20.0 CONSTRUCTION IMPACTS

20.1 Introduction

An assessment of construction impacts is discussed in the following subsections to determine the potential impact from construction activities associated with the proposed project. Included in the assessment is the phasing and timetable of the proposed actions, description of the construction plan, analysis of the potential impacts from construction-related activities, and the measures that would be employed to minimize those impacts. The proposed project would add a net gain of twenty-six (26) new certified beds and approximately 137,869 SF of floor space.

20.2 Construction Stages and Activities

The proposed project is anticipated to be completed in one (1) phase. The additions to the East Wing of the main hospital building and the construction of the new River Building over the FDR Drive airspace would be completed in 2010. A description of the proposed construction is given in Section 1.0, "Project Description". In summary, the proposed project consists of the 137,869 SF of floor area that would be added to the East Wing of the main hospital building and the new River Building, which are additions, which were not included in the Previous Approvals. The proposed project would add floors 9 through 11 on the East Wing of the main hospital building (exclusion of the 8th Floor which was previously approved) and the construction of the 12-story River Building over the FDR Drive airspace, amounting to a total of 137,869 SF of additional floor area.

The construction of the River Building would involve the following components: foundations, platform construction, building structure and exterior, Esplanade restoration, and new building interior.

20.2.1 Excavation & Foundation

Two (2) rows of foundations are required for construction of the proposed River Building. The first row of foundation caissons would be placed along the East River Esplanade, east of the FDR Drive. The foundation process would include Esplanade and roadway modifications. No direct modifications of the E. 71st Street pedestrian overpass to the Esplanade would be necessary. However, the proposed action would result in the placement of support columns for the new River Building platform in-between the two (2) parts of the switchback ramp immediately east of the FDR Drive that connects to the pedestrian bridge over the FDR Drive. Access for emergency vehicles on the Esplanade would be maintained. Traffic would be redirected to allow construction of the foundation. Construction would not substantially interfere with vehicular traffic of the FDR Drive. Lane closures and restrictions would be coordinated with the DOT. The second row of foundation caissons would be located parallel with the existing Caspary Building along the west sidewalk of the FDR Drive. Appropriate protection would be provided for the existing Caspary Building and FDR Drive.

A Phase II Environmental Site Assessment was conducted where excavation activities are proposed for the placement of the support columns along the FDR Drive Southbound Service Road and along the East River Esplanade in between the two (2) parts of the switchback

pedestrian ramp. As outlined in Section 12.5 contamination of SVOCs and Metals was found in the soil and metals in the groundwater below the site. Based on this information, and in accordance with local, State, and Federal standards and guidelines, a Remedial Action Plan and Construction Health and Safety Plan were prepared to aid in the proposed excavation activities and remediation that is needed for the excavation of the support columns. All appropriate mitigation measures for the remediation of the contaminated soil (and groundwater should it be encountered) are outlined in the Remedial Action Plan, which was deemed acceptable by the New York City Department of Environmental Protection (DEP) on July 21, 2008. The Construction Health and Safety Plan prepared for the site, and deemed acceptable by the DEP on July 21, 2008, will ensure all safety measures for the proposed remediation are conducted in accordance with all local, State, and Federal rules and regulations. Air monitoring will be conducted in accordance with the approved CHASP using dust monitors and a PID, and will take place in accordance with the New York State Department of Health guidance values. Monitoring for background levels will take place at the start of each work day. The monitors will then be moved to the downwind side of any ongoing work to monitor for excessive levels of dust or flammable gasses. Dust suppression activities will be implemented if conditions indicate that dust may become problematic. The PID will be used to monitor for volatile vapors.

The construction of the project's foundation would be expected to last a maximum of six (6) months and would be performed partially simultaneously with the platform construction.

20.2.2 Platform Construction

The construction of the platform and the platform support columns for the River Building would involve temporary median barriers, closures of FDR Drive during the lowest traffic period with the direction of the NYC DOT, installation of the deck, and placement of temporary protection over FDR Drive on north and south side. It is expected that construction of the new platform and platform support columns and the River Building would be carried out in the same manner as the original platform and platform support columns and East Wing Building were carried out: from a barge in the East River containing a crane that would lift materials from the barge, over the Esplanade to the construction site, lasting a maximum of six (6) months and would be performed partially simultaneously with the foundation construction. The platform support columns would be constructed between the area of the pedestrian bridges switchback ramp along the East River Esplanade and along the 71st Street Service Road. Since these columns would not decrease the amount of accessible space width along the esplanade, since they would be located amidst the pedestrian bridges ramps, no significant impacts are expected. All excavation work would be done in accordance with the Remedial Action Plan and Construction Health and Safety Plan. Air monitoring will be conducted in accordance with the approved CHASP using dust monitors and a PID, and will take place in accordance with the New York State Department of Health guidance values. Monitoring for background levels will take place at the start of each work day. The monitors will then be moved to the downwind side of any ongoing work to monitor for excessive levels of dust or flammable gasses. Dust suppression activities will be implemented if conditions indicate that dust may become problematic. The PID will be used to monitor for volatile vapors.

Unforeseen and uncontrollable events are always possible in construction, such as a worker strike. HSS will continue to make every effort to limit closure of the esplanade to between four

(4) and six (6) months. As mitigation, if the Esplanade remains closed for more than six months, HSS would allocate financial resources to the City for maintenance of the Esplanade, in the amount of $10,000 per each additional month the Esplanade remains closed.

20.2.3 Structure & Shell

The construction period of the exterior of the River Building is estimated to be approximately twelve (12) months. The construction period of the addition to the Main Hospital-East Wing is estimated to be approximately eight (8) months. The structure and shell stage would include construction of the steel frameworks, construction and pouring of the concrete floors, and commencement of the installation of the mechanical, electrical, and plumbing systems, which would continue through the interior construction and finishing stages. These activities would require the use of cranes, derricks, exterior hoists, delivery trucks, and welding equipment.

Cranes would be used to lift steel, façade elements, and large pieces of equipment. Construction and debris materials would be moved via lifts, and debris would be removed from the project site by trucks. The trucking company will have all applicable permits for trucking the material(s) being removed from the site. All construction operations would comply with all appropriate and applicable city, state and federal government regulations.

20.2.4 Interior Construction & Finishing

Installation of the internal construction and finishing would be estimated to span approximately fifteen (15) months. During this time, completion of the mechanical, electrical, and plumbing systems would continue. In addition, installation of heating, ventilation, and air conditioning equipment and ductwork, installation of electric lines within the buildings, and interior installation of water supply and wastewater piping would be completed during this stage of development. Installation of the elevator and life safety systems would be completed as well. The finishing stage would include the construction of interior walls, installation of light fixtures, and interior finishes.

20.3 Typical Construction Activities

Construction equipment for the foundation stage of the proposed project would include backhoes, cranes, drills, hammers, and concrete delivery trucks. Typical equipment that would be used in construction includes cranes, hoist complexes, dump trucks, backhoes, compressors, derricks, and welding machines. All construction equipment would be in compliance with federal and state standards for noise generation.

Construction activities would generally occur Monday through Friday from 7:00 a.m. to 6:00 p.m. After-hours or weekend work may be necessary for special construction activities such as the construction of the foundation and platform over FDR Drive or the setup of cranes or derricks where it would be desirable to do this when little traffic and few pedestrians are in the area. In those instances, a special permit from the New York City Department of Buildings (NYCDOB) would be required.

Proper safety would be provided by the construction manager and all of its subcontractors. All construction operations would comply with all appropriate and applicable city, state and federal government regulations. The construction site would be surrounded by temporary fencing with lockable gates.

20.4 The Future Without the Proposed Project - 2010

Construction of the future without the proposed project would be similar to the construction activities of the proposed project, see below. The construction activities would be temporary and may be disruptive to the surrounding area, in particular the hospital operations and traffic flow on FDR Drive.

20.5 The Future With the Proposed Project - 2010

Construction of the proposed project may be disruptive to the surrounding area, in particular the hospital operations and traffic flow on FDR Drive. The following analysis describes the overall temporary effects on land use, community facilities, historic and archeological resources, hazardous materials, traffic and transportation, air quality, and noise.

20.5.1 Land Use

Construction would not alter surrounding land uses. However, construction of the proposed project would cause temporary disruptions and intrusions. For example, the construction of the River Building would make the Esplanade less attractive and will require closure for four (4) to six (6) months during certain unsafe construction activities for the proposed platform and support columns of the proposed River Building. The implementation of a Construction Management Plan would minimize any effects.

20.5.2 Socioeconomic Conditions

The construction of the proposed project would not negatively impact either the access to, or the viability of, the various residences or businesses that are located nearest to the proposed project site. The construction of the proposed project would create significant beneficial employment and fiscal benefits for the city and state.

20.5.3 Community Facilities

Access to the main entrance of HSS would not be blocked during the construction process. Access to the New York Presbyterian Hospital (NYPH) emergency entrance, located west of the HSS entrance on E. 70th Street, would be unaffected by the construction process. Construction activities would be conducted in accordance with NYCDOB codes related to active hospitals.

Some temporary disruption of street and sidewalk activity on E. 71st Street between York Avenue and FDR Drive is anticipated. All street and sidewalk disruptions would be done in accordance with DOT permits and standards. However, all of the streets affected and FDR Drive would be accessible to emergency vehicles and available for emergency access. Coordination with the New York City Police Department (NYPD) and the New York City Fire Department (FDNY) would ensure unimpeded emergency access during construction.

20.5.4 Open Space

Although the construction of the proposed project would decrease the attractiveness of the Esplanade in the area of the proposed proposed project, it would only be short term, and no other open space's would be affected as a result of the proposed projects construction activities. During construction activities for the platform and support columns, portions of the Esplanade will be temporarily closed. During installation of the columns and while the footings are being excavated, the Esplanade will be closed between approximately E. 70th Street to just past the midblock point between E. 71st Street and E. 72nd Street. At the request of the New York City Department of Parks and Recreation (See Appendix D) HSS will make every effort to limit the closure to four to six months and would remain open on weekends when possible and safety permitting. HSS will also coordinate the construction project with the New York City Department of Transportation's planned reconstruction of the East 78th and East 81st Street pedestrian bridges.

Approximately four (4) foundation columns would be placed in the Esplanade in between the ramps of the E. 71st Street switchback ramp of the pedestrian bridge; therefore, no change in useable space of the East River Esplanade would result from the placement of the foundation columns. However, this would cause the ramp to be unusable during construction. Access to the E. 71st pedestrian bridge via the E. 71st Street pedestrian ramp would be re-routed to a temporary ramp during construction in order to preserve access along the Esplanade south of E. 71st Street. Detour signage would be installed at the last entrance/exit to the Esplanade north of the blocked area (E.78th Street) to alert Esplanade users that there is no exit south of this point and that there is a "dead-end" ahead and to direct pedestrians to the temporary ramp. Additionally, the Esplanade would be opened on weekends when possible and safety permitting.

Fencing and temporary protection during construction activities would ensure safety to users of the Esplanade. Once the columns are in place and the structure of the deck is in place, north-south movement past this point would be restored. Restoration of the Esplanade would commence as early as possible after construction of the River Building. Unforeseen and uncontrollable events are always possible in construction, such as a worker strike. HSS will continue to make every effort to limit closure of the esplanade to between four (4) and six (6) months. As mitigation, if the Esplanade remains closed for more than six months, HSS would allocate financial resources to the City for maintenance of the Esplanade, in the amount of $10,000 per each additional month the Esplanade remains closed.

20.5.5 Historic Resources

No construction impacts are expected on listed or eligible for listing historic resources since no historic resources are located adjacent to the project site.

20.5.6 Hazardous Materials

There is a potential to encounter contaminated fill material during excavation activities for the support columns. Based on the above and HSS' commitments to the City, the proposed actions would not result in significant adverse impacts with respect to hazardous materials. A Phase II Environmental Site Assessment was conducted where excavation activities are proposed for the placement of the support columns along the FDR Drive Southbound Service Road and along the

East River Esplanade in between the two (2) parts of the switchback pedestrian ramp. As outlined in Section 12.5 contamination of SVOCs and metals was found in the soil and metals in the groundwater below the site. Based on this information, and in accordance with local, State, and Federal standards and guidelines, a Remedial Action Plan and Construction Health and Safety Plan were prepared to aid in the proposed excavation activities and remediation that is needed for the excavation of the support columns. All appropriate mitigation measures for the remediation of the contaminated soil (and groundwater should it be encountered) are outlined in the Remedial Action Plan, which was deemed acceptable by the New York City Department of Environmental Protection (DEP) on July 21, 2008. The Construction Health and Safety Plan prepared for the site, and deemed acceptable by the DEP on July 21, 2008, will ensure all safety measures for the proposed remediation are conducted in accordance with all local, State, and Federal rules and regulations. Air monitoring will be conducted in accordance with the approved CHASP using dust monitors and a PID, and will take place in accordance with the New York State Department of Health guidance values. Monitoring for background levels will take place at the start of each work day. The monitors will then be moved to the downwind side of any ongoing work to monitor for excessive levels of dust or flammable gasses. Dust suppression activities will be implemented if conditions indicate that dust may become problematic. The PID will be used to monitor for volatile vapors.

Based on the construction dates for the West Wing (1954 and 1980) and Caspary Research Building (1958) there is a potential for asbestos containing materials and lead based paint that can be disturbed during construction activities. This work would be done in accordance with the Hospital for Special Surgery's existing Operations and Maintenance Plan. Based on the construction dates for the Belaire Building (1987) and the East Wing (1995) there are no potential concerns relating to asbestos containing materials and lead based paint in these buildings.

20.5.7 Traffic & Transportation

An increase in truck traffic, construction workers' private autos, and construction equipment to and from the site during the construction period is anticipated. This increase in traffic is anticipated to vary, depending on the construction phase, the equipment required, and the number of workers required being present on the site during that particular portion of the construction.

The estimated average number of construction workers on site would vary depending on the stage of construction. Given typical construction hours (7am to 4pm), worker trips would occur during off-peak hours and would not significantly increase the traffic during peak hours. Construction workers would travel primarily by public transportation, with a small percentage traveling by automobile, thus not having a significant adverse impact on the street traffic. In addition, the increase in traffic is not anticipated to be significant, due to its temporary nature.

Concrete trucks and container/dumpster trucks are expected to be used during construction activities. The truck movements would be spread throughout the day occurring generally between 7:30 AM and 4:30 PM. Trucks would travel designated truck routes to and from the site, and would get permits for overweight/oversized trucks. Southbound trucks, would enter and

exit from the FDR Drive at the E. 73rd and 63rd Street ramps. Northbound trucks would enter and exit from the FDR Drive at the E. 62nd and 96th Street ramps.

Sections of the FDR Drive near the project site would be narrowed during construction. The addition of a new, independent grade beam for the Esplanade ramp of the pedestrian bridge may require sheeting along the east side of the FDR Drive and the addition of a grade beam to accommodate the columns to be located on the west side of the FDR Drive, would require temporary closures of one (1) northbound land that the southbound service of the Drive. These closures would occur at times of reduced traffic and as directed by the NYC DOT. Lanes on the FDR Drive have been similarly narrowed in the past for other projects and has been determined to have modest impact on capacity and level of service. During certain stages of construction, there could be complete sidewalk closures and temporary parking restrictions. Pedestrian safety would be protected by means of construction site fencing, overhead protection, and limited access locations. There could be sidewalk closings for short periods of time, but pedestrians would be directed to an alternate route for walking past the construction site. No bus stops or subway entrances would need to be closed to allow for construction related activity.

20.5.8 Air Quality

Heavy construction operations at the site would result in a temporary increase in pollutant emissions from the equipment used, and from truck and automobile traffic traveling to and from the site. However, the major air quality concern during construction operations would be the control of fugitive dust when site preparation operations are undertaken. Fugitive dust at a construction site is essentially composed of airborne soil particles caused by entraining soil into the air. Air monitoring during the excavation stage of the construction activities will be conducted in accordance with the approved CHASP using dust monitors and a PID, and will take place in accordance with the New York State Department of Health guidance values. Monitoring for background levels will take place at the start of each work day. The monitors will then be moved to the downwind side of any ongoing work to monitor for excessive levels of dust or flammable gasses. Dust suppression activities will be implemented if conditions indicate that dust may become problematic. The PID will be used to monitor for volatile vapors. To a lesser extent, some fugitive dust emissions would arise from wind disturbance of exposed areas during construction. Dust control management would include covering of trucks with tarpaulins and hosing of dusty areas to ensure accordance with Section 1402.2-9.11 of the New York City Air Pollution Control Code. Construction vehicles would be routed on main thoroughfares. Local residential streets would be avoided wherever practicable. All construction related air quality effects would be of a relatively short duration, and minimized through modern construction techniques. Therefore, project related construction impacts on air quality are not expected to be significant.

20.5.9 Noise

The CEQR Technical Manual states that significant noise impacts due to construction would occur "only at sensitive receptors that would be subjected to high construction noise levels for an extensive period time." In general, this has been interpreted to mean that such impacts would occur only at sensitive receptors where high noise levels would occur for two years or longer. Given that the construction timeframe is estimated at a maximum of six (6) months, any elevated noise levels due to construction would be considered temporary in nature and not significant.

Impact on community noise levels during construction of the proposed project would include noise from construction equipment and noise from construction and delivery vehicles traveling to and from the project site. The level of impact of these noise sources depends on the noise characteristics of the equipment and activities involved, the construction schedule, and the location of sensitive noise receptors.

Noise levels at a given location are dependent on the type and number of pieces of construction equipment being operated as well as the distance from the construction site. Typical noise levels from construction equipment are shown in Table 20-1. Noise levels due to construction activities would vary widely, depending on the phase of construction (excavations, foundation, erection of structural steel and concrete, construction of exterior walls…), and the specific task being undertaken.

Construction noise generated by the project is expected to be similar to noise generated by other construction projects in Manhattan. Increased noise levels can be expected to be most significant during the foundation phase of the construction, which is expected to be short term. There would be no blasting conducted for the construction of the proposed project.

The noise impacts would last as long as the project is under construction, estimated to be a maximum of eighteen (18) months, and would vary in intensity, depending upon the nature of the construction stage. However, these effects would be temporary in nature, and would not be considered significant adverse impacts. The construction would comply with the general city, state, and federal guidelines for noise levels during construction.

Any noise impacts would be temporary and short-term. After erection of the framework and shell, the majority of the buildings would be enclosed and noise levels related to on-site construction activities would be significantly reduced. Therefore, no significant negative noise adverse impacts are expected from the construction of the proposed project.

Table 20-1. Typical Noise Emission Levels for Construction Equipment.

Equipment Item	Noise Level at 50 ft (dBA)
Equipment	SPL Range
Compactors	72-88
Front Loaders	72-97
Backhoes	72-93
Tractors	73-96
Scrapers, Graders	77-95
Pavers	82-92
Trucks	70-96
Cement Mixers	71-90
Cement Pumps	75-84
Cranes	76-95
Pumps	70-80
Generators	70-82
Compressors	68-86
Pneumatic Wrenches	82-88
Jackhammers, Drills	76-98
Pile Drivers (Peak levels)	89-104
Vibrators	70-81
Saws	67-93
Tamper (at 1 meter)	94-100

Source: Harris, C., Handbook of Noise Control, Second Edition. New York: McGraw-Hill Book Company, 1979.