## A. INTRODUCTION

The 2006 Final Environmental Impact Statement (FEIS) studied the impacts of an intense level of construction activity to complete both Phase I and Phase II of the Project over a 10-year construction period. This Supplemental Environmental Impact Statement (SEIS) has been prepared to comply with the Order of New York State Supreme Court dated July 13, 2011, which required an analysis of a construction schedule for Phase II longer than was assumed in the 2006 FEIS. In accordance with that order, this SEIS focuses on the environmental impacts of a prolonged construction schedule of the Phase II program, and will assume for analysis purposes that construction of Phase II (including certain proposed project modifications described in Chapter 1, "Project Description") will begin in 2018 and continue until 2035 (analyzed in this SEIS as the Extended Build-Out Scenario). This chapter frames the analyses that will assess whether the construction of Phase II of the Project under the Extended Build-Out Scenario and changed background conditions since the 2006 FEIS would result in any significant adverse impacts not previously disclosed, and whether any additional mitigation measures beyond those identified in the 2006 FEIS and the Amended Memorandum of Environmental Commitments (MEC) would be warranted and are practicable. The analyses in the subsequent construction-related chapters focus on zoning and public policy, socioeconomic conditions, community facilities, open space, urban design and visual resources, hazardous materials, transportation, air quality, noise and vibration, public health, and land use and neighborhood character.

Under the Extended Build-Out Scenario, most of the Phase I construction elements are assumed to be substantially completed before the start of Phase II construction and are incorporated in the future background baseline. Building 1 and Site 5 may be constructed anytime during the overall construction period and could occur during Phase II construction. Accordingly, for each of the various technical areas analyzed, the SEIS analysis would either take into account the effects of the construction and operation of Building 1 and Site 5 as background conditions in assessing the environmental impacts of Phase II of the Project or would account for the possibility that there may be an overlap between the construction of these buildings and the Phase II construction, depending on which condition would represent the reasonable worst-case relevant to that technical area. For the purposes of a conservative analysis, the remaining existing structures on Blocks 1120 and 1129 and the western portion of Block 1128 within the project site are assumed to be demolished as part of Phase II construction.

The assessments presented in this SEIS focus on Phase II construction, which would occur on the eastern end of the project site, on Blocks 1120, 1121, 1128, and 1129. Under the Extended Build-Out Scenario, eleven new buildings and the associated open spaces are assumed to be constructed over a period of approximately 18 years from 2018 to 2035. As discussed in more detail below, there are three illustrative construction phasing plans that are analyzed: Construction Phasing Plan 1—continuous sequential phasing with Block 1129 first; Construction Phasing Plan 2—continuous sequential phasing with Building 15 on Block 1128

first; and Construction Phasing Plan 3—start and stop sequential phasing with periods of more intense construction activities. These illustrative phasing plans are not intended to serve as a prediction of the exact schedule and sequence of the Phase II construction, but rather have been developed to illustrate how the timing of the construction of certain project components may vary and to provide for a reasonably conservative analysis of the range of environmental effects associated with a delayed build-out of Phase II. The three illustrative construction phasing plans serve as the basis of analysis in this chapter because they provide a range of potential impacts within the envelope of the reasonable worst-case construction schedule under the Extended Build-Out Scenario.

This chapter first summarizes the status of Project implementation to date. Next, this chapter establishes the framework used for the assessment of potential impacts from construction. The three illustrative construction phasing plans are described. Construction practices and the types of activities likely to occur during construction are also discussed, along with the projected number of workers and truck deliveries.

## B. EXISTING CONDITIONS

### PHASE I CONSTRUCTION ACTIVITIES AND PROJECT STATUS

As described in the 2006 FEIS, Phase I construction consists of the following elements:

- Environmental remediation and demolition of existing buildings;
- Construction of the Arena;
- Construction of a new entrance to the subway through the Urban Room;
- Installation of infrastructure (water, sewer, and utilities) improvements;
- Restoration or construction of new streets and sidewalks along the western blocks.
- Replacement of the 6th Avenue and Carlton Avenue Bridges;
- Construction of temporary and permanent parking;
- Reconstruction of the Vanderbilt Yard including a temporary yard, permanent new rail yard, mat foundations to support the future platform and buildings and the West Portal, which would connect the new Vanderbilt Yard with the Long Island Rail Road (LIRR) Atlantic Avenue Terminal;
- Construction of the Urban Room, a publicly accessible atrium; and
- Construction of five residential/commercial buildings (Buildings 1 through 4 and Site 5) west of 6th Avenue.

As discussed in Chapter 1, "Project Description," since approval of the Project in December 2006, a number of project-related construction and design tasks have been undertaken. Key areas of construction include: clearance of most of the buildings on the project site; completion and opening of the Arena, which is now known as Barclays Center; completion and opening of the new subway entrance on the Arena Block; the re-routing of water, sewer, and utility lines around the Arena Block; a new water main on Atlantic Avenue; roadway modifications; work on the new LIRR rail yard; replacement of the Carlton Avenue Bridge spanning the rail yard; construction of a surface parking lot on Block 1129; and commencement of construction of the first residential building (Building 2) on the Arena Block (on which ground was broken on December 18, 2012) which uses the modular construction method. The replacement of the 6th

Avenue Bridge is no longer necessary since the Project is able to retain the existing 6th Avenue Bridge with the reconfiguration of the LIRR rail yard. Concurrently, Empire State Development (ESD) and the project sponsors have implemented many of the commitments and mitigation measures described in the 2006 FEIS and MEC and have provided relocation assistance to residents and businesses displaced from the project site.

## ENVIRONMENTAL COMPLIANCE AND OVERSIGHT

The project sponsors are obligated to implement various measures pursuant to the MEC (incorporated as an exhibit to the Development Agreement), including a number of measures to minimize the effects of Project construction on traffic conditions, noise, air quality, and other issues of concern in the surrounding area. ESD retained a technical consultant, Henningson, Durham & Richardson Architecture and Engineering, P.C. (HDR), in the role of an independent mitigation monitor, to coordinate with the project sponsors' On-site Environmental Monitor (OEM) and monitor compliance with the MEC.

The OEM program was developed in compliance with the MEC and consists of an OEM and two environmental engineers (MEs) who monitor, enforce, and document project compliance with the construction-related requirements set forth in the MEC. The MEs are on site during regular work day hours and perform routine site walkthroughs to observe and document compliance. These MEs work in close coordination with the OEM, who conducts on-site weekly meetings and also periodically performs compliance inspections. The level of on-site staffing adjusts as work activities change; any changes are discussed with ESD before implementation.

ESD has the right under its agreements with the project sponsors to enter the project site to monitor compliance with the MEC requirements. Since the commencement of Project construction, HDR has conducted more than 300 site visits, reviewed Project documentation, held weekly coordination calls or meetings with the project sponsors' staff, and prepared weekly and quarterly reports of its findings relative to compliance with the MEC. In addition, HDR has reviewed project documentation, including look-ahead construction activity summary reports, plans for the maintenance and protection of traffic (MPTs), air quality monitoring logs, LEED certification checklists, and site logistics plans to allow for early identification of actual and potential non-compliance issues and the refinement of compliance strategies, and the development of measures to correct instances of non-compliance.

The MEC requirements implemented by the project sponsors and monitored by ESD and HDR relate to the mitigation (or avoidance) of environmental impacts relating to transportation, air quality, hazardous materials, noise, vibration, the protection of historic resources, and rodent control.

Some specific MEC components include:

- MPT Plans to minimize traffic disruption during construction;
- An emissions reduction program, including the requirement to use ultra-low sulfur diesel (ULSD) fuel and diesel particle filters (DPFs) on construction equipment to reduce the air pollutant levels from construction equipment;
- A Community Air Monitoring Plan (CAMP) implemented during excavation and other soil disturbing activities;
- Remedial Action Work Plans to address contaminated or potentially contaminated soils and materials on the Project site;

- A noise mitigation program relating to on-site equipment and offering double-glazed or storm windows and air conditioning units to all significantly impacted sensitive uses as identified in the 2006 FEIS (e.g., residential, community facility, houses of worship) to partially mitigate the project's noise impacts during construction;
- Vibration monitoring and Phase 1B archaeological studies to protect historic resources during construction; and
- Site-specific rodent control plans.

The project sponsors' activities in complying with these measures are described below. In addition, the project sponsors have agreed to incorporate a number of improvements to improve the effectiveness of their program to comply with the requirements of the MEC during Project construction. These adjustments are discussed in the section below under "Program Improvements."

*MEC COMMITMENT AREAS AND COMPLIANCE*

*Transportation*

The MEC requires the project sponsors to implement measures to minimize traffic disruption during Project construction. These measures include implementation of project-specific MPT plans, compliance with truck protocols, and the use of on-site designated construction staging areas and on-site parking areas.

The project sponsors have closely coordinated with the New York City Department of Transportation (NYCDOT), ESD, and HDR in the development and approval of the major MPT plans which were put into effect to minimize traffic disruption during construction. Where appropriate, HDR was provided with the opportunity to review and comment before revised MPT plans were submitted to NYCDOT. HDR periodically observed traffic and pedestrian conditions and found that the project sponsors have substantially complied with the requirements for MPT plans set forth in the MEC. There were a few instances where flagmen or signage were found to be absent at locations specified in the MPT plans, but in each case the deviation from the approved MPT plan was promptly resolved.

Starting from the third quarter of 2010, a reversible lane was installed on Flatbush Avenue due to Arena construction and New York City Transit (NYCT) ventilation relocation work on Flatbush Avenue between Atlantic Avenue and Dean Street. The reversible lane was installed at the request of the NYCDOT over other MPT configurations proposed by the project sponsors. Moveable delineators were mounted to the pavement to separate opposing traffic flow on either side of the reversible lane. However, these delineators were knocked down by traffic repeatedly, creating confusion and unsafe driving conditions. Starting from the second quarter of 2011, the operation of the reversible lane was vastly improved through the implementation of longer merge lane approaches south of Dean Street for the northbound direction and north of Atlantic Avenue for the southbound direction, although typically a few delineator posts were still observed to be knocked down. This is an example of adjustments being made to improve the functioning of MPTs during the course of construction.

Truck protocols during construction that are specified as part of the MEC include on-site speed limit, dedicated queuing area, the scheduling and metering of truck deliveries, covered loads, wheel washing upon exiting the construction site, idling restriction, and the use of NYCDOT truck routes.

An incident of a truck exceeding the 5 miles per hour on-site speed limit was observed during the second quarter of 2010. Subsequently, ten additional speed limit signs were promptly posted around the construction site, resulting in an improvement in compliance. In order to minimize congestion near the construction sites, a dedicated queuing area was established on Pacific Street between Vanderbilt Avenue and Carlton Avenue. The majority of Project-related trucks coming to the site were required to enter this queue area first and were released in controlled intervals to prevent on-street queuing at the various construction site entrances. HDR found that the queuing of trucks in this dedicated area on Pacific Street worked well. To increase its effectiveness during the third quarter of 2010 when there was an increase in construction truck volumes, the project sponsors employed an additional flagger at the egress point of the queuing area to efficiently meter the release of trucks to the construction sites. In addition, during the third quarter of 2010, HDR observed that truck drivers, in an attempt to be near the front of the queue line, arrived early to the project site before the queuing area opened and queued and idled on Vanderbilt Avenue. Subsequently, the project sponsors employed an additional flagger at the entrance of the queuing area early in the morning to prevent trucks from queuing and idling on Vanderbilt Avenue prior to opening of the queue area gates. Overall, equipment delivery could fit into the queuing area. One notable exception involved deliveries of oversized chiller units during the second quarter of 2011 when these units could not fit through the west end of the queue area. Thereafter, the project sponsors widened a pinch point to allow wide loads to pass through this area. Instances of excessive idling were observed during the third quarter of 2011. Subsequently, actions were taken (including the installation of "No Idling" signs, the distribution of laminated truck protocol documents, and the provision of a comfort station for the drivers) resulting in a substantial reduction in idling violations.

An increased number of uncovered loads and inadequate wheel washing violations were observed during the third quarter of 2011. Subsequently, a security guard was deployed at the Atlantic Avenue egress point to monitor compliance. Two drivers were banned for violating these protocols. In addition, another driver was banned for improper queuing at the Pacific Street and 6th Avenue intersection. Subsequent to these driver-specific bans, significant improvements in compliance were observed by HDR. According to the project sponsors' records, the Project achieved an average truck protocols compliance rate of approximately 98.8 percent during peak Arena construction.

Trucks are required to travel on an NYCDOT truck route to the greatest extent possible when approaching/leaving the construction site, except in the vicinity of the construction site if the access point is located on a non-NYCDOT truck route (e.g., Dean Street). To assist Arena site truck drivers in using NYCDOT-approved truck routes, drivers were provided with maps that show the truck routes to/from the construction site along with the location of site access points. These maps also had certain truck protocols (queuing and idling details) listed on the back. The drivers were directed to keep these maps and protocols in the trucks at all times. Truck egress route maps were subsequently distributed to truck drivers working on the rail yard site. The maps were later expanded to include ingress routes as well. HDR regularly monitored truck activity for compliance with the truck route requirement outlined in the MEC and observed that this requirement was generally followed.

In order to reduce or eliminate curb-lane construction staging that is typical for construction projects in New York City, the project sponsors utilized multiple on-site staging areas, including portions of Blocks 1120 and 1121, the Arena Block, and Block 1129. HDR found that the staging areas generally operated in compliance with the MEC.

The MEC requires the project sponsors to provide up to 800 market-rate on-site parking spaces for construction workers. Although HDR did not observe any non-compliance issues related to the provision of the specific number of construction worker parking spaces, HDR did observe that at times, construction workers illegally parked in non-parking areas on Pacific Street just east of 6th Avenue, on Dean Street just east of Flatbush Avenue at the B65 bus stop, and, on the 6th Avenue Bridge. As a result, both ESD and the project sponsors repeatedly reached out to the New York City Police Department (NYPD) to increase ticketing at these locations. Instances of illegal parking were subsequently reduced once NYPD increased ticketing in these areas, but NYPD would need to remain vigilant in ticketing illegally parked vehicles to keep this issue from resurfacing.

Although HDR found that the project sponsors were generally in compliance with the transportation requirements set forth in the MEC, HDR found that truck protocols, truck routing, and the use of designated on-site staging areas could be improved. The specific improvements to these requirements, which have been agreed to by the project sponsors, are discussed below under "Program Improvements."

*Air Quality*

The MEC requires the project sponsors to implement a comprehensive emissions reduction program to reduce air emissions from construction activities. This program includes the use of ULSD fuel, early electrification, idling restrictions, the use of DPFs on diesel engines greater than 50 hp, and dust control requirements.

HDR has found the construction contractors to be in compliance with the MEC requirement on the use of ULSD fuel. HDR has also noted that to date, the project sponsors have been able to either arrange for temporary power from Con Edison or use existing grid power on all construction sites as early as practicable in the construction process. The early implementation of grid power use resulted in the reduction of the use of on-site generators, thereby reducing air emissions during construction. As discussed in the "Transportation" section above under "MEC Commitment Areas and Compliance," instances of excessive idling were observed. However, with the implementation of measures such as the installation of "No Idling" signs, the distribution of laminated truck protocol documents, the provision of a comfort station for the drivers, and more vigilant monitoring and enforcement of truck protocols by the Office of Environmental Management (OEM), HDR observed that the number of idling violations was substantially reduced.

HDR found that the construction contractors generally complied with the dust control measures regarding site watering, truck wheel washing, the application of gravel at construction egress points and vehicle speeds on-site, as outlined in the MEC. However, HDR did observe a number of instances of non-compliance that required attention. For example, during the summer of 2011, a large quantity of stockpiled soil was temporarily stored in Block 1229, Lot 81 for several months without being covered or kept adequately damp. This issue was eventually resolved through the application of a dust suppression agent by the construction contractor.

With respect to the use of DPFs on diesel engines greater than 50 horsepower (hp), HDR infrequently observed the use of non-compliant equipment. In most instances, the non-compliant equipment was either promptly replaced or retrofitted with a DPF, consistent with MEC requirements. There were a few instances where the contractor was allowed by the project sponsors to utilize a non-compliant piece of equipment for a short duration, typically a week or less, as a result of an unanticipated change in the construction schedule, or the impracticability

of retrofitting the equipment. HDR periodically checked equipment documentation from the project sponsors and on-site equipment to ensure that diesel engines were in compliance with the DPF requirement. According to the project sponsors' records, on average, 98.5 percent of the construction equipment used during peak Arena construction met the DPF requirement specified in the MEC. HDR found that, based on observations and reviewed information, the project sponsors did substantially comply with the DPF requirement outlined in the MEC.

A Construction Air Quality Measures (CAQM) Compliance Plan was finalized and implemented in April 2010. HDR noted that the CAQM Compliance Plan has provided the necessary strategies to meet the construction air quality requirements. However, HDR observed that a number of the provisions in the CAQM Compliance Plan were not adequately followed, including the submission of the project sponsors' quarterly environmental monitoring reports in a timely manner, completion of the environmental monitor daily inspection form on a regular basis, and proper training related to the MEC air quality requirements to all contractors working on-site.

A meeting was subsequently held in October 2012 among the project sponsors, ESD, and HDR to identify strategies to better implement the requirements of the CAQM Compliance Plan. Recommendations included improved contractor training and modifications to some forms to facilitate its use. In March, June, and September of 2013, additional follow up meetings were held to discuss these specific improvements as well as other recommended improvements developed by HDR, ESD and the project sponsors. These improvements are further discussed below under "Program Improvements."

Although HDR found that the project sponsors were generally in compliance with the air quality requirements set forth in the MEC, HDR found that the contractors' efforts to suppress dust during construction, meet the DPF requirement, and comply with the CAQM Compliance Plan could be improved. Identified improvements to the construction protocols relating to air quality are discussed below under "Program Improvements."

*Hazardous Materials*

Per the 2006 FEIS and MEC, a Hazardous Materials Health and Safety Plan (HASP) (prepared by Roux Associates, Inc. and dated February 9, 2007) was prepared to describe the protocols required for encountering and handling known and unknown hazardous soil and/or other hazardous materials on site. In addition, a Community Air Monitoring Program (CAMP) (prepared by Roux Associates, Inc. and dated February 6, 2007) for particulate matter ($PM_{10}$) and volatile organic compounds (VOCs) was prepared conforming to the guidance published by the New York State Department of Health (NYSDOH) for NYSDEC-supervised cleanups at State brownfield and superfund sites. As required by the CAMP and the NYSDOH guidance, monitoring of $PM_{10}$ was performed up-wind and down-wind of excavation of site soils and other activities that involved moving existing site soils around or off the project site. Monitoring of VOCs was performed downwind of construction activities involving disturbance of soils at locations identified in the 2006 FEIS as being contaminated with gasoline or other organic chemicals, i.e., Block 1118, Lot 1 (179 Flatbush Avenue), Block 1119, Lots 1 and 64 (622 Atlantic Avenue) and Block 1127, Lot 1 (195 Flatbush Avenue). The CAMP incorporated action levels for $PM_{10}$ and VOCs recommended by NYSDOH. For $PM_{10}$, these action levels allowed work to continue (with additional dust suppression measures, as required) provided that airborne dust was not observed and provided the measured $PM_{10}$ downwind levels (over a 15 minute averaging period) were not more than 150 micrograms per cubic meter ($\mu g/m^3$) greater than

upwind levels. If levels exceed 150 µg/$m^3$, then the work would need to be reevaluated and changes initiated to reduce these levels, including work stoppage if necessary. For VOCs, the actions levels allowed work to continue provided that 15-minute average downwind total VOC levels were not more than 5 parts per million (ppm) greater than upwind/background levels. In both cases, exceedance of an action level required the contractor to temporarily halt construction work in the area to employ additional measures to reduce $PM_{10}$ or VOC emissions.

HDR reviewed the CAMP logbooks available on-site and found that PM levels were measured for 4,653 hours between June 7, 2009 and July 19, 2013, and were found to be below the CAMP action levels 99.8 percent of the time. Based on the information available to HDR, there were 16 separate events totaling 7.25 hours over this timeframe in which the monitors recorded $PM_{10}$ levels in excess of the 150 µg/$m^3$ level specified in the CAMP over a 15 minute period. The majority of these exceedances lasted for one 15 minute period. Based on HDR's observations and review of the visual observations recorded by the OEM in the CAMP logbook, it is HDR's opinion that the project sponsors generally investigated and when required, implemented proper corrective measures to address the exceedance.

HDR observed certain instances of non-compliance when the project sponsors failed to perform VOC monitoring in a required location or during a required activity, and/or its contractors failed to adequately cover a VOC-contaminated soil pile. These incidents occurred during the onset of construction activities (First and Second Quarter of 2010), when major construction activities commenced and the project sponsors' environmental monitoring program was first getting underway. HDR brought these incidents to the attention of ESD and the project sponsors and new and expanded protocols were implemented to improve compliance. The above-mentioned incidents of non-compliance relating to lack of VOC monitoring and inadequately covered contaminated soil piles were substantially resolved by the conclusion of the Second Quarter of 2010. There was an additional isolated incident related to the handling of soil containing arsenic ampoules, which occurred during the First Quarter of 2011; however, the non-compliance did not result in any release of contaminants or cross contamination of soils. Based on HDR's observations, the project sponsors were generally compliant with the hazardous materials MEC requirements.

In order to improve overall compliance with the MEC measures addressing hazardous materials, the project sponsors will implement the improvements discussed below under "Program Improvements."

*Noise*

The MEC requires the project sponsors to implement measures to mitigate noise impacts during construction. These measures include compliance with source controls and path controls specified in the New York City Noise Code, construction equipment location restriction, installation of appropriate noise mitigation barriers, and offer to provide double-glazed windows or storm windows and/or air conditioning units at eligible affected sensitive uses identified in the 2006 FEIS.

The project sponsors developed Construction Noise Mitigation Plans (CNMPs) for the specific construction sites in compliance with the MEC noise requirements. HDR has noted that the contractors generally followed the protocols of the CNMPs. However, there were a few instances where violations of the CNMPs were identified, including the use of non-compliant equipment. In one instance, a utility contractor informed the OEM that the jackhammer in use was compliant with the noise levels specified in the New York City Noise Code. However, on-

site monitoring indicated otherwise. As a result, the non-compliant jackhammer was promptly removed from the site. Measures identified to improve documentation demonstrating compliance with the required noise levels are further discussed below under "Program Improvements."

HDR has found that the construction contractors have been able to either arrange for temporary power from Con Edison or use existing grid power on all construction sites to date as early as practicable in the construction process. The early implementation of grid power resulted in the reduction of the use of on-site generators, thereby reducing noise associated with this type of equipment during construction.

Based on field observations, HDR found that the contractors have generally complied with the proper maintenance requirement on their construction equipment and use of required mufflers. In one instance where the OEM identified a pothole in the Pacific Street queuing area that was covered with metal plating (the metal plating generated excessive noise when traversed over by construction vehicles), the project sponsors required the contractor to fill the pothole and remove the metal plating to reduce the noise levels being generated by this condition at this location.

HDR has found that the project sponsors generally complied with the noise barrier requirement where 8-foot to 16-foot fencing, portable noise curtains, or other means of shielding such as noise blankets were used to reduce noise levels. There was one instance during the fourth quarter of 2011 where a generator and an air compressor were placed at street level near a property line and were not equipped with noise shielding. HDR discussed this issue with the project sponsors, and it was determined that for any noisy equipment that needs to operate near a property line across the street from residences, noise blankets would be employed. No subsequent incidents of non-compliance with this requirement were observed by HDR.

The project sponsors have offered double-glazed or storm windows and air conditioning units to all affected sensitive uses as identified in the 2006 FEIS (e.g., residential, community facility, houses of worship located in areas identified as being significantly adversely impacted by Project-related noise) as partial mitigation for the Project's significant noise impacts during construction. Letters were sent by the project sponsors to the affected properties to schedule a window inspection appointment so that the proper windows could be sized and ordered. In addition, free vouchers for air conditioning units redeemable at P.C. Richard & Son were provided to qualifying property owners. Eligible property owners that requested them in response to the project sponsors' offer received vouchers for air conditioning units by 2009, and qualifying property owners that responded to the project sponsors' letter either received new windows or received agreed upon compensation in lieu of new windows by the first quarter of 2010.

*Vibration*

The MEC requires the project sponsors to implement a monitoring program to ensure that vibration levels at the Swedish Baptist Church and the town houses along Dean Street immediately adjacent to the Project's Building 15 are kept below the 0.50 inches/second vibration threshold. In addition, a Construction Protection Plan (CPP) was prepared in consultation with the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) (to meet the requirements of the November 2006 Letter of Resolution [LOR] among ESD, OPRHP, and the project sponsors) to avoid adverse demolition/construction-related impacts to buildings within the Prospect Heights Historic District that are within 90 feet from the project site.

Vibration monitoring at these sensitive resources commenced in 2008. Since the 2006 FEIS, the Prospect Heights Historic District has been designated by the New York City Landmarks Preservation Commission, which ultimately defined the boundaries slightly differently than what was described in the 2006 FEIS. As a result, the CPP has been amended to include additional historic resources within the expanded boundaries of the Prospect Heights Historic District that are within 90 feet of project-related construction activity. As per the updated CPP, future vibration monitoring will include these additional resources.

In the third quarter of 2009, the project sponsors redeployed vibration monitors at historic buildings within the Prospect Heights Historic District in anticipation of pile drilling activities at the LIRR rail yard. These monitors have been maintained to date, despite there being periods when construction activities requiring vibration monitoring were not occurring.

The project sponsors also requested that the structural engineer produce weekly vibration monitoring reports and provide those reports to HDR and the New York City Department of Buildings (DOB). All vibration monitoring devices, with the exception of the monitor located at 516 Carlton Avenue, were removed in December 2008 since construction activities requiring vibration monitoring were not required during the next calendar quarter.

Separate and apart from the monitors required by the CPP, the project sponsors installed several vibration monitors (in addition to those required by the CPP) at various locations outside of the Prospect Heights Historic District in the third quarter of 2008 in anticipation of an increase in demolition and construction activities at the project site.

There has been no recorded incident of a vibration threshold exceedance caused by construction activity to date. However, there have been limited instances of vibration threshold exceedances which the project sponsors' structural engineer has confirmed to have been caused by a local disturbance (e.g., a basement boiler turning on in the building containing the monitor). Based on observation and readings made over the course of Project construction, HDR found that the project sponsors have been in compliance the MEC requirements for construction-related vibration.

*Rodent Control*

The MEC requires the project sponsors to institute a rodent control plan (RCP) on all project sites during construction.

HDR confirmed that rodent control inspections were performed by periodically requesting copies of the rodent control inspection reports; however, some deficiencies (i.e., lack of baiting or debris piled onsite) were occasionally observed onsite by HDR. In addition, public complaints were received during the second quarter of 2011 concerning increased rodent activities in the area of Sixth Avenue and Dean Street. In June 2011, in response to these complaints, the project sponsors scheduled a site walkthrough with HDR and representatives from the New York City Department of Health and Mental Hygiene (NYCDOHMH) to identify how the RCP could be improved. Some of the improvements that were put into place included the hiring of an independent rodent control vendor to provide program oversight and suggest best management practices for each of the project sites, increased frequency of site inspections and improved reporting methods, assigning additional laborers committed to garbage pickup duties, and deployment of new garbage cans for workers that were designated as "food only" receptacles. Further, the project sponsors offered heavy-duty rat-proof trash receptacles to nearby residents. HDR has observed that improvements to rodent control during subsequent site inspections and

found the project sponsors to be generally in compliance with the rodent control measures specified in the MEC.

*PROGRAM IMPROVEMENTS*

Upon completion of the Arena, HDR reviewed its quarterly construction reports and further reexamined in detail the project sponsors' compliance with the construction-related requirements of the MEC. ESD and HDR have discussed the findings of HDR's review with the project sponsors, and have also further discussed in detail HDR's preliminary recommendations with regard to how the practices and procedures for implementing the construction-related measures required by the MEC could be improved. As a result of those discussions, the project sponsors have agreed to incorporate a number of improvements recommended by ESD and HDR to bolster the project sponsors' program to meet the requirements of the MEC. The agreed upon adjustments to the current construction practices include:

- *Six-Month Look-Ahead Reports.*
    - The project sponsors will provide ESD and HDR with six month look-ahead reports at regular intervals that will describe, in general terms, the activities anticipated on the project site for the next six months (including major milestones for areas of new construction activity, excavation, construction, MPT, soil and groundwater remediation work, and soil characterization). Among other things, each look-ahead report will include an assessment of the level of OEM staffing that should be deployed during the relevant period to properly monitor compliance with the MEC. That assessment will provide a basis for discussion regarding the level of staffing for the relevant period among ESD, HDR, and the project sponsors.
- *Contractor Training.*
    - The project sponsors will target its PowerPoint presentation so that it provides specific instructions to contractors on the requirements of the MEC. The project sponsors may tailor the presentation so that it focuses on MEC requirements that relate specifically to a particular project component. ESD and HDR will be provided with the opportunity to comment on the PowerPoints prior to their use in contractor training.
    - PowerPoint presentations will be presented by the OEM to all foremen, project managers, field managers, and similar key personnel of all subcontractors upon mobilization, and every 90 days thereafter, with sign-in sheets to track attendance.
- *Contracts.*
    - The project sponsors will include in their construction contracts, and require their contractors to include in all subcontracts, an exhibit incorporating an excerpt from the MEC that sets forth all construction-related requirements contained in that document. The project sponsors' construction contracts will expressly require each contractor to comply with all the terms of the MEC that apply to its construction activity, and to require its subcontractors to do the same.
    - The project sponsors will add to their standard MEC-related contractual terms a provision that reiterates the project sponsors' remedies for a contractor's non-

compliance with the MEC, including the rights to withhold payment or terminate the contract; such provision, however, will be in addition to other remedies available to the project sponsors to address any contractor's non-compliance with an MEC requirement.

- *Staffing and Off-Hour Work.*
    - Each six month look-ahead report will include a reassessment of staffing levels, and OEM staff will be adjusted as appropriate in light of any changes anticipated to the level of construction activity during future reporting periods.
    - The OEM will provide an update on upcoming after-hour and/or weekend construction work at each weekly meeting with HDR, during which it will be agreed upon by ESD and the project sponsors whether such work requires the presence of an ME. The OEM is ultimately responsible for ensuring that a proper level of monitoring coverage is maintained, even where after-hours or weekend work is performed on short notice from the contractor.
- *Traffic.*
    - Sufficient staff will be available to patrol the project site regularly to check for non-compliance with the truck protocol requirements concerning idling and/or queuing. The staff devoted to monitoring compliance with the truck protocol will be adjusted based upon the level of construction activity at the site. Staffing for overseeing compliance with truck protocol requirements will be assessed in the six month look-ahead reports, and discussed at weekly meetings with HDR.
    - Staff assigned to oversee compliance with the truck protocol will be properly trained in the truck protocol and will direct drivers to comply with MEC requirements.
    - A system will be instituted to facilitate the reporting of truck protocol violations to the project sponsors. Material violations of the truck protocol will be reported by staff to the project sponsors' management representatives, and the project sponsors will keep a record of such reported incidents.
    - The project sponsors will advise HDR at the weekly meetings of any circumstance where a contractor or driver has been found to be a repeat violator of the truck protocols. The project sponsors and ESD will agree, on a case-by-case basis, on the steps to be taken to deal with the repeat violator. Those measures may include, without limitation, providing warnings, invoking contract sanctions and/or banning from the site such companies and/or drivers in the event that violations continue after reasonable warning has been given.
    - The project sponsors will ensure that contractor logistics plans maximize the utilization of the Pacific Street queuing area between Carlton Avenue and Vanderbilt Avenue or other designated location for truck marshalling and queuing to the extent practicable and appropriate, so long as such areas are available. The project sponsors will provide HDR and ESD with copies of the logistics plans for review and comment.
    - Maps that identify acceptable truck routes to and from the project site will be provided to all contractors as part of the MEC training program. The project sponsors or its contractors will take measures to ensure that the trucks follow such routes. Among other things, contractors will be directed to provide those

maps to their trucking subcontractors, and require that the maps be distributed to drivers and kept available for reference in the cabs at all times. The Pacific Street queue area (if part of the then currently effective logistics plan) will be incorporated into these truck routing maps so long as that area is available.

- *Air Quality.*
    - The project sponsors and its contractors will assign sufficient staff to allow for careful monitoring of contractor compliance with MEC dust control measures, and staffing will be keyed to the level of dust-generating construction activities at the site. Staffing levels will be assessed in the six month look-ahead reports and discussed at the weekly meetings with HDR.
    - As one element of the MEC training program, contractors will be instructed on how to complete and submit documentation needed to confirm compliance with the DPF requirement of the MEC. Such instruction will be provided at a level of detail commensurate with the training needs of the contractors on the site.
    - Where practicable, all equipment subject to the DPF requirement (or equivalent controls) will be prominently labeled with a label prepared by the project sponsors that indicates that the equipment has a DPF (or equivalent controls) that complies with the MEC emission control requirement. Information on how to label compliant equipment will be provided as part of contractor training. Additional labels are not required for equipment with USEPA labels indicating that the emission controls on such equipment satisfy requirements that are at least as stringent as those required by the MEC.
- *CAQM Compliance Plan.*
    - In 2014, the CAQM Compliance Plan was updated to reference the contractors and personnel working at the project site and to reflect current protocols and procedures. Exhibits to the CAQM Compliance Plan were updated to improve the effectiveness of the CAQM Compliance Plan.
- *Dust Suppression and Wheel Washing.*
    - Prior to the commencement of construction activities for each major work phase, the project sponsors or its contractor(s) will prepare a fugitive dust management plan that identifies: the location of the fixtures to be used in controlling dust at the site (including without limitation hydrants or other points of water supply), any wheel washing stations, gravel placement locations, hoses, dust suppression agents and any other equipment and material to be used in complying with the dust suppression requirements of the MEC. The project sponsors will require its contractors to adhere to such plans, and HDR will refer to such plans in assessing the project sponsors' compliance with the dust suppression requirements of the MEC. ESD and HDR will be provided with the opportunity to comment on the plans prior to their implementation in the field.
    - A wheel washing station will be constructed at each truck exit, whereby truck wheels will be washed, and the water will be contained and recycled to avoid tracking mud out of the site. If construction of a wheel washing station is not practicable at a construction site exit due to site conditions, the circumstances giving rise to any claim of impracticability will be set forth in the relevant Dust Management Plan, and in such circumstances, the Dust Management Plan prepared by the project sponsors or its contractor will include a substitute

program for wheel cleaning that will achieve equivalent results, taking into account weather conditions, space availability, site pitch, catch basin location and other relevant factors.

- *Soil Stockpiling.*
    - In order to avoid excessive dust conditions, the MEC requires that any soil stockpiled on site be adequately moistened or covered by a tarp, dust suppression agent or other effective means. This requirement will be specifically incorporated into the training materials for the relevant contractors. Stockpiles of contaminated material will continue to be managed in accordance with the HASP approved by the NYSDEC.
- *Air Monitoring.*
    - The project sponsors have procured five new particulate monitors, four of which have been deployed on a daily basis at the site to monitor particulate levels associated with construction activity, as required by the MEC. OEM personnel will follow the manufacturer's recommendations for operation and maintenance of this monitoring equipment, and routine inspections of the dust monitoring equipment will be conducted by the OEM to ensure functionality. OEM personnel will follow the best management practices previously developed by HDR in operating this equipment, or equally effective procedures.
- *Noise.*
    - A written protocol has been developed to confirm that certain "noisier" equipment complies with the noise levels set forth in Table 17c-3 of the 2006 FEIS.
    - The OEM staff will check applicable equipment for compliance with the MEC noise requirements when the equipment is first mobilized. They will do so pursuant to the protocol described above. The OEM staff also will regularly check equipment in use on-site against the Construction Noise Mitigation Plan or the Alternative Construction Noise Mitigation Plan (as applicable) posted for the site to confirm that there are no discrepancies, or revise such plans as necessary.
    - The project sponsors will assure that perimeter fencing meets both the requirements of the MEC and the New York City Noise Code, which requires that perimeter fencing meet the STC rating of 30 or greater.
    - Where it is impracticable due to field conditions to meet the noise fence height requirements of the MEC and/or the New York City Noise Code in areas that are proximate to residences or other sensitive receptors, the project sponsors will install the best practicable sound barriers which may include some or all of the following, depending on the circumstances: sound attenuation blankets, additional sound barriers placed between the noise source and sensitive receptors, and/or angled cantilevered fences, and/or other practicable pathway controls.
    - In an effort to avoid delays occasioned by Con Edison scheduling constraints, the project sponsors will continue to submit electrification requests as early in the construction sequence as practicable, and follow up with Con Edison on a regular basis until electrification has been timely accomplished, subject to scheduling restraints of other entities not under the project sponsors' control.

- Construction staging areas that are located within 200 feet of a sensitive receptor and are used in connection with nighttime work will be shielded (by noise mitigating fencing and/or blanketing) on the side facing those sensitive receptors by New York City Noise Code and MEC-compliant noise mitigating fencing and/or blanketing, unless ESD determines that shielding is not required because of the level of anticipated activities and/or duration of such activities.
- Where practicable, quiet construction procedures and equipment will be used, including where practicable the use of a bed liner made of thick rubber, spray-on liner, plywood, sand or gravel on dump trucks to mitigate the noise of the first load being dropped into the dump truck.
- Where practicable and feasible, sound-mitigated backup alarms will be used such as backup alarms that lower backup alarm noise in response to more quiet ambient conditions (such as night-time work) or backup alarms that use white noise or other mitigating technologies for trucks and equipment expected to operate at or make deliveries to the Project site during any phase of extended night-time work or night-time module deliveries.

- *General Compliance.*
  - The project sponsors have agreed to pursue the services of a qualified outside engineering firm or construction management firm to serve as the OEM for the Project pursuant to a scope to be reviewed by ESD and that thereafter, the OEM function would not be moved in-house without prior approval by ESD.

*CONCLUSION*

HDR found that the project sponsors were generally in compliance with the requirements set forth in the MEC. In the areas that the project sponsors were not in compliance, HDR noted that prompt action was generally taken to address the non-compliance issues. HDR observed that there were improvements to processes and protocols after construction began, which resulted in improved compliance. The measures outlined in the MEC will continue during Phase II construction. Further, the project sponsors have agreed to incorporate a number of improvements recommended by ESD and HDR to improve the project sponsors' MEC compliance program. The SEIS analyses presented in the subsequent construction-related chapters examine whether there are additional practicable measures that should be implemented beyond those already required in the MEC for Phase II construction activities under the Extended Build-Out Scenario. ESD will continue to require the project sponsors to implement the required environmental impact avoidance and mitigation measures. During construction of the Project, ESD will also continue to retain the services of appropriate professionals to monitor compliance.

## C. CONSTRUCTION ANALYSIS FRAMEWORK

The SEIS construction analyses assess the potential for significant adverse construction impacts with the prolonged construction of Phase II under the Extended Build-Out Scenario and compares them to those found in the 2006 FEIS. The technical areas that could be affected by the prolonged construction of Phase II would be zoning and public policy, socioeconomic conditions, community facilities, open space, urban design and visual resources, hazardous materials, transportation, air quality, noise and vibration, and land use and neighborhood character. Chapter 2, "Analysis Framework," provides an explanation for why other technical

areas of the construction analyses would not be significantly affected by the Extended Build-Out Scenario.

The detailed construction-period analyses for Phase II under the Extended Build-Out Scenario consider three illustrative construction phasing plans (discussed below) that represent concentrated periods of construction as well as less concentrated but more continuous construction for an extended period of time (see **Figures 3A-1 through 3A-3**). These illustrative phasing plans are not intended to serve as a prediction of the exact schedule and sequence of Phase II construction, but rather have been developed to illustrate how the timing of the construction of certain project components may vary and to provide for a reasonably conservative analysis of the range of environmental effects associated with a delayed build-out of Phase II.[1] The three construction phasing plans serve as the basis of analysis in this chapter because they provide disclosure of the environmental impacts of prolonged construction of Phase II of the Project and would enable practicable mitigation measures to be identified. For each of the various technical areas, appropriate construction analysis years under the different construction phasing plans were selected to represent reasonable worst-case conditions relevant to each particular technical area, which can occur at different times for different analyses.

Since approval of the project in December 2006, a number of Phase I construction tasks have been undertaken and will continue to proceed. Most of the Phase I construction elements are expected to be substantially completed before the start of Phase II construction and are incorporated in the future background baseline. Building 1 and Site 5 may be constructed anytime during the construction period and could occur during Phase II construction. Accordingly, for each of the various technical areas, the SEIS analysis either takes into account the effects of the operation of Building 1 and Site 5 as background conditions in assessing the environmental impacts of Phase II of the Project under the Extended Build-Out Scenario, or accounts for the possibility that there may be an overlap between the construction of these buildings and the Phase II construction, depending on which condition represents the reasonable worst-case relevant to that technical area. For the purposes of a conservative analysis, the remaining existing structures on Blocks 1120 and 1129 and the western portion of Block 1128 within the project site are assumed to be demolished as part of Phase II construction.

Building 2 on the Arena Block is currently being constructed using the modular construction method where substantial project components are constructed off-site. This modular construction method may be considered for other Project buildings. However, the SEIS conservatively assumes that Phase II buildings will be constructed using the conventional construction method since this method would result in more intense on-site construction activities. The potential for construction impacts resulting from some or all of the Phase II buildings being constructed using the modular construction method will be qualitatively discussed in Chapter 3M, "Modular Construction."

[1] As noted in Chapter 1, "Project Description," the joint venture documentation includes a development schedule for Phase II construction that is substantially shorter than the one being analyzed under the Extended Build-Out Scenario. The schedule is comparable in duration to the schedule studied in the 2006 FEIS.

# D. CONSTRUCTION PHASING AND ACTIVITIES

## PHASE II CONSTRUCTION PHASING AND SCHEDULE

The Phase II construction activities would be located on the eastern portion of the project site on Blocks 1120, 1121, 1128, and 1129. Under the Extended Build-Out Scenario, eleven new buildings (Buildings 5 through 15) and the associated open spaces would be constructed over a period of approximately 18 years, from 2018 to 2035. As discussed in Chapter 2, "Analysis Framework," the construction phasing sequences are partially guided by certain contractual agreements between the project sponsors and ESD as well as between the project sponsors and MTA, which dictate the outside dates for starting and completing certain project buildings and components. There are three illustrative construction phasing plans that will be considered for the purpose of analyzing construction impacts under the Extended Build-Out Scenario:

- Construction Phasing Plan 1: Continuous Sequential Phasing with Block 1129 First
- Construction Phasing Plan 2: Continuous Sequential Phasing with Building 15 on Block 1128 First
- Construction Phasing Plan 3: Start and Stop Sequential Phasing with Periods of More Intense Construction Activities

All three illustrative construction phasing plans are designed to comply with all of the contractual agreements among the project sponsors, ESD and MTA.

Although as noted above it is possible that some or all of the buildings planned for Phase II would be constructed using prefabricated, or modular, construction techniques, the SEIS assumes that each building would be constructed using the conventional construction method. Where relevant, differences in potential impacts related to conventional and modular construction techniques are discussed qualitatively.

For each of the various technical areas presented in this chapter, appropriate construction analysis years under the different construction sequences were selected to represent reasonable worst-case conditions relevant to that technical area, which can occur at different times for different analyses. For example, the noisiest part of the construction may not be at the same time as the heaviest construction traffic. Therefore, the analysis periods may differ for different analysis areas. Where appropriate, the effects of the Phase I and Phase II project elements that would be completed and operational during the selected construction analysis years were also accounted for. Neither the Project documents nor the SEIS preclude a more rapid project completion, which was analyzed in the 2006 FEIS.

### *CONSTRUCTION PHASING PLAN 1*

The illustrative construction schedule for Construction Phasing Plan 1 is shown on **Figure 3A-1** and **Table 3A-1**. Under Construction Phasing Plan 1, construction would be continuous and sequential, with the start time of each individual Phase II element generally a year apart from the start time of another Phase II element. Construction is assumed to begin on Block 1129, moving from west to east. Construction of Building 14 is assumed to commence in June 2018, which is two years from the deadline specified in the Development Agreement, followed by the construction of Buildings 13, 12, and 11. Building construction on Block 1129 is assumed to be completed by March 2025. In October 2023, construction of Building 15 on Block 1128 is assumed to commence, with all activities completed by August 2026. Construction is then

assumed to proceed to Block 1121 in August 2026 where a platform would be constructed over the LIRR Vanderbilt Yard to provide a base for the Block 1121 buildings. Building construction on Block 1121 is assumed to move from west to east, starting with the construction of Building 8 in March 2027, followed by Building 9 in April 2028 and Building 10 in August 2029. Activities on Block 1121 are assumed to be completed by November 2031. Construction on Block 1120 is assumed to be the last component to commence under Construction Phasing Plan 1, starting with platform construction over the LIRR Vanderbilt Yard for Building 5, followed by Building 5 construction, platform construction for Buildings 6 and 7, Building 6 construction, and finally Building 7 construction. Block 1120 construction activities are assumed to take place from March 2030 through December 2035.

**Table 3A-1**
**Phase II Illustrative Construction Phasing Plan 1**

| Building | Block | Start Month | Finish Month | Approximate duration (months) |
|---|---|---|---|---|
| Building 14 | 1129 | June 2018 | May 2021 | 36 |
| Building 13 | 1129 | February 2020 | September 2022 | 31 |
| Building 12 | 1129 | April 2021 | February 2024 | 34 |
| Building 11 | 1129 | September 2022 | March 2025 | 31 |
| Building 15 | 1128 | October 2023 | August 2026 | 34 |
| Platform for Buildings 8, 9, and 10 | 1121 | August 2026 | August 2028 | 24 |
| Building 8 | 1121 | March 2027 | September 2028 | 18 |
| Building 9 | 1121 | April 2028 | December 2029 | 21 |
| Building 10 | 1121 | August 2029 | November 2031 | 27[1] |
| Platform for Building 5 | 1120 | March 2030 | November 2030 | 8 |
| Building 5 | 1120 | November 2030 | November 2032 | 24 |
| Platform for Buildings 6 and 7 | 1120 | July 2030 | March 2033 | 32 |
| Building 6 | 1120 | January 2032 | October 2033 | 21 |
| Building 7 | 1120 | May 2033 | December 2035 | 32 |

**Note:** [1] Includes 6 months of site and amenities work on Blocks 1121 and 1129.
**Source:** Hunt Construction Group

**Figures 3A-4 through 3A-6** depict the Phase II project site through early, intermediate, and late stages of construction under Construction Phasing Plan 1.

*CONSTRUCTION PHASING PLAN 2*

The illustrative construction schedule for Construction Phasing Plan 2 is shown on **Figure 3A-2** and **Table 3A-2**. Similar to Construction Phasing Plan 1, Construction Phasing Plan 2 is designed to be continuous and sequential, with the start time of each individual Phase II element generally a year apart from the start time of another Phase II element. However, the construction sequence in Construction Phasing Plan 2 would differ from the construction sequence in Construction Phasing 1. This illustrative phasing plan begins with the construction of Building 15 on Block 1128, which like Construction Phasing Plan 1, takes advantage of the fact that Block 1128 is situated on land, i.e., would not require the construction of a platform before building construction can begin. Under Construction Phasing Plan 2, construction is assumed to begin at Building 15 on Block 1128 in June 2018, with all activities to be completed by March 2021. Construction is then assumed to proceed to Block 1120 with platform construction over

**Table 3A-2**
**Phase II Illustrative Construction Phasing Plan 2**

| Building | Block | Start Month | Finish Month | Approximate duration (months) |
|---|---|---|---|---|
| Building 15 | 1128 | June 2018 | March 2021 | 34 |
| Platform for Building 5 | 1120 | May 2019 | January 2020 | 8 |
| Building 5 | 1120 | January 2020 | January 2022 | 24 |
| Building 14 | 1129 | May 2020 | April 2023 | 36 |
| Platform for Buildings 6 and 7 | 1120 | October 2022 | June 2025 | 32 |
| Building 6 | 1120 | April 2024 | January 2026 | 21 |
| Building 7 | 1120 | August 2025 | March 2028 | 32 |
| Platform for Buildings 8, 9, and 10 | 1121 | February 2027 | January 2029 | 24 |
| Building 8 | 1121 | August 2027 | February 2029 | 18 |
| Building 9 | 1121 | September 2028 | June 2030 | 21 |
| Building 10 | 1121 | February 2030 | November 2031 | 21 |
| Building 13 | 1129 | June 2030 | December 2032 | 31 |
| Building 12 | 1129 | July 2031 | May 2034 | 34 |
| Building 11 | 1129 | December 2032 | December 2035 | 37[1] |

**Note:** [1] Includes 6 months of site and amenities work on Blocks 1121 and 1129.
**Source:** Hunt Construction Group

the Vanderbilt Yard for Building 5, followed by Building 5 construction, platform construction for Buildings 6 and 7, Building 6 construction, and finally Building 7 construction. Block 1120 construction activities are assumed to take place from May 2019 through March 2028. During construction of Building 5, construction of Building 14 on Block 1129 would also commence due to a contractual agreement that construction of at least one building on this block must begin by May 2020. Construction of Building 14 is assumed to take place from May 2020 through April 2023. Construction on Block 1121 is assumed to start in February 2027 where a platform would be constructed over a portion of the Vanderbilt Yard to provide a base for the Block 1121 buildings. Building construction on Block 1121 is assumed to move from west to east, starting with the construction of Building 8 in August 2027, followed by Building 9 in September 2028, and Building 10 in February 2030. Activities on Block 1121 are assumed to be completed by November 2031. The remaining portion of Block 1129 is assumed to be constructed starting in June 2030 with Building 13, followed by Buildings 12 and finally Building 11, with all activities completed by December 2035.

**Figures 3A-7 through 3A-9** depict the Phase II project site through early, intermediate, and late stages of construction under Construction Phasing Plan 2.

*CONSTRUCTION PHASING PLAN 3*

The illustrative construction schedule for Construction Phasing Plan 3 is shown on **Figure 3A-3** and **Table 3A-3**. This third illustrative construction phasing plan is designed to illustrate construction that would start as described in Construction Phasing Plan 1, stop for a period of time for unforeseen reasons, and then restart with concentrated construction until project completion in 2035. The analysis of Construction Phasing Plan 3 is intended to assess the effects of stalled construction followed by a period of intense construction activities. Construction under this phasing plan would proceed in the same general sequence as described for Construction Phasing Plan 1 above, with Block 1129 in an earlier build-out to fulfill the aforementioned

**Table 3A-3**
**Phase II Illustrative Construction Phasing Plan 3**

| Building | Block | Start Month | Finish Month | Approximate duration (months) |
|---|---|---|---|---|
| Building 14 | 1129 | June 2018 | May 2021 | 36 |
| Building 13 | 1129 | May 2025 | November 2027 | 31 |
| Building 12 | 1129 | January 2026 | November 2028 | 34 |
| Building 11 | 1129 | January 2027 | August 2029 | 31 |
| Building 15 | 1128 | November 2027 | September 2030 | 34 |
| Platform for Buildings 8, 9, and 10 | 1121 | February 2029 | August 2030 | 18 |
| Building 8 | 1121 | September 2029 | March 2031 | 18 |
| Building 9 | 1121 | June 2030 | March 2032 | 21 |
| Building 10 | 1121 | June 2031 | September 2033 | 27[1] |
| Platform for Building 5 | 1120 | August 2030 | April 2031 | 8 |
| Building 5 | 1120 | April 2031 | April 2033 | 24 |
| Platform for Buildings 6 and 7 | 1120 | November 2030 | August 2032 | 21 |
| Building 6 | 1120 | May 2032 | February 2034 | 21 |
| Building 7 | 1120 | May 2033 | December 2035 | 32 |

**Note:** [1] Includes 6 months of site and amenities work on Blocks 1121 and 1129.
**Source:** Hunt Construction Group

contractual obligation. However, under this illustrative phasing plan, construction is assumed to stop for several years. Construction activities under illustrative Construction Phasing Plan 3 would be more staggered with more overlapping construction activities than the other two phasing plans. Under Construction Phasing Plan 3, construction is assumed to begin on Block 1129, moving from west to east. Construction of Building 14 is assumed to commence in June 2018 and would be completed by May 2021. No construction activities are anticipated between June 2021 and April 2025. Construction activities on Block 1129 are assumed to resume in May 2025 for the construction of Building 13, followed by the construction of Buildings 12 in January 2026 and finally Building 11 in January 2027. Building construction on Block 1129 is assumed to be completed by August 2029. In November 2027, construction of Building 15 on Block 1129 is assumed to commence, with all activities to be complete by September 2030.

Construction is then assumed to proceed to Block 1121 in February 2029 where a platform would be constructed over a portion of the Vanderbilt Yard to provide a base for the Block 1121 buildings. Building construction on Block 1121 is assumed to move from west to east, starting with the construction of Building 8 in September 2029, followed by Building 9 in June 2030 and Building 10 in June 2031. Activities on Block 1121 are assumed to be completed by September 2033. While construction activities are occurring simultaneously for the Block 1121 platform, Building 8, and Building 9, activities on Block 1120 are assumed to commence. Platform construction for Building 5 is assumed to begin in August 2030 and would be completed by April 2031. Platform construction for Buildings 6 and 7 is assumed to soon follow and is assumed to take place between November 2030 and August 2032. Construction of Buildings 5, 6, and 7 is assumed to begin in April 2031, May 2032, and May 2033 respectively, with all activities on Block 1120 to be complete by December 2035.

**Figures 3A-10 through 3A-12** depict the Phase II project site through early, intermediate, and late stages of construction under Construction Phasing Plan 3.

## CONSTRUCTION DESCRIPTION

*HOURS OF WORK*

Phase II construction of the Project would be carried out in accordance with New York City laws and regulations, which, in general, allow construction activities between 7 AM and 6 PM. Construction work normally would begin at 7 AM on weekdays, with most workers arriving between 6 AM and 7 AM. Under the Extended Build-Out Scenario, normally weekday work would end by 3:30 PM, but it can be expected that, in order to meet the construction schedule or to complete certain critical tasks, the workday may be extended from time to time beyond normal work hours. Some examples of such work could include completing the drilling of piles, finishing a concrete pour for a floor deck, or completing the bolting of a steel frame erected that day. Any extended workdays would generally last until approximately 6 PM and would not include all construction workers on-site, but only those involved in the specific task requiring additional work time.

Under the Extended Build-Out Scenario, weekend work would not be scheduled regularly, but may occur from time to time to make up for weather delays, unforeseen circumstances, or special activities such as erecting/dismantling tower cranes. In such cases, appropriate work permits from DOB would be obtained. Similar to an extended workday, the numbers of workers and pieces of equipment in operation would be limited to those needed to complete the particular task at hand. The duration of a typical weekend workday would be on a Saturday from approximately 7 AM to 5 PM. However, these hours could be extended to address special circumstances in limited instances.

At limited times during the construction period when foundation and construction work for the platform deck over the existing LIRR yard is required, night time and/or weekend work may be scheduled to avoid interference with yard operations of the LIRR. In such cases, construction activities would be scheduled to start after the Yard has been vacated to meet the evening rush hour and be completed before trains return from the morning rush hour**.**

When work is required outside of normal construction hours, the proper approvals would be obtained from the appropriate agencies (e.g., DOB, DEP, NYCDOT, and/or LIRR, depending on the type and location of work to be done). In addition, a noise control plan would be developed and implemented to minimize intrusive noise emanating into nearby areas and affecting sensitive receptors. The noise control plan would include such restrictions as the prohibition, where practicable, against placing generators at the property line and engaging in unnecessary loud activities at night.

*CONSTRUCTION STAGING AND TEMPORARY PARKING AREAS*

Portions of Block 1129 and the bed of Pacific Street between Carlton Avenue and Vanderbilt Avenue are currently used for construction staging including storage of equipment and materials, and truck staging. Entrances to the staging area are via Vanderbilt and Carlton Avenues onto the closed portion of Pacific Street. The use of Block 1129 and the bed of Pacific Street between Carlton Avenue and Vanderbilt Avenue as staging areas minimizes the number of trucks waiting on the street for access to the construction area. Block 1129 would continue to be used for staging activities at the beginning of Phase II construction, although the area used for staging would diminish as the buildings and open space on Buildings 11, 12, 13, and 14 are developed. It is expected that the bed of Pacific Street between Carlton Avenue and Vanderbilt Avenue would continue to be used for construction staging until necessary to be used for open space construction

at this location when the seven buildings on Blocks 1121 and 1129 are completed. In such cases, the staging and laydown of materials would occur along the perimeters of the construction sites within delineated closed-off areas.

In addition, temporary parking for construction workers may be provided on Block 1129. If required, to avoid overtaxing nearby on- and off-street facilities, the project sponsors may provide on-site parking to construction workers at a fee that is comparable to other parking lots/garages in the area. The use of Block 1129 as a temporary parking area would diminish as the buildings and open space on Buildings 11, 12, 13, and 14 are developed. In such cases, temporary parking for construction workers may be provided in permanent parking lots under Project buildings that are already completed or at nearby on- and off-street parking facilities (e.g., garage at the Atlantic Center).

*SITE ACCESS AND DELIVERIES*

Because of site constraints, the presence of large equipment, and the type of work, access to the construction sites would be tightly controlled. The work areas would be fenced off, and limited access points for workers and trucks would be provided. As noted above, temporary parking for the construction workers could be provided on Block 1129, although this area used for temporary parking would diminish as the buildings and open space on Buildings 11, 12, 13, and 14 are developed. Security guards and flaggers would be posted as necessary, and all persons and trucks would have to pass through control points. Workers or trucks without a need to be on the site would not be allowed entry. After work hours, the gates would be closed and locked. Security would be provided at the sites as necessary during off hours, nights and weekends.

As is the case with almost all large urban construction sites, material deliveries to the site would be scheduled. Because of the high level of construction activity and constrained space, unscheduled or haphazard deliveries would not be allowed. For example, during excavation, each dump truck would be assigned a specific block of time during which it must arrive on the site. If a truck is late for its turn, it would be accommodated if possible, but if not, the truck would be asked to leave the site or the queuing area on Pacific Street between Carlton Avenue and Vanderbilt Avenue and not return until its new assigned time. A similar regimen would be instituted for concrete deliveries, but the schedule would be even stricter. If a truck is late, it would be accommodated if possible, but if on-time concrete trucks are in line, the late truck would not be allowed on-site. Because construction documents specify a short period of time within which concrete must be poured (typically 90 minutes), the load would be rejected if this time limit is exceeded.

During the finishing of the building interiors, individual deliveries would be scheduled to the maximum extent practicable. Studs for the partitions, drywall, electrical wiring, mechanical piping, ductwork, and other mechanical equipment are some of the materials that must be delivered and moved within each building. The available time for subcontractors' use of the hoists would be scheduled. Each trade, such as the drywall subcontractor, would be assigned a specific time to have its materials delivered and hoisted into the building. If the delivery truck arrives outside its assigned time slot, it would be accommodated if possible without disrupting the schedule of other deliveries. However, if other scheduled deliveries would be disrupted, the out-of-turn truck would be turned away. This strict adherence to a schedule for trucks minimizes any queuing of the trucks on the street. In addition, some queuing could take place within the construction fence line.

Truck protocols (i.e., delivery schedule restrictions, truck queuing restrictions, etc.) have been required by the construction contracts, reemphasized during the bid process, and enforced by the OEM during construction operation. Since the OEM has enforced the truck protocols specified in the construction contracts and most contractors have grown accustomed to the Project requirements, compliance has improved over the course of the Phase I construction period. Truck protocols would continue to be implemented during Phase II construction.

To aid in adhering to the delivery schedules flaggers would be employed, as is normal for building construction in New York City, where needed. The flaggers could be supplied by the subcontractor on-site at that time or by the construction manager. The flaggers would control trucks entering and exiting the site, so that they would not interfere with one another. In addition, they would provide an additional traffic aid as the trucks enter and exit the on-street traffic streams.

*SIDEWALK AND LANE CLOSURES*

Similar to many other construction projects in New York City, temporary curb-lane and sidewalk closures would be required adjacent to any given Phase II construction site for varying lengths of time during construction. Along with the closures, bus stops would have to be temporarily relocated. Three street segments were permanently closed during Phase I construction and have been incorporated into the project site. These street segments would remain closed during Phase II construction:

- Pacific Street between Carlton and Vanderbilt Avenues;
- Pacific Street between Flatbush and 6th Avenues (now occupied by the Barclays Center); and
- 5th Avenue between Atlantic and Flatbush Avenues (now occupied by the Barclays Center).

For the most part, sidewalks and curb-lanes immediately adjacent to the project site would be intermittently closed during construction. During Phase II when construction would take place east of 6th Avenue on Blocks 1120, 1121, 1128, and 1129, certain sidewalk segments and parts of curb-lanes would be closed along the south side of Atlantic Avenue east of 6th Avenue, Carlton Avenue between Atlantic Avenue and Pacific Street, and 6th Avenue between Pacific Street and Dean Street would be closed. These sidewalks and curb-lanes would be reopened as the buildings are completed. To facilitate pedestrian flow through these areas, temporary sidewalks could be maintained in most cases. However, if necessary, the south side of Atlantic Avenue east of 6th Avenue may be closed to pedestrians at certain times during construction on Blocks 1120 and 1121.

Three bus stops on Atlantic Avenue (Blocks 1120 and 1121) and two bus stops on Vanderbilt Avenue (Blocks 1121 and 1129) would be affected during Phase II construction. These bus stops would be temporarily relocated to nearby areas along the bus routes, usually within one block. The relocations would be subject to the review and approval of NYCT. The potential impacts of these relocations are discussed in Chapter 3H, "Construction Transportation."

Sidewalk bridges would be erected to protect pedestrians passing by the construction site. Flaggers may be present at active driveways, where needed, to manage the access and movement of trucks, and to ensure the safety of pedestrians. MPT plans would be developed for any temporary curb-lane, sidewalk, or bicycle lane closures and would be developed as each building is constructed to protect pedestrian safety and avoidable traffic impacts. Approval of these plans and implementation of the closures would be coordinated with NYCDOT. Although not

expected to be a common practice, it may be necessary at times to expand the MPT areas beyond the curb lanes into the adjacent travel lanes. As with the curb lane and sidewalk closures, NYCDOT is expected to provide the appropriate MPT stipulations to ensure that loss of or diminished traffic capacities would be minimized to the extent practicable.

*RODENT CONTROL*

Construction contracts would include provisions for a rodent control program. Before the start of construction, the contractor would survey and bait the appropriate areas and provide for proper site sanitation. During construction, the contractor would continue to carry out a maintenance program, as necessary, including the setup and maintenance of bait stations at the construction sites. Signage would be posted, and coordination would be conducted with appropriate public agencies. Only U.S. Environmental Protection Agency (USEPA)- and NYSDEC-registered rodenticides would be permitted, and the contractor would be required to implement the rodent control program in a manner that is not hazardous to the general public, domestic animals, and non-target wildlife.

*GENERAL CONSTRUCTION TASKS*

Construction of large-scale buildings in New York City typically follows a general pattern. The first task is construction startup, which involves the installation of public safety measures (i.e., fencing, safety netting, Jersey barriers etc.), temporary power and communication lines, and construction essentials (i.e., portable toilets, dumpsters for trash etc.). At the project site where there are existing structures, any potential hazardous materials (such as asbestos) are abated, and the structures are demolished with some of the materials (such as concrete, block, and brick) either recycled or crushed on-site to be reused as fill and the debris taken to a licensed disposal facility. Excavation of the soils is next along with the construction of the foundations. When the below-grade construction is completed, construction of the superstructure of the new building begins. As the core and floor decks of the building are being erected, installation of the mechanical and electrical internal networks would start. As the building progresses upward, the exterior cladding is placed, and the interior fit out begins. During the busiest time of building construction, the upper core and structure is being built while mechanical/electrical connections, exterior cladding, and interior finishing are progressing on lower floors.

Since the construction approach and procedures for each building during Phase II construction would be similar, general construction procedures using the conventional construction method will be described followed by the major construction tasks (abatement and demolition [where needed], platform construction or excavation and foundations, superstructure, exterior cladding, interior finishing, site work and commissioning). Although it is possible that some or all of the buildings planned for Phase II would be constructed using prefabricated, or modular, construction techniques, the SEIS assumes that each building would be constructed using the conventional construction method. Modular construction techniques are discussed in Chapter 3M, "Modular Construction."

*Abatement and Demolition*

The remaining existing structures on Blocks 1120 and 1129 and the western portion of Block 1128 within the project site would be demolished during or before Phase II, including the former LIRR Stables at Atlantic Avenue. Measures to partially mitigate the impact of the demolition of this historic building were developed in consultation with OPRHP and are stipulated in the LOR signed by ESD, OPRHP, and the project sponsors. The LOR stipulates protective and mitigation

measures related to cultural resources. The facilities would be abated of asbestos and any other hazardous materials within the existing buildings and structures, recyclable materials removed, and then demolished.

A New York City-certified asbestos investigator would inspect the buildings for asbestos-containing materials (ACM), and those materials must be removed by a New York State Department of Labor (NYSDOL)-licensed asbestos abatement contractor prior to interior demolition. Asbestos abatement is strictly regulated by DEP, NYSDOL, EPA, and OSHA to protect the health and safety of construction workers and the general public. Depending on the extent and type of ACMs, these agencies would be notified of the asbestos removal and may inspect the abatement site to ensure that all work is performed in accordance with applicable regulations. Any areas of the building with ACM would be isolated with containment and decontamination systems. Specially trained and certified workers, wearing personal protective equipment, would remove the ACM and place them in bags or containers lined with plastic sheeting, for disposal at an asbestos-permitted landfill. Depending on the extent and type of ACM, an independent third-party air-monitoring firm would collect air samples before, during, and after the asbestos abatement, as needed. These samples would be analyzed in a laboratory to ensure that regulated airborne asbestos fiber levels are not exceeded.

Any activities with the potential to disturb lead-based paint would be performed in accordance with the applicable OSHA regulation (OSHA 29 CFR 1926.62—*Lead Exposure in Construction*). When conducting demolition (unlike lead abatement work), lead-based paint is generally not stripped from surfaces. Structures may be disassembled or broken apart with most paint still intact. Dust control measures (spraying with water) would be used if necessary. The lead content of any resulting dust is therefore expected to be low. Work zone air monitoring for lead may be performed during certain activities with a high potential for releasing airborne lead-containing particulates in the immediate work zone, such as manual demolition of walls with lead paint or cutting of steel with lead-containing coatings. Such monitoring would be performed to ensure that workers performing these activities are properly protected against lead exposure.

Any suspected PCB-containing equipment (such as fluorescent light ballasts) that would be disturbed would be evaluated prior to disturbance. Unless labeling or test data indicate that the suspected PCB-containing equipment does not contain PCBs, it would be assumed to contain PCBs and removed and disposed of at properly licensed facilities in accordance with all applicable regulatory requirements.

General demolition is the next step. Demolition would occur in accordance with DOB guidelines/requirements. In general, the first step is to remove any economically salvageable materials. Depending on the structural properties of the existing buildings, the buildings are either deconstructed using large equipment such as excavators with hoe ram attachments and cranes with demolition attachments, or with hand tools. Demolition activities would require fencing and netting around the building to prevent accidental dispersal of building materials into areas accessible to the general public. When structures on the roof are being razed, enclosed chutes would be used to move the debris to the ground level. The demolition debris would be sorted prior to being disposed at landfills to maximize recycling opportunities. Other equipment that would be used during demolition would include compressors, jack hammers, and diamond saws.

*Platform Construction / Excavation and Foundation*

Platforms would be built over the open, below-grade portions of the newly relocated Vanderbilt Yard. One platform would span over the below-grade portion of Block 1120 and a second platform would span over Block 1121. The platform would provide a base for the Phase II buildings on Blocks 1120 and 1121 (Buildings 5, 6, and 7 on Block 1120 and Buildings 8, 9, and 10 on Block 1121). The construction techniques and sequencing for both platforms would be basically the same. Columns and shear walls would be constructed on the mat foundations for future buildings. Large steel trusses, running north to south, would be supported by the columns and the shear walls. Concrete would be poured upon decking, which would have been placed on the steel trusses to form and finish the platform. Equipment that would be used during platform construction would include cranes, lift trucks, concrete pumps, compressors, and generators.

Buildings 11 through 15 would require excavation and foundation activities. Excavators and front end loaders would be used for the tasks of soil excavation. The soils would be loaded onto dump trucks for transport to a licensed disposal facility or for reuse on a construction site that needs fill. The dump trucks would be loaded in the excavation area itself, and a ramp may be built to the street level. Next, the concrete footings and walls would be erected and subsequently the cellar floor would be installed. A spread footing foundations system is expected to be used for the project buildings. In this type of foundation system, concrete column footings would be used to accommodate the concentrated load placed on them and to support the structure above. These concrete footings would be reinforced with rebar as they are traditionally done. Equipment that would also be used during excavation and foundation would also include the use of cranes, backhoes, drill rigs, bulldozers, concrete pumps, compressors, and generators.

*Below-Grade Hazardous Materials*

During all subsurface disturbance work, dust control measures (e.g., applying water on haul roads, wetting equipment and excavation faces, spraying on equipment buckets during excavation and dumping, hauling materials in properly tarped or watertight containers, restricting vehicle speeds to five miles per hour on the project site and covering stockpiled excavated material) would be implemented. In 2007, a HASP was prepared for Project construction in accordance with OSHA regulations and guidelines to address both the known contamination issues and contingency items. The HASP describes in detail the health and safety procedures put in place to minimize exposure of hazardous materials to workers and the public. The HASP includes provisions for the identification, handling and disposal of known and/or unexpected buried tanks, petroleum-contaminated soil, historic fill, or other contaminated materials that might be encountered. The HASP also addresses procedures for stockpiling, testing, loading, transporting (including truck routes), and properly disposing of all excavated material. The HASP requires a CAMP that conforms to the guidance published by NYSDOH. The 2007 CAMP was implemented during excavation and other activities that involved moving existing site soils around or off the project site. The measures outlined in the HASP would continue to be implemented during Phase II construction.

*Stormwater Pollution Prevention Plan*

The construction of each Phase II building and surrounding amenities would be performed with a stormwater pollution prevention plan (SWPPP) in place. The SWPPP would include required stormwater management practices with construction drawings illustrating the site-specific erosion and sediment control measures and Best Management Practices (BMPs). The SWPPP would identify responsible parties as well as their roles in the installation, repair/maintenance and inspection of the required erosion and sediment control measures and/or BMPs, if any

In accordance with NYSDEC guidance, the SWPPP would include both structural and non-structural measures. The structural measures would consist of silt fencing, drainage inlet protection, and installation of a stabilized construction entrance or other appropriate means to limit potential offsite transport of sediment. The non-structural BMPs would include routine inspection, dust control, street sweeping (if and as needed), and maintenance programs; instruction on the proper management, storage, and handling of potentially hazardous materials; and identification of parties responsible for implementation and ongoing maintenance programs. All temporary control measures would be maintained until disturbed areas of the site are stabilized.

*Superstructure*

The superstructures of the project buildings would include the building's framework (beams and columns) and floor decks. Construction of the interior structures, or cores, of the proposed buildings would include elevator shafts; vertical risers for mechanical, electrical, and plumbing systems; electrical and mechanical equipment rooms; core stairs; and restroom areas. Superstructure construction would begin after the foundation is completed. Two cranes and two hoists would typically service one building. Additional equipment that would be used during superstructure would include lift trucks, concrete pumps, and generators.

*Exterior Cladding*

As the superstructure advances upward above ground, the vertical mechanical systems would start to be installed. After the superstructure is 5 to 10 floors above street grade, the exterior façade would be installed on the lower floors. The exterior façade would arrive on trucks and be lifted into place for attachment by cranes. Additional equipment that would be used during exterior cladding would include hoists.

*Interior Finishing*

This stage of construction would include the construction of interior partitions, installation of lighting fixtures, interior finishes (flooring, painting, millwork, glass and glazing, door and hardware, etc.), and mechanical and electrical work, such as the installation of elevators, and plumbing and fire protection fit-out work. Additional equipment that would be used during interior construction would include hoists and a variety of small hand-held tools. While the greatest number of construction workers would be on-site during interior finishing, this stage of construction is the quietest since most of the construction activities would occur within the buildings with the façades substantially complete.

*Site Work and Commissioning*

Upon completion of Phase II, there would be 8 acres of publicly accessible active and passive open space constructed on land and over the renovated LIRR Vanderbilt Yard. The open space would be located on Blocks 1120, 1121, and 1129 and would be constructed in segments upon the completion of each of the project's buildings. In addition, the open space that would be located on the street bed of Pacific Street between Carlton and Vanderbilt Avenues would be constructed after the seven buildings on Blocks 1121 and 1129 are completed. Top soil would be imported for installation of the grassy areas and landscaping. Concrete sidewalks would be poured, and street furniture, such as benches and tables, would be installed. Dump trucks would bring the soil to the site for spreading. Trees and shrubs would be planted. For the active recreation areas, the ground surfaces would be installed, followed by the appropriate amenities. It is expected that the open space would be constructed near a building when the building is

completed. Additional equipment that would be used during site work would include backhoes, front end loaders, and generators.

Commissioning would occur towards the end of construction of each building and would involve completing all of the punch list items, which are typically small tasks that were not completely finished. In addition, final cleanup and touchup of the site and final approvals from city and state authorities would be part of the commissioning.

*GOVERNMENTAL COORDINATION AND OVERSIGHT*

Construction oversight involves several city, state, and federal agencies. **Table 3A-4** lists the primary involved agencies and their areas of responsibility. For projects in New York City, primary construction oversight lies with New York City Department of Buildings (DOB), which oversees compliance with the New York City Building Code. In addition, DOB enforces safety regulations to protect workers and the general public during construction. The areas of oversight include installation and operation of equipment such as cranes and lifts, sidewalk sheds, and safety netting and scaffolding. DEP enforces the New York City Noise Code and approves relocations and replacements of water and sewer lines. In addition, DEP and the Office of Environmental Remediation (OER) approve HASPs for any portion of the Project site where these agencies have jurisdiction. FDNY has primary oversight of compliance with the New York City Fire Code and the installation of tanks containing flammable materials. NYCDOT's Office of Construction Mitigation and Coordination (OCMC) reviews and approves any traffic lane and sidewalk closures. NYCT is responsible for subway access and bus stop relocations.

**Table 3A-4**
**Summary of Primary Agency Construction Oversight**

| Agency | Areas of Responsibility |
|---|---|
| **New York City** | |
| Department of Buildings | Building Code and site safety |
| Department of Environmental Protection | Noise Code, HASPs, relocations and replacements of water and sewer lines |
| Office of Environmental Remediation | HASPs |
| Fire Department | Compliance with Fire Code, fuel tank installation |
| Department of Transportation | Lane and sidewalk closures |
| New York City Transit Authority | Subway access and bus stop relocation |
| | |
| **New York State** | |
| Empire State Development | Consistency with General Project Plan (GPP) and Memorandum of Environmental Commitments (MEC) |
| Office of Parks, Recreation, and Historic Preservation | Cultural and Architectural Resources |
| Department of Labor | Asbestos Workers |
| Department of Environmental Conservation | Hazardous materials and fuel/chemical storage tanks |
| **United States** | |
| Environmental Protection Agency | Asbestos Abatement |
| Occupational Safety and Health Administration | Worker safety |

At the state level, ESD monitors construction activities for consistency with the General Project Plan (GPP) and the MEC. The Office of Parks, Recreation, and Historic Preservation (OPRHP) reviews and approves the CPPs and any monitoring measures necessary to prevent damage to historic structures. The New York State Department of Labor (DOL) licenses asbestos workers. The New York State Department of Environmental Conservation (DEC) regulates disposal of

hazardous materials, and construction and operation of bulk petroleum and chemical storage tanks and the cleanup of oil spill sites. At the federal level, the Environmental Protection Agency (EPA) regulates asbestos abatement, and the Occupational Safety and Health Administration (OSHA) sets standards for work site safety and construction equipment.

*COMMUNITY LIAISON OFFICE*

The Community Liaison Office (CLO) was established per the MEC to provide a direct point of contact between the local community and the project sponsor, during the construction of the Project. The CLO opened in February 2007 and was located at 24 6th Avenue in Brooklyn; the current location is 752 Pacific Street on Block 1129. Informational signs about the CLO have been posted around the project construction site to inform the community of the purpose, location and contact information of the CLO. During construction, the CLO was relocated on site several times as the Project components progressed. With each move, new signs were posted to keep the public informed. Information about the CLO and how to make inquiries is also listed on the Atlantic Yards website, and has been from website inception. Additionally, the CLO uses the Atlantic Yards website to send out email notifications to the community and to post updated construction information.

The CLO is managed and staffed by the project sponsors' External Affairs department, and has a rotating staff with at least one person on-site each day, from Monday to Friday, 9 AM to 4 PM. The public has always been able to leave a message or contact the CLO since it was established. There are three direct ways to contact the CLO: visit the CLO office during normal business hours, call the toll-free number (866-923-5315), or email communityliaison@atlanticyards.com. Infrequently, the CLO was not physically staffed as a result of office movements and activities on site. However, the public was able to access the CLO via email or phone during those times.

Generally, the CLO has responded to inquiries within 24 hours of receipt. The message center is checked multiple times daily. The staff of the CLO has direct access to the construction project managers, including the OEM, which assists the CLO in providing up to date responses to construction-related inquires. In addition to coordinating the preparation of responses to community inquiries, the CLO and OEM also collaborate on the development of community notices, the regular construction "Two Week Look Ahead", and other community interactions, such as construction-related site visits. The CLO also distributes flyers and emails to an Atlantic Yards list serve regarding any special upcoming construction-related activity that may impact the community (i.e., street closures, travel lane reversals, etc.)

The CLO would continue to operate as described above, during Phase II construction.

## NUMBER OF CONSTRUCTION WORKERS AND MATERIAL DELIVERIES

**Tables 3A-5** through **3A-7** show the estimated average daily numbers of workers and deliveries by calendar quarter for the duration of the Phase II construction period under the various illustrative construction phasing plans.

## Table 3A-5
## Average Number of Daily Workers and Trucks by Quarter
## Construction Phasing Plan 1

| Phase II | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Year** | **2018** | | | | **2019** | | | | **2020** | | | | **2021** | | | |
| Quarter | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th |
| Workers | - | 31 | 31 | 31 | 47 | 57 | 57 | 82 | 99 | 226 | 370 | 381 | 311 | 188 | 296 | 340 |
| Trucks | - | 49 | 49 | 48 | 37 | 48 | 57 | 70 | 82 | 88 | 103 | 116 | 124 | 129 | 113 | 129 |
| **Year** | **2022** | | | | **2023** | | | | **2024** | | | | **2025** | | | |
| Quarter | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th |
| Workers | 396 | 243 | 221 | 289 | 337 | 338 | 330 | 208 | 191 | 399 | 440 | 389 | 274 | 187 | 187 | 155 |
| Trucks | 102 | 87 | 129 | 101 | 136 | 114 | 103 | 142 | 142 | 156 | 130 | 106 | 127 | 46 | 67 | 69 |
| **Year** | **2026** | | | | **2027** | | | | **2028** | | | | **2029** | | | |
| Quarter | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th |
| Workers | 108 | 63 | 72 | 269 | 138 | 393 | 632 | 514 | 658 | 702 | 465 | 530 | 565 | 551 | 377 | 341 |
| Trucks | 33 | 47 | 76 | 74 | 84 | 128 | 135 | 122 | 100 | 160 | 146 | 86 | 89 | 38 | 40 | 135 |
| **Year** | **2030** | | | | **2031** | | | | **2032** | | | | **2033** | | | |
| Quarter | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th |
| Workers | 427 | 584 | **793** | 552 | 468 | 566 | 625 | 669 | 570 | 598 | 662 | 589 | 462 | 264 | 268 | 297 |
| Trucks | 66 | 140 | 173 | 138 | 142 | 206 | 168 | 106 | 124 | 133 | 207 | 183 | 95 | 53 | 124 | 69 |
| **Year** | **2034** | | | | **2035** | | | | **Phase II** | | | | | | | |
| Quarter | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | **Average** | | **Peak** | | | | | |
| Workers | 429 | 477 | 470 | 462 | 395 | 266 | 126 | 38 | **347** | | **793** | | | | | |
| Trucks | 76 | 76 | 47 | 30 | 21 | 22 | 63 | 66 | **99** | | **207** | | | | | |

**Note:** The construction worker and truck projections shown in this table are for Phase II Project elements only and do not include projections for Building 1 and Site 5.
**Source:** Hunt Construction Group

## Table 3A-6
## Average Number of Daily Workers and Trucks by Quarter
## Construction Phasing Plan 2

| Phase II | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Year** | **2018** | | | | **2019** | | | | **2020** | | | | **2021** | | | |
| Quarter | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th |
| Workers | - | 13 | 54 | 134 | 128 | 137 | 279 | 314 | 411 | 453 | 464 | 458 | 490 | 365 | 363 | 423 |
| Trucks | - | 49 | 53 | 70 | 65 | 92 | 139 | 119 | 103 | 149 | 178 | 150 | 137 | 88 | 85 | 153 |
| **Year** | **2022** | | | | **2023** | | | | **2024** | | | | **2025** | | | |
| Quarter | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th |
| Workers | 171 | 215 | 215 | 225 | 253 | 115 | 168 | 132 | 223 | 233 | 290 | 396 | 437 | 363 | 415 | 556 |
| Trucks | 64 | 54 | 76 | 81 | 118 | 64 | 71 | 35 | 25 | 91 | 103 | 145 | 149 | 101 | 53 | 118 |
| **Year** | **2026** | | | | **2027** | | | | **2028** | | | | **2029** | | | |
| Quarter | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th |
| Workers | 348 | 318 | 318 | 313 | 394 | 598 | 543 | 891 | 644 | 361 | 568 | **932** | 609 | 377 | 371 | 371 |
| Trucks | 75 | 76 | 76 | 48 | 79 | 96 | 118 | 185 | **210** | 115 | 105 | 166 | 130 | 90 | 81 | 33 |
| **Year** | **2030** | | | | **2031** | | | | **2032** | | | | **2033** | | | |
| Quarter | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th |
| Workers | 566 | 702 | 408 | 402 | 401 | 461 | 602 | 387 | 253 | 290 | 330 | 387 | 244 | 244 | 240 | 292 |
| Trucks | 57 | 133 | 106 | 135 | 113 | 106 | 140 | 138 | 139 | 102 | 84 | 130 | 101 | 136 | 117 | 103 |
| **Year** | **2034** | | | | **2035** | | | | **Phase II** | | | | | | | |
| Quarter | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | **Average** | | **Peak** | | | | | |
| Workers | 393 | 318 | 210 | 206 | 213 | 227 | 17 | 17 | **347** | | **932** | | | | | |
| Trucks | 108 | 91 | 78 | 77 | 34 | 82 | 56 | 57 | **100** | | **210** | | | | | |

**Note:** The construction worker and truck projections shown in this table are for Phase II Project elements only and do not include projections for Building 1 and Site 5.
**Source:** Hunt Construction Group

**Table 3A-7**
**Average Number of Daily Workers and Trucks by Quarter**
**Construction Phasing Plan 3**

| Phase II | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Year** | **2018** | | | | **2019** | | | | **2020** | | | | **2021** | | | |
| Quarter | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th |
| Workers | - | 31 | 31 | 31 | 47 | 57 | 57 | 82 | 137 | 215 | 215 | 212 | 219 | 207 | - | - |
| Trucks | - | 49 | 49 | 48 | 37 | 48 | 57 | 70 | 69 | 54 | 67 | 62 | 51 | 74 | - | - |
| **Year** | **2022** | | | | **2023** | | | | **2024** | | | | **2025** | | | |
| Quarter | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th |
| Workers | - | - | - | - | - | - | - | - | - | - | - | - | - | 56 | 57 | 56 |
| Trucks | - | - | - | - | - | - | - | - | - | - | - | - | - | 30 | 49 | 56 |
| **Year** | **2026** | | | | **2027** | | | | **2028** | | | | **2029** | | | |
| Quarter | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th |
| Workers | 120 | 187 | 253 | 278 | 358 | 440 | 447 | 395 | 398 | 536 | 525 | 447 | 372 | 614 | 641 | 681 |
| Trucks | 92 | 119 | 111 | 134 | 152 | 124 | 160 | 214 | 180 | 152 | 174 | 190 | 153 | 190 | 246 | 239 |
| **Year** | **2030** | | | | **2031** | | | | **2032** | | | | **2033** | | | |
| Quarter | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th |
| Workers | 596 | 787 | 885 | 865 | 884 | 796 | 1,226 | 1,267 | **1,356** | 1,078 | 920 | 867 | 842 | 463 | 562 | 543 |
| Trucks | 188 | 188 | 208 | 184 | 280 | 217 | 237 | 254 | **327** | 217 | 136 | 130 | 225 | 102 | 89 | 125 |
| **Year** | **2034** | | | | **2035** | | | | **Phase II** | | | | | | | |
| Quarter | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | **Average** | | **Peak** | | | | | |
| Workers | 404 | 318 | 313 | 308 | 318 | 318 | 325 | 111 | **442** | | **1356** | | | | | |
| Trucks | 105 | 76 | 44 | 30 | 20 | 22 | 65 | 130 | **127** | | **327** | | | | | |

**Note:** The construction worker and truck projections shown in this table are for Phase II Project elements only and do not include projections for Building 1 and Site 5.
**Source:** Hunt Construction Group

For Construction Phasing Plan 1, the average number of workers throughout the entire period would be approximately 347 per day. The peak number of workers would be 793 per day, and would occur in the 3rd quarter of 2030 when construction of Building 10 and the platform over Block 1120 would be simultaneously occurring. For truck trips, the average number of trucks throughout the entire construction period would be 99 per day, and the peak would occur in the 3rd quarter of 2032 when construction of Buildings 5 and 6 and the platform over Building 7 would be simultaneously occurring, with 207 truck trips per day.

For Construction Phasing Plan 2, the average number of workers throughout the entire period would be approximately 347 per day. The peak number of workers would be 932 per day, and would occur in the 4th quarter of 2028 when construction of Buildings 8 and 9 and the platform over Block 1121 would be simultaneously occurring. For truck trips, the average number of trucks throughout the entire construction period would be 100 per day, and the peak would occur in the1st quarter of 2028 when construction of Buildings 7, 8, and 9 would be simultaneously occurring, with 210 truck trips per day.

For Construction Phasing Plan 3, the average number of workers throughout the entire period would be approximately 442 per day for the period when construction activities are occurring. The peak number of workers would be 1,356 per day, and would occur in the 1st quarter of 2032 when construction of Buildings 5, 9, and 10 and the platform over Block 1120 would be simultaneously occurring. For truck trips, the average number of trucks throughout the entire construction period would be 127 per day, and the peak would also occur in the 1st quarter of 2032, with 327 truck trips per day.

## E. FUTURE WITHOUT PHASE II CONSTRUCTION ACTIVITIES

In the Future Without Phase II, no new residential, retail/community facility development or open space would occur on the Phase II project site. The project site would remain predominantly as an open rail cut and surface parking lot and no construction activities would occur on the project site.

Since approval of the Project in December 2006, a number of Phase I construction tasks have been undertaken and will continue to proceed. Under the Extended Build-Out Scenario, most of the Phase I construction elements are assumed to be substantially completed before the start of Phase II construction and are incorporated in the future background baseline except for Building 1 and Site 5 construction. Details associated with this future background baseline, where appropriate, are described and analyzed in the subsequent construction-related technical analyses. ✷