

**Environmental Assessment
HHC Coney Island Hospital
New Critical Services Structure
New York City, Kings County, New York**

4085-DR-NY

July, 2015



FEMA

**U.S. Department of Homeland Security
Federal Emergency Management Agency Region II
26 Federal Plaza, NY, NY 10278**

TABLE OF CONTENTS

1.0 INTRODUCTION..... 1

2.0 PURPOSE AND NEED 1

3.0 PROJECT LOCATION AND BACKGROUND 2

4.0 ALTERNATIVES 3

4.1 Alternative 1: No Action Alternative 4

4.2 Alternative 2: Proposed Alternative: New Critical Services Structure 4

4.3 Alternatives Considered and Dismissed..... 6

4.3.1 Mitigation in Place..... 6

4.3.2 Perimeter Floodwall..... 7

4.4 Summary of Alternatives 7

5.0 AFFECTED ENVIRONMENT AND POTENTIAL IMPACTS..... 7

5.1 Geology, Topography, and Soils 7

5.1.1 Existing Conditions..... 7

5.1.2 Potential Impacts and Proposed Mitigation 8

5.2 Air Quality..... 8

5.2.1 Existing Conditions..... 10

5.2.2 Potential Impacts and Proposed Mitigation 11

5.3 Wetlands and Water Quality 12

5.3.1 Existing Conditions..... 12

5.3.2 Potential Impacts and Proposed Mitigation 13

5.4 Floodplain 13

5.4.1 Existing Conditions..... 14

5.4.2 Potential Impacts and Proposed Mitigation 15

5.5 Vegetation 15

5.5.1 Existing Conditions..... 16

5.5.2 Potential Impacts and Proposed Mitigation 16

5.6 Wildlife and Fish..... 17

5.6.1 Endangered and Threatened Species 17

5.6.2 Migratory Bird Treaty Act..... 17

5.6.3 Bald and Golden Eagle Protection Act 17

5.6.4 Essential Fish Habitat 18

5.6.5 Existing Conditions..... 18

5.6.6 Potential Impacts and Proposed Mitigation 21

5.7 Cultural Resources 21

5.7.1 Historic (Standing) Structures 22

5.7.2 Archaeological Resources..... 25

5.8 Aesthetic Resources 27

5.8.1 Existing Conditions..... 28

5.8.2 Potential Impacts and Proposed Mitigation 28

5.9 Socioeconomic Resources and Environmental Justice 28

5.9.1 Existing Conditions..... 28

5.9.2 Potential Impacts and Proposed Mitigation 29

5.10 Land Use and Planning 30

5.10.1 Existing Conditions..... 30

5.10.2	Potential Impacts and Proposed Mitigation	30
5.11	Infrastructure.....	31
5.11.1	Existing Conditions.....	31
5.11.2	Potential Impacts and Proposed Mitigation	31
5.12	Noise.....	32
5.12.1	Existing Conditions.....	33
5.12.2	Potential Impacts and Proposed Mitigation	33
5.13	Transportation	34
5.13.1	Existing Conditions.....	34
5.13.2	Potential Impacts and Proposed Mitigation	35
5.14	Public Health and Safety.....	36
5.14.1	Existing Conditions.....	36
5.14.2	Potential Impacts and Proposed Mitigation	36
5.15	Hazardous Materials	36
5.15.1	Existing Conditions.....	36
5.15.2	Potential Impacts and Proposed Mitigation	37
5.16	Climate Change.....	38
5.16.1	Existing Conditions.....	39
5.16.2	Potential Impacts and Proposed Mitigation	39
5.17	Cumulative Impacts.....	40
6.0	PERMITS AND PROJECT CONDITIONS	42
7.0	AGENCY COORDINATION AND PUBLIC INVOLVEMENT.....	44
8.0	CONCLUSION	46
9.0	LIST OF PREPARERS.....	46
10.0	SUMMARY OF IMPACTS	47
11.0	REFERENCES.....	52

APPENDICES

APPENDIX A: Documents

Document 5.2-1	Air Title V Facility Permit
Document 5.4-1	8-Step Floodplain Decision Making Notice
Document 5.4-2	Hydrology and Hydraulics
Document 5.7-1	U.S. Department of the Interior Correspondence

APPENDIX B: Figures

Figure 1-1	Project Location Map
Figure 1-2	Existing Campus Layout
Figure 4-1	Proposed Alternative
Figure 5.1-1	SSURGO Soils
Figure 5.3-1	NWI Wetlands
Figure 5.3-2	NYSDEC Tidal Wetlands
Figure 5.4-1	FEMA Preliminary Flood Hazard Areas
Figure 5.5-1	NYC Coastal Zone Boundary
Figure 5.6-1	Photograph Key
Figure 5.6-2	Natural Resources Photographs
Figure 5.10-1	Community of Concern – Environmental Justice Study Area
Figure 5.11-1	Existing Land Use
Figure 5.13-1	Transportation

APPENDIX C: Tables

Table 5.2-1	National Ambient Air Quality Standards (NAAQS)
Table 5.2-2	Representative Monitored Ambient Air Quality Data
Table 5.6-1	Vegetation Identified within the Project Site

Table 5.7-1 New York State Breeding Bird Atlas (2000-2005) Results for Block
5849C

APPENDIX D: Correspondence

Correspondence 5.7-1 New York State Historic Preservation Office Consultation

LIST OF ACRONYMS

APE – Area of Potential Effects

BFE – Base Flood Elevation

NYCBSA – New York City Board of Standards and Appeals

CAA – Clean Air Act

CEHA – Coastal Erosion Hazard Area

CEQ – Council on Environmental Quality

CFR – Code of Federal Regulations

CHASP – Construction-Related Health and Safety Plan

CIH – Coney Island Hospital

CO – Carbon monoxide

COC – Community of Concern

CRIS – Cultural Resources Information System

CWA – Clean Water Act

CZMA – Coastal Zone Management Act

CZMP – Coastal Zone Management Plan

dB/dBA - Decibels

NYCDPR – New York City Department of Parks and Recreation

DSNY – New York City Department of Sanitation

EA – Environmental Assessment

ED – Emergency Department

EFH – Essential Fish Habitat

EHP – Environmental and Historic Preservation

EIS – Environmental Impact Statement

EJ – Environmental Justice

EO – Executive Order

EPA – United States Environmental Protection Agency

EMS – Emergency Medical Services

ESA – Endangered Species Act

FAA – Federal Aviation Administration

FDNY – New York City Fire Department

FEMA – Federal Emergency Management Agency

FGI – Facility Guideline Institute
FIRM – Flood Insurance Rate Map
FONSI – Finding of No Significant Impact
GHG – Greenhouse gas
HASP – Health and Safety Plan
HHC – New York City Health and Hospitals Corporation
IPaC – Information, Planning, and Conservation
IPCC – Intergovernmental Panel on Climate Change
L^{dn} – Day night noise level
L_{eq} – Equivalent noise level
LQG – Large Quantity Generator
MBTA – Migratory Bird Treaty Act
MEP – Mechanical, electrical, and plumbing
MLD – Multiple Lines of Defense
mmBtu – Million British Thermal Units
NAA – Non-attainment area
NAAQS – National Ambient Air Quality Standards
NAVD88 – North American Vertical Datum of 1988
NCSS – New Critical Services Structure
NEPA – National Environmental Policy Act
NFIP – National Flood Insurance Program
NHPA – National Historic Preservation Act
NMFS – National Marine Fisheries Service
NOAA – National Oceanic and Atmospheric Administration
NO₂ - Nitrogen dioxide
NO_x - Nitrogen oxides
NPCC – New York City Panel on Climate Change
NPDES – National Pollution Discharge Elimination System
NRCS – Natural Resources Conservation Service
NRHP – National Register of Historic Places
NYCDEP – New York City Department of Environmental Protection
NYNHP – New York Natural Heritage Program

NYSDEC – New York State Department of Environmental Conservation

NYSDHSES – New York State Division of Homeland Security and Emergency Services

NYSDOS – New York State Department of State

NYSHPO – New York State Historic Preservation Office

NWI – National Wetland Inventory

OCMC – New York City Department of Transportation’s Office of Construction Mitigation and Coordination

PBS – Petroleum Bulk Storage

PM – Particulate matter

RAP – Remedial Action Plan

REC – Recognized Environmental Conditions

SIP – State Implementation Plan

SPDES – State Pollutant Discharge Elimination System

SPL – Sound pressure level

SO₂ – Sulfur dioxide

SRIA – Sandy Recovery Improvement Act

ULSD – Ultra-low-sulfur diesel

USACE – United States Army Corps of Engineers

USDA – United States Department of Agriculture

USFWS – United States Fish and Wildlife Service

VOC – Volatile organic compound

WWTP – Wastewater Treatment Plant

1.0 INTRODUCTION

On October 29, 2012, Hurricane Sandy caused storm damage to several areas of New York City including Coney Island Hospital (CIH) in Kings County, New York. President Barack Obama declared Hurricane Sandy a major disaster on October 30, 2012. The declaration authorized federal public assistance to affected communities and certain nonprofit organizations per Federal Emergency Management Agency (FEMA) 4085-DR-NY and in accordance with the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1974 (42 U.S.C. 5172) as amended; the Sandy Recovery Improvement Act (SRIA) of 2013 and the accompanying Disaster Relief Appropriations Act, 2013. The New York City Health and Hospitals Corporation (HHC) (Subgrantee), which operates the city's public healthcare system, has applied to FEMA for financial assistance for a comprehensive flood mitigation project for CIH, its healthcare facility located in the Coney Island neighborhood of Brooklyn. The New York State Division of Homeland Security and Emergency Services (NYS DHSES) is the Grantee partner for the proposed action.

Hurricane Sandy inundated the CIH campus with contaminated floodwaters, causing the loss of critical electrical and mechanical systems ultimately requiring evacuation of all patients and staff. HHC is seeking funding from FEMA pursuant to sections 406 and 428 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act for the Proposed Project, which would prevent damage to the hospital from future storm or flooding events by providing elevated and/or hardened space for the Emergency Department (ED) and mechanical, electrical, and plumbing (MEP) equipment.

This Environmental Assessment (EA) has been prepared in accordance with Section 102 of the National Environmental Policy Act (NEPA) of 1969, as amended; and the Council on Environmental Quality (CEQ) Regulations for Implementation of NEPA (40 Code of Federal Regulations [CFR] Parts 1500 to 1508). The purpose of the EA is to analyze the potential environmental impacts of the proposed project and alternatives, including a no action alternative, and to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI). In accordance with above referenced regulations and FEMA's regulations for NEPA compliance found at 44 CFR Part 10, FEMA is required, during decision making, to fully evaluate and consider the environmental consequences of major federal actions it funds or undertakes.

2.0 PURPOSE AND NEED

FEMA's Public Assistance and Hazard Mitigation programs foster the protection of health, safety, and welfare of citizens, assists communities in recovering from and mitigating damages caused by disasters and reduces future losses resulting from natural disasters. The purpose of this

project is to mitigate against future flood damage to critical hospital spaces, in particular the ED and supporting infrastructure. The need for this project is to minimize damages to the critical facility's infrastructure due to future storm events and to ensure the hospital remains fully operational during future storm or flooding events. An additional purpose of the project is to incorporate the principles of a Multiple-Lines-of-Defense (MLD) strategy as recommended by the U.S. Army Corps of Engineers for improving resiliency of critical infrastructure. The primary purpose of the MLD mitigation strategy is to prevent floodwaters from entering the hospital through vulnerable points on the hospital campus and to allow the hospital to fully operate under backup systems for electricity and steam in the event that utility services are shut off.

3.0 PROJECT LOCATION AND BACKGROUND

CIH is part of the New York City HHC, a public benefit corporation and the largest municipal healthcare system in the United States. HHC provides quality medical, mental health, and substance abuse services to 1.4 million New Yorkers. The hospital opened its first permanent buildings at its current location along Ocean Parkway in 1910. Today, CIH, which is one of HHC's 11 acute care hospitals, is the primary healthcare provider for southern Brooklyn, serving a population of approximately 900,000 residents, visitors and commuters using the nearby Belt Parkway. CIH admits 18,000 inpatients and treats 300,000 outpatients annually. CIH is the designated 911 Receiving Hospital by the New York City Fire Department (FDNY) Bureau of Emergency Medical Services.

The CIH campus is located on a superblock – a large, contiguous site, larger than a traditional block that often has the effect of discontinuing a portion of a street grid – bounded by Ocean Parkway, Avenue Z, East 6th Street, and Shore Parkway (see Appendix B, Figure 1-1). The surrounding Coney Island neighborhood is a predominantly residential area located in southern Brooklyn along Lower New York Bay. While the oldest structures on the campus date back to the early 20th century, the main CIH inpatient facilities were built in the 1950s in response to southern Brooklyn's post-war population boom. The CIH campus contains the following buildings (see Appendix B, Figure 1-2):

- **Main Building**—a 14-story building located on the southern side of the campus, which contains the primary inpatient functions, including operating rooms, labor and delivery rooms, laboratory services, radiology services, outpatient services, pharmaceutical services, food services, and administrative clinical and non-clinical support services. The ED is located in a first-floor wing on the southeast corner of the Main Building.
- **Inpatient Tower**—an 8-story building located in the center of the campus and the most recent addition to CIH (built in 2006). The Inpatient Tower contains inpatient services, including the majority of CIH's inpatient beds.

- Hammett Pavilion—a 6-story building located on the west side of the campus, which contains the behavioral health and Inpatient/Outpatient care facilities.
- Building 6/Engineering—a 2-story building located on the northeast corner of the campus (physically separated from the connected Main Building, Inpatient Tower, and Hammett Pavilion), which contains non-medical support service facilities, including engineering and administrative offices.
- Building 3/Powerhouse—a 1-story building located on the east side of the campus, which contains CIH's power plant, mechanical facilities, and repair shops
- An FDNY-EMS Battalion Station, located adjacent to the Powerhouse.

Hurricane Sandy's storm surge inundated the Coney Island area and the CIH campus with floodwater from nearby Lower New York Bay. The basement/pipe space areas in the Main Building, Building 3, and Building 6 were completely flooded with water reaching to the ceiling. The partial basements in Building 6 containing the boiler and chiller and the raised floor area under the data center in the Hammett Pavilion were also flooded. Floodwaters reached the first floor of each building in the super block, in some areas reaching a height of 1.5 feet and covered the parking lot area between the buildings with up to 4 feet of water. Damage from floodwaters to electrical equipment in the lower levels caused a complete power failure (including the emergency power) in CIH, leading to the loss of the use of elevators, oxygen and medical gases and communication lines, which resulted in a full evacuation of the hospital of all patients and staff.

Although pumping and emergency repairs, including the installation of temporary boilers and splicing to restore power to the Main Building, began immediately following the storm, CIH was non-operational for several days. By deploying and activating mobile medical offices and a temporary urgent care center, CIH was able to provide emergency and urgent care services and limited outpatient services, for several months following Hurricane Sandy. Normal hospital operations were not fully restored until January 2013, more than two months after Hurricane Sandy and the hospital continues to operate with temporary repair measures to MEP systems.

4.0 ALTERNATIVES

Several alternatives were evaluated for the CIH Hazard Mitigation project. The alternatives were evaluated based upon engineering constraints, environmental impacts and available property. Budget was considered for feasibility of alternatives, but was not the controlling factor.

Guidance provided in 40 CFR 1502.14 regarding the NEPA provision of an alternative analysis states that an agency must rigorously explore and objectively evaluate all reasonable alternatives and for alternatives which were eliminated from detailed study, briefly discuss the reasons for

their elimination. Additionally, a No Action Alternative must be included. This section discusses the No Action Alternative, also known as the Future without Federal Project Condition, the feasible alternatives would provide for the purpose and need and the alternative that was eliminated from full analysis.

4.1 Alternative 1: No Action Alternative

Under the No Action Alternative, no alterations would be made to the CIH campus or hospital facilities. No federal funds would be provided and the status quo would be maintained. The hospital would remain in its existing condition and availability of services would not be restored. The hospital would continue to operate with temporary repair measures to existing MEP systems installed following Hurricane Sandy and no hazard mitigation would be pursued to enhance the hospital's resiliency. The CIH campus and hospital facilities would remain at risk from future storm or flooding events; risk of repetitive financial losses and disruption of critical healthcare services would continue. The surrounding community would experience service interruptions and possible threats to human health due to the loss of healthcare functions, particularly emergency care, in the event a future storm or flooding event causes a partial or full cessation of operations at CIH.

4.2 Alternative 2: Proposed Alternative: New Critical Services Structure

Under this Alternative, a New Critical Services Structure (NCSS) would be constructed on the CIH campus. The new facility would provide elevated space for critical hospital facilities and infrastructure while providing minimal disruptions to hospital functions during construction. The 12-story NCSS would be located on the northern side of the CIH campus and would provide space for hospital functions that would be relocated from the existing CIH buildings and additional code compliant upgraded spaces (see Appendix B, Figure 4-1). Overall, hospital capacity should remain the same although there will be a 9 bed decrease. Currently, the beds that would be removed have a low occupancy rate (less than 25 percent), and the occupancy rate of the remaining beds would be maximized due to decreased average lengths of stay and improved efficiency of services. Therefore, the reduction in the number of beds is not expected to have an impact on the service population.

The Proposed Alternative would raise the ED and MEP equipment out of the 500-year floodplain. It would reroute associated subsurface utility pathways and elevate or harden communications and electrical service panels. As part of this alternative, the existing Power House building, Building 6, and the Hammett Pavilion would be demolished. A floodwall at the 1 percent annual probability ("100-year") flood elevation plus three feet would be constructed around the perimeter of the Main Building and the Tower Building to provide added protection for non-critical functions in these buildings. An improved stormwater management system will be provided within the floodwall which includes installation of a collection ring, pumps, and

pipng as well as drainage modifications. It is anticipated that services would be relocated as follows:

- The ED would be relocated to the second floor of the NCSS, which would be elevated well above the 500-year floodplain. The ED would be accessed from an entrance lobby and drop-off area facing Ocean Parkway and an ambulance ramp and drop-off apron leading to Avenue Z;
- Nine operating rooms, the Cardiac Catheterization Lab, and central sterile supply facility would be relocated to the third and fourth floors of the NCSS to provide a code compliant surgical suite that connects directly to the ED;
- A new inpatient imaging center would be created on the fourth floor of the NCSS;
- Inpatient beds that are currently in non-code complaint spaces in the Main Building and the Hammett Pavilion would be relocated to the top four floors of the NCSS;
- MEP systems from elsewhere on the CIH campus, including the Central Plant building, would be relocated to elevated space on the fifth floor and fifth floor mezzanine in the NCSS. MEP systems include air handling units, emergency electrical switchgear rooms, medical gas systems, boiler plant, and chilled water plant; and,
- The roof of the NCSS would house the cooling tower, air conditioning units and emergency generators. The generators would be used to supply electricity to critical care areas and select equipment that includes sewage/stormwater pumps, three elevators, life safety, egress lighting, fire pumps, one chiller, and domestic water pumps.

The Proposed Alternative would also include renovations to the Main Building:

- The Behavioral Health Clinic would be relocated from the Hammett Pavilion to the seventh and eighth floors of the Main Building;
- The data center would be relocated from the Hammett Pavilion to the fifth floor of the Main Building;
- Engineering and administration offices would be relocated from Building 6 to the Main Building;
- Outpatient diagnostic facilities, including the imaging center and exam rooms, would be relocated from the first floor to the fifth floor; and,
- Functions on the first floor such as the morgue and ED administrative offices would be mitigated in place as a result of the protection provided by the floodwall.

- In addition, the first and second floors of the Tower Building would be renovated to create a corridor connecting the NCSS and the second floor would connect to the Main Building. Electrical equipment in the basement would be elevated to the second floor.

In addition, as part of a separate project not funded by FEMA, CIH will construct a new 350-space parking garage on site for hospital staff and visitors; this garage will replace and supplement the hospital's existing at-grade parking spaces and is expected to provide the necessary parking capacity for CIH. While not part of the Proposed Alternative, it is considered in this EA.

4.3 Alternatives Considered and Dismissed

4.3.1 Mitigation in Place

Alternative 3 would include measures to protect the existing CIH buildings and facilities by elevating the ED and critical MEP systems from the basement and first floor of CIH's buildings to at least the second floor. The ED would be relocated to the second floor of the Main Building; to accommodate the elevated ED and ED expansion for code compliance, a two-level addition would be constructed in the interior courtyard areas between the Main Building's north and south wings. Additional renovations would be made to create code compliant inpatient nursing unit rooms and a new data center in the Main Building. Renovations would be performed throughout the Main Building and the Hammett Pavilion, as well as portions of the Tower Building, to elevate critical MEP systems, and a second level would be constructed on the Central Plant building to accommodate the elevated boilers and other MEP equipment. All mitigation work would be performed within the existing buildings, and no new structures would be constructed on the CIH campus.

Alternative 3 (Mitigation-in-Place) was dismissed due to code compliance issues and concerns regarding maintenance of hospital operations during the extensive renovation work required by the project. The code compliance issues specifically concern spaces in the Main Building that do not meet the requirements of the New York State Health Code under the Facility Guideline Institute (FGI) requirements and 10 NYCRR Section 711.3 as well as relocated MEP systems that will be required to comply with the appropriate MEP codes. With Mitigation-in-Place, upgrades to various floor spaces and equipment would be required due to their elevation and relocation to different floors to make them code compliant. These upgrades are infeasible and cost prohibitive due to the extensive phasing that would be required to keep the hospital operable throughout construction. This alternative would also take much longer to complete due to the phasing.

4.3.2 Perimeter Floodwall

Alternative 4 would include the construction of a perimeter boundary and improved stormwater management measures to protect against floodwater and contaminated water. The floodwall would be constructed around the perimeter of the entire CIH campus, unlike the floodwall that would be constructed under the Proposed Alternative, which would only surround the Main Building and Tower Building. The perimeter boundary would be supported on piles with a groundwater seepage cutoff wall below-grade to prevent subsurface infiltration of floodwaters, to allow access to the hospital, several vehicular and pedestrian floodgates would be included; these would be activated in the event of a flood event. The perimeter floodwall would be built to an elevation of 18 feet North American Vertical Datum of 1988 (NAVD88), the 500-year flood elevation for the campus plus three feet of freeboard to account for sea level rise. A sanitary stormwater system, including a stormwater pump station on the northeast corner of the campus and a sanitary pump station on the northwest corner of the campus, would be constructed to remove stormwater and wastewater from the site. Both pumping stations would include an elevated emergency generator to mitigate against future flooding for continued operation during a storm event.

Alternative 4, Perimeter Floodwall, was dismissed because, while the floodwall provides a comparable level of protection as the Proposed Alternative, it does not achieve the goals of a MLD strategy that is recommended for critical infrastructure.

4.4 Summary of Alternatives

Four alternatives were considered. Two alternatives—Alternative 3 (Mitigation in Place) and Alternative 4 (Perimeter Floodwall)—were dismissed. The remaining alternatives are:

- 1) No Action Alternative
- 2) New Critical Services Structure (Proposed Alternative)

The following section focuses impact analysis on environmental and cultural resources in regards to the No Action and Proposed alternatives.

5.0 AFFECTED ENVIRONMENT AND POTENTIAL IMPACTS

5.1 Geology, Topography, and Soils

5.1.1 Existing Conditions

The Project Site is on the south side of Brooklyn, to the east of Ocean Parkway and just north of Shore and Belt Parkways. Soils and subsurface material overlying bedrock along the South Shore of Long Island (and this area of Brooklyn) are part of an outwash plain south of the Harbor Hill

Moraine (Cadwell 1989). Strong westward longshore drift of sediments along the south shore of Long Island has resulted in recent shore deposits forming barrier islands and spits at Rockaway Beach and Coney Island.

The Project Site is located within a developed urban area, with predominantly flat or gently sloping topography. Soils in the northern third of the Project Site are classified as UoA (urban land, outwash substratum, 0 to 3 percent slopes), while soils in the southern two-thirds of the Project Site are classified as UmA (urban land, tidal marsh substratum, 0 to 3 percent slopes) (see Appendix B, Figure 5.1-1). Urban lands consist of paved areas or areas of highly disturbed land and are considered “nonsoil areas” by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS).

5.1.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

As discussed above under “Existing Conditions,” the Project Site is heavily developed with highly disturbed soils. No development or other significant alterations to soils, topography, geology, or groundwater aquifer would occur on this land in the near future. Therefore, these resources within the Project Site under the No Action Alternative would be largely the same as at present and would not be affected by the No Action Alternative.

Alternative 2: Proposed Alternative

As discussed above under “Existing Conditions,” the Project Site is heavily developed with highly disturbed soils. Construction and operation of the Proposed Alternative would not result in significant alterations to topography or geologic resources within the Project Site. Installation of the perimeter boundary protection system, and some possible stormwater best management practices (BMPs) would require excavation of existing soils but it will be minimal and would not result in adverse effects to soil resources. Erosion and sediment control measures would be implemented in accordance with the New York State Standards and Specifications for Erosion and Sediment Control to minimize soil loss as a result of construction activities. Therefore, these resources within the Project Site under the Proposed Alternative would be largely the same as at present and would not be affected by the Proposed Alternative.

5.2 Air Quality

As required by the Clean Air Act (CAA), primary and secondary National Ambient Air Quality Standards (NAAQS) have been established for six major air pollutants: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone, respirable particulate matter (both particles with an aerodynamic diameter of less than or equal to 2.5 micrometers [PM_{2.5}], and particles with an aerodynamic diameter of less than or equal to 10 micrometers [PM₁₀]), sulfur dioxide (SO₂), and lead. The

primary standards represent levels that are required to protect the public health, allowing an adequate margin of safety. 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. The primary standards are generally either the same as the secondary standards or more restrictive. The NAAQS are presented in Appendix C, Table 5.2-1. The NAAQS for CO, annual NO₂, and 3-hour SO₂ have also been adopted as the ambient air quality standards for New York State but are defined on a running 12-month basis rather than for calendar years only. New York State also has standards for total suspended particulate matter, settleable particles, non-methane hydrocarbons, 24-hour and annual SO₂, and ozone which correspond to federal standards that have since been revoked or replaced and for the noncriteria pollutants beryllium, fluoride, and hydrogen sulfide.

The CAA, as amended in 1990, defines non-attainment areas (NAA) as geographic regions that have been designated as not meeting one or more of the NAAQS. When an area is designated as non-attainment by the United States Environmental Protection Agency (EPA), the state is required to develop and implement a State Implementation Plan (SIP), which delineates how a state plans to achieve air quality that meets the NAAQS under the deadlines established by the CAA, followed by a plan for maintaining attainment status once the area is in attainment.

The conformity requirements of the CAA and regulations promulgated thereunder limit the ability of federal agencies to assist, fund, permit, and approve projects that do not conform to the applicable SIP. When subject to this regulation, the federal agency is responsible for demonstrating conformity for its proposed action. Conformity determinations for federal actions other than those related to transportation plans, programs, and projects which are developed, funded, or approved under title 23 U.S.C. or the Federal Transit Act (49 U.S.C. 1601 et seq.) must be made according to the requirements of 40 CFR Part 93 (federal general conformity regulations).

Under the general conformity regulations, a determination for federal actions is required for each criteria pollutant or precursor in non-attainment or maintenance areas where the action's direct and indirect emissions have the potential to emit one or more of the six criteria pollutants at rates equal to or exceeding the prescribed *de minimis* rates for that pollutant. In the case of this project, the prescribed annual rates are 50 tons of volatile organic compounds (VOCs) and 100 tons of nitrogen oxides (NO_x) (ozone precursors, ozone non-attainment area in transport region), 100 tons of CO (CO maintenance area), and 100 tons of PM_{2.5}, SO₂, or NO_x (PM_{2.5} and precursors in PM_{2.5} attainment area).

The general conformity requirements do not apply to federal actions that:

- Do not exceed the prescribed emissions threshold levels;

- Occur in an attainment area;
- Are related to transportation plans, programs, and projects developed, funded, or approved under Title 23 U.S.C. or the Federal Transit Act (49 U.S.C. 1601); or
- Qualify for exemptions or where the emissions are not reasonably foreseeable as defined in § 93.153.

The regulation assumes that a proposed federal action whose criteria pollutant emissions have already been included in the local SIP's attainment or maintenance demonstrations conforms to the SIP.

The emissions from construction activities are subject to air conformity review. Therefore, a qualitative assessment was conducted to evaluate whether the construction of the Proposed Project would have the potential to result in adverse effects on air quality.

5.2.1 Existing Conditions

The existing background ambient air quality in the area of the Project Site is based on the air quality monitoring data collected by the New York State Department of Environmental Conservation (NYSDEC) in Region 2 at air quality monitoring stations nearest to the study area. The summary of the concentrations of all criteria pollutants in the vicinity of the Project Site are presented in Appendix C, Table 5.2-2. All data statistical forms and averaging periods are consistent with the definitions of the NAAQS. These existing concentrations are based on recent published measurements, averaged according to the NAAQS; the background concentrations are the highest values in past years and are used as a conservative estimate of the highest background concentrations for future conditions. As shown in the table, there were no monitored violations of the NAAQS for the pollutants at these sites.

New York City has been designated as in attainment for CO, PM_{2.5}, and Lead and is currently in attainment of the annual-average NO₂ standard. Brooklyn has also been designated as in attainment for PM₁₀. EPA has designated the entire state of New York as “unclassifiable/attainment” of the 1-hour NO₂ standard effective February 29, 2012; since additional monitoring is required for the 1-hour standard, areas will be reclassified once three years of monitoring data are available (likely 2017). The EPA has established a 1-hour SO₂ standard, and based on the available monitoring data, all New York State counties currently meet the 1-hour standard; draft attainment designations were published by the EPA in February 2013, indicating that the EPA is deferring action to designate areas in New York State and expects to proceed with designations once additional data are gathered.

CIH has a Title V Permit issued by NYSDEC pursuant to 6 NYCRR Part 201. The permitted sources include three 20.412 million British Thermal Units (mmBtu/hr) per hour Cleaver Brook

boilers. The current operating permit will expire in January 2019 (Appendix A, Document 5.2-1). The facility also operates several exempt sources including two emergency generators.

5.2.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

Under the No Action Alternative, no alterations would be made to the CIH campus or its facilities. CIH would remain in its current condition with hospital facilities operating under temporary repair measures. Therefore, the No Action Alternative would not result in any increase in emission levels during construction or operation and therefore would not have an adverse effect on air quality. The three on-site boilers would continue operating under the existing Title V Permit which will not expire until January 2019.

Alternative 2: Proposed Alternative

Under the Proposed Alternative, the relocation of boilers, which operate under the existing Title V Permit, would require a notification to NYSDEC since the exhaust points would be changed. If the Proposed Alternative introduces new major sources at the NCSS, a modification of the existing NYSDEC Title V Permit would also be required.

Construction activities would be carried out in accordance with all applicable regulatory requirements. As required by EPA regulations, ultra-low-sulfur diesel (ULSD) fuel would be used for all construction-related vehicles and non-road construction equipment. Since all diesel engines will be using ULSD, SO₂ emissions would be negligible. In addition, all necessary measures would be implemented to ensure adherence to the New York City Air Pollution Control Code regulating construction-related dust emissions.

The construction activities associated with the Proposed Alternative are anticipated to be approximately 38 months. In order to maintain continuous functionality of the hospital during the construction timeframe, construction activities would employ a phased approach. Emissions from on-site construction equipment and on-road construction-related vehicles such as trucks and construction worker vehicles have the potential to affect air quality. Construction of the Proposed Alternative would require the use of concrete trucks and delivery trucks as well as non-road equipment such as excavators, backhoes, loaders and cranes. However, the use of such equipment would be temporary and short-term and would not be needed once the construction task is complete. Further, the approach and procedures for constructing the NCSS would be typical of the methods utilized in other construction projects throughout New York City.

Accordingly, as the potential operational and construction emissions are expected to be below the applicable *de minimis* levels, no general conformity analysis would be required, and the Proposed Alternative would not result in adverse effects on air quality.

5.3 Wetlands and Water Quality

Congress enacted the Federal Water Pollution Control Act in 1948 which was later reorganized and expanded in 1972 and became known as the Clean Water Act (CWA) in 1977. The CWA regulates discharge of pollutants into water with sections falling under the jurisdiction of the U.S. Army Corps of Engineers (USACE) and the EPA. Section 404 of the CWA establishes the USACE permit requirements for discharging dredged or fill materials into Waters of the United States and traditional navigable waterways. USACE regulation of activities within navigable waters is also authorized under the 1899 Rivers and Harbors Act. Under the National Pollution Discharge Elimination System (NPDES), the EPA regulates both point and non-point pollutant sources including stormwater and stormwater runoff. Activities that disturb one acre of ground or more are required to apply for an NPDES permit, called a State Pollutant Discharge Elimination System (SPDES) permit through NYSDEC as authorized by the EPA. Executive Order (EO) 11990 Wetlands Management requires federal agencies to avoid funding activities that directly or indirectly support occupancy, modification, or development of wetlands, whenever there are practicable alternatives.

Section 1424(e) of the Safe Drinking Water Act of 1974 [P.L. 93-523] authorizes the Administrator of the U.S. Environmental Protection Agency (USEPA) to designate an aquifer for special protection if it is the sole or principal drinking water resource for an area (i.e., it supplies 50 percent or more of the drinking water in a particular area) and if its contamination would create a significant hazard to public health. No commitment for federal financial assistance may be entered into for any project that the Administrator determines may contaminate such a designated aquifer so as to create a significant hazard to public health.

5.3.1 Existing Conditions

The majority of the Project Site is heavily developed and occupied by existing hospital buildings, asphalt-paved parking lots, and small patches of upland vegetation. The Project Site is located at least 2,500 feet from surface water features. FEMA uses the National Wetlands Inventory, state-specific mapping tools and on-site surveys to identify wetlands. The U.S. Fish & Wildlife Service's (USFWS) National Wetland Inventory (NWI) map for the Project Site (see Appendix B, Figure 5.3-1) indicates there are no NWI-mapped wetlands on or within the vicinity of the Project Site. The NYSDEC wetlands map for the Project Site (see Appendix B, Figure 5.3-2), also indicates that there are no NYSDEC-mapped wetlands on or within the vicinity of the Project Site. In addition, there are no other surface waters considered Waters of the United States on or in the vicinity of the Project Site.

The Project Site is within the Brooklyn-Queens Aquifer System, a sole source aquifer system identified by the USEPA under the Act (USEPA 1983). This aquifer system comprises four distinct formations within the unconsolidated materials overlying the bedrock: the Upper Glacial,

the Jameco, the Magothy and the Lloyd aquifers. The Upper Glacial aquifer is not used as a drinking water supply. Within central Kings County, the Upper Glacial aquifer is more than 200 feet thick (de Laguna 1948 in USGS 1997). Groundwater is not used as a potable water supply in this part of Brooklyn, and non-potable use is limited.

5.3.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

As discussed above under “Existing Conditions,” there are no NWI- or NYSDEC-mapped wetlands, NYSDEC-regulated wetland adjacent areas, or other Waters of the United States within or in the vicinity of the Project Site. Therefore, the No Action Alternative would not adversely affect wetlands or water quality, although, during future flooding events it is possible there would be localized water quality effects from contaminated floodwaters, as occurred during Hurricane Sandy.

Alternative 2: Proposed Alternative

Because there are no NWI- or NYSDEC-mapped wetlands, NYSDEC-regulated wetland adjacent areas, or other Waters of the United States on or in the vicinity of the Project Site, the Proposed Alternative would not adversely affect wetlands or water quality. The proposed perimeter boundary protection system would minimize potential for future flood events to cause localized water quality effects from contaminated floodwaters. Construction of the Proposed Alternative would require the preparation of a Stormwater Pollution Prevention Plan (SWPPP) and adherence to the conditions of State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges Permit No. GP-0-15-002, if the soil disturbance would be greater than or equal to one acre. BMPs (e.g., silt fences, inlet protection) would be used to prevent adverse effects on water quality during construction.

Construction and operation of the Proposed Alternative would not adversely affect the Brooklyn-Queens sole source aquifer or drinking water supplies. Groundwater is not used as a potable water supply in the area, and the Proposed Alternative would not result in groundwater withdrawal or have the potential to affect quality of the Brooklyn Queens sole source aquifer. Therefore, the Proposed Alternative would not have the potential to result in adverse impacts to groundwater resources on or in the vicinity of the Project Site, and would be compliant with Section 1424(e) of the Safe Drinking Water Act (Beers).

5.4 Floodplain

EO 11988 (Floodplain Management) requires that a federal agency avoid direct or indirect support of development within the floodplain whenever there is a practicable alternative. FEMA uses Flood Insurance Rate Maps (FIRM) to identify the floodplains for the National Flood

Insurance Program (NFIP). Federal actions within the “100-year” floodplain or in the case of the Hospital (a critical facility as defined in 44 CFR Part 9), the 500-year floodplain require the federal agency to conduct an 8-Step process (Appendix A, Document 5.4-1). This process, like NEPA, requires the evaluation of alternatives prior to funding the action. FEMA’s regulations on conducting the 8-Step process are contained in 44 CFR Part 9.

On January 30, 2015, EO 11988 was amended. Among other changes, the way in which federal agencies establish the flood elevation was changed. Federal agencies must now use one of the following three methods to determine the flood elevation used in siting, design, and construction:

- Use data and methods informed by best-available, actionable climate science;
- Build two feet above the “100-year” flood elevation and three feet above for critical facilities; or
- Build to the “500-year” flood elevation.

While the recent EO 11988 amendments are not yet in effect, pending adoption of formal guidance on implementing the amendments, it is the intent of the Proposed Project to comply with the amendments to the extent possible.

5.4.1 Existing Conditions

FEMA released preliminary FIRMs on January 30, 2015 that precede the future publication of new, duly adopted, final FIRMs. The preliminary FIRMs represent the Best Available Flood Hazard Data at this time. FEMA encourages communities to use the preliminary FIRMs when making decisions about floodplain management until final maps are available. As indicated in the FEMA Preliminary Flood Hazard Areas map for the Project Site (see Appendix B, Figure 5.4-1, FIRM panel 3604970354G), the entire Project Site is located within the “100-year” floodplain (Zone AE) with a Base Flood Elevation (BFE) for the Project Site of +10 feet NAVD88. The 500-year BFE for the Project Site is +14 feet NAVD88. The majority of the Project Site is heavily developed and occupied by existing hospital buildings, asphalt-paved parking lots, and small patches of upland vegetation.

New York City is affected by local, fluvial, and coastal flooding that affect the City’s Atlantic coast, bays such as Lower New York Bay, tidally influenced rivers such as the Hudson and East Rivers, streams, and inlets such as Mill Basin Inlet in Jamaica Bay (FEMA 2013). Within New York City, tidal flooding is the primary cause of area-wide flooding. Coastal floodplains such as those in the project area are influenced by astronomic tide and meteorological forces (e.g., northeasters and hurricanes [FEMA 2013]), not by fluvial flooding. Because the Lower New York Bay is a tidal bay, its surface water elevations are controlled by the tidal levels.

5.4.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

Under Alternative 1, no development or significant alterations to the Project Site would occur. Thus, CIH would continue to be located within the “100-year” floodplain, would not be mitigated up to the “500-year” flood level and would continue to be vulnerable to potential flooding from future storm events.

Alternative 2: Proposed Alternative

The Proposed Alternative would result in the modification of an existing facility, all of which is located within the “100-year” floodplain. Therefore, as indicated in Appendix A, Document 5.4-1 (8 Step Process, 44 CFR Part 9), there is no practicable alternative that would not occur within the “100-year” floodplain. However, construction and operation of the Proposed Alternative would conform to the amended EO 11988 through the construction of the NCSS, which would allow the relocation of the ED and critical mechanical systems to elevated space out of the “500-year” floodplain and construction of a floodwall at the “100-year” flood elevation plus three feet of freeboard to account for sea level rise around the perimeter of the Main Building and the Tower Building to provide added protection for non-critical functions in the buildings. As indicated in the Hydrology and Hydraulics study (Appendix A, Document 5.4-2), the floodplain on and in the vicinity of the Project Site is affected by regional storm tide levels of the Lower New York Harbor which is controlled by offshore water levels, wind patterns, and bathymetric and topographic features. The flood volume displaced by the CIH campus is comparatively much less than the storm tide volume of the Lower New York Harbor. Thus, the proposed modifications to the existing hospital facilities will not adversely affect floodplains on or in the vicinity of the Project Site and will not increase the storm tide risk to adjacent properties.

5.5 Vegetation

Local Law 3 of 2010 amended Section 18-107 of the Administrative Code of the City of New York and codifies the New York City Department of Parks and Recreation’s (NYCDPR) ability to regulate the replacement of trees on or within jurisdiction of the NYCDPR, which includes all trees growing in the public right-of-way and on land mapped as City parkland. The law requires permits from the NYCDPR for the removal of trees within the NYCDPR jurisdiction and requires replacement of trees that are removed. The law protects against the unauthorized removal, destruction, irreparable damage, and injury to trees under the jurisdiction of the NYCDPR.

5.5.1 Existing Conditions

The Project Site is occupied by existing hospital buildings, asphalt-paved parking lots, and relatively small patches of maintained lawns and landscaped areas along the perimeter of the buildings and Project Site boundary (see Appendix B, Figures 5.6-1 and 5.6-2). These vegetated patches occupy approximately 15 percent of the area within the Project Site. Following Edinger et al. (2002), the ecological community characterization guidance manual used to describe ecological communities in New York in a standardized manner; the Project Site would include mowed lawn with trees, paved road/path, and urban structure exterior. The only vegetated community within the Project Site is the mowed lawn with trees community, which is dominated by London plane tree (*Platanus acerfolia*) and pin oak (*Quercus palustris*) in the canopy and grasses in the herbaceous layer. Table 5.6-1 in Appendix C lists the vegetation observed during the February 24, 2015 reconnaissance investigation.

Coney Island does not fall within the boundaries of a regulated quarantine zone for the Asian longhorned beetle (*Anoplophora glabripennis*), a destructive wood-boring pest of maple and other hardwoods that was first discovered in the United States in Brooklyn (Kings County) in 1996. As a measure of control, certain tree species are generally prohibited from being planted within all of Brooklyn (including Coney Island), Manhattan, Queens, and parts of Staten Island.

5.5.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

The majority of the Project Site is heavily developed, with limited vegetation (e.g., mowed lawn with trees). Vegetation within the Project Site under the No Action Alternative would be largely the same as at present and would remain subject to impact by potential future inundation.

Alternative 2: Proposed Alternative

Construction of the Proposed Alternative would result in the loss of the area of mowed lawn with trees due to construction of the NCSS and floodwall. Construction of the Proposed Alternative would require the removal of several trees within the Project Site. However, all work would be performed in compliance with Local Law 3 of 2010 and the NYCDPR's Tree Protection Protocol to minimize potential adverse effects. The mowed lawn with trees community has limited ecological value because it is a smaller isolated space disconnected from other vegetated areas in the predominantly urbanized New York City environment. Operation and construction of the Proposed Alternative would not result in adverse effects on vegetation within the New York Metropolitan region. If feasible, trees and other landscaping would be planted on the Project Site to offset the vegetation lost as a result of construction of the Proposed Alternative.

A planting plan would be implemented following construction of the Proposed Alternative. The palette of species for the plan would consist of locally grown native herbaceous materials, shrubs, and trees that would likely occur in adjacent ecological communities. The planting plan (including species, sizes, numbers, and locations), which would include a tree planting program, would be prepared during the final design stages. Invasive species management (e.g., mechanical/chemical removal of invasive plants, proper disposal of invasive species) would be included in the planting plan in order to minimize the potential for invasive and nuisance plant species during the establishment period. Therefore, the Proposed Alternative would be consistent with Executive Order 13112.

5.6 Wildlife and Fish

5.6.1 Endangered and Threatened Species

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

5.6.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 provides a program for the conservation of migratory birds that fly through lands of the United States. The lead federal agency for implementing the MBTA is the USFWS. The law requires federal agencies to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any migratory birds or result in the destruction or adverse modification of designated critical habitat of such species.

5.6.3 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), enacted in 1940, prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" Bald and Golden eagles including their parts, nests, or eggs. The Bald Eagle used to be listed on the Federal Threatened and Endangered Species list but has since been delisted.

5.6.4 Essential Fish Habitat

Federal agencies are required to assess the potential impacts that proposed actions and alternatives may have on Essential Fish Habitat (EFH), in accordance with the Magnuson-Stevens Fishery Conservation and Management Act. However, there are no waterbodies within the Project Site. Therefore, an EFH assessment under the Magnuson-Stevens Act is not required.

5.6.5 Existing Conditions

5.6.5.1 Wildlife and Fish

The Project Site and surrounding area mostly (approximately 85 percent) consists of lots covered by buildings and asphalt in a heavily urbanized and commercial/residential setting with limited habitat for even disturbance-tolerant wildlife species. The remaining portion of the Project Site (approximately 15 percent) consists of maintained lawns with shade trees. The Breeding Bird Atlas is a periodic census of the distribution of breeding birds across New York State. The most recent census was conducted from 2000-2005 indicates 20 bird species as confirmed or probable/possible breeders in the survey block in which the Project Site is located (Block 5849C) (see Appendix C, Table 5.7-1). Of these bird species, the Project Site provides suitable breeding habitat for only a few urban-adapted birds, such as the rock pigeon (*Columba livia*), house sparrow (*Passer domesticus*), and European starling (*Sturnus vulgaris*). These are extremely disturbance-tolerant, generalist species that can thrive in heavily developed, urban environments. Rock pigeons and house sparrows were observed within the vicinity of the Project Site during the February 24, 2015 reconnaissance investigation.

Habitat for mammals is limited within the Project Site and is likely to be used only by urban-adapted and synanthropic species (those that benefit from an association with humans). These include the raccoon (*Procyon lotor*), Norway rat (*Rattus norvegicus*), and domestic cat (*Felis catus*). No mammals were observed in the vicinity of the Project Site during the February 24, 2015 reconnaissance investigation.

The Project Site lacks any habitat, including surface water features, which would be suitable for reptile and amphibian species. As such, no reptiles or amphibians are considered to have the potential to occur within the Project Site: thus, further assessment of reptiles and amphibians is not necessary.

5.6.5.2 Threatened & Endangered

The Piping Plover (*Charadrius melodus*; threatened), Red Knot (*Calidris canutus rufa*; threatened), Roseate Tern (*Sterna dougallii dougallii*; endangered), Northern Long-eared bat (*Myotis septentrionalis*; threatened), and Aeabeach amaranth (*Amaranthus pumilus*; threatened)

are the only federally endangered or threatened species listed by the USFWS Information, Planning, and Conservation (IPaC) system as occurring in on or in the vicinity of the Project Site (Appendix A, Document 5.7-1). A review of the NYSDEC New York Nature Explorer database for state-listed species indicates that seabeach knotweed (*Polygonum glaucum*; rare) has the potential to occur within a 0.5 mile radius of the Project Site. No birds documented by the 2000-2005 Breeding Bird Atlas in Block 5849C are federally- or state-listed species.

Piping Plover

The breeding population of piping plovers in New York City is limited to the Rockaway Peninsula in Queens County (Fowle and Kerlinger 2001, Boretti et al. 2007), and the Project Site lacks wide, open expanses of unvegetated beach that the piping plover uses for habitat. Therefore, piping plovers are not considered to have the potential to occur within the Project Site.

Roseate Tern

Roseate terns do not nest anywhere in New York City or its neighboring counties (Fowle and Kerlinger 2001, Mitra 2008), and any occurrence of roseate terns in the vicinity of the Coney Island neighborhood of Brooklyn would be limited to rare and brief passages of birds offshore that are associated with nesting colonies elsewhere, such as eastern Long Island. Therefore, roseate terns are not considered to have the potential to occur within the Project Site.

Red Knot

The *rufa* subspecies of the red knot migrates up to 30,000 miles round trip between primary wintering grounds in South America and breeding grounds in the high arctic with conditions for refueling at staging areas along the Atlantic coast being critical determinants of migration and reproductive success and overall survival (Baker et al. 2004, Morrison et al. 2007). Although migrating red knots are known to occur along Long Island (e.g., Jamaica Bay [Tanacredi and Badger 1995:104, Fowle and Kerlinger 2001:81]), none of its beaches, bays, or estuaries are known to be high-use staging areas that support large concentrations of individuals. Therefore, red knots are not considered to have the potential to occur within the Project Site.

Northern Long-eared Bat

The northern long-eared bat is considered a forest-dependent species that is sensitive to fragmentation and requires interior forest for both foraging and breeding (Foster and Kurta 1999, Broders et al. 2006, Henderson et al. 2008). Although they may occur in urbanized areas (Whitaker et al. 2004, Johnson et al. 2008) and will occasionally utilize buildings and other artificial structures rather than trees for roosting (Timpone et al. 2010, USFWS 2013), urban northern long-eared bats tend to occur near large, forested parks or other green spaces with abundant tree cover (Johnson et al. 2008). The New York Natural Heritage Program (NYNHP) and NYSDEC have no records of sightings or other encounters with the northern long-eared bat

from any of the five boroughs of New York City (NYNHP 2014, NYSDEC 2014), and no nuisance bats ever collected from New York City and submitted to the New York State Department of Health for rabies testing have included a northern long-eared bat (NYSDEC 2014). Because no caves, mines, or small or large woodlands occur near the Project Site, northern long-eared bats are not considered to have the potential to occur in the area during either the breeding or non-breeding period.

Seabeach Amaranth

Seabeach amaranth is an annual herbaceous plant. It grows along sandy beaches of the Atlantic coast in areas of accreting shoreline, upper beach, foredune, or overwash flat as well as beach nourishment sites (USFWS 2012). The Project Site does not contain this habitat. Therefore, Seabeach amaranth is not considered to have the potential to occur within the Project Site.

Seabeach Knotweed

Seabeach knotweed is an annual herbaceous plant. It grows along maritime beaches, dunes, and on the edges of salt marshes in open areas. Seabeach knotweed is found within New York State on Long Island (NYNHP 2013). The Project Site does not contain this habitat. Therefore, Seabeach knotweed is not considered to have the potential to occur within the Project Site.

5.6.5.3 Migratory Bird Treaty Act

As discussed above, under “Terrestrial,” the most recent census of the Breeding Bird Atlas was conducted from 2000-2005 and documented 20 species as confirmed or probable/possible breeders in the survey block in which the Project Site is located (Block 5849C). The species considered likely to breed within the vicinity of the Project Site are the rock pigeon, house sparrow, and European starling. These species are not protected under MBTA and the Project Site does not contain designated critical habitat for any species protected under MBTA. Therefore, no further assessment under MBTA is required.

5.6.5.4 Bald and Golden Eagle Protection Act

The Project Site and surrounding area mainly consists of lots covered by buildings and asphalt in a heavily urbanized and commercial/residential setting and lacks suitable habitat for bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*), and neither species is reported as breeding in the vicinity of the Project Site (see Appendix C, Table 5.7-1). Therefore, no further assessment under the Bald and Golden Eagle Protection Act is required.

5.6.6 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

The majority of the Project Site is heavily developed with limited habitat for disturbance-tolerant wildlife species. No development or other significant alterations to habitat would occur on this land in the near future. Therefore, the No Action Alternative would not affect wildlife or federally or state-listed species within the Project Site.

Alternative 2: Proposed Alternative

Wildlife and Fish

Construction of the Proposed Alternative would not adversely affect wildlife at either the individual or population level. Terrestrial wildlife habitat at the Project Site comprises buildings and paved parking lots with limited area of mowed lawns with trees. Construction activities would result in the loss of a portion of lawn with trees. The loss of this habitat, common within the New York metropolitan area, would not adversely affect the few urban-adapted species that use this habitat. As extreme generalists that are highly disturbance-tolerant, any individuals of these species that may be temporarily displaced from the Project Site during construction would be expected to move to alternative habitat. Overall, construction and operation of the Proposed Alternative would not adversely affect wildlife resources at the individual or population level.

Threatened & Endangered

As discussed above under “Existing Conditions,” no federal or state-listed endangered, threatened, and special concern species are considered to have the potential to occur within the Project Site. Therefore, construction and operation of the Proposed Alternative would not result in any significant adverse effects to threatened, endangered, and special concern species.

5.7 Cultural Resources

As a federal agency, FEMA must consider the potential effects of its funded actions upon cultural resources prior to engaging in any undertaking. This obligation is defined in Section 106 of the National Historic Preservation Act (NHPA), as amended and implemented by 36 CFR Part 800. The NHPA of 1966 defines a historic property as “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on the National Register.” Eligibility criteria for listing a property on the National Register of Historic Places (NRHP) are found at 36 C.F.R. Part 60.

The New York State Historic Preservation Office (NYSHPO) maintains a database of New York’s historic properties. Requirements for review include the identification of significant cultural resources that may be impacted by the undertaking. Cultural resources are defined as prehistoric and historic sites, structures, districts, buildings, objects, artifacts, or any other

physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons.

Only those cultural resources determined to be potentially significant under NHPA are subject to protection from adverse impacts resulting from an undertaking. To be considered significant, a cultural resource must meet one or more of the criteria established by the National Park Service that would make that resource eligible for inclusion in the NRHP. The term “eligible for inclusion in the NRHP” includes all properties that meet the NRHP listing criteria, which are specified in the Department of Interior regulations Title 36, Part 60.4 and NRHP Bulletin 15. Sites that have not been evaluated at the time of the undertaking may be considered potentially eligible for inclusion in the NRHP and as such, are afforded the same regulatory consideration as nominated properties.

Pursuant to 36 CFR 800.4(a)(1), the Area of Potential Effects (APE) is defined as the geographic area(s) within which the undertaking may directly or indirectly affect cultural resources. Within the APE, impacts to cultural resources are evaluated prior to the undertaking for both Standing Structures (above ground resources) and Archaeology (below ground resources).

5.7.1 Historic (Standing) Structures

5.7.1.1 Existing Conditions –Historic Standing Structures

Coney Island Hospital roots originated in 1875 as a First Aid Station at Oceanfront Beach as an emergency treatment center where, according to CIH, cases consisted chiefly of lacerations of the feet caused by broken bottles. By 1902 the medical service had moved into a one and a half story wooden building on Sea Breeze Avenue and had grown into an emergency hospital during the summer months. In 1908 a 100-bed hospital was constructed at the current hospital site at 2601 Ocean Parkway in response to a rapid population growth. By its opening in May of 1910, the site consisted of six buildings: the Main Hospital Building (known as the Hammett Building and currently used as a data center), Nurses Home (demolished), Employees Dormitory (also known as Building #6 and currently used as the Administration and Engineering Building), Laboratory Building, Power Plant (also known as Building #3 and currently containing the emergency generators) and the Laundry Building. As the medical center continued to expand, the two white brick towers that make up the current hospital (Main Building) were finished in 1954 and the inpatient bed tower behind the Hammett Building was added in 2006.

A search for known historic standing structures was conducted within the APE using the NYSHPO Cultural Resources Information System (CRIS) to determine if any buildings in the APE are listed on or determined eligible for listing on the State and National Registers of Historic Places individually or within historic districts. In addition, information from prior

environmental reviews was also reviewed as were listings of New York City Landmarks and Historic Districts (STV 2001).

Within the APE, defined as a radius of 500 feet to include the entire superblock, there is one National Register of Historic Places (NRHP) listed site, Ocean Parkway (90NR01303). The Parkway is located adjacent to the Coney Island Hospital site and has been designated a NYC Scenic Landmark as well as being listed on the State Register of Historic Places. Additionally there are four (4) structures on the CIH site that are older than 45 years of age: The Hammett Building, Power Plant, the Administration Building and the current hospital building. The NY SHPO has identified the entire hospital site as being 'not eligible' for the NRHP.

Hammett Building

This structure faces Ocean Parkway and is the original 100-bed hospital constructed for this site. This five story public building was built in 1908 in Italian Renaissance style with a one-story side wing. Faced with light golden tan brick articulated with sandstone lentils, belt courses and window surrounds, it is topped with a low profile sandstone roof cornice and a solid brick parapet. It displays Italianate details articulated in brick such as arched first floor windows, blind arches, a classical entrance with paired pilasters and a projecting first floor elevation in a rusticated shiplap pattern with sandstone keystones and belt course.

Building #6 (Employees Dormitory)

This U-shaped structure is located on the northeast corner of the hospital campus at Avenue Z and East 6th Street. Constructed in the same building campaign as the Hammett Building, this two-story structure is in the same Italianate Renaissance style with restrained detailing and a low profile roof cornice. A later addition of a freestanding, -one-story, metal box was added on the flat roof.

Building #3 (Power Plant)

The power plant is a -one-story gabled brick structure with two side wings on either side of the main building. Constructed in the same style and timeframe as the Hammett Building and the Employees Dormitory, the Power Plant is a complimentary structure in the Italianate Renaissance style. Details of brick dentil brackets, soldier band courses, arched doorways and pedimented gable parapet distinguishes this building from the adjacent modern Inpatient Tower.

Main Building (current Hospital)

Built in 1954 in response to WWII veterans returning home, this twelve story building was constructed of white brick at the corner of Ocean parkway and E 6th Street. Constructed in an 'H'

configuration, there are two wings parallel to E 6th Street with the main center tower facing Ocean Parkway.

Ocean Parkway

Bordering the Hospital to the west, Ocean Parkway is listed on the National Register and is a designated New York City Scenic Landmark. The boundaries for both the S/NR listing and NYC Scenic Landmark are the same with the west boundary at the western curb line of the western side road and with the east boundary at the eastern curb line of the eastern side road of Ocean Parkway.

Ocean Parkway was designed by Frederick Law Olmsted and Calvert Vaux and built between 1874 and 1876. Ocean Parkway was planned as part of a parkway system that would integrate Brooklyn and Manhattan by connecting Prospect Park and Central Park with landscaped, municipal boulevards. Olmsted and Vaux envisioned the parkway system as a means of fostering suburban development. Running from Prospect Park's southern entrance to Coney Island, Ocean Parkway initially consisted of a central roadway, two landscaped malls, bridle and bicycle paths, and a pedestrian promenade lined with trees and benches. It ran through several existing neighborhoods, and its construction spurred new development at the turn of the 20th century. In the 1920's, apartment buildings were constructed along the parkway.

Ocean Parkway is directly adjacent to the CIH and is parallel to the west boundary of the campus which is the main entrance to the Hospital.

5.7.1.2 Potential Impacts and Proposed Mitigation to Standing Historic Structures

Alternative 1: No Action

Since no alterations would be made to the CIH campus or hospital facilities, the No Action alternative would have no effect on known historic standing structures.

Alternative 2: Proposed Alternative

As part of this alternative, the existing Power House building, Building 6, and the Hammett Pavilion would be demolished and a New Critical Services Structure (NCSS) would be constructed at the north end of the CIH campus. FEMA found that the Proposed Action would have no effect on historic structures and sent a consultation letter to the NYSHPO on 6/23/2015 (Appendix 5.7-1). Consultation will be conducted with the NYSHPO and the LPC regarding this undertaking. If the consulting agencies concur with FEMA's determination of effect, the Section 106 consultation will be concluded. If either agency does not concur with the determination, FEMA will continue consultation until concurrence is reached or a determination of eligibility is requested and received from the Keeper of the National Register of Historic Places.

The proposed project would not adversely affect the character defining features of Ocean Parkway. The only modification to Ocean Parkway would be the installation of curb cuts on the east side road of Ocean Parkway for the proposed new CIH surface parking lot. This would not be a significant change, as curb cuts to the main entrance of the CIH and to the parking lot at the south end of the campus currently exist. The east side road of Ocean Parkway permits parking on both sides. The northern half of the east side road of Ocean Parkway adjacent to the CIH is separated from the main parkway road by a landscaped mall with mature trees. Therefore the curb cuts would be minimally visible from the main parkway road. The east side road of Ocean Parkway adjacent to the south end of the CIH across from the Main Building has angled parking in lieu of the landscaped mall. This configuration would not be altered. While the 3-foot-tall concrete wall would be visible from the east side road of Ocean Parkway, it would be less visible from the main parkway road due to distance and the presence of vehicles in the angled parking spaces. In any case, the proposed approximately 3-foot-tall floodwall would not exceed the height of the existing metal fence that borders the CIH property on Ocean Parkway, and would not obstruct any significant scenic views. The CIH has been a part of the visual context of Ocean Parkway since it was constructed, and has continued to be altered throughout the 20th century.

As described in the National Register Nomination Form (August 4, 1983), Ocean Parkway is architecturally and historically significant as the first parkway planned in the United States. The proposed project would not adversely affect its scenic character or defining features, which include its configuration with a main roadway and side roads that are separated by landscaped malls.

5.7.2 Archaeological Resources

5.7.2.1 Existing Conditions

In order to evaluate the archaeological sensitivity of the area for which improvements are proposed, FEMA conducted a field inspection of the Project Site, performed an evaluation of geological data, and conducted documentary research within the Area of Potential Effects (APE) and surrounding landscape. FEMA archaeologists used the NYSHPO Cultural Resource Information System (CRIS) to locate areas that have been previously surveyed for cultural resources, properties listed in the New York and National Register of Historic Places (NRHP), and areas of archaeological sensitivity.

Prehistoric Archaeological Resources

Research conducted using records, maps and literature from the NYSHPO CRIS reveals the Project Site is located in an area of archaeological sensitivity. While this is the case, no previously recorded archaeological sites have been identified within the Project Site and/or

within one-mile of the APE. Likewise, it is not contiguous to a property listed or eligible for listing in the NRHP.

A previously conducted Phase IA documentary study conducted by AKRF (2001) was undertaken to identify the potential presence for significant archaeological resources in and/or around the immediate vicinity of the APE which at that time was being considered for a proposed hospital addition. The report was used to assess disturbance caused by past construction and/or demolition episodes, landscaping or farming practices. A study of 19th century maps shows that, as late as 1873, the hospital site was just north of a winding stream called Coney Island Creek that emptied into Gravesend Bay on the west and Sheepshead Bay on the east. These maps all show the creek surrounded by marshland, with then nearest elevated ground approximately 400 feet to the north.

By the time Ocean Parkway was built in 1897, the marsh is no longer in evidence. Cartographic study illustrates that the proposed Coney Island Hospital addition site was marshland associated with Coney Island Creek until into the last quarter of the 19th century. The buildings of the hospital complex were the first structures on the site, beginning in 1910, with additions and subtractions through the following years. Although this marsh may have been used by both the Native Americans and the European settlers for harvesting plant materials, fishing and/or hunting, it is unlikely that it was ever a habitation site.

The absence of recorded sites in the area may be attributable to the presence of dense urban and industrial development of the area. The absence of sites at or below the facility's elevation is likely due to inhospitable or submerged conditions in such areas prior to the early-20th century and the area's history of filling and development.

The only evidence of Native American activity that might be located within the APE would be random, sparsely distributed artifacts left by brief forays into the wetlands during prehistoric times. While it is conceivable that some small, ephemeral deposits might exist below the fill in sediments related to the former wetlands, the likelihood of detecting and recovering any significant archaeological materials given existing conditions is low.

Historic Archaeological Resources

Review of historic maps including topographical and historic aerials beginning in the mid-19th century extending to present, reveal that prior to construction of the facility the land was undeveloped marshland. As stated above, the buildings of the hospital complex were the first structures on the site, beginning in 1910 with the infill of marshland, with additions and subtractions through the following years. Historic archaeological resources pre-dating construction of the facility are considered unlikely due to lack of documented development. Therefore, the potential to encounter historic archaeological resources is assessed as low.

5.7.2.2 Potential Impacts and Proposed Mitigation, Archaeological Resources

Alternative 1: No Action

Since no work or ground disturbance will occur, the No Action alternative would have no effect on archaeological properties.

Alternative 2: Proposed Alternative

Although, no previously recorded prehistoric or historic archaeological sites have been identified within the Project Site, the project would exceed the depth of fill and extend into the Holocene glacial outwash sand deposits. The proposed floodwall construction would have minimal impact to potential archaeologically sensitive soils. Project plans call for a perimeter boundary protection system around the Main Building and the Tower Building built to withstand a 100-year flood event plus 3 feet to account for sea level rise. The wall is to be built of durable materials and once completed it becomes a permanent fixture. The conceptual design consists of a cantilever T-type 11-foot concrete wall that rests on a 2-foot high pile cap and is stabilized by H piles anchored approximately 50-feet below the pile cap, placed every five feet on center. The bottom of the wall foundation is 4-feet into the ground to be below frost penetration. There will also be interlocking sheet piling 35 feet into the ground below the flood wall pile cap. This will serve as a seepage cutoff wall.

Identifiable archaeological remains of such activities are unlikely to be present. As a result, the APE has a very low sensitivity for archaeological resources to exist. In any case, subterranean disturbance to the site has been extensive. The 1910 construction of the Nurses' Residence and its later demolition, the various sewer and water lines that cross the site, pipe tunnels for utilities, and excavation for the 1954 hospital building have impacted any potential archaeological resources. Based on the results of the previous AKRF archaeological study, NYSHPO and LPC have determined that no archaeological significance is connected to the site and no further work was recommended. As a result, the likelihood of encountering intact prehistoric and/or historic archaeological resources is considered low. No additional archaeological survey is recommended. "In the event any potential archaeological resources are discovered (unexpected discoveries) during construction, the applicant will immediately cease construction in that area and notify the State and FEMA, and will follow the guidelines illustrated in Section 6.0 "Permits and Projects Conditions" number 6.

5.8 Aesthetic Resources

This analysis considers the potential loss of or impact to any aesthetic resources or viewsheds. A viewshed is an area of land, water or other environmental element that is visible to the human

eye from public areas or thoroughfares such as public roadways, public parks or high-rise buildings. Viewsheds can be areas of particular scenic or historic value deemed worthy of preservation against development or other change. If a viewshed is integral to the setting of a landmark building or part of the NHPA Evaluation Criterion for a building's eligibility, the viewshed must be considered in any new development or renovation proposal.

5.8.1 Existing Conditions

The area around the CIH campus is a developed urban area that predominantly contains streets and includes two arterial roads, Ocean Parkway and Shore Parkway/Belt Parkway and residential buildings. The area contains a large amount of planted space and other open areas, particularly planted medians along Ocean Parkway and Shore Parkway/Belt Parkway. Ocean Parkway is a designated New York City Scenic Landmark and is listed on the State and National Registers of Historic Places, as discussed above in section 5.8 "Aesthetic Resources." The planted areas along Belt Parkway (also known as Leif Ericson Drive) are notable as an example of the landscaped parkways introduced to New York City by Robert Moses.

5.8.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

Under the No Action Alternative, no alterations would be made to the CIH campus or its facilities, and there would be no changes to the visibility of the planted areas along Ocean Parkway and Shore Parkway/Belt Parkway. There would, therefore, be no effect on aesthetic resources or viewsheds.

Alternative 2: Proposed Alternative

The Proposed Alternative includes the demolition of several structures on the CIH campus and the construction of the NCSS on the northern portion of the campus. These alterations to the CIH campus would have a limited effect on viewsheds in the area. The Proposed Alternative would potentially result in enhanced viewsheds in the area to the north of the campus by demolishing the Hammett Pavilion and providing a more open area along the western perimeter of the campus, thereby expanding views of Ocean Parkway. Therefore, the Proposed Alternative would not result in any adverse effects on aesthetic resources.

5.9 Socioeconomic Resources and Environmental Justice

5.9.1 Existing Conditions

EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires agencies to identify and address disproportionately high and

adverse human health or environmental effects its activities may have on minority or low-income populations.

The population was determined by selecting all census block groups with at least half of their physical area within ¼-mile of the Project Site (see Appendix B, Figure 5.10-1).

Per the EPA Region 2 Guidelines for Conducting Environmental Justice Analyses, a community in New York would be considered an Environmental Justice (EJ) community if the minority population was 51.51 percent or higher or if 23.59 percent or more of the population was below the poverty line.

According to the 2010 Decennial Census, in 2010, the Community of Concern (COC) population included 12,870 persons, 36.6 percent of which were minority. Of the entire COC population, 13.3 percent identified as Hispanic, 1.8 percent identified as Non-Hispanic Black, 19.1 percent identified as Non-Hispanic Asian and 2.5 percent identified as Non-Hispanic and another race besides White.

For the same area, the 2009-2013 American Community Survey reported a poverty rate of 17.2 percent and a per capita income of \$26,390. Based on the above calculations, neither the minority rate nor the poverty rate of the COC is above the EPA threshold for an EJ community.

5.9.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

Under the No Action Alternative, no additional alterations would be made to the CIH campus or facilities. The CIH campus and facilities would remain at risk from future storm or flooding events with potential disruption of critical healthcare services. If a storm or flooding event causes partial or full cessation of operations at CIH, the surrounding community, including minority or low-income populations served by CIH, could experience service interruptions, which would threaten human health due to the loss of healthcare functions, particularly emergency care.

Alternative 2: Proposed Alternative

Potential temporary effects to the COC could be caused by an increase in noise levels and traffic during construction. The construction activities associated with the Proposed Alternative would be subject to all New York City construction and noise regulations. For this reason, and because the COC does not qualify as an EJ community, there would be no disproportionate or adverse effect on minority or low-income populations. The actions under the Proposed Alternative would also benefit the community by reducing the risk of flood damage to CIH and helping to prevent service interruptions in healthcare and emergency care.

5.10 Land Use and Planning

5.10.1 Existing Conditions

The CIH campus is located in a predominantly residential urban area: approximately 95 percent of the lots in the area contain residential buildings. The campus' western and southern frontages are located along wide arterial streets: Ocean Parkway to the west and Shore Parkway/Belt Parkway to the south. The blocks to the north and east of the campus contain single-family homes including row houses and semi-detached houses. The blocks located to the west of the campus, fronting on Ocean Parkway, contain larger (6- to 12-story) elevator apartment buildings. The area also contains the William E. Grady Career and Technical High School, a public school located to the south of the campus across Shore Parkway/Belt Parkway. Although the area is highly developed, it also contains a large amount of planted areas and other open spaces. This includes planted medians along Ocean Parkway and Shore Parkway/Belt Parkway and the Grady Playground, a public park located adjacent to the William E. Grady High School.

The CIH campus is located within a low-density residential zoning district (R4); medium-density residential zoning districts (R5 and R6) are located to the west and south of the campus. Residential zoning districts permit a variety of housing types and community facilities including hospitals, but do not permit commercial or manufacturing uses. The area also contains the Special Ocean Parkway District, a special zoning district that applies yard and landscaping requirements that enhance the scenic quality of Ocean Parkway.

5.10.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

Under the No Action Alternative, no alterations would be made to the CIH campus or its facilities. CIH would remain in its current condition with hospital facilities operating under temporary repair measures. There are no associated potential impacts to land use and planning.

Alternative 2: Proposed Alternative

The Proposed Alternative would not alter the land use at the Project Site: hospital functions would remain on the CIH campus with some facilities, such as the ED, relocated to elevated or hardened spaces in the NCSS. At up to 12 stories, the NCSS would be built to a similar scale as the existing buildings on the CIH campus, particularly the 14-story Main Building and, the more recently built, eight-story Tower Building. Other elements of the Proposed Alternative, including the construction of a floodwall around the Main Building and Tower Building as well as interior renovations to the Main Building, would also not affect land use on the CIH campus.

While the community facility uses in the NCSS are compliant and permitted in the residential zoning district, the NCSS would not comply with bulk, height and setback zoning regulations. CIH is expected to seek zoning variances from the New York City Board of Standards and Appeals (NYCBSA) to facilitate the construction of the NCSS; hospitals in New York City frequently seek relief from the NYCBSA to permit construction of new, large-scale medical facilities or expansions which cannot be accommodated by existing zoning regulations. The NYCBSA variances are subject to review under New York City Environmental Quality Review (CEQR). No SEQRA or CEQR process is currently underway or has been completed for the Proposed Project.

The Proposed Alternative would not affect land use on any other site and would not affect other zoning regulations or other planning policies: therefore, there would be no impacts to land use and planning. In addition, the Proposed Alternative would have no adverse effects on public service or utilities. CIH would remain fully functional during all phases of construction related to the project.

5.11 Infrastructure

5.11.1 Existing Conditions

The Project Site is located within a developed urban area and is served by major utilities for all infrastructure. Underground utilities at CIH and the surrounding area include electric, natural gas, and city water and sewer lines. Electrical power is provided by Consolidated Edison; CIH maintains its own backup on-site emergency power generation capabilities, with emergency generators located in the Power House. Natural gas is provided to CIH by Keyspan Energy Gas services. Water is supplied by the City of New York, which maintains three water supply systems with a watershed area of over 2,000 square miles and a storage capacity of 550 billion gallons. The CIH campus is located in an area that is served by a separated sewer system: sanitary sewage is conveyed to the Coney Island Wastewater Treatment Plant (WWTP) and stormwater is discharged untreated to Lower New York Bay. CIH's ordinary solid waste is collected by the New York City Department of Sanitation (DSNY), and the hospital's regulated medical waste is collected by a licensed private hauler.

5.11.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

Under the No Action Alternative, no alterations would be made to the CIH campus or its facilities. CIH would remain in its current condition with hospital facilities operating under temporary repair measures. CIH's infrastructure would remain vulnerable to damage from flooding in the event of a future storm. In particular, the emergency power generation system

located in the Power House, which was flooded and damaged during Hurricane Sandy resulting in a complete power failure, would remain vulnerable to floodwater.

Alternative 2: Proposed Alternative

The Proposed Alternative, including the construction of the NCSS and a floodwall around the Main Building and Tower Building as well as interior renovations to the Main and Tower Buildings, would not affect CIH's primary electrical, gas, and water and sewer services, which would continue to be provided by the City of New York and major utilities such as Consolidated Edison. These systems are expected to have sufficient capacity to accommodate the increase in demand for utility services with the Proposed Alternative. The NCSS would provide elevated space for critical MEP equipment out of the 500-year floodplain to ensure CIH's emergency power system remains operational during a future flooding event; emergency generators would be located on the roof of the NCSS. The Proposed Alternative would also include an improved stormwater management system within the floodwall which includes installation of a collection ring, pumps, and piping as well as drainage modifications. With these improvements, the Proposed Alternative would have no adverse effects on infrastructure.

5.12 Noise

The Noise Control Act of 1972 required the EPA to create a set of noise criteria. In response, the EPA published *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* in 1974 which explains the impact of noise on humans. The EPA report found that keeping the maximum 24-hour L_{dn} value below 70 dBA would protect the majority of people from hearing loss. The EPA recommends an outdoor L_{dn} of 55 dBA. According to published lists of noise sources, sound levels, and their effects, sound causes pain starting at approximately 120 to 125 dBA (depending on the individual) and can cause immediate irreparable damage at 140 dBA. OSHA has adopted a standard of 140 dBA for maximum impulse noise exposure.

Sound pressure level (SPL) is used to measure the magnitude of sound and is expressed in decibels (dB or dBA), with the threshold of human hearing defined as 0 dBA. The SPL increases logarithmically, so that when the intensity of a sound is increased by a factor of 10, its SPL rises by 10 dB, while a 100-fold increase in the intensity of a sound increases the SPL by 20 dB. Equivalent noise level (L_{eq}) is the average of sound energy over time so that one sound occurring for 2 minutes would have the same L_{eq} of a sound twice as loud occurring for 1 minute. The day night-noise level (L^{dn}) is based on the L_{eq} , and is used to measure the average sound impacts for the purpose of guidance for compatible land use. It weights the impact of sound as it is perceived at night against the impact of the same sound heard during the day. This is done by adding 10 dBA to all noise levels measured between 10:00 pm and 7:00 am. For instance, the sound of a car on a rural highway may have an SPL of 50 dBA when *measured* from the front porch of a

house. If the measurement were taken at night, a value of 60 dBA would be recorded and incorporated into the 24-hour L_{dn} .

L_{eq} and L_{dn} are useful measures when used to determine levels of constant or regular sounds. However, neither represents the sound level as it is perceived during discrete events, such as fire sirens and other impulse noises. They are averages that express the equivalent SPL over a given period of time. Because the decibel scale is logarithmic, louder sounds (higher SPL) are weighted more heavily; however, loud infrequent noises with short durations would not significantly increase L_{eq} or L_{dn} over the course of a day.

5.12.1 Existing Conditions

Existing noise levels at the Project Site are relatively high due to noise from traffic on the Shore Parkway/Belt Parkway, which is a major highway, and Ocean Parkway, which is a heavily trafficked thoroughfare. The Project Site is also within approximately 15 miles of JFK Airport and experiences some noise resulting from aircraft over-flights; however, it is outside the 60 dBA L_{dn} noise level contour line Federal Aviation Administration's (FAA) published noise level contour map for JFK airport, so would experience less than 60 dBA of aircraft noise.

5.12.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

The No Action Alternative would not increase noise levels at nearby noise receptors resulting from operation or construction of the Proposed Project. Nor would any noise-sensitive spaces be constructed that would be subject to existing noise at the Project Site.

Alternative 2: Proposed Alternative

Construction of the NCSS would temporarily increase noise as a result of construction equipment operating on-site and construction worker and delivery truck trips to and from the Project Site. Construction activity on the Project Site is subject to the NYC Noise Control Code's requirements for construction noise control including noise emission limits for specific pieces of equipment, the requirement for barriers and enclosures where necessary and logistics arrangements to reduce noise at surrounding receptors. Furthermore, construction is not permitted to occur during the night or weekend hours except in certain extenuating circumstances.

The noise receptors with the greatest potential to experience elevated levels of noise would be the receptors immediately north and east of the Project Site. However, these residences are in proximity and have lines of sight to Shore Parkway/Belt Parkway and Ocean Parkway, which are both heavily trafficked and generate relatively high levels of noise. Consequently, during all but

the loudest and most intense phases of construction, the increase in noise resulting from construction of the proposed NCSS would be expected to result in noise level increases that would be considered imperceptible or only barely perceptible. During the excavation and foundation and flood wall construction phases, including pile driving, noise generated by construction equipment on site may result in noise levels at the adjacent residences that would be readily noticeable; however, these phases of construction would occur over a limited period of time. Furthermore, most of the residences adjacent to the Project Site have double-glazed windows and through-wall or window-unit air conditioners. The buildings with these façade elements would be expected to provide 20-30 dBA window-wall attenuation, substantially reducing the level of construction noise experienced by the residences. Consequently, construction of the Proposed Alternative would not result in any significant adverse noise impacts.

The mechanical systems associated with the proposed NCSS would be designed to meet all applicable noise regulations (i.e., Subchapter 5, §24-227 of the New York City Noise Control Code and the New York City Department of Buildings Code). In meeting these stringent noise emission level limits, the building mechanical systems will avoid producing levels that would result in any significant increase in ambient noise levels. Other noise sources associated with the Proposed Alternative would remain unchanged from the existing condition, including vehicles traveling to and from the Project Site.

The newly constructed NCSS building would be subject to the noise exposure and window-wall attenuation requirements included in the *New York City Environmental Quality Review (CEQR) Technical Manual*. These would require that the NCSS be constructed to provide sufficient window-wall attenuation to result in interior $L_{10(1h)}$ noise levels no greater than 45 dBA for in-patient medical uses and 50 dBA for out-patient and administrative uses as well as providing an alternate means of ventilation allowing for the maintenance of a closed-window condition. These requirements would ensure that the NCSS is protected from elevated noise levels that existing at the Project Site. Consequently, operation of the Proposed Alternative would not result in any significant adverse noise impacts.

5.13 Transportation

5.13.1 Existing Conditions

The CIH campus is bounded by Ocean Parkway to the west, Avenue Z to the north, East 6th Street to the east, and Shore Parkway/Belt Parkway to the south. The roadway network surrounding the Project Site is generally characterized by moderate to high traffic volumes, comparable to other residential or mixed-use areas in Brooklyn located in close proximity to major arterial streets and highways. Specifically, the through streets carry higher volumes with Ocean Parkway north of the Belt Parkway experiencing average daily traffic levels of

approximately 40,000 vehicles, and Avenue Z, a more local street, experiencing average daily traffic levels of approximately 14,000 vehicles.

Several bus routes serve the Project Site and surrounding blocks (see Appendix B, Figure 5.13-1). The nearest subway stations (F, B and Q lines) are located along Shell Road/West 6th Street (F train) and Brighton Beach Avenue/East 16th Street (B and Q trains). The nearest subway station for each of the three lines is located approximately ½ mile away from the Project Site.

5.13.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

Under the No Action Alternative, no alterations would be made to the CIH campus or its facilities. CIH would remain in its current condition with hospital facilities operating under temporary repair measures. Therefore, there would be no potential impacts to transportation under this alternative.

Alternative 2: Proposed Alternative

The Proposed Alternative would not increase the capacity of the hospital and as a result, would not generate new trip-making after the construction period. The anticipated duration of the construction activities for the Proposed Alternative is approximately 38 months. In order to maintain continuous functionality of the hospital during construction, construction activities would be implemented in phases. During construction, a temporary increase in vehicle trips is anticipated as a result of the ingress and egress of construction equipment, the delivery of construction materials and visitation of the construction workers accessing the Project Site. Similarly, as a result of construction worker activity, transit and pedestrian trips may also increase during construction. Transportation operations are expected to return to near existing conditions after the construction period and would not result in any potential transportation impacts.

Throughout the construction period, traffic lanes and sidewalks may be closed or protected for varying periods of time. Some street lanes and sidewalks may be continuously closed, and some lanes and sidewalks may be closed only intermittently to allow for certain construction activities. Approval and implementation of all sidewalk and lane closures during construction would be coordinated with the New York City Department of Transportation's Office of Construction Mitigation and Coordination (OCMC).

As described above, as part of a separate project (i.e., not funded by FEMA), a new 350-space parking garage would be constructed on site for hospital staff and visitors; this garage would replace and supplement the hospital's existing at-grade parking spaces and is expected to provide the necessary parking capacity for CIH. It is expected that the provision of this garage will

reduce demand for on-street parking in the surrounding neighborhood, thereby positively affecting the area.

5.14 Public Health and Safety

5.14.1 Existing Conditions

The Project Site is within the boundaries of the New York City Police Department's 60th precinct and FDNY's 245th company. As discussed in Section 3.0, CIH sees 18,000 inpatient admissions and 300,000 outpatient visits annually. CIH is also a designated 911 receiving Hospital by the FDNY Bureau of Emergency Medical Services.

5.14.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

Under the No Action Alternative, no alterations would be made to CIH. The CIH would remain at risk from future storm or flooding events with potential disruption of critical healthcare services. The surrounding community could experience service interruptions and threats to human health due to the loss of healthcare functions, particularly emergency care, if a storm or flooding event causes partial or full cessation of operations at CIH.

Alternative 2: Proposed Alternative

The Proposed Alternative would protect public health and safety by minimizing the risk of loss of CHI's function as result of storm or flooding events. It would enhance the facility's ability to provide continuous operation and reduce potential strain on other emergency operations and facilities in the city. During construction of the Proposed Alternative, no closures to the hospital's facilities would be required and access to hospital facilities and services would be maintained.

5.15 Hazardous Materials

5.15.1 Existing Conditions

A Phase I Environmental Site Assessment (Phase 1 ESA), consisting of a site inspection and an evaluation of regulatory database listings and historic fire insurance maps, was completed in January 2015 to identify the presence or potential presence of recognized environmental conditions (RECs). The Phase 1 ESA identified evidence of on-site hazardous materials/petroleum usage including: several aboveground and underground petroleum tanks registered with the NYSDEC Petroleum Bulk Storage (PBS) program (Facility ID #s 2-032972 and 2-609084); two active-status NYSDEC petroleum spills (Spill Nos. 100915 and 9612054) with documented petroleum-contaminated soil/groundwater (and ongoing remedial activities);

and the Project Site's listing as a Large Quantity Generator (LQG) of hazardous wastes (RCRA ID # NYD078181021) for various waste streams. Historical Sanborn maps indicate past on-site uses included industrial/automotive facilities including shop areas with buried gasoline tanks. Historical filling of Coney Island Creek may have affected subsurface conditions given the unknown nature of the historical fill materials which may have resulted in elevated methane levels.

5.15.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

Under the No Action Alternative, no alterations would be made to the CIH campus or its facilities. Soil/groundwater remediation associated with the active-status spills would continue with oversight from NYSDEC and bulk chemical, petroleum and hazardous waste generation/storage/disposal would continue to be conducted in accordance with local, state and federal requirements. It is not anticipated that this alternative would result in any adverse effects related to hazardous materials.

Alternative 2: Proposed Alternative

The greatest potential for exposure to any contaminated materials would occur during construction, specifically the associated subsurface disturbance. Because CIH is expected to seek zoning variances from the NYCBSA, the Proposed Alternative would be subject to NYC Department of Environmental Protection (NYCDEP) review, and the potential for adverse effects would be minimized by adhering to the following:

- A subsurface investigation, targeting the areas where subsurface disturbance would occur, would be performed in accordance with an Investigation Work Plan and Health and Safety Plan (HASP) approved by NYCDEP.
- Following implementation of the Investigation Work Plan (collection and laboratory analysis of subsurface samples), a written report with findings and a summary of the data would be submitted to NYCDEP for review and approval.
- Based on the results of the Phase II Investigation (and previous investigations), a Remedial Action Plan (RAP) and construction-related health and safety plan (CHASP) would be prepared for implementation during the subsurface disturbance associated with the Proposed Project. The RAP and CHASP would address requirements for items such as petroleum tank removal, dust control and contingency measures should unforeseen petroleum tanks or soil contamination be encountered. The RAP would also include any necessary measures required to be incorporated into the new building, e.g., a vapor barrier beneath/outside of the foundations. The RAP and CHASP would be subject to NYCDEP approval.

- If dewatering is necessary for the proposed construction, water would be discharged to sewers in accordance with NYCDEP requirements.
- All petroleum tanks no longer required and encountered during construction would be properly removed in accordance with the applicable regulations, including FDNY and NYSDEC requirements (including tank registration and spill reporting/remediation).
- As with the No Action Alternative, soil/groundwater remediation associated with the active-status would continue with oversight from NYSDEC, and bulk chemical, petroleum and hazardous waste generation/storage/disposal would continue to be conducted in accordance with local, state and federal requirements.
- Any ACM, LBP and/or PCB-containing building components affected by the Proposed Project would be properly managed (including abatement activities where necessary) in accordance with all applicable federal, state and local regulations.

With these measures, the Proposed Alternative would not result in any significant adverse impacts related to hazardous materials.

5.16 Climate Change

EO 13514, Federal Leadership in Environmental, Energy and Economic Performance, sets sustainability goals for federal agencies and focuses on making improvements in their environmental, energy and economic performance. EO 13653, Preparing the United States for the Impacts of Climate Change, sets standards to prepare the United States for the impacts of climate change by undertaking actions to enhance climate preparedness and resilience. FEMA is required under these executive orders to implement climate change adaptability and green infrastructure in FEMA-funded projects, when feasible.

According to EPA, climate change “...refers to any significant change in the measures of climate lasting for an extended period of time” (EPA 2014). This includes major variations in precipitation, sea surface temperatures and levels, atmospheric temperature, wind patterns and other variables resulting over several decades or longer. Such changes are dubbed “abrupt climate change,” occurring over decades and not gradually over centuries or millennia, a distinction from natural variability. The EPA identifies and regulates human actions that may affect climate change. Embodied energy is a measure of sustainability that accounts for the energy used by structures or to create materials. Another measure of sustainability is life-cycle or cradle-to-grave analysis, which accounts for the extraction, manufacture, distribution, use and disposal of materials. While resources exist to quantify embodied energy and life-cycle analysis, no such calculations were required to be prepared by the Subgrantee for the options presented in this EA.

5.16.1 Existing Conditions

Under existing conditions, energy use and the associated GHG emissions would not change. Climate change impacts relevant to the project are summarized below. Broader discussion of climate change impacts can be found in the following documents and are incorporated here by reference, as recommended by CEQ:

- Intergovernmental Panel on Climate Change Fifth Assessment Report (IPCC 2013)
- Third National Climate Assessment (United States Global Change Research Program 2014)
- New York City Panel on Climate Change 2015 Report, (NPCC3 2015)

The only climate change effect directly relevant to the Proposed Project for which reasonably foreseeable consequences can be projected is sea level rise and its interaction with coastal storms. The NPCC3 report is the latest and best available source of climate change information for the New York City area. According to NPCC3, sea levels in New York City are projected to increase by up to 30” by the 2050s (90th percentile estimate, with a middle range, 25-75th percentile, of 11-21”), 58” by the 2080s (middle range 18-39”), and 75” by 2100 (middle range 22-50”). A “100-year” flood, which is a flood with a 1.0 percent probability of occurring annually under current conditions, would have up to a 12.7 percent probability of occurrence annually by the 2080s.

5.16.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

In the No Action Alternative, energy use and the associated GHG emissions would not change. The No Action Alternative does not provide for flood damage risk reduction and other hazard mitigation measures; therefore, the CIH campus and hospital facilities would remain at risk from storm or flooding events with repetitive financial losses and disruption of critical healthcare services. The surrounding community would experience service interruptions and threats to human health due to the loss of healthcare functions, particularly emergency care, in the event a storm or flooding event causes partial or full cessation of operations at CIH.

Alternative 2: Proposed Alternative

With the Proposed Alternative, the NCSS would be constructed on the CIH campus including new MEP equipment. This would replace the existing older MEP systems with newer, more energy efficient systems which will meet or exceed current building energy code. Although details of the design are not yet available, the design will be evaluated to identify opportunities for energy efficiency and potentially incorporate other systems which could result in lower energy expenditure and associated GHG emissions. Potential systems and design measures that

are found to provide long term benefits will be implemented where practicable. Therefore, energy use and the associated GHG emissions would improve with the implementation of the Proposed Alternative, consistent with federal, state and city policies.

Design guide for critical facilities, FEMA 543 (FEMA 2015), was followed during the designing phase of the project. Though it does not explicitly address climate change, it does recommend designing to a “500-year” flood for critical facilities, including health care facilities. However, as described above (see Section 4.2), the Proposed Alternative is designed to incorporate a comprehensive mitigation system that provides resiliency and risk reduction of flood damage and other hazards to an elevation of 18 feet NAVD88, which is three feet above the current “500-year” flood level (including an additional one foot for wave action). This design elevation would be a mitigation measure for a “500-year” flood level through 2050 or possibly later (depending on how much sea level actually rises). Given the range of future projections, design to this level may be sufficient through the end of the century; should sea levels rise at higher rates currently projected by 2050, additional changes to the perimeter boundary protection system could be considered at that time.

The Proposed Alternative is not anticipated to significantly exacerbate impacts of climate change on the project area. The potential for induced flooding was evaluated and, as described in more detail in the floodplain section (Section 5.4), because the floodplain on and in the vicinity of the Project Site is affected by coastal flooding, the proposed modifications to the existing hospital facilities will not adversely affect floodplains on or in the vicinity of the Project Site and will not contribute to additional flooding of areas adjacent to the Project Site.

5.17 Cumulative Impacts

In accordance with NEPA, this EA considers the overall cumulative impact of the Proposed Alternative and other actions that are related in terms of time or proximity. According to the CEQ regulations, cumulative impacts represent the “impact on the environment which results from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what federal agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.7).

Cumulative impacts are those impacts “... which result from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions...” (40 CFR 1508.7) The statutory basis for considering cumulative impacts of federal actions is NEPA 1969, 42 U.S.C. 4321 et seq. In the context of evaluating the scope of a proposed action, direct, indirect and cumulative impacts must be considered.

In addition to NEPA, other statutes require federal agencies to consider cumulative impacts. These include the Clean Water Act section 404 (b)(1) guidelines; regulations implementing the conformity provisions of the Clean Air Act; regulations implementing Section 106 of the NHPA; and, regulations implementing section 7 of the ESA.

Recovery efforts are in progress throughout the area impacted by Hurricane Sandy including demolition, reconstruction and new construction from the private sector as well as state and federal sectors. Numerous projects including roads, buildings, recreational facilities and public utilities to restore pre-disaster conditions are under way throughout New York City and near the CIH site. The Proposed Project is not anticipated to impact these projects. In reviewing the impacts of the proposed action, cumulative effects, such as contribution to landfills due to demolition activities, are mostly constrained by existing New York City and state regulatory frameworks including permitting and required reviews. Additional impacts not addressed through existing local and state regulations are predominantly temporary, incremental and not a significant impact to the human or natural environment. The Proposed Project, once fully implemented, would provide elevated space for critical hospital facilities and infrastructure while providing minimal disruptions to hospital functions during construction. The NCSS would provide space for hospital functions that would be relocated from the existing CIH buildings and additional code compliant, upgraded spaces. The Proposed Project would ensure the hospital remains fully operational during storm or flooding events.

6.0 PERMITS AND PROJECT CONDITIONS

The Subgrantee is responsible for obtaining all applicable federal, state and local permits and other authorizations for project implementation prior to construction and adherence to all permit conditions. Any substantive change to the approved scope of work will require re-evaluations by FEMA for compliance with NEPA and other laws and EOs. The Subgrantee must also adhere to the following conditions during project implementations and consider the below conservation recommendations. Failure to comply with grant conditions may jeopardize federal funds:

1. The Best Available Data (BAD) must be used to determine the 500-year floodplain elevation for final engineering design in accordance with 44 CFR Part 9. At the time of this publication, the Preliminary Flood Insurance Rate Map Community-Panel Number 3604970354G dated January 30, 2015 is the BAD.
2. Any proposed construction in the floodplain must be coordinated with the local floodplain administrator and must comply with federal, state and local floodplain laws and regulations.
3. Excavated soil and waste materials shall be managed and disposed of in accordance with applicable federal, state and local regulations. Solid-waste haulers will be required to have a NYSDEC waste hauler permit and all waste will need to be disposed of, or processed at a permitted facility.
4. If project exceeds or changes outside of parameters in their V Permit for air quality, notification to NYSDEC will occur and modifications to permit may need to be made.
5. Threatened or endangered species are likely to not be found in the area of the proposed Project Site. As a result, pursuant to section 7(a)(4) of the ESA and implementing regulations at 50 CFR §402.02 and 50CFR §402.10, FEMA has determined that the proposed action would not be likely to jeopardize endangered or threatened species, or destroy or adversely modify critical habitat. If any threatened or endangered species are to be found in project area, work will cease and consultation with USFWS and other appropriate agencies will be conducted.
6. In the event that unmarked graves, burials, human remains or archaeological deposits are uncovered, the Subgrantee and its contractors will immediately halt construction activities in the vicinity of the discovery, secure the site and take reasonable measures to avoid or minimize harm to the finds. The Subgrantee will inform the Grantee, NYSHPO and FEMA immediately. The Subgrantee must secure all archaeological findings and shall restrict access to the area. Work in sensitive areas may not resume until consultations are completed or until an archaeologist who meets the Secretary of the Interior's Professional Qualification Standards determines the extent and historical significance of the discovery. Work may not resume at or around the delineated archaeological deposit until the Subgrantee is notified by the Grantee to proceed.

7. A Construction Protection Plan may be required for this site to identify the coordination needed to limit potential impacts to the environment, protected resources and communities within and abutting the Project area.
8. The Subgrantee and its contractor are required to use best management practices for construction not limited to sedimentation and erosion control measures, dust control, noise abatement and restriction of work areas to limit vegetation removal and habitat impacts.
9. Occupational Safety and Health Administration (OSHA) standards shall be followed during construction to avoid adverse impacts to worker health and safety.
10. The Subgrantee shall submit copies of all obtained permits to the Grantee/FEMA at or prior to final closeout of the public assistance grant.
11. Subgrantee shall not initiate construction activities until fifteen (15) days after the date that the Finding of No Significant Impact (FONSI) has been signed as “APPROVED.”

7.0 AGENCY COORDINATION AND PUBLIC INVOLVEMENT

This Draft PEA will be made available for agency and public review and comment for a period of 30 days. The public information process will include a public notice with information about the proposed project in the New York Post. A hard copy of the Draft PEA will be available for review at these locations:

Coney Island Hospital
Patient Relations Room 1N21
2601 Ocean Pkwy
Brooklyn, NY 11235
Contact: Malorie Ginsburg, Director of Media and Communications, 718-616-5389

Gravesend Public Library
303 Avenue X
Brooklyn, NY 11223

New York City Health and Hospitals Corporation
Room 519
125 Worth Street
New York, NY 10013
Contact: Patricia Lockhart, Secretary to the Corporation & Records Access Officer,
212-788-3368

An electronic copy of the EA may be requested by emailing FEMA at FEMA-4085-Comment@fema.dhs.gov. The EA will also be made available for download at <http://www.nyc.gov/html/hhc/html/about/About-PublicNotice-CIHEA.shtml>. This EA reflects the evaluation and assessment of the federal government, the decision-maker for the federal action; however, FEMA will take into consideration any substantive comments received during the public review period to inform the final decision regarding grant approval and project implementation. The public is invited to submit written comments by mail to: FEMA NY Sandy Recovery Office, Attn: EHP-Coney Island Hospital Hazard Mitigation EA Comments, 118-35 Queens Blvd., Forest Hills, NY 11375, or: FEMA-4085-Comment@fema.dhs.gov. If no substantive comments are received from the public and/or agency reviewers, the EA will be adopted as final and FEMA will issue a FONSI. If substantive comments are received, FEMA will evaluate and address comments as part of the FONSI record documentation or in a Final Environmental Assessment.

Notices of Availability of the EA will be sent to the following parties:

Coney Island Hospital Community Advisory Board
Stephen Moran, Chairman, Brooklyn Community Board 13
Shimon Rinkovsky, Land Use Committee, Brooklyn Community Board 13
Eric L. Adams, Brooklyn Borough President
Chaim M. Deutsch, New York City Council, District 48
Mark Treyger, New York City Council, District 47 & Chairperson, Committee on Recovery and Resiliency
Diane J. Savino, NYS Senator
Steven Cymbrowitz, NYS Assembly member
Dan Donovan, US Congress
Charles E. Schumer, US Senate
Kirsten Gillibrand, US Senate
U.S. Environmental Protection Agency
New York State Department of Health
New York State Department of Environmental Conservation
New York State Department of State
New York State Historic Preservation Office
New York City Mayor's Office of Environmental Coordination
New York City Department of Buildings
New York City Department of City Planning
New York City Department of Health and Mental Hygiene
New York City Landmarks Preservation Commission
New York City Board of Standards and Appeals
New York City Department of Parks and Recreation
New York City Department of Environmental Protection
New York City Department of Transportation
City Record
Environmental Notice Bulletin

8.0 CONCLUSION

The Subgrantee identified that Alternative 2 New Critical Services Structure is the best-suited alternative to repair, rehabilitate and increase the resiliency of Coney Island Hospital. Additionally, this will minimize damage to the critical facility's infrastructure and ensure the hospital remains fully operational during, and after, future storm or flooding events. The perimeter boundary protection system and other mitigation measures would provide a defense against flooding, thus minimizing risk of future damage to the hospital's critical assets and minimizing future disruption of service to the community. The continuous functionality of the hospital is critical to minimize deleterious public health, economic and environmental consequences that could arise as a result of a disruption in the hospital's service. This EA concludes that the construction and operation of the perimeter boundary system and other mitigation measures would have no significant adverse impact on the human environment. In addition, certain design, regulatory compliance and best management practices would be enforced. This EA will be adopted as final through the signing of the FONSI if no substantial comments are received. If substantial comments are received, they will be adopted in the EA and sent out for a second final comment period.

9.0 LIST OF PREPARERS

New York Sandy Recovery Office, FEMA Region II
118-35 Queens Boulevard
Forest Hills, NY 11375

Health and Hospitals Corporation
125 Worth Street
New York, NY 10013

AKRF, Inc.
440 Park Avenue South
New York, NY 10016

ARCADIS U.S., Inc.
27-01 Queens Plaza North, Suite 800
Long Island City, NY 11101

Base Tactical
121 West Long Lake Road, Suite 330
Bloomfield Hills, MI 48304

10.0 SUMMARY OF IMPACTS

Section	Area of Evaluation	Alternative 1: No Action	Alternative 2: New Critical Services Structure (NCSS) (Proposed Alternative)
5.1	Geology, Topography and Soils	No effect	Construction and operation would not result in significant alterations to topography or geologic resources within the Project Site. Installation of the perimeter boundary protection system would require minimal excavation of existing soils which would not result in adverse effects to soil resources.
5.2	Air Quality	No effect	This alternative would not result in adverse effects to air quality. The potential operational and construction emissions are expected to be below the applicable <i>de minimis</i> levels and no general conformity analysis would be required.
5.3	Wetlands and Water Quality	During flood events, there is a possibility of localized water quality effects from contaminated floodwaters.	The proposed perimeter boundary protection system would minimize the potential for flood events to cause localized water quality effects from contaminated floodwaters. The Proposed Alternative would not result in adverse impacts to groundwater resources or the Brooklyn-Queens sole source aquifer. It would also not adversely affect wetlands or water quality.
5.4	Floodplain	CIH would continue to be located within the 100-year floodplain, would not be mitigated up to the 500-year flood level and would continue to be vulnerable to flooding	The Proposed Alternative would not adversely affect floodplains on or in the vicinity of the Project Site and would not increase the storm tide risk to adjacent properties.

Section	Area of Evaluation	Alternative 1: No Action	Alternative 2: New Critical Services Structure (NCSS) (Proposed Alternative)
		from storm events.	
5.5	Vegetation	No effect	Construction activities would result in the direct loss of landscaped areas with limited ecological value (i.e., isolated patches of mowed lawn with trees). The Proposed Alternative includes the removal of several trees. Potential adverse effects would be minimized by performing all work in compliance with Local Law 3 of 2010 and the NYCDPR's Tree Protection Protocol. Operation and construction of the Proposed Alternative would not result in adverse effects on vegetation within the New York Metropolitan region.
5.6	Wildlife and Fish	No effect	Construction and operation of the Proposed Alternative would not adversely affect wildlife resources at the individual or population level nor would it result in any significant adverse effects to threatened, endangered or special concern species.
5.7	Cultural Resources		
5.7.1	Historic (Standing) Structures	No effect	Demolition of the existing Power House building, Building 6 and Hammett Pavilion would have No effect on historic properties. The proposed project would not adversely affect the character defining features of Ocean Parkway.
5.7.2	Archaeological Resources	No effect	The proposed floodwall construction would have minimal impact to potential archaeologically sensitive soils. The likelihood of encountering intact prehistoric or historic archaeological resources is low since previous

Section	Area of Evaluation	Alternative 1: No Action	Alternative 2: New Critical Services Structure (NCSS) (Proposed Alternative)
			subterranean disturbance to the site has been extensive.
5.8	Aesthetic Resources	No effect	The demolition of several structures and construction of the NCCSS would have a limited effect on viewsheds in the area. The Proposed Alternative could result in enhanced viewsheds in the area to the north of the campus because demolishing of the Hammett Pavilion may expand views of Ocean Parkway. The Proposed Alternative would, therefore, not result in any adverse effects on aesthetic resources.
5.9	Socioeconomic Resources and Environmental Justice	If a storm or flood event causes partial or full cessation of operations at CIH, the surrounding community, including minority and low-income populations, could experience interruptions of critical healthcare service, particularly emergency care.	The Proposed Alternative would not have a disproportionate or adverse effect on minority or low income populations. The Proposed Alternative would benefit the community, including minority or low-income populations, by reducing the risk of flood damage to CIH facilities and helping to prevent service interruptions in healthcare and emergency care.
5.10	Land Use and Planning	No effect	The Proposed Alternative would not alter the land use at the Project Site. CIH is expected to seek zoning variances from NYCBSA to facilitate the construction of the NCSS, a frequent request from New York City hospitals. The Proposed Alternative would not affect land use on any other sites and would not affect the applicable zoning regulations or other planning policies: therefore, there

Section	Area of Evaluation	Alternative 1: No Action	Alternative 2: New Critical Services Structure (NCSS) (Proposed Alternative)
			would be no impacts to land use and planning. In addition, the Proposed Alternative would have no adverse effects on public service or utilities.
5.11	Infrastructure	CIH's infrastructure would remain vulnerable to damage from flooding in the event of a future storm. The emergency power generation system located in the Power House would remain vulnerable to floodwater.	The MEP systems are expected to have sufficient capacity to accommodate the increase in demand for utility services. The NCSS would provide elevated space for critical MEP equipment out of the 500-year floodplain and emergency generators would be located on the roof of the NCSS. Improved stormwater management system within the floodwall which includes installation of a collection ring, pumps, and piping as well as drainage modifications is included.
5.12	Noise	No effect	Construction and operation of the Proposed Alternative would not result in any significant adverse noise impacts.
5.13	Transportation	No effect	During construction, a temporary increase in vehicle, transit and pedestrian trips is anticipated. The Proposed Alternative would not increase the capacity of the hospital and would not generate new trip-making after the construction period. Approval and implementation of all sidewalk and lane closures during construction would be coordinated with OCMC. Transportation operations are expected to return to near existing conditions after the construction period and would not result in any transportation impacts.
5.14	Public Health	If a storm or flood	The Proposed Alternative would help

Section	Area of Evaluation	Alternative 1: No Action	Alternative 2: New Critical Services Structure (NCSS) (Proposed Alternative)
	and Safety	event causes partial or full cessation of operations at CIH, the surrounding community could experience interruptions of critical healthcare service, particularly emergency care.	protect public health and safety by minimizing the risk of loss of function as result of storm or flooding event. It would enhance the facility’s ability to provide continuous operation and reduce potential strain on the city’s other emergency operations and facilities. During construction of the Proposed Alternative, no closures to the hospital’s facilities would be required and access to hospital facilities and services would be maintained.
5.15	Hazardous Materials	No effect	Any potential for adverse effects would be minimized by adhering to NYCDEP best management practices. With these measures, the Proposed Alternative would not result in any significant adverse impacts related to hazardous materials.
5.16	Climate Change	No effect	Energy use and the associated GHG emissions would improve with the implementation of the Proposed Alternative. The Proposed Alternative is not anticipated to significantly exacerbate impacts of climate change on the project area.

11.0 REFERENCES

- Baker, A.J., P.M. González, T. Piersma, L.J. Niles, I.L.S. do Nascimento, P.W. Atkinson, N.A. Clark, C.D.T. Minton, M.K. Peck and G. Aarts.
2004 “Rapid Population Decline in Red Knot: Fitness Consequences of Decreased Refueling Rates and Late Arrival in Delaware Bay.” *Proceedings of the Royal Society of London B*, 25: 125-129.
- Beers, F.W.
1873 “Map of Gravesend, Kings County, L.I.” *Atlas of Long Island, New York, From Recent and Actual Surveys and Records*. Beers, Comstock & Cline.
- Boretti, T., E. Fetridge and A. Brash.
2007 “The Piping Plover Colony at Rockaway Beach Within a Regional Context.” *Transactions of the Linnaean Society of New York*, 10: 213-228.
- Broders, H.G., G.J. Forbes, S. Woodley and I.D. Thompson
2006 “Range Extent and Stand Selection for Forest-Dwelling Northern Long-Eared and Little Brown Bats in New Brunswick.” *Journal of Wildlife Management*, 70: 1174-1184.
- Cadwell, D.H., G.G. Connally, R.J. Dineen, P.J. Fleisher, M.L. Fuller, L. Sirkin and G.C. Wiles
1991 “Surficial Geologic Map of New York - Lower Hudson Sheet.” *Surficial Geologic Map of New York*. New York State Museum.
- Coney Island Hospital
2015 www.nyc.gov/html/hhc/coneyisland/html/about/history.shtml
- Council on Environmental Quality
2014 *Revised Draft Guidance on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change*.
- de Laguna, W.
1948 “Geologic Correlation of Log of Wells in Kings County, New York.” *New York State Water Power and Control Commission Bulletin GW-17*: 35.
- Edinger, G.J., D.J. Evans, S. Gebauer, T.G. Howard, D.M. Hunt and A.M. Olivero
2002 *Ecological Communities of New York State, Second Edition*. New York State Department of Environmental Conservation.
- Federal Emergency Management Agency (FEMA)
2015 *Flood Insurance Rate Maps*. <https://msc.fema.gov/portal/search>
- 2013 *Flood Insurance Study: City of New York, New York, Bronx County, Richmond County, New York County, Queens County, and Kings County*.

- 2007 Design Guide for Improving Critical Facility Safety from Flooding and High Winds - Providing Protection to People and Buildings. FEMA 543.
- Foster, R.W. and A. Kurta
1999 “Roosting Ecology of the Northern Bat (*Myotis septentrionalis*) and Comparisons with the Endangered Indiana Bat (*Myotis sodalis*).” *Journal of Mammalogy*, 80: 659-672.
- Fowle, M. and P. Kerlinger.
2001 *The New York City Audubon Guide to Finding Birds in the Metropolitan Area*. Cornell University Press.
- Henderson, L.E., L.J. Farrow and H.G. Broders
2008 “Intra-specific Effects of Forest Loss on the Distribution of the Forest-dependent Northern Long-eared Bat (*Myotis septentrionalis*).” *Biological Conservation*, 141:1819-1828.
- Intergovernmental Panel on Climate Change (IPCC)
2013 *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*.
- Johnson, J.B., J. Gates and W. Ford
2008 “Distribution and Activity of Bats at Local and Landscape Scales Within a Rural–Urban Gradient.” *Scientific Journal. Urban Ecosystems*, 11: 227-242.
- McGowan, K.J. and K. Corwin
2008 “Roseate Tern.” *The Second Atlas of Breeding Birds in New York State*. Cornell University Press. 268-269.
- Morrison, R.I.G., N.C. Davidson, and J.R. Wilson.
2007 “Survival of the Fattest: Body Stores on Migration and Survival in Red Knots, *Calidris canutus islandica*.” *Journal of Avian Biology* 38: 479-487.
- New York City Department of Buildings
2014 *New York City Building Code*. International Code Council.
- New York City Mayor’s Office of Environmental Coordination
2014 *New York City Environmental Quality Review (CEQR) Technical Manual*.
http://www.nyc.gov/html/oec/html/ceqr/technical_manual_2014.shtml
- New York City Panel on Climate Change
2015 “New York City Panel on Climate Change 2015 Report.” *Annals of the New York Academy of Sciences*, Volume 1336, Issue 1.

New York Natural Heritage Program

2013 NYNHP Conservation Guide - Seabeach Knotweed. New York State Department of Environmental Conservation.

<http://www.acris.nynhp.org/report.php?id=9222>

2014 Personal telecommunication between Nicholas Conrad, NYNHP and Chad Seewagen, AKRF Inc., February 12, 2014.

New York State Department of Environmental Conservation

1974 Tidal Wetlands Inventory. <http://www.dec.ny.gov/lands/4940.html>

2007 New York State Breeding Bird Atlas (2000-2005).

<http://www.dec.ny.gov/cfm/xtapps/bba/>

2014 Personal telecommunication between Carl Herzog, NYSDEC and Chad Seewagen, AKRF Inc., February 19, 2014.

New York State Department of Transportation

2015 NYS Traffic Data Viewer

www.dot.ny.gov/tdv

New York State Historic Preservation Office

2015 Cultural Resources Information System (CRIS). <https://cris.parks.ny.gov>

STV, Inc. and the New York City Health and Hospitals Corporation

2001 Coney Island Major Modernization Project Environmental Impact Analysis Report.

Tanacredi, J.T. and C.J. Badger.

1995 Gateway: A Visitor's Companion. Stackpole Books.

Timpone, J.C., J.G. Boyles, K.L. Murray, D.P. Aubrey and L.W. Robbins

2010 "Overlap in Roosting Habits of Indiana Bats (*Myotis sodalis*) and Northern Bats (*Myotis septentrionalis*). *American Midland Naturalist*, 163:115-123.

U.S. Census Bureau

American Factfinder, 2010 Decennial Census and 2009-2013 American Community Survey. <http://factfinder.census.gov/>

U.S. Department of Agriculture – Natural Resources Conservation Service

2015 Soil Service Geographic Database (SSURGO)

http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/geo/?cid=nrcs142p2_053627

U.S. Environmental Protection Agency

- 1983 Brooklyn-Queens Aquifer System.
<http://www.epa.gov/region02/water/aquifer/brooklyn/brooklyn.htm>.
- 2014 *EJView*. <http://epamap14.epa.gov/ejmap/entry.html>
- 2015 Guidelines for Conducting Environmental Justice Analyses.
<http://www.epa.gov/region2/ej/guidelines.htm#guide>
- 1974 Information on Levels of Environmental *Noise* Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.
http://www.fican.org/pdf/EPA_Noise_Levels_Safety_1974.pdf

U.S. Fish and Wildlife Service

- 2015 National Wetlands Inventory. <http://www.fws.gov/wetlands/>
- 2012 Seabeach amaranth.
http://www.fws.gov/raleigh/species/es_seabeach_amaranth.html

U.S. Geological Survey

- 1997 Water-Table Altitude in Kings and Queens Counties, New York, in March 1997. Fact Sheet FS 143-97.

U.S. Global Change Research Program

- 2014 Climate Change Impacts in the United States: The Third National Climate Assessment.
http://s3.amazonaws.com/nca2014/low/NCA3_Climate_Change_Impacts_in_the_United%20States_LowRes.pdf?download=1

Whitaker Jr, J.O., D.W. Sparks and V. Brack Jr.

- 2004 “Bats of the Indianapolis International Airport Area, 1991-2001.” Proceedings of the Indiana Academy of Science, 113: 151-161.