Environmental Assessment

NYU Langone Medical Center Facility Construction

New York City, NY
FEMA 4085-DR-NY

July, 2013

FEMA

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

TABLE OF CONTENTS

1. Introduction....1
2. Purpose and Need....1
3. Alternatives Considered....2
3.1 Alternative 1 - No Action....2
3.2 Alternative 2 - Proposed Action....2
3.3 Alternative Considered and dismissed....3
4. Affected Environment and Potential impacts....3
4.1 Physical Resources....6
4.1.1 Geology and Soils....6
4.1.2 Air Quality....6
4.2 Water Resources....7
4.2.1 Water Quality....7
4.2.2 Wetlands....8
4.2.3 Floodplain....8
4.3 Coastal Resources....9
4.4 Biological Resources....9
4.4.1 Protected Species and Habitat....9
4.5 Cultural Resources....10
4.5.1 Historic Structures....10
4.5.2 Archaeological Resources....11
4.5.3 Visual Resources....11
4.6 Socioeconomic Considerations....12
4.6.1 Environmental Justice....12
4.6.2 Public Health and Safety....12
4.6.3 Noise....13
4.6.4 Transportation....13
4.7 Climate Change....14
4.8 Cumulative Impacts....14
4.9 Permits and Project Conditions....15
5. Public Involvement....17
6. Conclusion....18
7. Parties Consulted and References....18
7.1 Parties Consulted....18
7.2 References....18
8. List of Preparers....19
8.1 Government Preparers....19
8.2 Contractor Preparers....20

APPENDICES

Appendix A
- Figure 1: General Location of NYULMC
- Figure 2: NYULMC Campus Configuration
- Figure 3: Conceptual Emergency Department Site Plan
- Figure 4: Project Area for Proposed Kimmel Pavilion and Energy Building
- Figure 5: Project Area for Proposed Science Building
- Figure 6: Conceptual Floodwall Boundaries
- Figure 7: U.S. Fish and Wildlife Service Wetland Map
- Figure 8: Floodplain Preliminary Workmap
- Figure 9: Floodplain Preliminary Workmap Detail
- Figure 10: Environmental Justice Map – Below Poverty
- Figure 11: Environmental Justice Map – Minority Population
- Figure 12: Known Site Constraints

Appendix B
- Site Photographs

Appendix C
- Exhibit 1: Executive Order 11988 Floodplain Management Review
- Exhibit 2: Coastal Management Program Federal Consistency Review
- Exhibit 3: OPRHP No Archaeological Concerns Letter
- Exhibit 4: SHPO Email Regarding NYULMC Complex Listing Eligibility

Appendix D
- Exhibit 1: CEQR Environmental Assessment Statement Kimmel Pavilion
- Exhibit 2: CEQR Environmental Assessment Statement Science Building
- Exhibit 3: CEQR Environmental Assessment Statement Emergency Department

Abbreviations and Acronyms

ABFE	Advisory Base Flood Elevation
APE	Area of Potential Effect
BMP	Best Management Practices
BSA	Board of Standards and Appeals
CAA	Clean Air Act
CBRA	Coastal Barrier Resource Act
CEQ	Council on Environmental Quality
CEQR	City Environmental Quality Review
CFR	Code of Federal Regulations
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CPP	Construction Protection Plan
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
EA	Draft Environmental Assessment
EA	Environmental Assessment
EAS	Environmental Assessment Statement

Abbreviations and Acronyms, continued

EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESA	Environmental Site Assessment
F	Fahrenheit
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
GHG	Greenhouse Gases
GIS	Geographic Information System
LPC	Landmarks Preservation Commission
OPRHP	Office of Parks, Recreation, and Historic Preservation
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NYCL	New York City Landmarks
NYSDEC	New York State Department of Environmental Conservation
NYDOB	New York Department of Buildings
NYDOS	New York Department of State
NYSOEM	New York State Office of Emergency Management
NYU	New York University
NYULMC	New York University Langone Medical Center
OSHA	Occupational Safety and Health Administration
RCRA	Resource Conservation and Recovery Act
RAP	Remedial Action Plan
SHPO	State Historic Preservation Office
S/NR	State and National Registers of Historic Places
SPDES	State Pollutant Discharge Elimination System
SSA	Sole Source Aquifer
SWPPP	Storm Water Pollution Prevention Plan
TPPN	Technical Policy and Procedure Notice
USACE	U.S. Army Corps of Engineers
WRP	Waterfront Revitalization Program

1. INTRODUCTION

On October 29, 2012, the post-tropical cyclone remnants of Hurricane Sandy made landfall along the coastal areas of New Jersey and New York. Hurricane force winds and storm surge caused severe damage throughout the area. President Obama declared a major disaster for the State of New York (FEMA-4085-DR-NY) on October 30, 2012, authorizing the Department of Homeland Security's (DHS) Federal Emergency Management Agency (FEMA) to provide federal assistance in designated areas of New York. FEMA is administering this disaster assistance pursuant to the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), PL 93-288, as amended.

NYU Langone Medical Center (NYULMC), located at 550 First Avenue within the Kips Bay neighborhood of New York City, New York County, NY, is a world-class, patient-centered, integrated, academic medical center, specializing in clinical care, biomedical research and medical education. The NYULMC campus is bounded by 1st Avenue, FDR Drive, East 30th Street, and East 34th Street (Appendix A, Figure 1). Hurricane Sandy floodwaters from the East River inundated NYULMC's campus including basements and the ground floor of buildings. During the event, the facility lost emergency power because the fuel tanks supplying the generators were compromised which resulted in the need to evacuate patients to other hospitals. The flood waters directly and indirectly caused irreparable damage to medical equipment and research materials on the ground floor and the basement. NYULMC has requested recovery funding from the State of New York (grantee) as a Subgrantee to restore function and capacity lost as a result of the disaster.

In compliance with the National Environmental Policy Act of 1969 (NEPA), the President's Council on Environmental Quality regulations implementing NEPA (Title 40 of the Code of Federal Regulations [CFR] Parts 1500 through 1508) and FEMA's implementing regulations (44 CFR Part 10), FEMA herein documents the analysis of potential human and natural environmental impacts of the proposed action against a series of alternatives prior to making a funding decision. . FEMA will use the findings in this Environmental Assessment (EA) to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

2. PURPOSE AND NEED

The purpose of this project is to assist NYULMC in their recovery from the damages resulting from Hurricane Sandy. NYULMC has requested funding through the FEMA Public Assistance Program. This program provides supplemental Federal disaster grant assistance to State, Tribal, and local governments, and certain types of Private Non-Profit organizations so that communities can respond to and recover from major disasters or emergencies.

The need of this project is to restore the operational function of NYULMC, improve its capacity and capabilities, and mitigate against current and expected flood hazards. To restore the functional capabilities of the medical center, the Subgrantee wishes to repair and replace flood damaged structural components, utilities and equipment. To improve the medical center's capacity and capabilities, NYULMC would implement its long term Campus Transformation Plan (Appendix A, Figure 4 and 5).

3. ALTERNATIVES CONSIDERED

3.1 ALTERNATIVE 1 - NO ACTION

Under the no action alternative, no FEMA funds would be made available to NYULMC for disaster recovery. Without the restoration or replacement of specialized medical equipment, those services would not be available at NYULMC and patients would have to go elsewhere. The facility would remain vulnerable in the event of a power outage due to damaged emergency generators that would go un-replaced. FEMA anticipates that the campus transformation plan would continue to be stalled. The Emergency Department would remain closed and the hospital would continue to rely on temporary urgent care clinics to serve patients, significantly impacting the medical center's capability to provide medical services. Without mitigating against the flood hazard, the facility would also remain vulnerable to another flooding event.

The no action alternative serves as the baseline to assess the impacts of other project alternatives. The no action alternative would not meet the purpose and need for the action.

3.2 ALTERNATIVE 2 - PROPOSED ACTION

The proposed action considered in this EA has three components:

- Repair and replace damaged building components and equipment
- Implement the Campus Transformation Plan (Appendix A, Figures 3-5)
- Construct a campus-wide floodwall (Appendix A, Figure 6)

Repair of disaster-damaged facilities to pre-disaster condition includes the collection and disposal of flood-related debris, replacement of damaged equipment and materials, and repairs to damaged buildings and building components.

At the time of the disaster, the NYULMC had several projects in construction and planning stages in an effort to implement a campus-wide transformation plan. Direct federal funding to these actions has not been determined at this time; however, these actions are evaluated in this EA due to their connection to the other proposed actions. Implementation of the Campus Transformation Plan would include the proposed construction of three (3) new structures within existing campus boundaries. This would require the demolition of several existing structures currently sited within the proposed construction footprint. The proposed Kimmel Pavilion would function as a new inpatient hospital building with a gross floor area of approximately 830,000 square feet and would be physically linked to and function with the existing Tisch Hospital. The existing Rusk Institute for Rehabilitative Medicine, the Perelman Building, the Auxiliary Pavilion, the Greenhouse, Horizon House and the Visitors' Pavilion would be demolished and replaced with the new Kimmel Pavilion. The new Energy Building would be located on campus to the south of the proposed Kimmel Pavilion and would also be physically linked to and function with Tisch Hospital. It would have a gross floor area of approximately 74,000 square feet. The Energy Building would house a new natural gas combined heat and power plant among other functions. Also included in the Campus Transformation Plan is the proposed construction of a 365,000 gross square foot new Science Building within campus boundaries. The new Science Building would be constructed

at the southeast corner of the campus along East 30th Street and the FDR Drive Service Road, adjacent to the existing Smilow Research Center (Block 962, Lots 1001-1107). Construction would require demolition of the existing structures on the site, including the Rubin Hall Dormitory, administrative office space, and a portion of Schwartz Lecture Hall. The capacity would be comparable to the facilities to be replaced. The Emergency Department would be expanded adjacent to Tisch Hospital between First Avenue and the Amtrak ventilation tower immediately north of the Hospital. The new structures would be modified with design changes to strengthen the perimeter walls to function as components of the proposed floodwall system. Existing buildings would have the perimeter walls hardened to function as components in the floodwall system which would be tied into the new buildings and new free-standing floodwalls. The loading dock and roll-up garage doors adjacent to the Office of Chief Medical Examiner would be replaced with a solid masonry wall due to the relocation of its function to the new Science Building. The bulk oxygen storage tanks may be relocated to the previous loading dock location and enclosed with masonry walls with a metal gate facing East 30th Street. The City Environmental Quality Review (CEQR) documentation prepared by NYULMC for the Kimmel Pavilion and Energy Building, Science Building, and Emergency Department expansion are included in Appendix D. These documents contain additional figures and analysis of the proposed projects.

To complete comprehensive flood protection measures, new flood walls spanning the open space between buildings would be constructed along with hardening of slabs to resist hydrostatic pressures, compartmentalizing interior components to buildings, and implementation of measures to prevent backflow through existing utilities. Where openings are required during non-emergency times, deployable flood protection measures, such as removable flood walls would be incorporated; Figure 6 shows the conceptual outline of the proposed floodwall. Until the completion of the proposed floodwall, temporary flood protection measures would be used to protect the facility to the extent practicable using sandbags or inflatable flood barrier systems. The proposed permanent flood wall and barrier system would be designed to protect the facility to the Advisory Base Flood Elevation (ABFE) 500-year level at a minimum (see 5.2.3).

3.3 ALTERNATIVE CONSIDERED AND DISMISSED

One additional alternative considered was restoration of the facility to pre-disaster condition with upgrades to meet current building codes and standards. Although feasible, this alternative would not meet the stated purpose and need to improve capacity and capabilities identified in the Campus Transformation Plan and mitigate current and expected flood hazards. As such, this alternative was eliminated from further discussion in the EA. Relocation of the facility outside of the floodplain was not a viable alternative.

4. AFFECTED ENVIRONMENT AND POTENTIAL IMPACTS

NYULMC occupies one "superblock" on the east side of 1st Avenue between 30th and 34th Streets in the Kips Bay neighborhood of Manhattan along the East River (Appendix A, Figure 1). Also located on the same superblock is the Office of the Chief Medical Examiner and two Amtrak ventilation towers. Immediately south of NYULMC is the Bellevue Psychiatric Hospital; to the west are the Kips Bay Towers, a residential condominium complex; additional mixed-use buildings are located adjacent to the Kips Bay Towers and to the north of NYULMC. The proposed action site is a substantially developed urban environment occupied primarily by NYULMC with a combination of public health, research, and teaching functions. The proposed action would

impact the entire superblock with actions ranging from staging equipment and materials to vehicle access to the construction activities themselves.

This chapter describes potential impacts to environmental resources. The potential for significant environmental consequences was evaluated using the context and intensity considerations as defined in CEQ regulations for implementing the procedural provisions of NEPA (40 CFR 1508.27). Projects in New York City undergo a substantive environmental review process mirroring NEPA known as City Environmental Quality Review (CEQR). FEMA has reviewed the documentation developed under this framework for applicability to this EA document to enhance efficiency and minimize duplication of efforts (Appendix D).

Two alternatives, the No Action and the Proposed Action, have been fully evaluated and their impacts summarized in this section using the following scale. Impacts are assumed to be negative unless noted otherwise.

- No impact – no impacts are anticipated
- Negligible impact – no discernible impacts are anticipated or are minimal and cannot be measured meaningfully
- Minor impact – anticipated impacts are measurable, but are minor and within or below regulatory standards and / or are confined to the project site(s)
- Moderate impact – anticipated impacts are measurable and / or have impacts that may extend beyond the project site(s), may require permitting, and may require limited mitigation actions or coordination to minimize negative impacts
- Major impact – anticipated impacts are readily measurable, have a regional impact, require mitigation to reduce impacts, and / or exceed existing regulatory standards; permanent changes to the resources would be expected

Affected Environment	**Impacts**	**Mitigation Measures / BMPs**
Geology and Soils		
Alternative 1	No Impact	Not applicable
Alternative 2	Moderate Impact	Use of best engineering practices will mitigate challenges associated with mixed soil and fill
Air Quality		
Alternative 1	No Impact	Not applicable
Alternative 2	Moderate Impact	New York Department of Environmental Conservation Air Quality permit is required
Water Quality		
Alternative 1	No Impact	Not applicable
Alternative 2	Moderate Impact	Storm Water Pollution Prevention Plan and State Pollutant Discharge Elimination System permit are required for activities disturbing 1 acre of ground or more; if dewatering is required, coordination with USACE for appropriate permitting is required
Wetlands		
Alternative 1	No Impact	Not applicable
Alternative 2	Negligible Impact	

Affected Environment	Impacts	Mitigation Measures / BMPs
Floodplain		
Alternative 1	Moderate Impact	Facility would remain vulnerable to future flooding events
Alternative 2	Moderate (positive) impact	All work must comply with local floodplain administrator requirements
Coastal Resources		
Alternative 1	No Impact	Not applicable
Alternative 2	Minor Impact	Project has been found consistent with Water Resource Plan
Protected Species and Habitat		
Alternative 1	No Impact	Not applicable
Alternative 2	No Impact	
Historic Structures		
Alternative 1	No Impact	Not applicable
Alternative 2	Moderate Impact	Preparation and implementation of a Construction Protection Plan in compliance with Department of Buildings and Landmarks Preservation Commission technical policies and procedures are required
Archaeology		
Alternative 1	No Impact	Not applicable
Alternative 2	No Impact	In the event that archaeological deposits are encountered, the work must stop, site stabilized, and FEMA notified within 24 hours for additional evaluation and coordination activities
Visual Resources		
Alternative 1	No Impact	Not applicable
Alternative 2	Minor Impact	
Environmental Justice		
Alternative 1	Minor Impact	Not applicable
Alternative 2	Moderate (positive) Impact	
Public Health and Safety		
Alternative 1	Moderate Impact	Contaminants present in the soil would remain undisturbed by direct action, however subsurface migration of contaminants would potentially continue
Alternative 2	Minor Impact	Compliance with Remedial Action Plan recently prepared and with OSHA requirements; in the event that spills occur or hazardous substances in excess of New York State reporting thresholds are encountered, additional coordination with the New York Department of Environmental Conservation Spill Response and Remediation Program is required
Noise		
Alternative 1	No Impact	Not applicable
Alternative 2	Minor Impact	Sound attenuation is required to mitigate impacts to the interior of the facility from existing traffic noise

Affected Environment	Impacts	Mitigation Measures / BMPs
Transportation		
Alternative 1	No Impact	Not applicable
Alternative 2	Minor Impact during construction, Negligible post-construction impacts	
Climate Change		
Alternative 1	Moderate impact	Facility would remain vulnerable to the impacts of increasingly severe and unpredictable weather events
Alternative 2	Moderate (positive) impact	Project would contribute to greenhouse gas reduction goals, would be better protected against severe flooding events, and be better capable to assist the community during severe weather events
Cumulative Impact		
Alternative 1	Moderate Impact	Not applicable
Alternative 2	Negligible Impact	

4.1 PHYSICAL RESOURCES

4.1.1 Geology and Soils

Existing Conditions

Soil borings previously conducted at the site have identified a mix of decomposed stone, river sand deposits, urban fill including timber, bricks, and other debris, and bedrock at varying depths throughout the superblock.

Proposed Action

The proposed new facilities would have foundations designed according to best engineering practices and accepted building code requirements with pilings extending to the bedrock. Engineering and soil evaluation conducted to-date have identified challenges associated with the mixed fill and particularly subsurface timber, in addition to the potential intrusion of groundwater during construction. Work would incorporate use of best management practices (BMP) to mitigate challenges associated with the soil composition and prevent impacts to surrounding facilities. Since the project area is mapped as “urban” on the Census Bureau Map, by regulation at 7 CFR 658.2, development of soils/land in the area would not be subject to the Farmland Protection Policy Act.

4.1.2 Air Quality

Existing Conditions

The Environmental Protection Agency (EPA) has designated New York City as a nonattainment area for multiple pollutants under the National Ambient Air Quality Standards (NAAQS). New York City has been designated as a nonattainment area for fine particulate matter (PM2.5) in 1997 and 2006, a marginal

nonattainment area for 8-hour Ozone levels in 2008, and a moderate nonattainment area for 8-hour Ozone in 1997.

Proposed Action

The operation of motor vehicles on unpaved surfaces and the use of earthmoving equipment are likely to generate particulate matter in addition to combustion emissions from vehicles and construction equipment including criteria pollutants. Associated deterioration of air quality would be a localized, short-term condition that would be discontinued when the project has been completed and disturbed soils have been stabilized or permanently covered. As the potential construction and operational emissions are below de minimis threshold for criteria pollutants, no general conformity analysis would be required. The cogeneration plant to provide power and heat to the hospital will however result in permanent air emissions that will require NYULMC to obtain a New York Department of Environmental Conservation (NYSDEC) air permit. The planned Energy Building and cogeneration plant are consistent with the Greenhouse Gas (GHG) reduction goals of the New York City comprehensive plan, PlaNYC, and New York State goals.

4.2 WATER RESOURCES

4.2.1 Water Quality

Existing Conditions

The project site is located less than 200 feet from the East River which is the only major source of surface water that has the potential of being impacted by the project. The project site is located on neither an EPA-designated Sole Source Aquifer (SSA) nor a NY DEC-identified primary or principal aquifer. There are no designated wild and scenic rivers in the New York City area.

Proposed Action

As more than one acre of ground disturbance is expected from the proposed projects, a Storm Water Pollution Prevention Plan (SWPPP) and a State Pollutant Discharge Elimination System (SPDES) permit would be required. Best management practices to contain sedimentation to the site would be used to minimize construction impacts. With the operation and refueling of vehicles and heavy equipment, there is the potential for release of petroleum or other chemicals. Spills exceeding state reporting requirements must be promptly stabilized and the NYSDEC contacted for any further coordination, clean-up, or monitoring. If dewatering activities are necessary to control groundwater intrusion into the work site, they will be required to comply with city discharge standards and with USACE Nationwide Permitting and pre-construction notifications, as appropriate. Water quality impacts are expected to remain within regulatory limits.

4.2.2 Wetlands

Existing Conditions

The nearest mapped wetland is the East River which is identified as an estuarine system by the National Wetland Inventory (NWI) maps, see Appendix A, Figure 7. No plants indicative of wetland conditions were identified during a site visit on March 12, 2013.

Proposed Action

There is a potential for incidental impacts to the East River estuarine system resulting from the migration of subsurface contaminants due to ground disturbing activities. Impacts associated with site dewatering, if necessary, are expected to be contained through City discharge standards and USACE permitting as indicated in 4.2.1. Potential impacts are expected to be controlled by the distance between the project site and the river and by applicable conditions associated with required permits BMP's to contain sedimentation would minimize and contain potential on surface impacts to the site.

4.2.3 Floodplain

Existing Conditions

Advisory Base Flood Elevation (ABFE) maps were released for New York City between December 14, 2012 and February 22, 2013. Preliminary Workmaps were released for New York City June 11, 2013 succeeding the ABFE maps and are currently considered the best available data for floodplain management purposes under Executive Order 11988. The damaged facility is located within the 100 and 500-year floodplains of the Preliminary Workmaps and subject to repetitive flooding from the coastal floodplain. The Preliminary Workmaps show the 100-year floodplain encompassing approximately half of the entire NYULMC campus (Appendix A, Figures 8-9).

Proposed Action

The proposed action supports continued occupancy within the floodplain by restoring flood damaged facilities and equipment, supporting the implementation of the Campus Transition Plan, and constructing a campus-wide floodwall. As the site has been substantially developed prior to the disaster, the proposed project would have no additional impact to the coastal floodplain. As Manhattan is a heavily urbanized area, the proposed action would not itself induce further development within the floodplain. The proposed project with the changes to building footprints and the addition of a floodwall would remove only a small area providing flood storage during a flooding event. Since the project's footprint area as flood storage volume is such a negligible portion of the coastal storm surge floodplain, there would be no measurable change to flood elevations in the immediate vicinity or within the shared floodplain. There are no sources of riverine flooding that would have the potential to affect NYULMC. With the inclusion of flood mitigation including the proposed floodwall, strengthening of slabs to resist hydrostatic pressures, compartmentalizing interior building components, and including backflow preventers, the facility is expected to resist inundation from future flooding events.

The campus-wide floodwall would be constructed to protect the facility from the 500-year flood event at a minimum. The Skirball Institute and Schwartz Health Care Center along 1st Avenue are located at a high

enough elevation that the proposed floodwall would not eliminate all ingress and egress to the facility. A preliminary schematic drawing shows the proposed floodwall system extending from the Office of the Medical Examiner along 30th Street, around the buildings along FDR Drive and 34th Street, and terminating at the Skirball Institute where the building meets with the Emergency Department / Tisch Hospital. In the event that the flood protection measures are compromised and the facility would need to be evacuated in a future event, there would still be access to the facility through the Skirball Institute and Schwartz Health Care Center from 1st Avenue as with during Hurricane Sandy. FEMA has completed an 8-Step Decision Making Process of the project according to Executive Order 11988 and 44 CFR Part 9 which is included in Appendix C, Exhibit 1.

4.3 COASTAL RESOURCES

Existing Conditions

NYULMC in its entirety is located within a coastal zone; 1st Avenue marking the landward boundary of the zone. No part of Manhattan is a designated coastal barrier unit or adjacent to a coastal barrier unit under the Coastal Barrier Resource Act. New York City has adopted a Waterfront Revitalization Program (WRP) which was approved by the New York Department of State (NYDOS) as the agency administrating the Coastal Zone Management Act (CZMA). The proposed new buildings were determined consistent with the WRP by the New York City Board of Standards and Appeals (BSA) through review of the EAS documents submitted by NYULMC; the Emergency Department was approved July 13, 2010, the Kimmel Pavilion was approved March 15, 2011, and the Science Building was approved December 11, 2012.

Proposed Action

FEMA certifies that the activities that would result from the proposed grant project are consistent with the policies of the NYS Coastal Management Program (CMP) and would not hinder the achievement of those policies. Under 15 CFR 930.96(a), a Federal assistance agency may not approve an application for federal financial assistance until the State agency administering the Coastal zone program provides the coastal zone consistency determination. FEMA is coordinating with the New York State Office of Emergency Management and the New York Department of State for a formal consistency determination (Appendix C, Exhibit 2).

4.4 BIOLOGICAL RESOURCES

4.4.1 Protected Species and Habitat

Existing Conditions

There are no federally-listed species or designated critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service in New York County. The project is located within the North America Atlantic Flyway for migratory birds.

Proposed Action

A site visit conducted by FEMA March 12, 2013, confirmed no evidence of protected species or habitat. There would be no effect to protected species or critical habitat. The project would not impact bird habitat and is expected to have no change to migratory birds compared to existing land use and surrounding structures.

4.5 CULTURAL RESOURCES

4.5.1 Historic Structures

Existing Conditions

The NYULMC campus is part of a larger medical corridor that includes Bellevue Hospital Center. The medical corridor was planned as part of a Robert Moses era urban renewal project in the Kips Bay and Bellevue South neighborhoods on the east side of Manhattan. In 1947, the New York University (NYU)-Bellevue Medical Center was formally established, with plans subsequently prepared to build a new NYU-Bellevue Medical Center.

In 1949, the land for the NYULMC campus was conveyed to New York University by the City of New York - creating a superblock for development of an integrated hospital complex (Appendix A, Figures 4 & 12). There are three outparcels on the superblock. Ventilation buildings for the Amtrak tunnels which run beneath the site are located on two of the three outparcels. The third outparcel on the corner of First Avenue and former East 30th Street belongs to the Office of the Chief Medical Examiner.

Constantly evolving, the NYU Langone Medical Center Campus has undergone alterations, additions, and new construction that have changed the campus as the initial master plan was not sufficient to meet the institution's growing needs. As part of the permitting process for recent capital projects under the Campus Transition Plan, the SHPO previously determined that the NYULMC campus (including the buildings on the project site) was not eligible for listing in the State or National Register of Historic Places. There are no designated New York City Landmarks, or properties pending such designation on the project site or in the study area (see Appendix C, Exhibit 4).

Proposed Action

Within the study area, the former Bellevue Hospital Psychiatric Building is located across East 30th Street, approximately 70 feet from the proposed site for construction of the Science Building. While not currently listed in the National Register of Historic Places (NRHP), the former Bellevue Psychiatric Building has been determined individually eligible for listing. As a condition of the CEQR review conducted, BSA required NYULMC to prepare and implement a Construction Protection Plan (CPP), as required by the New York Department of Buildings (NYDOB) *Technical Policy and Procedure Notice* (TPPN) #10/88, for this architectural resource. As such, this plan would also be required for the construction of a floodwall. The CPP would contain measures to avoid construction-related impacts including ground-borne vibration, falling debris, and accidental damage from heavy machinery. The CPP would be developed in consultation with Landmarks Preservation Commission (LPC) and OPRHP and implemented by a professional engineer during any demolition, excavation, and construction. The CPP would follow the guidelines set forth in section 523 of the *CEQR*

Technical Manual, including conforming with LPC's *New York City Landmarks Preservation Commission Guidelines for Construction Adjacent to a Historic Landmark* and *Protection Programs for Landmark Buildings*. The CPP would also comply with the procedures set forth in DOB's *Technical Policy and Procedure Notice* (TPPN) #10/88.

Once NYU has developed a complete scope of work for the proposed floodwall, FEMA will begin consultation with the appropriate parties. The proposed project is not expected to result in adverse impacts on any historic and cultural resources.

4.5.2 Archaeological Resources

Existing Conditions

The OPRHP determined that the project site is not archaeologically sensitive in a letter dated February 11, 2011 (see Appendix C, Exhibit 3).

Proposed Action

The proposed project would not be expected to result in adverse impacts on any historic and cultural resources.

4.5.3 Visual Resources

Existing Conditions

NYULMC buildings currently occupying the site are constructed of predominantly of light and sand colored brick with bands of windows and aluminum paneling. A one-story area of dark colored brick along 30th street by entrance to Schwartz lecture hall extends along the sidewalk. Surrounding structures are predominantly rectangular and constructed of brick or pre-cast concrete, some with bands of windows. Bellevue Hospital immediately south of NYULMC is visually distinctive among surrounding structures with its significantly older architecture. Building heights range from a row of four-story structures to multiple high-rises. Views of the river from the street-level are obscured by FDR Drive.

Proposed Action

The proposed project would alter the campus with new buildings replacing several existing buildings. The design and materials of the new buildings would be comparable to remaining structures on the site with minimal change in visual impacts. The north and west facades of the Emergency Department would be predominantly clad in a glass screen wall and predominantly in aluminum paneling along the east facade. The Emergency Department would also include an illuminated 27 foot tall, 6 foot wide sign indicating emergency entrance on the south side to be visible to on-coming traffic. The inclusion of the floodwall as incorporated into the proposed and existing buildings is anticipated to be an incremental and negligible impact to visual resources by itself. In the event that design changes from the inclusion of the floodwall require additional review by the City of New York City, the Subgrantee would be responsible to coordinate with the appropriate departments. The project would have negligible change in visual connection to the river from the streets due to the existing impacts of FDR Drive. The accumulation of impacts to visual resources is expected to be minor.

4.6 SOCIOECONOMIC CONSIDERATIONS

4.6.1 Environmental Justice

Existing Conditions

The NYULMC is located in a Census Tract and adjacent to other Census Tracts with an estimated 10-20% population below the poverty threshold. Also adjacent to the campus are Census Tracts with estimated populations below the poverty threshold of 0-10%. The campus is located in and adjacent to Census Blocks with greater than 40% minority population; surrounding Census Blocks have minority populations ranging from 20-40% (Appendix A, Figures 10-11).

Proposed Action

The proposed projects consist of modifications within the superblock consistent with the facility's pre-disaster function as a vital service to the general public. The construction activities associated with the proposed action are consistent with work taking place throughout Manhattan and are subject to all New York City construction and noise regulations. The work involved would not displace or substantially impact minority or low-income populations or have any other disproportionately high, adverse effects. The addition of the proposed floodwall to the other portions of the proposed work at NYULMC is not expected to have any further impact to minority or low-income populations. The restoration, increased capacity, and protection of NYULMC are expected to have a positive impact on all populations within the community by providing improved access to sustained high quality health care services.

4.6.2 Public Health and Safety

Existing Conditions

In the planning process, NYULMC conducted Phase I and Phase II Environmental Site Assessments (ESA) to evaluate subsurface potential for contaminants. A Remedial Action Plan (RAP) was prepared following the Phase II study for the Energy Building portion of the property to address concerns identified in the study associated with past land uses on or adjacent to the site and soil testing. The RAP specifies requirements for items such as soil stockpiling, transportation, and disposal, dust control, and contingencies for the discovery of underground storage tanks or contaminated soils.

Proposed Action

By complying with state and city hazardous waste handling, disposal, and reporting requirements and measures identified in the approved RAP, no unmitigated adverse effects are anticipated as a result of the planned projects or construction of the floodwall. Compliance with a site-specific Health and Safety Plan and Occupational Safety and Health Administration (OSHA) requirements for personal protective devices and exposure limits would minimize impacts to workers resulting from hazardous materials on site. Any underground storage tanks or contaminated soils would be removed, disposed, and remediated in accordance with NYSDEC Spill Response and Remediation program. Asbestos remediation was initiated prior to Hurricane Sandy.

4.6.3 Noise

Existing Conditions

Sensitive noise receptors are generally considered to include museums, libraries, day care centers, schools, nursing homes, hospitals, and places of worship; NYULMC is included within this category. Multiple other sensitive noise receptors are also located within approximately 1000 feet of the facility. Current ambient noise levels are comparable with a densely populated city and with busy, neighboring roads; the maximum measured ambient noise levels reached 74.6 decibels at the proposed Science Building and 87.8 decibels at the east side of the proposed Kimmel Pavilion. Measurements of ambient noise levels were taken by NYULMC's contractors during the investigation leading to the CEQR documents presented to the BSA for review (Appendix D, Kimmel and Science Building Attachments H).

Proposed Action

Construction activities at NYULMC would contribute to ambient noise levels temporarily; however considering existing noise levels from traffic, the effects are anticipated to be only minor increases. The Subgrantee would be responsible to ensure construction activities are in accordance with any local noise ordinances and standards which may or may not include work hour restrictions. The proposed projects are not anticipated to generate sufficient changes in traffic levels to affect mobile noise sources and are below the threshold necessary to conduct a detailed analysis under CEQR. Because of existing ambient noise levels, some sound attenuation would be incorporated into the design of the proposed buildings to mitigate noise impacts to interior spaces.

4.6.4 Transportation

Existing Conditions

NYULMC is located along existing, heavily used roadway corridors; Average Annual Daily Traffic (AADT) along 1st Avenue is 28,414, along 34th Street is 22,344, and along the viaduct 136,651 as of the last available 2010 counts. Traffic is comparable to other areas within Manhattan. Several bus routes serve the project site and surrounding blocks; the nearest subway stops are located along Park Avenue.

Proposed Action

In the analysis submitted to the BSA indicates that the proposed project will not generate more than 50 vehicle trips or 200 pedestrian or transit trips which would otherwise require a more detailed analysis of impacts. During construction, a temporary increase in vehicle trips is anticipated associated delivery of materials and equipment access. Ingress and egress of heavy equipment may disrupt traffic temporarily during construction. Impacts to traffic and public transit are expected to return to near existing conditions and are expected to be negligible changes.

4.7 CLIMATE CHANGE

Existing Conditions

Since 1970, observed average temperatures in the northeast have increased by 0.5° Fahrenheit (F) per decade with an approximately 1.3° F increase per decade in winters. The warmer winters are associated with less snow and more precipitation falling as rain. A warming climate is correlated with increased variability in extreme weather events such as nor'easters, heat waves, coastal flooding, and ice storms. Climate research and predictive modeling indicate that an additional 2.5° F to 4° F increase in winter temperatures and 1.5° F to 3.5° F increases in summer temperatures through approximately 2050. Even more significant changes are predicted under high GHG emission models with modest increases under low emission models in addition to the observed and near-term predicted changes. New York City as a major urbanized area has an abundance of pavement and dark-colored surfaces similar to other large urbanized areas contributing to the urban heat island effect. During extreme heat events, high temperatures are retained for longer periods and contribute to risks to human health for vulnerable populations.

Proposed Action

The proposed project includes a new natural gas powered cogeneration heat-power plant to be housed within the Energy Building. In the EAS documents submitted to BSA, the plant was found consistent with New York's PlaNYC goals to reduce GHG emissions and supportive of the goal to reduce emissions by 30% by 2018. The proposed flood protection and campus transformation measures reduce the facility's vulnerability to future flooding events and enhance capabilities to serve populations affected by extreme events. The inclusion of the power plant provides a redundancy that would enable the facility to continue to operate during a disaster event even if the facility is impacted. Compliance with New York City building codes to incorporate light colored and/or reflective roofing would contribute to reducing the urban heating effect and help reduce energy consumption associated with cooling the facility.

4.8 CUMULATIVE IMPACTS

Recovery efforts are in progress throughout the area impacted by Hurricane Sandy including demolition, reconstruction, and potentially 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 NYULMC site. Planned projects including new residential building and dedicated bus lanes have been approved by the City for other entities; the proposed project is not anticipated to impact these projects. In reviewing the impacts of the proposed action, cumulative effects are mostly constrained by existing New York City and state regulatory frameworks including permitting and required reviews. Additional impacts not addressed through these existing local and state means are predominantly temporary, incremental, and not a significant impact to the human or natural environment. The proposed project once fully implemented would reduce flood risk to NYULMC, support resiliency during disaster events for a critical facility, improve capacity for the facility, and further NYULMC, State, and local planning goals.

4.9 PERMITS AND PROJECT CONDITIONS

The Subgrantee is responsible to obtain all applicable Federal, state, and local permits and applicable authorizations for project implementation prior to construction, and to adhere to all permit conditions. The Subgrantee has already completed a New York City Environmental Quality Review (CEQR) documentation process for the building additions with forms provided in *Appendix D*. Should inclusion of the floodwall require additional City approval through the Board of Standards and Appeals, the Subgrantee shall proceed through the permitting and review process as appropriate. Any substantive change to the approved scope of work will require re-evaluation by FEMA for compliance with NEPA and other laws and executive orders. The Subgrantee must also adhere to the following conditions during project implementation. Failure to comply with these conditions may jeopardize Federal funds:

1. The new facilities must be elevated, flood-proofed or otherwise protected to/above the 500-year floodplain utilizing the Best Available Data for the 500-year floodplain determination in accordance with EO 11988 and 44 CFR Part 9.

2. For proposed construction in the floodplain, the subgrantee shall coordinate with the local floodplain administrator and comply with Federal, state, and local floodplain laws and regulations.

3. The Subgrantee shall be responsible to comply with the NYSDEC State Pollutant Discharge Elimination System (SPDES) permit for Storm Water Discharge from Construction Activity or other applicable SPDES permit, in accordance with NYS Environmental Conservation Law. If the NYSDEC General Permit for Storm water Discharges is determined to cover the proposed action, the Subgrantee shall provide NYSOEM/DHS-FEMA a copy of the Storm Water Pollution Prevention Plan (SWPPP) and a copy of the Notice of Intent Form at grant project close-out or other time identified by NYSOEM/DHS-FEMA Grant Programs Directorate per grant administrative documentation guidance requirements. If an individual SPDES permit is determined to be required, the Subgrantee shall provide a copy of the obtained permit, as well as supporting SWPPP to NYSOEM/DHS-FEMA at grant project close-out or other time identified by NYSOEM/DHS-FEMA Grant Program per grant administrative documentation guidance requirements. For more information regarding SPDES, visit http://www.dec.ny.gov/chemical/43133.html. It is expected that the grantee and its construction contractor(s) will conduct construction utilizing best management practices to limit noise, dust and sedimentation & erosion during construction.

4. For construction and installation of any sewer additions or modifications, the subgrantee shall coordinate with the New York City Department of Environmental Protection.

5. The Subgrantee shall obtain the appropriate permits to construct and operate the facility from the New York City Department of Environmental Protection and an air facility permit or registration from the NYSDEC.

6. The Subgrantee shall complete any consistency review with the Water Resource Program if the inclusion of the floodwall necessitates additional coordination.

7. The Subgrantee shall prepare and implement a Construction Protection Plan including measures to avoid impacts associated with ground-borne vibration, falling debris, and accidental damage on Bellevue Hospital Psychiatric Building.

8. The Subgrantee shall ensure that work complies with all Federal, state, and city hazardous waste handling, disposal, and reporting requirements and with the Remedial Action Plan prepared following Phase II Environmental Site Assessment findings.

9. Any previously unidentified underground storage tanks or contaminated soils shall be removed, disposed, and remediated in accordance with NYDEC Spill Response and Remediation program.

10. Excavated soil and waste materials shall be managed and disposed of in accordance with applicable Federal, state, and local regulations.

11. In the event that unmarked graves, burials, human remains, or archaeological deposits are uncovered, the grantee and Subgrantee shall 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, shall inform the grantee, NYSOEM, immediately, secure all archaeological findings, and restrict access to the area. NYSOEM shall notify FEMA, who will consult with the NYSHPO. 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 NYSOEM.

12. Manhattan is currently mapped within the quarantine zone for the invasive insect Asian Longhorned Beetle. Since the proposed project is located in the quarantine area, any woody tree and shrub material removed for the proposed action shall not be transported intact outside of the designated quarantine area, but be chipped on site to chips of less than one inch in two dimensions in order to adhere with EO 13112 Invasive Species, Federal regulations at 7 CFR Part 301.51-1 through 301.51-9 and state regulations at 1 NYCRR Part 139. Invasive insects can devastate the forests of the northeast and it is recommended that communities in the northeast treat or handle wood materials in place to minimize the spread of these destructive pests. For more information concerning this environmental stewardship requirement, visit USDA-APHIS, New York State Department of Agriculture and Markets, and other websites concerning the beetle:

    - www.nycgovparks.org/trees/beetle-alert/control-measures
    - www.aphis.usda.gov/newsroom/hot_issues/alb/alb.shtml
    - www.agriculture.ny.gov/PI/alb.html

13. FEMA recommends that the Subgrantee restore pervious disturbed construction areas of the site with native seed and/or plant species to minimize soil erosion and sedimentation, as well as enhance environmental habitat quality of project area. Also recommended is that disturbed soil areas be planted with native plant material, as soon as practicable after exposure, to avoid or minimize growth of undesired and potentially invasive plant species that can potentially take hold without competition of

native plant materials. Local landscape plant nurseries and soil conservation offices can assist with identification of suitable native plants for site location type. The following websites may also be useful to identification of native plant material for the proposed project site:

- http://plants.usda.gov/java/
- www.nrcs.usda.gov/wps/portal/nrcs/main/national/plantsanimals/plants/
- www.fs.fed.us/wildflowers/nativeplantmaterials/rightmaterials.shtml

14. Public comments will continue to be accepted and considered up to fifteen (15) days after the date that the FONSI has been signed as "APPROVED."

5. PUBLIC INVOLVEMENT

In accordance with NEPA, this EA will be released for a 15-day public review and comment period. Availability of the document for comment will be advertised through the New York Post. A hard copy of the EA will be made available at Kips Bay Library, 446 Third Avenue at East 31st Street, and the Stephen A. Schwarzman Building, Fifth Avenue at 42nd Street. An electronic copy of the EA is available for download from the FEMA website at http://www.fema.gov/library/. 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 JFO, Office of Environmental Planning & Historic Preservation, Attention: New York University Langone Medical Center, 118-35 Queens Boulevard, Forest Hills, NY 11375, or by email to: FEMA4085Comment@fema.dhs.gov.

The EA evaluation resulted in the identification of no unmitigated significant impacts to the human environment. Obtaining and implementing permit requirements along with appropriate best management practices will avoid or minimize potential adverse effects associated with the alternatives considered in this EA to below the level of a significant impact. Substantive comments received will be evaluated and addressed as part of Final Environmental Assessment documentation prior to the anticipated issuance of a Finding of No Significant Impact (FONSI) by FEMA.

If no substantive comments are received from the public and/or agency reviewers, the EA will be adopted as final and a FONSI will be issued by FEMA. If substantive comments are received, FEMA will evaluate and address comments as part of Final Environmental Assessment documentation. The Federal government will post the FONSI to the FEMA website.

Copies of the EA will be sent to:

NYSOEM
1220 Washington Avenue,
Suite 101, Building 22
Albany, NY 12226-2251

NYU Langone Medical Center
C/O David Benfield
550 1st Avenue
New York, NY 10016

NYC Department of City Planning
22 Reade Street
New York, NY 10007-1216

Office of Manhattan Borough
1 Centre Street, 19th Floor
New York, NY 10007

6. CONCLUSION

The EA evaluated resources that could potentially be significantly impacted. The evaluation resulted in identification of no unmitigated significant impacts associated with the resources of historic, cultural, geology and soils; floodplains; wetlands and water resources; biological resources; and environmental justice. Obtaining and implementing permit requirements along with appropriate Best Management Practices and mitigation measures will avoid or minimize any effects associated with the alternatives considered in this EA to below the level of a significant impact. Should no substantive comments be received, or significant impacts be identified, during the public comment period, it is recommended that a Finding of No Significant Impact (FONSI) to the human or natural environment be issued for the Proposed Action Alternative.

7. PARTIES CONSULTED AND REFERENCES

7.1 PARTIES CONSULTED

David Benfield, Senior Project Manager, NYU Langone Medical Center

7.2 REFERENCES

Advisory Council on Historic Preservation, *An Overview of Federal Historic Preservation Law, 1966-1996*, [Online] Available: http://www.achp.gov/book/TOC2.html

New York Department of City Planning, *Environmental Review*, [Online] Available: http://www.nyc.gov/html/dcp/html/env_review/env_review.shtml, Accessed March 20, 2013

New York Department of Environmental Conservation, Groundwater: What is Groundwater?, 2013, [Online] Available: http://www.dec.ny.gov/lands/36064.html, Accessed April 25, 2013

New York State Department of Transportation, *Traffic Data Viewer*, 1999-2012, [Online] Available: https://www.dot.ny.gov/tdv, Accessed June 3, 2013

New York University Real Estate and Facilities, *Campus Transformation Overview*, Available: http://redaf.med.nyu.edu/campus-transformation-overview, Accessed March 15, 2012

Northeast Climate Impacts Assessment Team, Union of Concerned Scientists, *Confronting Climate Change in the U.S. Northeast: Science, Impacts, and Solutions*, July 2007, [Online] Available:

http://www.climatechoices.org/assets/documents/climatechoices/confronting-climate-change-in-the-u-s-northeast.pdf
U.S. Environmental Protection Agency, *Currently Designated Non-Attainment Areas for Criteria Pollutants*, Green Book, March 21, 2013, Available: http://epa.gov/oaqps001/greenbk/ancl.html, Accessed March 21, 2013
U.S. Environmental Protection Agency, *EJView*, February 17, 2011, [Online] Available: http://epamap14.epa.gov/ejmap/ejmap.aspx, Accessed March15, 2013
U.S. Environmental Protection Agency, Region 2 Water, *Sole Source Aquifers*, October 5, 2010, [Online] Available: http://www.epa.gov/region02/water/aquifer/, Accessed April 25, 2013
Wagner, Elise, Kramer Levin Naftalis & Frankel LLP, *NYULMC Emergency Department*, City Environmental Quality Review: Environmental Assessment Statement Full Form, March 18, 2010.
Wagner, Elise, Kramer Levin Naftalis & Frankel LLP, *NYULMC Kimmel Program*, City Environmental Quality Review: Environmental Assessment Statement Full Form, N.D.
Wagner, Elise, Kramer Levin Naftalis & Frankel LLP, *NYULMC Science Building*, City Environmental Quality Review: Environmental Assessment Statement Full Form, N.D.

United States Government. 1977. *Clean Water Act.*
United States Government. 1981. *Farmland Protection Policy Act, Public Law 98-98.*
United States Government. 1994. *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. Executive Order 12898.*
United States Government. 1977. *Floodplain Management. Executive Order 11988*
United States Government. 2008. *Code of Federal Regulations, Floodplain Management and Protection of Wetlands Title 44, Part 9,* October 1.
United States Government. 2008. *Code of Federal Regulations, Stafford Act, Title 44, Part 10,* October 1.
United States Government. 2008. *Code of Federal Regulations, National Environmental Policy Act, Title 40, Parts 1500-1508.* October 1.
United States Government. 2008. *Code of Federal Regulations, National Register of Historic Places, Title 36, Section 60.4.* October 1.
United States Government. 2008. Code of Federal Regulations, National Historic Preservation Act, Title 36, Part 800. October 1
United States Government. 1972. *Coastal Zone Management*, United States Code Chapter 33 Part 1451-1466
United States Government. 1972. *Coastal Barrier Resources Act*, United States Code Chapter 16 Part 3501

8. List of Preparers

8.1 Government Preparers

April Cummings, Environmental and Historic Preservation Advisor, New York Joint Field Office, Federal Emergency Management Agency, Region II

Adam Borden, Environmental Team Lead, New York Joint Field Office, Federal Emergency Management Agency, Region II

Kevin Mannie, Environmental Protection Specialist, New York Joint Field Office, Federal Emergency Management Agency, Region II

John Dawson, Environmental Protection Specialist, New York Joint Field Office, Federal Emergency Management Agency, Region II

Jessica M. Stewart, Historic Preservation Specialist, New York Joint Field Office, Federal Emergency Management Agency, Region II

8.2 CONTRACTOR PREPARERS

Rusty Anchors, Public Assistance Liaison, New York Joint Field Office

Alan Johnson, Floodplain Specialist, New York Joint Field Office