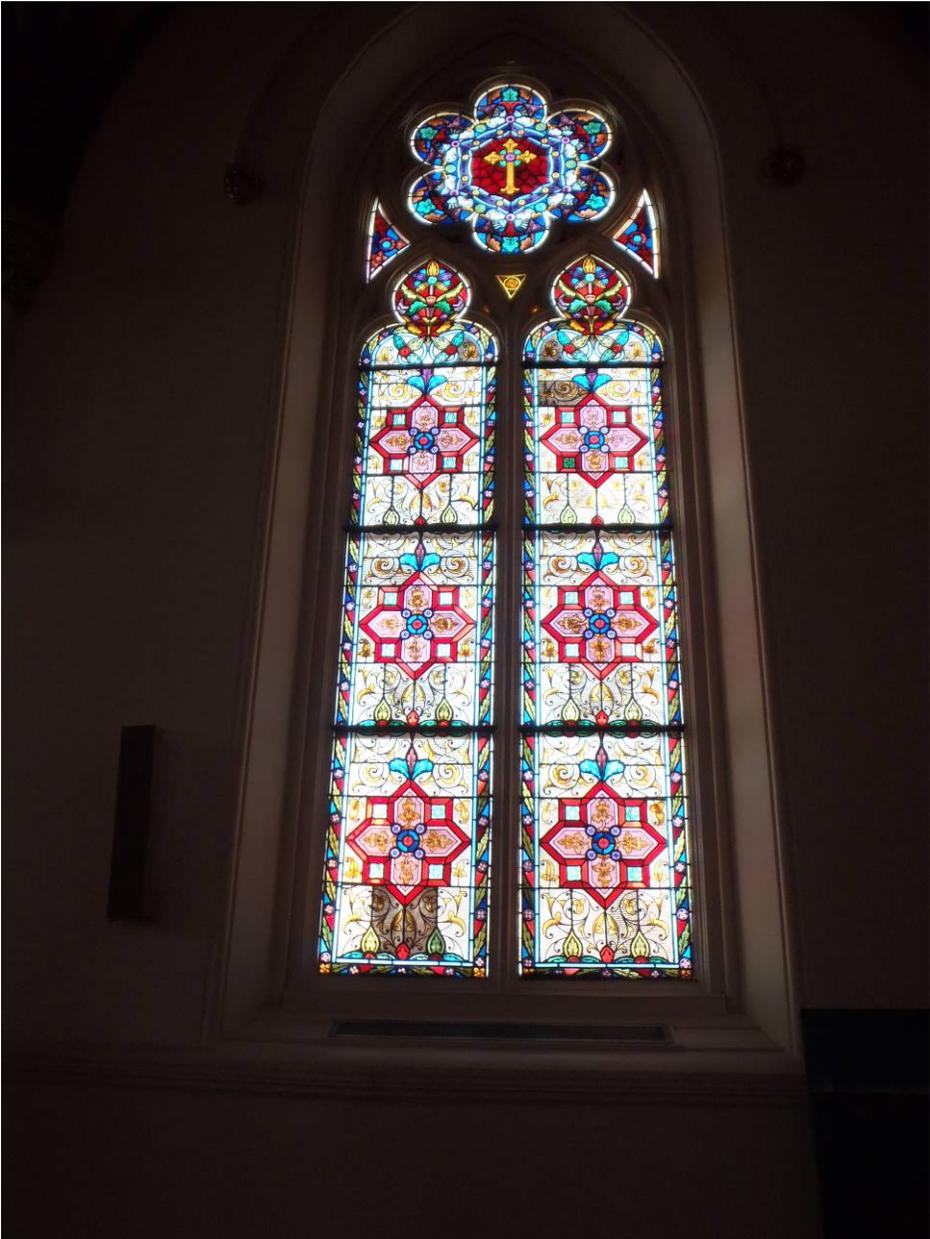


Photo 9. View northeast of one of the stained glass windows on the north side of the sanctuary.



Photo 10. Detail view northeast of the wooden trim below a window on the north wall.

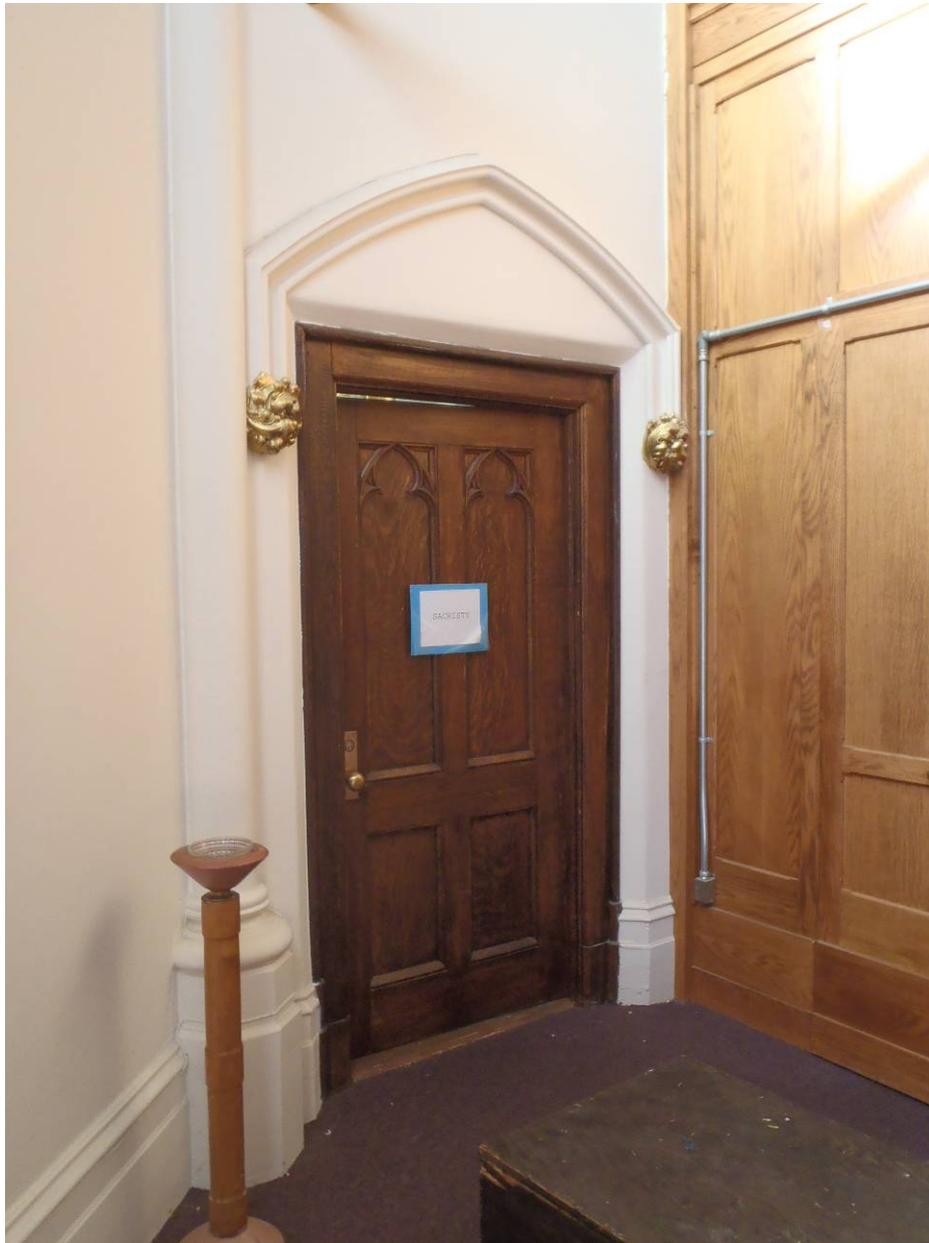


Photo 11. View west of a door to the sacristy (storage room for vestments and other church furnishings) behind the chancel.



Photo 12. View northeast of the sacristy behind the chancel.



Photo 13. View southwest of the door that exits from behind the chancel onto the north side of the chancel.



Photo 14. View southeast down the stairwell at the southeast corner of the chapel. There is a similar stairwell at the northeast corner of the chapel. The stairwells at the northeast and southeast corners of the building form the transept of the chapel



Photo 15. View southeast down a hallway in the remodeled first floor of the chapel.



Photo 16. View northeast of an original historic window retained amid a drop ceiling and a modern remodeled meeting room in the first floor.



Photo 17. View southwest in the basement of the bottom of the staircase at the southeast corner of the chapel. The foundation walls appear to be constructed of Fordham gneiss, the underlying bedrock in this area. The floor of the basement is poured concrete.



Photo 18. View west in the northern portion of the basement showing one in a series of the brick support pillars under the structure. This area is used for storage.



Photo 19. View northeast of the exterior of the chapel from the Parking Structure APE.



Photo 20. View west from northeast of the chapel showing the east and north sides of the building. The Parking Structure APE is located just south of the chapel in the left side of the photo.

The current project does not propose any direct impacts to the chapel. The two floors and basement of the chapel are currently used for interfaith religious worship, offices, and storage.

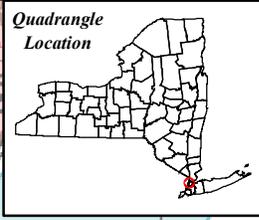
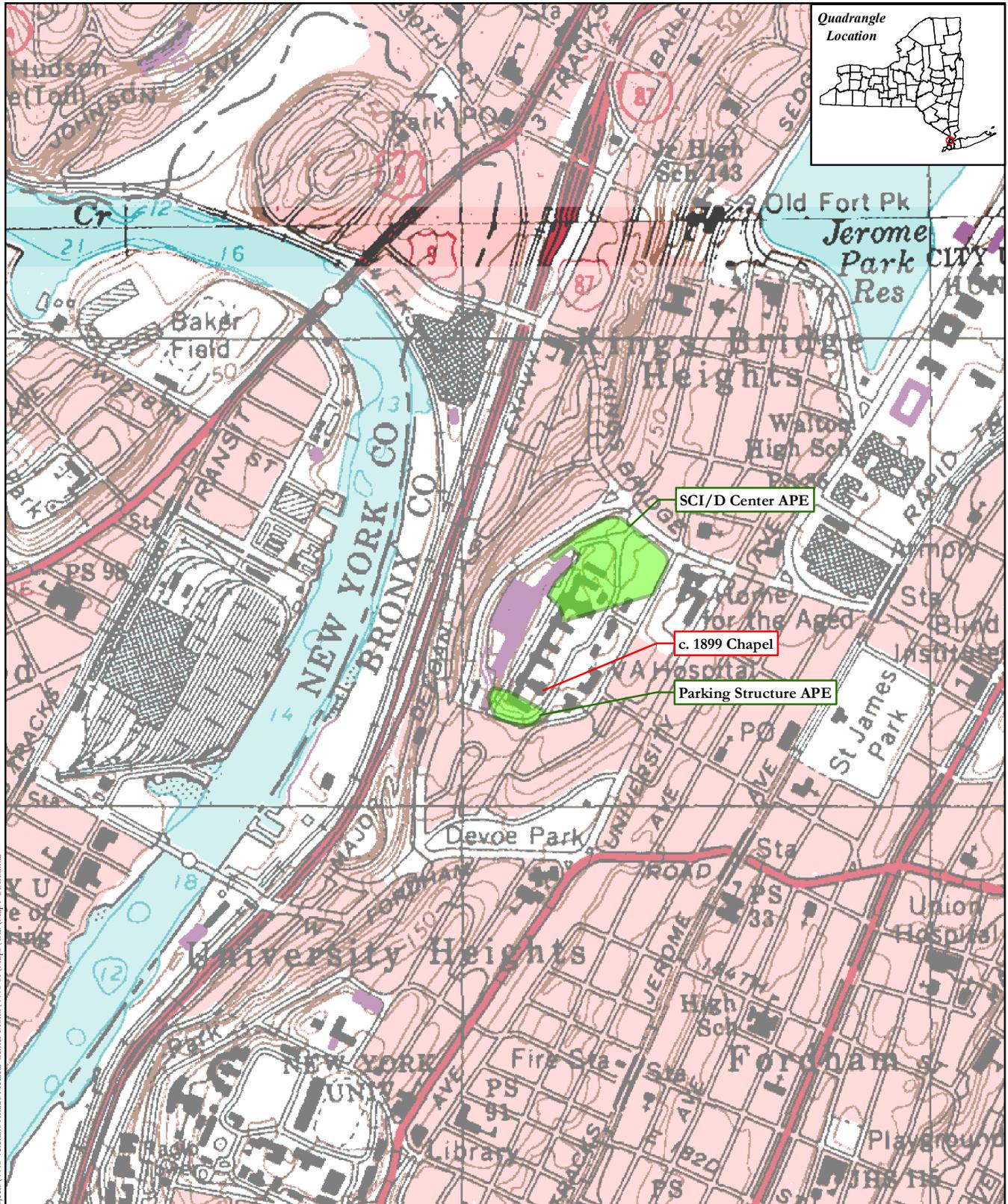
I have additional images from my site visit if OPRHP requires more for project review. Please contact me if you have any questions.

Sincerely,

Tracy Shaffer Miller  
Project Director

**Attached:** Maps 1-2 and Figures 1-3

**MAPS**



TSM March 27, 2012. R:\Active Projects\4446 Veterans Affairs Medical Center Bronx\4446-811\Maps\GIS\Map1-USGS.mxd

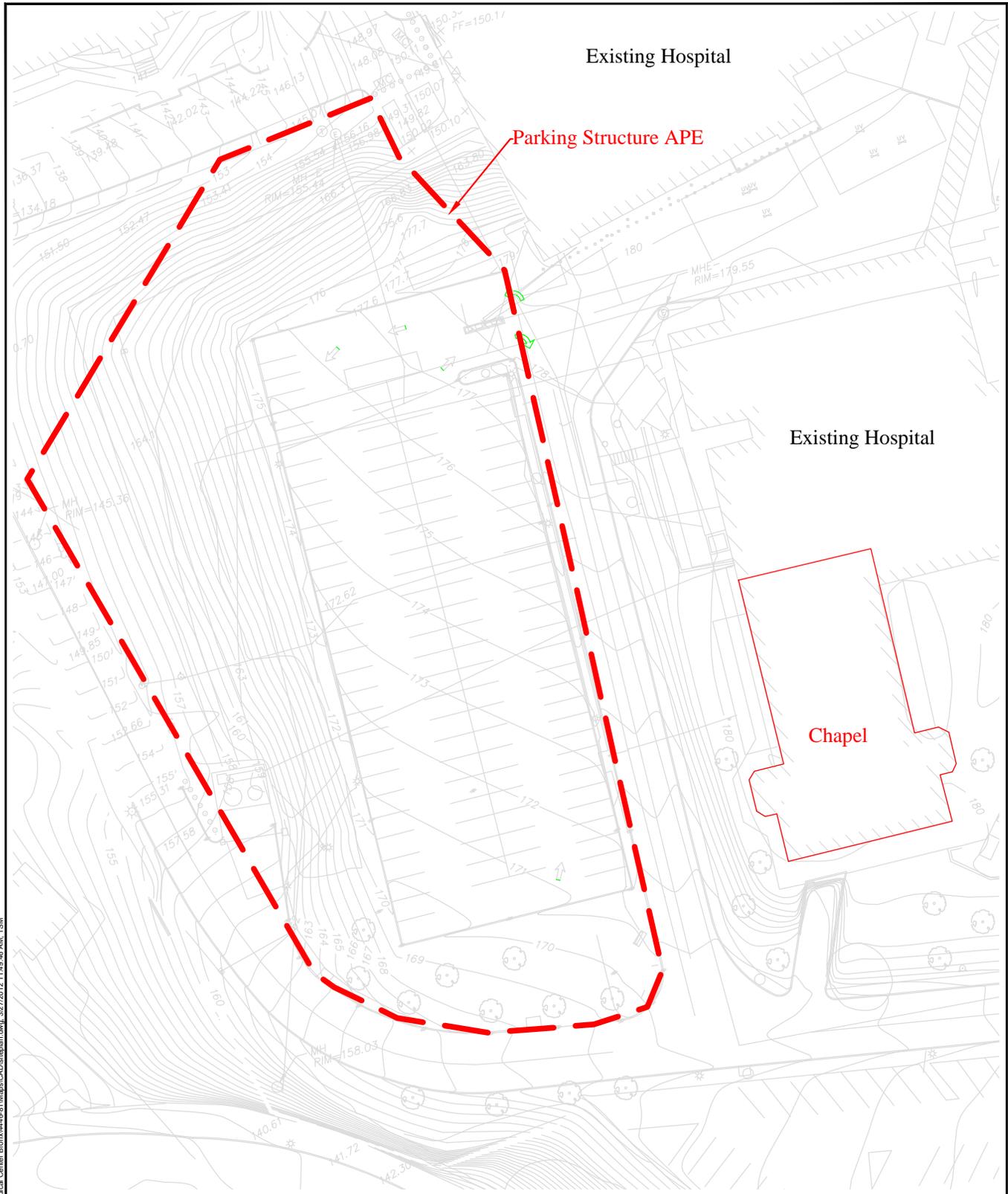


Note: Contour interval is 10 feet.



Project Location  
(USGS 1998 and 1995)

Map 1



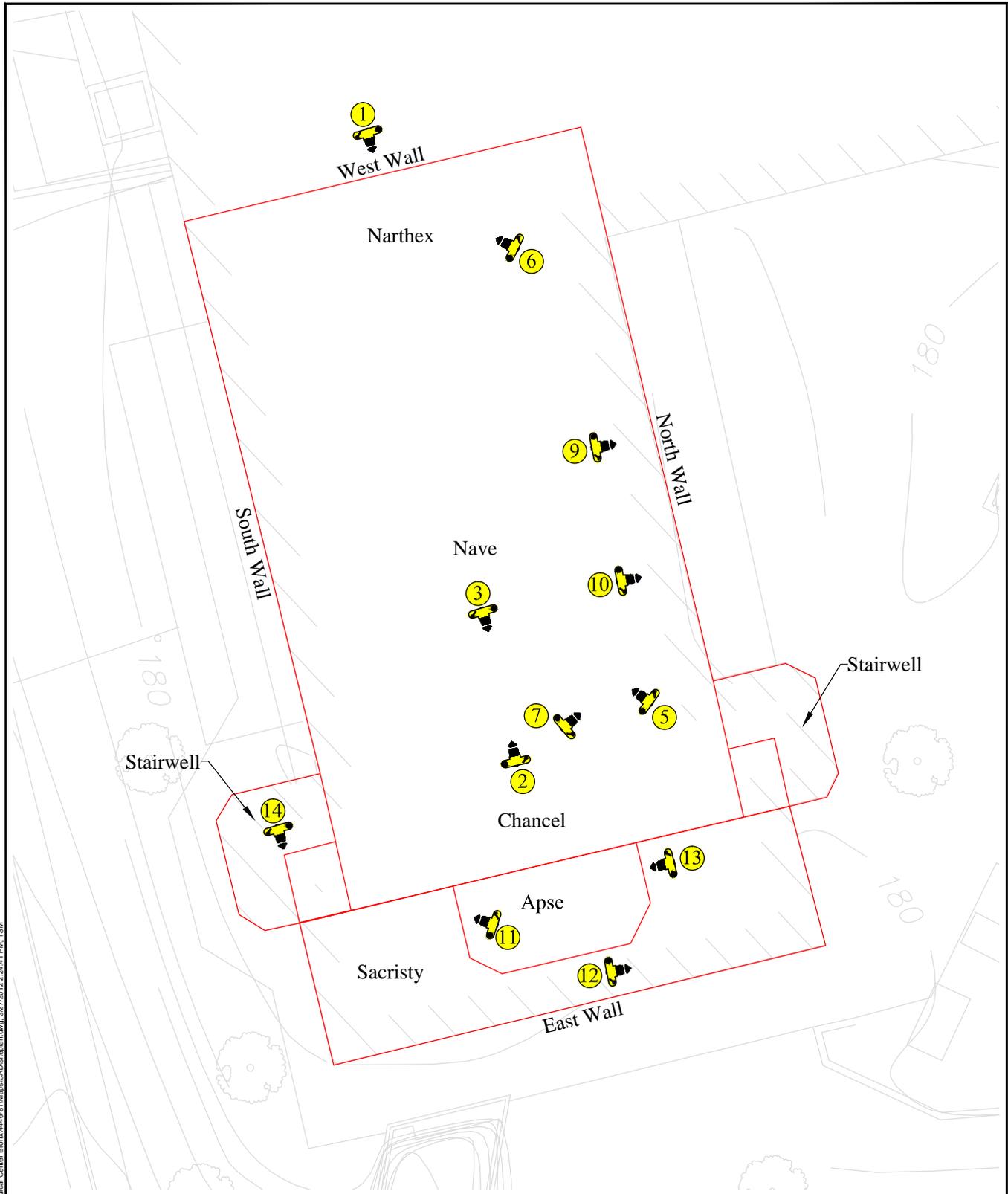
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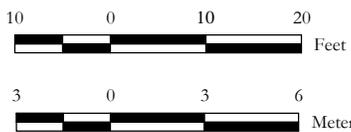
Chapel Location Relative to the  
Parking Structure APE  
(Cannon Design 2011, Hartgen 2012)



## FIGURES

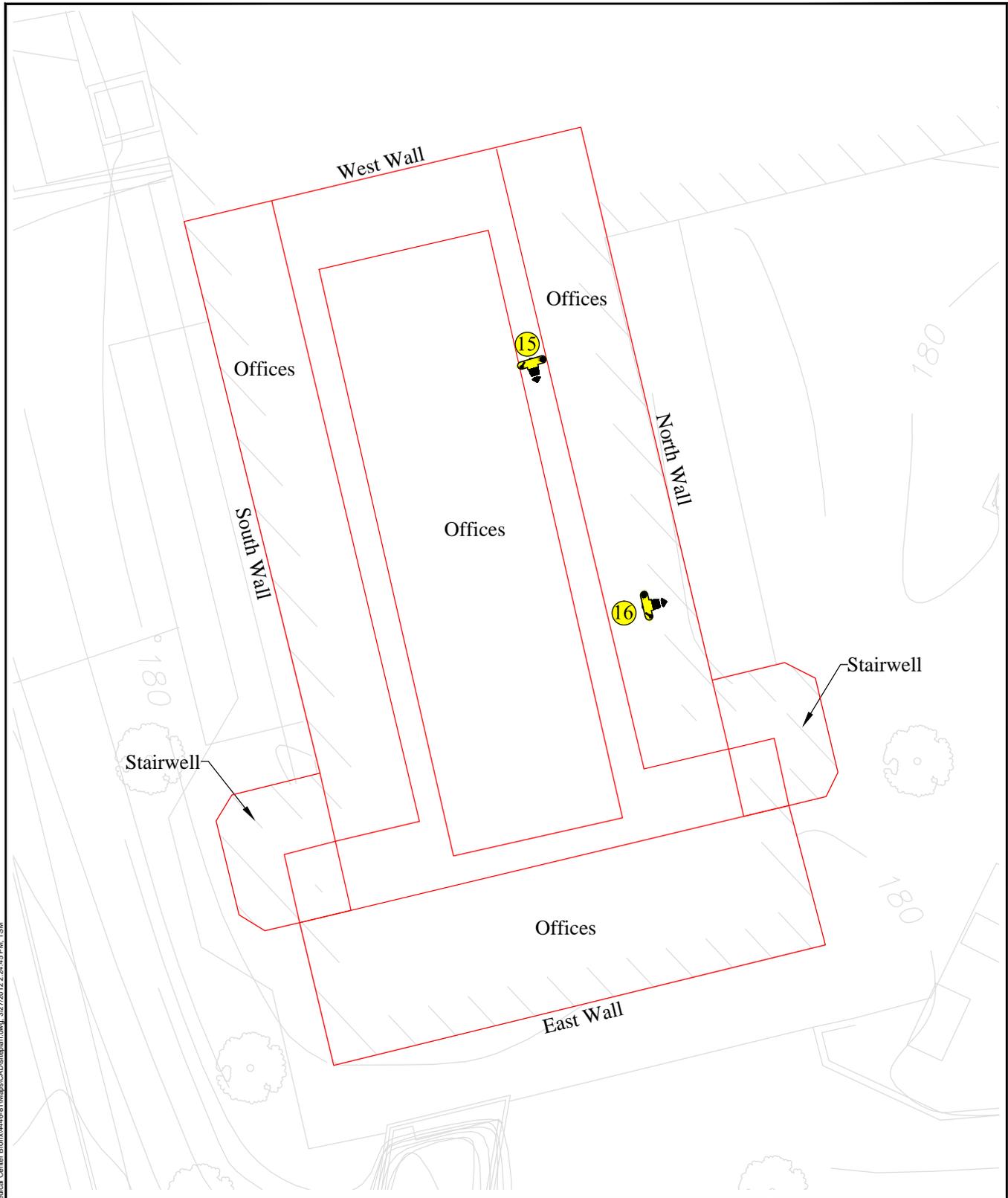


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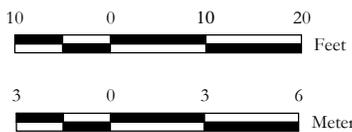


Chapel, Second Floor Plan View

Figure 1

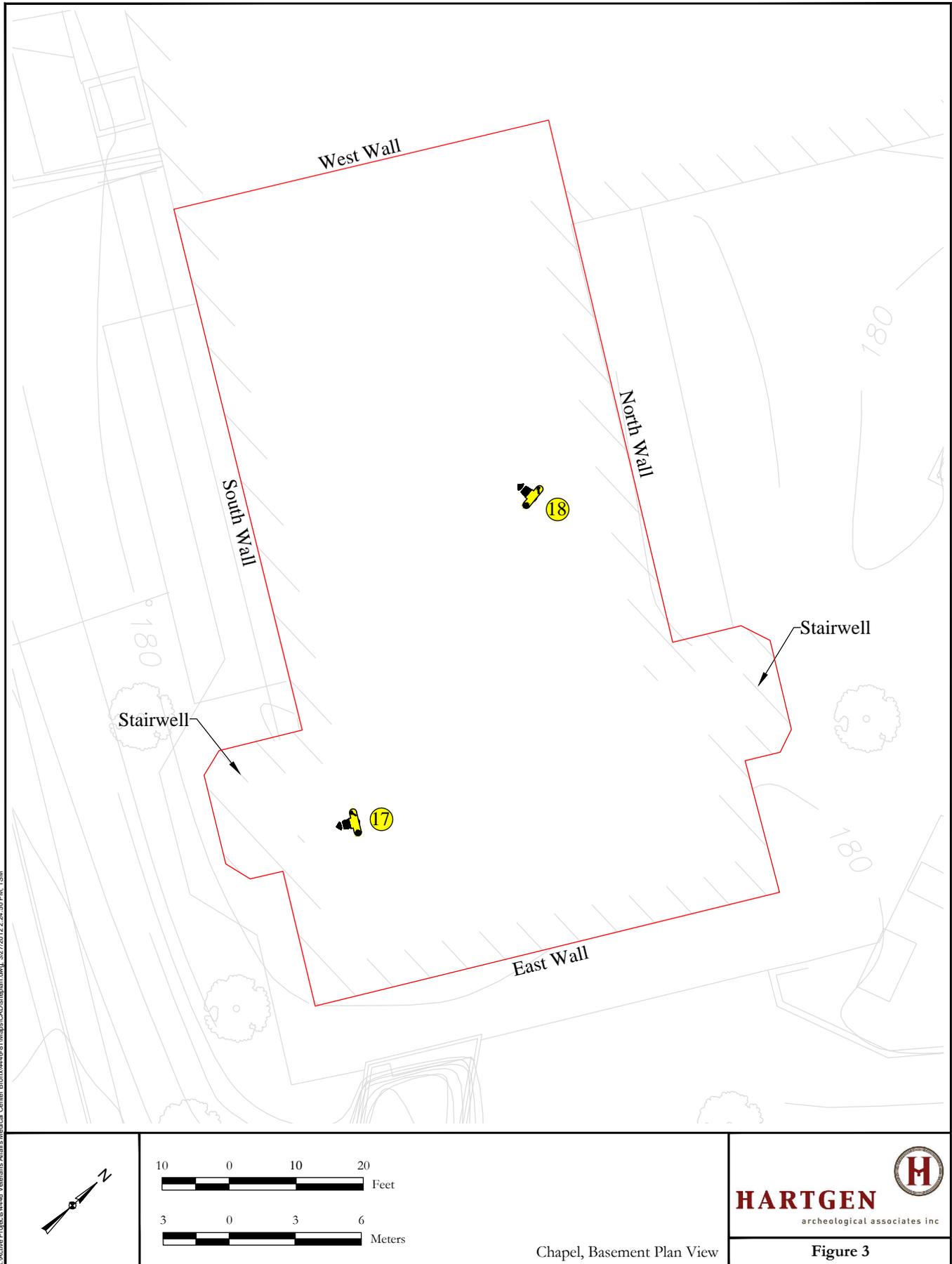


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Chapel, First Floor Plan View

Figure 2



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Chapel, Basement Plan View

**HARTGEN**  
archeological associates inc



**Figure 3**

## **Appendix B Letters of Record**



# Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO  
Governor

ROSE HARVEY  
Commissioner

July 13, 2015

Ms. Tracey Clothier  
The LA Group  
40 Long Alley  
Saratoga Springs, NY 12866

Re: VA  
VAMC Spinal Cord Injury Center  
130 West Kingsbridge Rd  
12PR00473

Dear Ms. Clothier:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the National Environmental Policy Act and/or the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8).

Based upon this review, the New York SHPO has determined that no historic properties will be affected by this undertaking.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont

Deputy Commissioner for Historic Preservation



**James J. Peters VA Medical Center  
130 West Kingsbridge Road  
Bronx, New York 10468**

In Reply Refer To: 526/00FM

Phillip Perazio  
New York State Office of Parks, Recreation and Historic Preservation  
Division for Historic Preservation  
Peebles Island State Park  
P.O. Box 189  
Waterford, New York 12047  
p. 518.268.2175  
e. [Philip.Perazio@parks.ny.gov](mailto:Philip.Perazio@parks.ny.gov)

Subject: James J. Peters Veterans Affairs Medical Center, Spinal Cord Injury/Disorders Center and Parking Garage  
130 West Kingsbridge Road, Block 3226, Lot 100  
New York City, Borough of the Bronx, Bronx County, New York

Dear Mr. Phillip Perazio;

The United States Department of Veteran Affairs (VA) plans to construct a Spinal Cord Injury/Disorder Center and Parking Structure at the James J. Peters Veterans Affairs Medical Center (VAMC) located at 130 West Kingsbridge Road, Bronx, New York. The VA is funding this project. The intent of this letter is to provide with notification of our activities and to initiate the National Historic Preservation Act, Section 106 consultation process with you.

### **Background**

Bronx VAMC is one of only 24 VA's Spinal Cord Injury (SCI) Centers in the U.S. The facility provides comprehensive treatment strategies for complex spinal cord injuries that include surgery, medical treatment, rehabilitation, and re-training. Bronx VAMC SCI Patient Care Center is the referral point for VA's Veteran Integrated Service Networks (VISN) 2, 3, and 4, a geographic area including New York, New Jersey, Pennsylvania, and West Virginia. This Medical Center is also the referral point for new Department of Defense (DOD) SCI patients and a provider under the TRICARE Military Health Care program which provides services to Active Duty Service members and their families. The VA Bronx facility is operating beyond capacity and does not meet the current Department of Veterans Affairs guidelines for SCI/D Centers. Proposed action to construct SCI/D Center and Parking structure at our facility is required to provide the best care of our Veterans.

### **Project Details**

The area of potential effects (APE) includes all portions of the property that will be directly or indirectly affected by the proposed undertaking. There are two discrete areas within the property where ground disturbing activities will take place for the proposed developments (Map 1):



**James J. Peters VA Medical Center  
130 West Kingsbridge Road  
Bronx, New York 10468**

In Reply Refer To: 526/00FM

Phillip Perazio  
New York State Office of Parks, Recreation and Historic Preservation  
Division for Historic Preservation  
Peebles Island State Park  
P.O. Box 189  
Waterford, New York 12047  
p. 518.268.2175  
e. [Philip.Perazio@parks.ny.gov](mailto:Philip.Perazio@parks.ny.gov)

Subject: James J. Peters Veterans Affairs Medical Center, Spinal Cord Injury/Disorders Center and Parking Garage  
130 West Kingsbridge Road, Block 3226, Lot 100  
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### **Project Details**

The area of potential effects (APE) includes all portions of the property that will be directly or indirectly affected by the proposed undertaking. There are two discrete areas within the property where ground disturbing activities will take place for the proposed developments (Map 1):

- Spinal Cord Injury/Disorder (SCI/D) Center northeast of the existing hospital:
  - Encompasses approximately 8.6 acres (3.4 ha),
  - New free-standing multi-level building with corridors connecting to the main existing hospital building,
  - Parking lot reconstruction and new basketball court and picnic area.
- Parking Structure southeast of the existing hospital:
  - The parking garage consists of a two-bay wide 35,788 square foot parking structure that encompasses approximately 1.5 acres (0.6 ha),
  - Seven (7) parking levels visible on the west side and five (5) levels visible on the east side of the garage, with six (6) stories above grade and two (2) stories below grade.
  - Reconstruction of surrounding retaining walls and roadways.

## **Project History**

Hartgen completed a Phase IA archeological sensitivity assessment for this project in January 2012 and recommended a Phase IB archeological field reconnaissance in order to assess the presence or absence of archeological deposits and/or prior disturbance in the project APEs. Douglas Mackey at OPRHP reviewed the Phase IA report and concurred with Hartgen's recommendations for a Phase IB in a letter dated February 15, 2012.

In addition, the February 15, 2012 OPRHP response noted that the 1899 Chapel on the VAMC property may be indirectly (visually) affected by the adjacent proposed Parking Structure. OPRHP requested additional information in the form of interior photographs of the chapel so that they could provide supplementary comments on this aspect of the project.

Hartgen completed a Phase IB report and additional documentation of the 1899 chapel in March 2012, but they were not submitted to OPRHP. We are submitting these reports to you at this time.

## **Closure**

Pursuant to the regulations of the Advisory Council on Historic Preservation, 36 CFR Part 800, we are requesting your comments on our preliminary conclusions regarding potential historic properties in regard to the above-mentioned project. If you have any questions or require additional information regarding our planned activities, please contact Michael Ong, Chief Engineer/Director of Facility Management Service, at [michael.ong@va.gov](mailto:michael.ong@va.gov), or Michael Butler, VA Projects Manager, at [michael.butler7@va.gov](mailto:michael.butler7@va.gov). I look forward to working with you and your staff.

Sincerely,



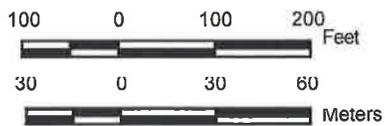
ERIK LANGHOFF, M.D., Ph.D.  
Medical Center Director

Enclosure

Spinal Cord Injury/Disorders Center and Parking Garage, James J. Peters Veterans Affairs Medical Center, Bronx, New York Submission of Phase IB Archeological Report and Documentation Letter Report (OPRHP 12PR00473)



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**Legend**

- APE
- Proposed Developments

Project Map  
(Cannon Design 2012; Esri Inc. 2015)



**HARTGEN**  
archeological associates inc

Map 1

- Spinal Cord Injury/Disorder (SCI/D) Center northeast of the existing hospital:
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Sincerely,



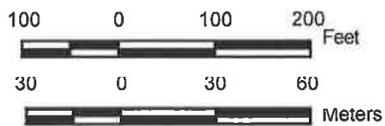
ERIK LANGHOFF, M.D., Ph.D.  
Medical Center Director

Enclosure

Spinal Cord Injury/Disorders Center and Parking Garage, James J. Peters Veterans Affairs Medical Center, Bronx, New York Submission of Phase IB Archeological Report and Documentation Letter Report (OPRHP 12PR00473)



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**Legend**

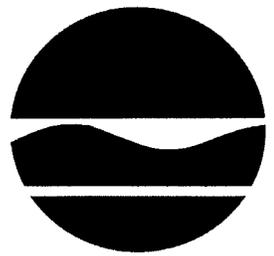
- APE
- Proposed Developments

Project Map  
(Cannon Design 2012; Esri Inc. 2015)

**HARTGEN**  
archeological associates inc

Map 1

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION**  
**Division of Fish, Wildlife & Marine Resources**  
625 Broadway, 5<sup>th</sup> Floor, Albany, New York 12233-4757  
**Phone:** (518) 402-8935 • **Fax:** (518) 402-8925  
**Website:** [www.dec.ny.gov](http://www.dec.ny.gov)



Joe Martens  
Commissioner

June 15, 2011

RECEIVED  
JUN 16 2011  
The LA Group

Richard P. Futyma  
The LA Group  
40 Long Alley  
Saratoga Springs, NY 12866

Dear Mr. Futyma:

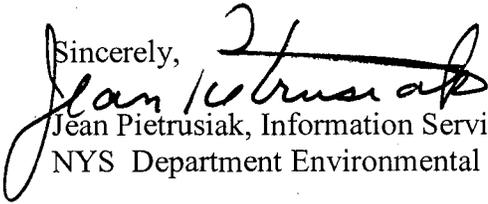
In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to an Environmental Assessment for the proposed new Parking Garage and Medical Building proposed for James J. Peters VA Medical Center, site as indicated on the map you provided, located in Bronx Borough, Bronx County.

Enclosed is a report of rare or state-listed animals and plants, significant natural communities, and other significant habitats, which our databases indicate occur, or may occur, on your site or in the immediate vicinity of your site. For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our databases. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. This information should not be substituted for on-site surveys that may be required for environmental impact assessment.

The enclosed report may be included in documents that will be available to the public. However, any enclosed maps displaying locations of rare species are considered sensitive information, and are intended only for the internal use of the recipient; they should not be included in any document that will be made available to the public, without permission from the New York Natural Heritage Program.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, as listed at [www.dec.ny.gov/about/39381.html](http://www.dec.ny.gov/about/39381.html).

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

Sincerely,  
  
Jean Pietrusiak, Information Services  
NYS Department Environmental Conservation

Enc.  
cc: Region 2

#565

## Natural Heritage Report on Rare Species and Ecological Communities



NY Natural Heritage Program, NYS DEC, 625 Broadway, 5th Floor,  
Albany, NY 12233-4757  
(518) 402-8935

~The information in this report includes only records entered into the NY Natural Heritage databases as of the date of the report. This report is not a definitive statement on the presence or absence of all rare species or significant natural communities at or in the vicinity of this site.

~Refer to the User's Guide for explanations of codes, ranks and fields.

~Location maps for certain species and communities may not be provided 1) if the species is vulnerable to disturbance, 2) if the location and/or extent is not precisely known, 3) if the location and/or extent is too large to display, and/or 4) if the animal is listed as Endangered or Threatened by New York State.

## Natural Heritage Report on Rare Species and Ecological Communities



### BIRDS

#### *Falco peregrinus*

Peregrine Falcon	NY Legal Status: Endangered	NYS Rank: S3B - Vulnerable	Office Use 4045
Breeding	Federal Listing:	Global Rank: G4 - Apparently secure	ESU
	Last Report: **	EO Rank: **	
	County: New York		
	Town: New York City (New York County)		
	Location: At, or in the vicinity of, the project site.		
	General Quality and Habitat: **For information on the population at this location and management considerations, please contact the NYS DEC Regional Wildlife Manager for the Region where the project is located.		

1 Records Processed

More detailed information about many of the rare and listed animals and plants in New York, including biology, identification, habitat, conservation, and management, are available online in Natural Heritage's Conservation Guides at [www.acris.nynhp.org](http://www.acris.nynhp.org), from NatureServe Explorer at <http://www.natureserve.org/explorer>, from NYSDEC at <http://www.dec.ny.gov/animals/7494.html> (for animals), and from USDA's Plants Database at <http://plants.usda.gov/index.html> (for plants).

More detailed information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at [www.acris.nynhp.org](http://www.acris.nynhp.org). For descriptions of all community types, go to <http://www.dec.ny.gov/animals/29384.html> and click on Draft Ecological Communities of New York State.

Richard - I checked out the location of the Peregrine falcons with Barbara Loucks who said "No Problem" - your Medical Ctr site is far enough away from nest of the falcons (3 new <sup>babies</sup> ones) <sup>years</sup> 6-15



*Carex glaucoidea*

<b>Glaucous Sedge</b>	<b>NY Legal Status:</b> Endangered <b>Federal Listing:</b> <b>Last Report:</b> 1897-05-28	<b>NYS Rank:</b> S2S3 - Imperiled <b>Global Rank:</b> G5 - Secure <b>EO Rank:</b> Historical, no recent information; Failed to find during most recent search	Office Use 2679
	<b>County:</b> Bronx <b>Town:</b> New York City (Bronx County) <b>Location:</b> Van Cortlandt <b>Directions:</b> Van Cortlandt Park, Mosholu. <b>General Quality and Habitat:</b> Two sections of park searched, but no plants found. Continue to search area. Park.		M

---

*Geum virginianum*

<b>Rough Avens</b>	<b>NY Legal Status:</b> Endangered <b>Federal Listing:</b> <b>Last Report:</b> 1895-06-16	<b>NYS Rank:</b> S2 - Imperiled <b>Global Rank:</b> G5 - Secure <b>EO Rank:</b> Historical, no recent information; Failed to find during most recent search	Office Use 4705
	<b>County:</b> Bronx <b>Town:</b> New York City (Bronx County) <b>Location:</b> Van Cortlandt <b>Directions:</b> Van Cortlandt Park, Mosholu. <b>General Quality and Habitat:</b> Park extensively searched in 1997 and 1998. No plants found, but remote possibility of rediscovery. Park.		M

---

*Oenothera laciniata*

<b>Cut-leaved Evening-primrose</b>	<b>NY Legal Status:</b> Endangered <b>Federal Listing:</b> <b>Last Report:</b> 1940-06-18	<b>NYS Rank:</b> S1 - Critically imperiled <b>Global Rank:</b> G5 - Secure <b>EO Rank:</b> Historical, no recent information	Office Use 2838
	<b>County:</b> Bronx <b>Town:</b> New York City (Bronx County) <b>Location:</b> New York Botanical Garden <b>Directions:</b> New York Botanical Garden, Bronx Park. <b>General Quality and Habitat:</b>		M

---

*Plantago cordata*

<b>Heartleaf Plantain</b>	<b>NY Legal Status:</b> Threatened <b>Federal Listing:</b> <b>Last Report:</b> 1894-09-01	<b>NYS Rank:</b> S3 - Vulnerable <b>Global Rank:</b> G4 - Apparently secure <b>EO Rank:</b> Historical, no recent information	Office Use 9838
	<b>County:</b> Bronx <b>Town:</b> New York City (Bronx County) <b>Location:</b> Spuyten Duyvil Creek <b>Directions:</b> Spuyten Duyvil Creek, near Marble Hill [Marble Hill is now a train station along the creek]. <b>General Quality and Habitat:</b>		M

---



***Poa cuspidata***

**Bluegrass**

**NY Legal Status:** Endangered

**NYS Rank:** SH - Historical

Office Use  
10528

**Federal Listing:**

**Global Rank:** G5 - Secure

**Last Report:** 1897-05-16

**EO Rank:** Historical, no recent information

**County:** New York

M

**Town:** New York City (New York County)

**Location:** Spuyten Duyvil Creek

**Directions:** Spuyten Duyvil Creek, Inwood, Manhattan.

**General Quality and Habitat:** Woods along creek.

***Sphenopholis obtusata***

**Prairie  
Wedgegrass**

**NY Legal Status:** Endangered

**NYS Rank:** S1 - Critically imperiled

Office Use  
2418

**Federal Listing:**

**Global Rank:** G5 - Secure

**Last Report:** 1890-06-15

**EO Rank:** Historical, no recent information

**County:** Bronx

M

**Town:** New York City (Bronx County)

**Location:** Van Cortlandt

**Directions:** Below Van Cortlandt Park.

**General Quality and Habitat:**

8 Records Processed

More detailed information about many of the rare and listed animals and plants in New York, including biology, identification, habitat, conservation, and management, are available online in Natural Heritage's Conservation Guides at [www.acris.nynhp.org](http://www.acris.nynhp.org), from NatureServe Explorer at <http://www.natureserve.org/explorer>, from NYSDEC at <http://www.dec.ny.gov/animals/7494.html> (for animals), and from USDA's Plants Database at <http://plants.usda.gov/index.html> (for plants).

## Natural Heritage Report on Rare Species and Ecological Communities



NY Natural Heritage Program, NYS DEC, 625 Broadway, 5th Floor,  
Albany, NY 12233-4757  
(518) 402-8935

### HISTORICAL RECORDS

The following plants and animals were documented in the vicinity of the project site at one time, but have not been documented there since 1979 or earlier, or there is uncertainty regarding their continued presence.

There is no recent information on these plants and animals in the vicinity of the project site and their current status there is unknown. In most cases the precise location of the plant or animal in this vicinity at the time it was last documented is also unknown and therefore location maps are generally not provided.

If appropriate habitat for these plants or animals is present in the vicinity of the project site, it is possible that they may still occur there.

## Natural Heritage Report on Rare Species and Ecological Communities



### VASCULAR PLANTS

#### *Agastache nepetoides*

Yellow  
Giant-hyssop

NY Legal Status: Threatened

NYS Rank: S2S3 - Imperiled

Office Use  
915

Federal Listing:

Global Rank: G5 - Secure

Last Report: 1891-10-03

EO Rank: Historical, no recent  
information

County: Bronx

Town: New York City (Bronx County)

Location: Spuyten Duyvil

Directions: Specimen label: Near the railroad at Spuyten Duyvil.

General Quality  
and Habitat:

M

#### *Bolboschoenus novae-angliae*

Saltmarsh Bulrush NY Legal Status: Endangered

NYS Rank: S1 - Critically imperiled

Office Use  
6683

Federal Listing:

Global Rank: G5 - Secure

Last Report: 1891-07-01

EO Rank: Historical, no recent  
information

County: New York

Town: New York City (New York County)

Location: Spuyten Duyvil Creek

Directions: Spuyten Duyvil Creek.

General Quality  
and Habitat:

M



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Long Island Ecological Services Field Office  
340 SMITH ROAD  
SHIRLEY, NY 11967  
PHONE: (631)286-0485 FAX: (631)286-4003

Consultation Code: 05E1LI00-2015-SLI-0104

April 22, 2015

Event Code: 05E1LI00-2015-E-00111

Project Name: Bronx VA Medical Center

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

## To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having

similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment



United States Department of Interior  
Fish and Wildlife Service

Project name: Bronx VA Medical Center

## Official Species List

**Provided by:**

Long Island Ecological Services Field Office  
340 SMITH ROAD  
SHIRLEY, NY 11967  
(631) 286-0485

**Consultation Code:** 05E1LI00-2015-SLI-0104

**Event Code:** 05E1LI00-2015-E-00111

**Project Type:** Development

**Project Name:** Bronx VA Medical Center

**Project Description:** Re-development project on existing hospital campus. New expansion and parking garage included. Minimal tree removal offset by substantial tree plantings.

**Please Note:** The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.



United States Department of Interior  
Fish and Wildlife Service

Project name: Bronx VA Medical Center

## Endangered Species Act Species List

There are a total of 1 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Birds	Status	Has Critical Habitat	Condition(s)
Piping Plover ( <i>Charadrius melodus</i> ) Population: except Great Lakes watershed	Threatened	Final designated	

## **Appendix C**

### **Lists of Environmental and Compliance Checklists**

Project Name	<b>Spinal Cord Injury/Disorders Center And Parking Garage (DVA # 528-315)</b>				
Project Site	<b>James J. Peters VAMC, Bronx, New York</b>				
Environmental Assessor	<b>Tracey M. Clothier, Senior Planner, The LA Group, P.C.</b>				
<b>Definitions:</b>					
Short-Term Impact (ST)	Short-term impacts 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 Impact (LT)	Long-term impacts are those that are more likely to be persistent and chronic.				
Direct Impact (DI)	A direct impact is caused by an action and occurs around the same time at or near the location of the action.				
Indirect Impact (IDI)	An indirect impact 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.				
Beneficial-and-not-Significant	This impact represents an improvement in existing conditions and an EIS is not required.				
None-to-Negligible	None-to-negligible impact would be barely detectable and an EIS is not required for this impact.				
Minimal-to-Moderate	Minimal-to-moderate impact is 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	Significant-if-not-mitigated would require specific mitigation measures beyond those associated with permit requirements but an EIS is not required for this impact.				
Significant-and-Immitigable	Significant-and-immitigable impact would have to be evaluated in an EIS.				
Adverse Impact	Adverse effect is one having unfavorable or undesirable outcomes on the manmade or natural environment.				
Beneficial Impact	A beneficial effect is one having positive outcomes on the man-made or natural environment.				
	<b>Project</b>	<b>Impact - No Action</b>		<b>Impact - Proposed Action</b>	
	<b>Attributes</b>	<b>Construction</b>	<b>Operation</b>	<b>Construction</b>	<b>Operation</b>
<b>Instructions</b>	<ul style="list-style-type: none"> <li>Please mark "LT" to indicate overall long-term impact of each resource during construction and operations. Also, please mark "ST" and "IDI" when applicable.</li> <li>Please mark X in applicable cells for each resource below to indicate <b>presence</b> of applicable project attributes.</li> </ul>				
<b>Aesthetics</b>					
<u>Impacts</u>					
Beneficial-and-not-Significant					
None-to-Negligible			X		X
Minimal-to-				ST	

VA Checklist for Environmental Assessment, 003C1B

	Project Attributes	Impact - No Action		Impact - Proposed Action	
		Construction	Operation	Construction	Operation
Moderate					
Significant-if-not-Mitigated					
Significant-and-Immitigable					
<u>Project Attributes</u>					
Vegetation Removal	X				
Building Restoration					
Landscape Alteration	X				
Utility or Service Area Development					
Open Space Altered	X				
Ground Improvement Amenities	X				
Public Parks					
Landmark Structures and Districts					
Waterfront and View Corridors					
Obstruction of Natural Resources					
New Building Construction	X				
<b>Land Use And Zoning</b>					
<u>Impacts</u>					
Beneficial-and-not-Significant					
None-to-Negligible			X	X	X
Minimal-to-Moderate					
Significant-if-not-Mitigated					
Significant-and-Immitigable					
<u>Project Attributes</u>					
Encroachment on Existing Land Use					
Sewage-Waste Treatment Facility					
Change to Land Use Pattern					

VA Checklist for Environmental Assessment, 003C1B

	Project Attributes	Impact - No Action		Impact - Proposed Action	
		Construction	Operation	Construction	Operation
Utilities					
Service And Operational	X				
Roads and Parking	X				
Hospital-Medical Facility	X				
Recreational					
Laboratories-Clinics	X				
Ground Improvements	X				
Administrative Facility	X				
Cemetery					
Zoning					
Community-Based Plans					
<b>Air Quality</b>					
<u>Impacts</u>					
Beneficial-and-not-Significant					X
None-to-Negligible			X		
Minimal-to-Moderate				ST	
Significant-if-not-Mitigated					
Significant-and-Immitigable					
<u>Project Attributes</u>					
Ambient Air Quality	X				
The General Conformity Rule					
Presence of Odors					
Photochemical Oxidants					
Particulate Emissions	X				
Greenhouse Gas Emissions	X				
Attainment Area	X				
PSD And Title V Permits					
Fuel Burning	X				
Stationary Gasoline Tanks					
Incinerator	X				

VA Checklist for Environmental Assessment, 003C1B

	Project Attributes	Impact - No Action		Impact - Proposed Action	
		Construction	Operation	Construction	Operation
Ozone Depleting Refrigerants (Sources May Include Chillers, Freezers, Refrigerators, Water Fountains, Vending Machines)	X				
<b>Cultural Resources</b>					
<u>Impacts</u>					
Beneficial-and-not-Significant					
None-to-Negligible			X	X	X
Minimal-to-Moderate					
Significant-if-not-Mitigated					
Significant-and-Immitigable					
<u>Project Attributes</u>					
National Registry Property					
Criteria of Adverse Effect					
Action Requires Tribal Coordination	X				
Action Requires SHPO Coordination	X				
Eligible Property	X				
Architecturally Significant Property	X				
Section 106 Report	X				
<b>Topography, Geology And Soils</b>					
<u>Impacts</u>					
Beneficial-and-not-Significant					
None-to-Negligible			X	X	X
Minimal-to-Moderate					
Significant-if-not-Mitigated					
Significant-and-Immitigable					

VA Checklist for Environmental Assessment, 003C1B

	Project Attributes	Impact - No Action		Impact - Proposed Action	
		Construction	Operation	Construction	Operation
<u>Project Attributes</u>					
Seismic Safety Building Codes and Standards	X				
Boulders and Ledge Outcrops	X				
Farmland					
Disturbance of Geology and Soils	X				
Storm Water and Sediments	X				
Dewatering					
Contaminated Soil					
Contaminated Groundwater					
Abandoned Underground Storage Tanks					
<b>Noise</b>					
<u>Impacts</u>					
Beneficial-and-not-Significant					
None-to-Negligible			X		X
Minimal-to-Moderate				ST	
Significant-if-not-Mitigated					
Significant-and-Immitigable					
<u>Project Attributes</u>					
Utility Source Generation	X				
Operational					
Traffic	X				
Vibrations	X				
Construction	X				
<b>Hydrology And Water Resources</b>					
<u>Impacts</u>					
Beneficial-and-not-Significant					
None-to-Negligible			X	X	X
Minimal-to-Moderate					

VA Checklist for Environmental Assessment, 003C1B

	Project Attributes	Impact - No Action		Impact - Proposed Action	
		Construction	Operation	Construction	Operation
Significant-if-not-Mitigated					
Significant-and-Immitigable					
<u>Project Attributes</u>					
Potential For Erosion and/or Sedimentation (NPDES)					
Alteration/Quality Change of Surface Water Drainage	X				
Potential for Contamination of Water Regime (from Hazardous/Toxic Wastes)					
Alteration/Quality Change of Groundwater Regime					
Wetlands					
Land Disturbance of More Than 1 Acre	X				
<b>Wildlife And Habitat</b>					
<u>Impacts</u>					
Beneficial-and-not-Significant					
None-to-Negligible			X	X	X
Minimal-to-Moderate					
Significant-if-not-Mitigated					
Significant-and-Immitigable					
<u>Project Attributes</u>					
Presence of Endangered or Threatened Wildlife Species					
Tree Removal	X				
Groundcover Removal	X				
Presence of Significant Wildlife					

VA Checklist for Environmental Assessment, 003C1B

	Project Attributes	Impact - No Action		Impact - Proposed Action	
		Construction	Operation	Construction	Operation
<b>Floodplains, Wetlands And Coastal Zone Management</b>					
<u>Impacts</u>					
Beneficial-and-not-Significant					
None-to-Negligible			X	X	X
Minimal-to-Moderate					
Significant-if-not-Mitigated					
Significant-and-Immitigable					
<u>Project Attributes</u>					
100-Year Floodplain					
Coastal Zone Management Area					
500-Year Floodplain					
Critical Environmental Area of Wetlands					
Critical Action (EO 11988)					
<b>Socioeconomics</b>					
<u>Impacts</u>					
Beneficial-and-not-Significant				X	X
None-to-Negligible			X		
Minimal-to-Moderate					
Significant-if-not-Mitigated					
Significant-and-Immitigable					
<u>Project Attributes</u>					
Reduction to Wages to Area					
Local Purchase of Goods and Services	X				
Additional Wages will be Available to Area	X				
Increase or	X				

VA Checklist for Environmental Assessment, 003C1B

	Project Attributes	Impact - No Action		Impact - Proposed Action	
		Construction	Operation	Construction	Operation
Decrease in Direct Workforce					
<b>Community Services</b>					
<u>Impacts</u>					
Beneficial-and-not-Significant					
None-to-Negligible			X	X	X
Minimal-to-Moderate					
Significant-if-not-Mitigated					
Significant-and-Immitigable					
<u>Project Attributes</u>					
Alteration of Public Facilities					
Alteration of Public Services					
Alteration of Public Utilities					
Parks, Schools and Libraries					
Child Care Centers and Health Care Centers	X				
Fire and Police Protection	X				
<b>Solid Waste And Hazardous Materials</b>					
<u>Impacts</u>					
Beneficial-and-not-Significant					
None-to-Negligible					X
Minimal-to-Moderate			X	X	
Significant-if-not-Mitigated					
Significant-and-Immitigable					
<u>Project Attributes</u>					
Street Removal/Demolition					
Construction Site	X				

VA Checklist for Environmental Assessment, 003C1B

	Project Attributes	Impact - No Action		Impact - Proposed Action	
		Construction	Operation	Construction	Operation
Stockpiling					
Bulk Operational Waste	X				
Earth and/or Rock Debris	X				
Concrete Debris					
Hazardous Waste	X				
PCB Containing Material					
Asbestos Containing Material					
Lead Containing Material					
Radioactive Waste					
Hazardous Material					
<b>Traffic, Transportation and Parking</b>					
<u>Impacts</u>					
Beneficial-and-not-Significant					X
None-to-Negligible					
Minimal-to-Moderate			X	ST	
Significant-if-not-Mitigated					
Significant-and-Immitigable					
<u>Project Attributes</u>					
Alteration Of Public Transportation	X				
Alteration of Existing on-Site Roads or Parking	X				
Alteration of Facility Access Roads	X				
Construction of New Roads or Parking	X				
<b>Utilities</b>					
<u>Impacts</u>					
Beneficial-and-not-Significant					X
None-to-Negligible				X	
Minimal-to-					

VA Checklist for Environmental Assessment, 003C1B

	Project Attributes	Impact - No Action		Impact - Proposed Action	
		Construction	Operation	Construction	Operation
Moderate					
Significant-if-not-Mitigated					
Significant-and-Immitigable					
<u>Project Attributes</u>					
Water System, Supply	X				
Incinerator	X				
Storm Water Drainage	X				
Air Conditioning and Refrigeration	X				
Sanitary Sewers	X				
Electrical	X				
Excavation	X				
Heat Generation	X				
Maintenance and Repair					
Chilled Water	X				
Steam And Condensate	X				
Underground Storage Tanks					
Telephone and Fiber Optic Cables	X				
Gas	X				
Drinking Water Storage, Distribution and Treatment	X				
Medical Gas System (Oxygen, Vacuum and Medical Air)	X				
<b>Alternative Energy Sources</b>					
<u>Impacts</u>					
Beneficial-and-not-Significant					X
None-to-Negligible			X		
Minimal-to-Moderate				ST	
Significant-if-not-Mitigated					
Significant-and-Immitigable					

VA Checklist for Environmental Assessment, 003C1B

	Project Attributes	Impact - No Action		Impact - Proposed Action	
		Construction	Operation	Construction	Operation
<u>Project Attributes</u>					
Solar Panels	X				
Solar Heater	X				
Geo-Thermal					
Wind Power					
<b>Environmental Justice</b>					
<u>Impacts</u>					
Beneficial-and-Not-Significant					X
None-to-Negligible			X	X	
Minimal-to-Moderate					
Significant-if-not-Mitigated					
Significant-and-Immitigable					
<u>Project Attributes</u>					
Impact on Minority and Low Income Population under EO 12898	X				
Impact on Children Under EO 13045					
<b>Cumulative Impacts</b>					
<u>Impacts</u>					
Beneficial-and-not-Significant					X
None-to-Negligible			X		
Minimal-to-Moderate				ST	
Significant-if-not-Mitigated					
Significant-and-Immitigable					
<u>Project Attributes</u>					
The Geographic Region of Influence (ROI)	X				
Past And Current Projects					
Known Future Actions					

VA Checklist for Environmental Assessment, 003C1B

	Project Attributes	Impact - No Action		Impact - Proposed Action	
		Construction	Operation	Construction	Operation
<b>Potential for Generating Substantial Controversy</b>					
<u>Impacts</u>					
Beneficial-and-not-Significant					X
None-to-Negligible			X		
Minimal-to-Moderate				ST	
Significant-if-not-Mitigated					
Significant-and-Immitigable					
<u>Project Attributes</u>					
Indirect or Direct Effects on Community Organizations	X				
Interpretation of how the Action Will Effect Community Response is in Question					
Consistent with Profile of Community	X				

<b>VA Checklist for Project Compliance with Federal Legal Authorities</b>	
<b>Project Compliance Assessor</b>	Tracey M. Clothier, Senior Planner, The LA Group, P.C.
<b><u>Compliance Codes</u></b>	
<b>FI – Requires Further Investigation</b>	
<b>MR – Mitigation Required, Non Compliance Anticipated</b>	
<b>CA – Compliance Anticipated</b>	
<b>NA – Not Applicable</b>	
<b>Compliance Status</b>	<b>Federal Legal Authority</b>
	<b><u>Executive Orders</u></b>
NA	EO 11988, Floodplain Management (Specify 100-year, critical action, or 500-year)
NA	EO 11990, Protection of Wetlands
NA	EO 11987, Exotic Organisms
CA	EO 12088, Federal Compliance
CA	EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations.
CA	EO 13006, Locating Federal Facilities on Historic Properties in Our Nation's Central Cities
NA	EO 13007, Indian Sacred Sites
CA	EO 13175, Indian Tribes
CA	EO 13287, Preserve America
CA	EO 13423, Strengthening Federal Environmental, Energy, and Transportation Management
CA	EO 13693, Planning for Federal Sustainability in the Next Decade
	<b><u>Federal Laws and Regulations</u></b>
CA	Advisory Council on Historic Preservation Regulations, Protection of Historic and Cultural Properties (36 CFR 800)
CA	Clean Air Act (CAA)
NA	Coastal Barrier Resources Act (PL 93-523)
NA	Coastal Zone Management Act (16 USC 1451 et. Seq.), amended by PL 101-508)
NA	Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
CA	Determination of No Hazard to Air Navigation (FAA Advisory Circular 70/7460-1 K Change 2)
CA	Emergency Planning and Community Right-to-Know Act (EPCRA)
CA	Endangered Species Act (ESA) as amended (PL 93-205)
CA	Energy Independence and Security Act of 2007 (EISA)
CA	EPA Regulations on Determination of Reportable Quantities for Hazardous Substance (40 CFR 117)

CA	EPA Regulations on Discharge of Dredged or Fill Material into Navigable Waters (40 CFR 230)
NA	EPA Regulations on Polychlorinated Biphenyls Manufacturing, Processing, Distribution in Commerce and Use Prohibitions (40 CFR 761)
CA	EPA Regulations on the National Pollutant Discharge Elimination System (40 CFR 122)
NA	Farmland Protection Policy Act (FPCRA)
CA	Federal Environmental Pesticide Act (FEPCA)
CA	Federal Food, Drug and Cosmetic Act (FFDCA)
CA	Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)
CA	Federal Water Pollution Control Act, Sec 313, as amended by Clean Water Act of 1977 (33 USC 1323)
CA	Food Quality Protection Act (FQPA)
NA	Marine Mammal Protection Act (MMPA)
NA	Migratory Bird Treaty Act (MBTA)
CA	National Environmental Policy Act (NEPA)
CA	National Historic Preservation Act (NHPA)
CA	Native American Graves Protection and Repatriation Act (NAGPRA)
CA	Noise Control Act of 1972
CA	Oil Pollution Act (OPA)
CA	Resource Conservation and Recovery Act (RCRA)
CA	Safe Drinking Water Act (SDWA), Sec 1447 (PL 93-523)
CA	Spill Prevention, Control and Countermeasure Plans (SPCC)
CA	Toxic Substance Compliance Act
NA	Wild and Scenic Rivers Act
NA	Wild and Scenic Rivers Act (16 USC 1274 et seq.)

## **Appendix D**

### **Air Emissions Calculations**

Bronx VAMC

Existing Conditions

Notes:

Notes:

1. Facility has five (5) Diesel Generators (600 KW each); Three boilers (38.83 MMBTU/Hr each); Emergency Generators 500 hours Max/yr;  
Facility is allowed 24.9 Tons/Yr of NOx per year
2. Sulphur in Diesel is 15 ppm (max); Based on diesel analysis provided by facility;
3. Sulphur in distillate is 11 ppm (max); Basis is analysis of distillate provided by facility
4. Heating values  
Diesel – 138,490 BTU/Gal (assumed)  
Distillate - 140,000 Btu/Gal  
Natural Gas in NY is 1032 Btu/Ft3
5. Uncontrolled emission factors are from AP42
6. Emission for NOx =  $D(0.02)+G(100)+E90.44)+N(3400)+E1(0.17)+N1(1265)$  (From air permit issued to facility)  
Where  
D =12 month rolling total of distillate fired, gal/yr  
G = MMSCF from boilers  
E = Diesel, Gal/Yr  
N= Natural Gas Fired in Engines, MMSCF/Yr  
E1 = Diesel from 5 bifuel engines, Gal/Yr
7. PM2.5 = PM Total \*0.1
8. Conversion Factors:  
1 KWH = 3412 BTU;  
1 BHP = 34.5 Lb/Hr steam  
1 BHP = 33.5 MBtu/Hr  
1 Lb/hr steam = 970 BTU/Hr

	A	B	C	D	E	F	G	H	I
1	<b>Bronx VAMC Air Emission Calculations</b>								
2	<b>Table 4-3 Air Emissions for Bronx VAMC for Existing Conditions and No Action Option - Based on Capacity of Boilers</b>								
3	Emission Source	Nox	VOC	CO	SO2	PM (Total)	PM10	PM2.5	CO2
4	Combustion								
5	Boiler # 1 (40,000 lbs/hr)	5.553	0.054	1,260	39,220		0.560	0.060	6406,950
6	Boiler # 2 (40,000 lbs/hr)	5.553	0.054	1,260	39,220		0.560	0.060	6406,950
7	Boiler #3 (40,000 lbs/hr)	3.805	0.210	32,000	0.020		0.291	0.031	4271,300
8	TOTAL, lb/hr	14.911	0.318	34,520	78,460	0.000	1.411	0.151	17085,200
9	Total, Tons/Yr	65.31	1.39	151.20	343.65	-	6.18	0.66	74,833.18

	<b>Table 4-4. Air Emissions for Bronx VAMC Resulting from Construction of Proposed Action (tons per year)</b>								
	Emission Source	Nox	VOC	CO	SO2	PM (Total)	PM10	PM2.5	CO2
11	Combustion	9.545	4.181	6,792	0.011	0.678	0.000	0.000	937,036
12	Fugitive Dust					51.797	8.201	0.820116	
13	Haul Truck On-Road	0.112	0.013	0.033	0.000	0.000	0.004	0.003	49,361
14	Commuter	0.258	0.277	2,603	0.004		0.036	0.023	434,634
15	TOTAL	9.914	4.470	9,428	0.016	52.475	8.242	0.847	1421,031

	<b>Table 4-5. Air Emissions for Bronx VAMC During Operations of Proposed Action (tons per year)</b>								
	Emission Source	Nox	VOC	CO	SO2	PM (Total)	PM10	PM2.5	CO2
19	Combustion								
20	Boiler # 1, lbs/hr	3.805	0.21	31,996	0.023		0.291	0.039	4271,3
21	Boiler # 2, lbs/hr	2.352	0.130	19,776	0.014		0.180	0.024	2,640,000
22	Boiler #3, lbs/hr	0.26	0.277	2,603	0.004	-	0.000	0.000	1,103
23	TOTAL, lbs/hr	6.415	0.617	54,375	0.041	0.000	0.471	0.063	6912,403
24	Total, Tons/Yr	28.098	2.702	238,163	0.181	0.000	2.063	0.276	30276,323

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	
	General Conformity Review and Emission Inventory for the James J. Peters VAMC SCI/D Center and Parking Garage																						
1	2 (Worst Case Analysis)																						
2	3 Construction Start Date: 03/07/2017																						
3	4 Construction End Date: 03/07/2017																						
4	5 Months: 43.6																						
5	6 Work days (no weekend): 1308																						
6	7																						
7	8																						
8	9																						
9	10																						
10	11																						
11	12																						
12	Equipment/Engine Category	# of Engines	hp	LF	hrs/day	Total Days of Operation	CO Emissions (lb/hr)	CO Emissions (short tons)	NOx Emissions (lb/hr)	NOx Emissions (short tons)	NOx Emissions (lb/hr)	NOx Emissions (short tons)	SOx Emissions (lb/hr)	SOx Emissions (short tons)	SOx Emissions (lb/hr)	SOx Emissions (short tons)	PM Emissions (lb/hr)	PM Emissions (short tons)	PM Emissions (lb/hr)	PM Emissions (short tons)	CO2 Emissions (short tons)	VOC Emissions (short tons)	
13	14.185 Compressor, 49HP	1	49	1	1	1308	0.281316	1.471845	0.238558	1.248137	0.000288	0.001506	0.026464	0.138461	22.27126	116.5232	0.734741						
14	15 Vibro Roller 52" Drum 58HP	1	58	1	1	1308	0.346862	1.657822	0.275326	1.440505	0.000336	0.001757	0.029227	0.152916	25.98313	135.9438	0.869693						
15	16 Dozer 78HP JD-550A	1	78	1	1	1308	0.860432	4.501783	1.708602	8.939406	0.001457	0.007622	0.099752	0.521902	129.4768	677.4229	1.169587						
16	17 Loader /Backhoe 70 CAT 426 125HP	1	70	1	1	1308	0.375606	1.965173	0.324248	1.694647	0.000403	0.002107	0.031888	0.166836	31.14967	162.9751	1.04963						
17	18 Loader Wheel 2.5 CY FT28 125HP	1	125	1	1	1308	0.418743	2.190862	0.64038	3.350468	0.000691	0.003616	0.05756	0.301152	58.91357	308.2355	1.874339						
18	19 Backhoe 1.25CY CAT 325 165HP	1	165	1	1	1308	0.586633	3.069265	0.829419	4.339514	0.001141	0.005969	0.047791	0.250043	101.8869	530.4562	2.474127						
19	20 Crane HYD. RT 28T ON RT5288 140HP	1	140	1	1	1308	0.361776	1.892813	0.550823	2.881907	0.000588	0.003078	0.049281	0.257837	50.14795	262.3741	2.099259						
20	21																						
21	22																						
22	23 Pickup 3/4 Ton 130HP	1	130	1	1	1308	0.758015	3.965932	1.030466	5.391399	0.001407	0.007364	0.060195	0.314939	125.0878	654.4532	1.949312						
23	24 Grove 115-Ton Hydr. All terrain Crane 148 HP	1	148	1	1	1308	0.482105	2.522374	0.776864	4.064555	0.000904	0.00473	0.044517	0.232912	80.34458	420.3628	2.19217						
24	25 Welder 400 AMP 50HP	1	50	1	1	1308	0.464	0.275324	1.440498	0.253471	1.326161	0.000336	0.001756	0.02397	0.12541	25.95806	135.8126	0.749735					
25	26																						
26	27																						
27	28 Sub-total		1,013			104,640																	
28	29																						
29	30																						
30	31 Total Emissions, short tons per year																						
31	32 Emissions, Tons per Month																						
32	33 Emissions, Tons per Year																						
33	34																						
34	35																						
35	36 Notes:																						
36	37 hp-hr = # of engines*hp*LF*hrs/day* days of operation																						
37	38																						
38	39 Load Factors																						
39	40 Load Factor (LF) represents the average percentage of rated horsepower used during a source's operational profile. For this worst case estimate, LF is held at 1 for all equipment. Typical is 0.4 to 0.6																						
40	41																						
41	42 Emission Factors																						
42	43 VOC Emissions Factor for Off-Road Construction Equipment is 1.30 g/hp-hr																						
43	44 Emissions (g) = Power Demand (hp-hr) * Emission Factor (g/hp-hr)																						
44	45 Emissions (tons) = Emissions (g)/(453.6 g/lb*2000lbs/ton)																						
45	46 1 gram is equivalent to 1.102x10-6 short tons																						
46	47																						
47	48 VOC, tons																						
48	49 ROG = reactive organic gases (excluding VOCs and CO)																						
49	50																						
50	51 PM = total particulate matter (includes PM 2.5 and PM10)																						
51	52																						
52	53 Data based on EPA and California tables (more stringent of the two used)																						

Air Emissions from Bronx VAMC

	A	B	C	D	E	F	G
1	<b>Fugitive Dust Calculations</b>						
2	Disturbed Area, Acres	Phase 1	0.35 Phase 2		0.34 Phase 3		0.3
3	Total Area Disturbed, Acres	No of Months	PM Total (tons per month)	PM10 (tons/month)	PM2.5 (ton sper month)		
4	0.99	44	1.188	0.188	0.019		
5	Emission per year, tpy		51.797	8.201	0.820		
6							
7							
8	<b>Notes</b>						
9	a. Fugitive dust based on 1.2 tons/acre/month for construction (EPA AP 42, 5th Edition, Volume 1, Chapter 13, Section 13.2.3; January 1995).						
10	b. Based on General Construction Activities Emission Factor of 0.19 ton PM10/acre/month (MRI 1996; EPA 2001; EPA 2006)						
11	c. PM2.5 emissions are estimated by applying a particle size multiplier of 0.10 to PM10 emissions. This methodology is consistent with the procedures documents for the National Emission Inventory (EPA 2006)						
12	<b>Sources:</b>						
13	EPA 2001. Procedures Document for National Emissions Inventory. Criteria Air Pollutant, 1985-1999. EPA-454/R-01-006, Office of Air Quality Planning and Standards, United States Environmental Protection Agency, March 2001.						
14	EPA 2006. Documentation for the Final 2002 Nonpoint Sector (Feb 06 version) National Emission Inventory for Criteria and Hazardous Air Poolutants. Prepared for: Emissions Inventory and Analysis Group (C339-02) Air Quality Assessment Division Office of Air Quality Planning and Standards, United States Environmental Protection Agency, July 2006.						
15	MRI 1996. Improvement of Specific Emission Factors (BACM Project No. 1) Midwest Research Institute (MRI). Prepared for the California South Coast Air Quality Management District , March 29, 1996.						
16							

Air Emissions from Bronx VAMC

	A	B	C	D	E	F	G	H
1	Bronx VAMC Air Emission Calculations							
2								
3	<b>Air Emissions for Bronx VAMC for Construction Workers Using Personal Vehicles</b>							
4	The average roundtrip commute for a construction worker, miles							30
5	Number of Construction Days							365
6	Number of Construction Workers (daily)							36
7	Number of trips per day							2
8								
9	<b>Emission Source</b>	<b>NOx</b>	<b>VOC</b>	<b>CO</b>	<b>SO2</b>	<b>PM10</b>	<b>PM2.5</b>	<b>CO2</b>
10	Average Emissions for Gasoline Passenger Cars, Pounds per mile	6.55E-04	7.02E-04	6.60E-03	1.07E-05	9.19E-05	5.94E-05	1.10E+00
11	Average Emissions for Gasoline Passenger Cars, tons per year	0.26	0.28	2.60	0.00	0.04	0.02	434.63
12								
13	<b>Notes</b>							
14	1 Emission factors are from the South Coast Air Quality Management District (SQAQMD) EMFAC 2007 (v2.3) Model (on-road). Last updated April 24, 2008. Source: <a href="http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html">http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html</a>							
15	2 The SMAQMD 2007 reference lists emission factors for reactive organic gas (ROG). For purpose of this worksheet ROG = VOC.							
16								

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Project	Bronx VAMC SCI/D												
2														
3														
4	Estimated Emissions from Parking Garage													
5	Carbon Monoxide (CO)													
6														
7														
8														
9	Technical Data													
10	Spaces	Length	Width	Garage Area/Level	Levels	Garage Fullness	8-hr Period with Largest Avg # Veh Departing	Idle Emissions Avg Idle Time per Veh During 8-hr	Idle Emissions Rate per 8-hr period	8-hr Period with Largest Avg # Veh Moving	Travel Emission Emission Factor	Mean Travel Distance	Travel Emission Rate per 8-hr period	Total Emission Rate over 8-hr period
11	#	feet	feet	sqft	#	percent	veh/hr	min/veh	gm/sec	veh/hr	gm/veh-mi	feet	gm/sec	gm/sec
12	1000	291	126	40,600	6	90	169	94.823	1	0.074	225	25,369	5004	1.503
13														
14														
15														
16	Evening and Weekends													
17	Spaces	Length	Width	Garage Area/Level	Levels	Garage Fullness	16-hr Period with Largest Avg # Veh Departing	Idle Emissions Avg Idle Time per Veh During 16-hr	Idle Emissions Rate per 16-hr period	16-hr Period with Largest Avg # Veh Moving	Travel Emission Emission Factor	Mean Travel Distance	Travel Emission Rate per 16-hr period	Total Emission Rate over 16-hr period
18	#	feet	feet	sqft	#	percent	veh/hr	min/veh	gm/sec	veh/hr	gm/veh-mi	feet	gm/sec	gm/sec
19	1000	291	126	40,600	6	90	169	94.823	1	0.008	38	25,369	5004	0.254
20														
21														
22	Week Days													
23	Emission Rate per 8-hr Period	Emissions per 16-hr Period	Evening Emission Rate per 16-hr Period	Weekday Emissions	Week Days per Year	Total Weekday Emissions	Emissions per 24-hr Period	Weekend Days per Year	Total Weekend Day Emissions	Total Annual Emissions				
24	gm/sec	tons/8-hr	gm/sec	tons/day	days/year	tons/year	gm/sec	days/year	tons/year	tons/year				
25	1.577	0.05005	0.2621	0.01664	160	17,338	0.3932	0.0374	3,8934	21,231				
26														

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1	Bronx VAMC SCI/D														
2															
3															
4	Estimated Emissions from Parking Garage														
5															
6	Nitrogen Oxides (NOx)														
7															
8	Week Days														
9	Technical Data														
10	Spaces	Length	Width	Garage Area/Level	Levels	Garage Fullness	8-hr Period with Largest Avg # Veh Departing	Emission Factor	Avg Idle Time per Veh During 8-hr	Idle Emissions Rate per 8-hr period	8-hr Period with Largest Avg # Veh Moving	Emission Factor	Mean Travel Distance	Travel Emission Rate per 8-hr period	Total Emission Rate over 8-hr period
11	#	feet	feet	sqft	#	percent	veh/hr	gm/hr/veh	min/veh	gm/sec	veh/hr	gm/veh-mi	feet	gm/sec	gm/sec
12	1000	291	126	40,600	6	90	169	3.95	1	0.003	225	1.41	5004	0.084	0.087
13															
14															
15	Evening and Weekends														
16	Technical Data														
17	Spaces	Length	Width	Garage Area/Level	Levels	Garage Fullness	16-hr Period with Largest Avg # Veh Departing	Emission Factor	Avg Idle Time per Veh During 16-hr	Idle Emissions Rate per 16-hr period	16-hr Period with Largest Avg # Veh Moving	Emission Factor	Mean Travel Distance	Travel Emission Rate per 16-hr period	Total Emission Rate over 16-hr period
18	#	feet	feet	sqft	#	percent	veh/hr	gm/hr/veh	min/veh	gm/sec	veh/hr	gm/veh-mi	feet	gm/sec	gm/sec
19	1000	291	126	40,600	6	90	19	3.95	1	3.47E-04	38	1.41	5004	1.41E-02	1.45E-02
20															
21															
22	Week Days														
23	Emission Rate per 8-hr Period	per 8-hr Period	Evening Emission Rate per 16-hr Period	Emissions per 16-hr Period	Weekday Emissions	Week Days per Year	Total Weekday Emissions	Emission Rate per 24-hr Period	Emissions per 24-hr Period	Weekend Days per Year	Total Weekend Day Emissions	Total Annual Emissions			
24	gm./sec	tons/8-hr	gm/sec	tons/16-hr	tons/day	days/year	tons/year	gm/sec	tons/day	days/year	tons/year	tons/year	tons/year	tons/year	tons/year
25	0.087	0.00273	1.45E-02	9.17E-04	3.67E-03	260	0.953	2.17E-02	2.06E-03	104.00	2.15E-01	1.17E+00			

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O		
1	Project	Bronx VAMC SCI/D														
2																
3																
4	Estimated Emissions from Parking Garage															
5	Particulate Matter (PM2.5)															
6																
7																
8																
9	Technical Data															
10	Spaces	Length	Width	Garage Area/Level	Levels	Garage Fullness	8-hr Period with Largest Avg # Veh Departing	Emission Factor	Avg Idle Time per Veh During 8-hr	Idle Emissions Rate per 8-hr period	16-hr Period with Largest Avg # Veh Moving	Emission Factor	Mean Travel Distance	Travel Emission Rate per 8-hr period	Total Emission Rate over 8-hr period	
11	#	feet	feet	sqft	#	percent	veh/hr	gm/hr/veh	min/veh	gm/sec	veh/hr	gm/veh-mi	feet	gm/sec	gm/sec	
12	1000	291	126	40,600	6	90	169	0.0485	1	0.000	225	0.0194	5004	0.001	0.001	
13																
14																
15	Evening and Weekends															
16	Technical Data															
17	Spaces	Length	Width	Garage Area/Level	Levels	Garage Fullness	16-hr Period with Largest Avg # Veh Departing	Emission Factor	Avg Idle Time per Veh During 16-hr	Idle Emissions Rate per 16-hr period	16-hr Period with Largest Avg # Veh Moving	Emission Factor	Mean Travel Distance	Travel Emission Rate per 16-hr period	Total Emission Rate over 16-hr period	
18	#	feet	feet	sqft	#	percent	veh/hr	gm/hr/veh	min/veh	gm/sec	veh/hr	gm/veh-mi	feet	gm/sec	gm/sec	
19	1000	291	126	40,600	6	90	19	0.0485	1	4.27E-06	38	0.0194	5004	1.94E-04	1.98E-04	
20																
21																
22	Week Days															
23	Emission Rate per 8-hr Period	Emissions per 8-hr Period	Evening Emission Rate per 16-hr Period	Weekday Emissions	Week Days per Year	Total Weekday Emissions	Emission Rate per 24-hr Period	Emissions per 24-hr Period	Weekend Days per Year	Total Weekend Day Emissions	Total Annual Emissions					
24	gm/sec	tons/8-hr	gm/sec	tons/day	days/year	tons/year	gm/sec	tons/day	days/year	tons/year	tons/year					
25	1.19E-03	0.00004	1.98E-04	5.03E-05	260	0.013	2.98E-04	2.83E-05	104.00	2.95E-03	1.60E-02					

Project	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Project				Bronx VAMC Parking Garage										
2	Parking Spaces	805													
3	1997 Mobile 4.1 CO Emission Factors					1997 CO Background									
4	Cold Idle @ 30F (CI), g/hr		1028.61			1-Hr, ppm	5.7								
5	5 mph Cold Auto @ 30 F (CA) - Departing auto, g/ml		188.17			8-Hr, ppm	3								
6	5 mph Hot Auto @ 30F (HA) - arriving auto, g/ml		32.13												
7															
8	1997 INS/OUTS														
9	Maximum Hour					Maximum Hour Per Level		Parking Lot Area, GSF	Mean Travel Distance, FT			Peak Hourly ER Per Level, g/sec			
10	Period														
11	5-6 PM		321	579	5-6 PM	INS	43	36,680	5004				2.18E-04		
12															
13	Emissions from Excess Vehicles														
14	Travel Distance between Floors, FT		130												
15	Level	Vehicles	Excess Vehicles INS	Excess Vehicles OUT	Q exc	Qa, excess	Qa, Lvl	Qa, tot	Difference in Height between parking lot level and pedestrian height, m	Xu/Qatotal	X Center Line (Equation 1)	Correction Factor for Difference between height of each parking level and pedestrian height	Concentration at Receptor, g/m3	PPM	PF*PPM
16			0	0			2.18E-04	2.18E-04	22.6	3.119	6.81E-04	0.00000	2.29E-16	0.000	1.44451E-13
17		115	43	97	0.012	3.61E-06	2.18E-04	2.22E-04	19.5	3.119	6.97E-04	0.00000	3.58509E-13	0.000	0.000
18		115	86	194	0.248	7.27E-05	2.18E-04	2.91E-04	16.5	3.119	9.08E-04	0.00000	2.04006E-10	0.000	0.000
19		115	129	291	0.372	1.09E-04	2.18E-04	3.27E-04	13.4	3.119	1.02E-03	0.00004	4.2097E-08	0.000	0.000
20		115	172	388	0.496	1.45E-04	2.18E-04	3.64E-04	10.4	3.119	1.13E-03	0.00228	2.59161E-06	0.002	0.002
21		115	215	485	0.620	1.82E-04	2.18E-04	4.00E-04	7.3	3.119	1.25E-03	0.04997	6.23544E-05	0.056	0.039
22		115	258	582	0.744	2.18E-04	2.18E-04	4.36E-04	4.3	3.119	1.36E-03	0.35357	4.81E-04	0.433	0.303
23	Total	805					0.001527726	0.00225882							0.344
24	Xu, m	97.5													
25	Xd, m	21.3													
26	X0, Virtual Distance, m	19.9													
27	Tu	117.4													
28	Td	41.2													

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
31	X <sub>z</sub> , m	21.3													
32	a	0.5													
33	b	0.77													
34	1-b	0.23													
35	Wind Speed, u, m/sec	1													
36	PF	0.7													
37	Difference in height between parking lot level and pedestrian height, m	3.048													
38	Pedestrian Height, m	1.8788													
39	X <sub>u</sub> /Q <sub>a</sub> , total	3.119													
40	Urban vertical dispersion coefficient for Polar-McElroy stability class D	σ <sub>z</sub> , meters	2.982												
41	Correction factor for Difference between height of each parking level and pedestrian height					0.59311									
42															
43															
44															
45															
46															
47															
48															
49	On-street Concentration of CO, ppm														
50	8-hr Total CO Concentration														
51															
52	NOTES:														
53	1. Basis of calculation is "Guidelines for Evaluating Air Quality Impacts from Multilevel Naturally Ventilated Parking Facility", in NY CEQR Technical Manual, March 2014 Edition, Appendix Air Quality, page 11.														
54	2. CO background concentration is for 8-hours and is for Botanical Garden, Bronx. Source: New York State Air Quality Report Ambient Air Monitoring System, Dec. 2007-20011.														
55	3. Average distance travelled between floors is 20 ft*number of floors.														
56															

Air Emissions from Bronx VAMC

	A	B	C	D	E	F	G	H	I	J
1	<b>Bronx VAMC Air Emission Calculations</b>									
2										
3	<b>Air Emissions for Bronx VAMC for Commuter for Parking Space - Note 1</b>									
4	Emission Source	Number of Employees	Nox	VOC	CO	SO2	PM10	PM2.5	CO2	
5	Average Emissions for Gasoline Passenger Cars, Pounds per day per vehicle		22.90	34.20	311.00		0.14	0.14	12,172.00	
6	Average Emissions for Gasoline Passenger Cars, tons per year (Assumed 50 vehicles)	50	0.573	0.855	7.775	-	0.004	0.004	304.300	
7	Average Emissions for Gasoline Light Trucks, Pounds per day per vehicle		31.40	40.40	391.00		0.16	0.15	16,966.00	
8	Average Emissions for Gasoline Light Trucks, tons per year (Assumed 33 vehicles)	33	0.518	0.667	6.452	-	0.003	0.002	279.939	
9	TOTAL Commuter Emissions, tons per year	83	1.091	1.522	14.227		0.006	0.006	584.239	
10										
11	Notes									
12	1									
13										

Basis is "Sample Calculations of Emission Reductions and Fuel Savings from a Carpool Program, EPA420-F-08-028, September 2008", [www.epa.gov/otaq/consumer.htm](http://www.epa.gov/otaq/consumer.htm)