

A. INTRODUCTION

This chapter summarizes the proposed project's construction plan and assesses the potential for construction-period impacts. The stages of construction and their associated activities and equipment are described as well as the construction methods that may be employed, if needed, to minimize temporary construction-period impacts.

PRINCIPAL CONCLUSIONS

Construction of the proposed project is expected to last approximately 24 months, beginning in April 2009 and ending in 2011.

Environmental remediation would be performed to address any hazardous materials currently existing on the site and demolition of the existing buildings.

Construction of the proposed project would involve several stages, some which would overlap: demolition of the existing buildings and environmental remediation; excavation/grading, foundation; building structure construction; and interior construction and finishing. Construction would generally proceed simultaneously on both blocks comprising the project site. Activities would begin with demolition of the existing buildings, and any required remediation of the site. Milling and crushing of any demolished materials approved for reuse, if any, would also be done during this stage of construction. Concurrently, the site would be graded, and the driving of piles for support of the building foundations and new sewer lines, as well as the driving of sheet piles for the restoration of the canal bulkhead would also be performed. Foundations work would then begin, followed by superstructure and building envelope activities focusing on the east side of the site to allow for an early start to construction of the canal esplanade. Mechanical, electrical, and interior finish work will follow the superstructure activities; a final site finish stage will complete construction activities prior to occupancy.

PROPOSED INFRASTRUCTURE IMPROVEMENTS

In addition to the building construction on site, there would also be improvements to the infrastructure. The proposed project would separate the stormwater flow from the sanitary flow by installing new separate stormwater sewers in 1st and 2nd Streets, with new stormwater outfalls to the Gowanus Canal. These new stormwater sewers would be designed and constructed in accordance with the New York City Department of Environmental Protection (DEP) standards and DEP approval.

PROPOSED WATERFRONT OPEN SPACE AND BULKHEAD IMPROVEMENTS

The proposed project would modify the existing infrastructure by installing a new steel sheet pile bulkhead for the entire length of the waterfront. To minimize extending the marine infrastructure into the water, the proposed new sheeting would be installed either in place or

against the face of the existing timber sheathing. An archaeological field investigation would occur either in advance of or in concert with the bulkhead reconstruction and storm water outfall installation (in coordination with the New York City Landmarks Preservation Commission [LPC]), and would serve as mitigation for the significant adverse impact to the bulkhead. An Archaeological Testing Protocol in compliance with the LPC Guidelines for Archaeological Work in New York City guidelines would be prepared and implemented in coordination with LPC. In addition, as requested by SHPO, an Unanticipated Discovery Plan for both human and non-human remains would be prepared in consultation with SHPO and implemented during project-related construction at the site.

TYPICAL CONSTRUCTION PRACTICES

The proposed project will employ typical construction practices that have proven successful and have been found to be necessary to complete projects of this magnitude in a confined urban area. All deliveries, material removals, and hoist uses have to be tightly scheduled to maintain an orderly work area and to keep the construction on schedule and within budget. The applicant would designate a contact person for community relations throughout the construction period. This person would serve as the contact for the community to voice concerns about construction activities, and would be available to meet with the community to resolve concerns or problems.

Typical construction practices include:

- Remedial Action Plan (RAP)/Construction Health and Safety Plan (CHASP). To minimize the potential for impacts to the community and construction workers, all demolition, excavation, and construction work involving soil disturbance would be performed in accordance with a RAP/CHASP approved by DEP.
- Construction Equipment. Typical equipment used for demolition, excavation, and foundation work would include excavators, bulldozers, portable crushing equipment, backhoes, compaction equipment, tractors, jackhammers, and concrete pumping trucks. Other equipment that would be used include pile drivers, dump trucks and loaders, concrete trucks, and back hoes. Trucks would deliver concrete and other building materials, and remove excavated material as well as demolition and construction debris. The construction equipment likely to be used during erection of the superstructure would include compressors, cranes, concrete pumps, hoists, bending jigs, and welding machines.
- Deliveries and Access. Access to the construction sites would be controlled. Work areas would be fenced off to provide security protection, and limited access points for workers and trucks would be provided. Security guards and flaggers would be posted, and all persons and trucks would have to pass through security points. After work hours, the gates would be closed and locked. Material deliveries to the site would be controlled and scheduled. Unscheduled or haphazard deliveries would be minimized.
- Hours of Work. Construction activities for the proposed buildings would take place in accordance with New York City laws and regulations, which allow construction activities to take place between 7:00 AM and 6:00 PM. Typically, work would end at 3:30 PM, but could be extended until 6:00 PM. Extended workday activities would not include all construction workers on site, but only those involved in the specific task. Extended workdays would occur during foundation and superstructure tasks, and limited extended workdays could occur during other tasks over the course of construction. It is possible that weekend work would be required; it would require a permit from the New York City Department of

Buildings (DOB) and, in certain instances, approval of a noise mitigation plan from DEP under the City's Noise Code.

- **Sidewalk and Lane Closures.** Depending on the location and stage of construction at a particular time on the project site, construction activities would require temporary sidewalk and lane closures along Bond Street, Carroll Street, 1st Street or 2nd Street. Sidewalk and lane closures require DOT permitting and compliance with measures to safeguard the public.
- **Staging and Laydown Areas.** During the early stages of construction, the laydown and staging areas would be accommodated on the unconstructed parcels. During construction of the proposed buildings' superstructure, laydown areas would likely be on the curb lane of Bond Street, Carroll Street, 1st Street or 2nd Street.
- **Rodent Control.** Construction contracts would include provisions for a rodent control program in coordination with appropriate public agencies.

In sum, construction may at times be disruptive to nearby residential buildings during the construction period. However, since the proposed project will conform to all appropriate local and state regulations, there would be no significant adverse impacts from construction of the proposed project.

B. CONSTRUCTION STAGES AND PRACTICES

OVERALL SCHEDULE

Construction of the proposed project is expected to last approximately 24 months. Based on current plans, construction would begin in April 2009 and be completed in 2011.

Construction of the proposed project would involve several stages, some which would overlap: demolition of the existing buildings and environmental remediation; excavation/grading, foundation; building structure construction; and interior construction and finishing.

Construction would generally proceed simultaneously on both blocks comprising the project site. Activities would begin with demolition of the existing buildings, and any required remediation of the site. Milling and crushing of any demolished materials approved for reuse, if any, would also be done during this stage of construction. Concurrently as logistics will allow, the site would be graded, and the driving of piles for support of the building foundations and new sewer lines, as well as the driving of sheet piles for the restoration of the canal bulkhead would also be performed.

Foundations work will then begin, followed by superstructure and building envelope activities focusing on the east side of the site in order to allow for an early start to construction of the canal esplanade. Mechanical, electrical and interior finish work will follow the superstructure activities; a final site finish stage will complete construction activities prior to occupancy.

ABATEMENT AND DEMOLITION, EXCAVATION/GRADING AND FOUNDATION

Construction of the proposed project would begin with environmental remediation to address any hazardous materials currently existing on the site and demolition of the existing buildings on Blocks 452 and 458. As this site is within the Asian Longhorn Beetle (ALB) Quarantine Zone, if any ALB host tree species are removed as part of the site reconstruction, they will be cut, chipped and disposed of in a manner that is consistent with all federal, state and local regulations.

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As described in Chapter 11, “Hazardous Materials,” demolition of the existing structures would be in accordance with applicable federal, state and city requirements relating to asbestos, lead paint and disposal of solid waste.

A geophysical survey to locate potential buried tanks would be conducted before any soil disturbance activities.

Prior to or as part of any new construction at the project site, the project sponsor would undertake the following actions:

- Any drums, chemicals, and remaining equipment would be removed and disposed of in accordance with all applicable regulations.
- Demolition of the existing structures would be in accordance with applicable federal, state and city requirements relating to asbestos, lead paint and disposal of solid waste.
- Any found Underground Storage Tanks (USTs) and existing Aboveground Storage Tanks (ASTs) would be registered with DEC, then removed in accordance with DEC requirements.
- Any excavated soils and fill materials would be removed from the site and properly disposed of in accordance with all applicable DEC regulations and at an appropriate disposal facility.

Based on the previous investigations (which include 59 soil samples and 17 groundwater samples), VOCs and SVOCs (particularly common petroleum constituents) are present throughout the project site. Fill material, which is 6 to 17 feet thick has elevated levels of PAHs, metals, PCBs, and other contaminants. As such, all subsurface disturbance would be performed in accordance with a RAP/CHASP. The RAP would provide for the appropriate handling, stockpiling, testing, transportation and disposal of these materials in accordance with all applicable federal, state and local regulations. The CHASP would ensure that all such work is done in a manner protective of both the community and site workers. The RAP/CHASP was approved by the New York City Department of Environmental Protection (DEP) on January 29, 2009. Further, with respect to active spill numbers, the remediation would also be undertaken in consultation with DEC.

The RAP would specify that:

- Any encountered USTs (or drums or other containers) will be removed in accordance with DEC requirements including any necessary registration and spill reporting.
- Any impacted soils (which display petroleum odors and/or staining) that are encountered during the excavation/grading activities will be removed and properly disposed of in accordance with all DEC Regulations.
- If dewatering into NYC storm/sewer drains will occur during the proposed construction, then a DEP Sewer Discharge Criteria should also be completed in any areas where dewatering is expected.
- Upon completion of construction activities, a Closure Report certified by a Professional Engineer or Registered Architect will be submitted to DEP. This report will demonstrate that all remediation activities have been implemented appropriately. At a minimum, the report will include a summary of post-excavation analytical results, soil removal activities, all transportation manifests, soil disposal/recycling certificates, proof of installation of a vapor barrier, and proof of importing clean fill/top soil at any landscaped or grass covered areas (uncapped) at the site.

The CHASP would include:

- Dust control measures such as: fine sprays of water, mist curtains or chemical foams within the excavation area; covering of stockpiled or staged soils; real-time air monitoring for particulates and VOCs.
- Worker training; routine oversight/emergency response procedures; personnel protection standards; and mandatory safety practices and procedures.

As part of the proposed redevelopment of the project site:

- Any areas not covered by buildings or pavement (e.g., unpaved areas in the proposed waterfront esplanade) would be covered with a minimum of two feet of imported clean fill imported from an approved facility/source. A demarcation barrier would be placed to identify the base of the clean fill cover and the top of the remaining fill material. The clean fill/top soil would be segregated at the source, have qualified environmental personnel collect representative samples at a frequency of one sample for every 250 cubic yards, analyzed the samples for Target Compound List (TCL) VOCs, SVOCs, pesticides/PCBs and TAL metals by a New York State Department of Health Environmental Laboratories Approval Program-certified laboratory, compare to TAGM 4046 Recommended Soil Clean-up Objectives, and receive DEP written approval to use the clean fill/top soil. The clean fill/top soil would not be comprised of any construction and demolition (C&D) debris.
- Excavated soils, which are temporarily stockpiled on-site, would be covered with polyethylene sheeting while disposal options are determined. Additional testing may be required by the disposal/recycling facility. If any petroleum-based impacted soils (which display petroleum odors and/or staining) are encountered during the excavation/grading activities, the impacted soils would be removed and properly disposed of in accordance with all DEC Regulations.
- To avoid the potential for vapor intrusion into the future buildings, a vapor barrier, such as Grace Preprufe® membrane, would be applied to the underside of all foundation slabs. Any penetrations would be sealed with a product such as Grace Bituthene® liquid membrane. The design of the vapor barrier system would be submitted to the DEP for review and approval.

These measures will be implemented in accordance with a DEP-approved Restrictive Declaration (a type of legal agreement/institutional control) for the project site (see Chapter 1, “Project Description.”). With these measures in place, significant adverse impacts related to hazardous materials would be avoided during and post construction.

SUPERSTRUCTURE

The construction of the buildings’ superstructures would overlap with the foundation and below-grade construction phase. Construction of the exterior enclosure, or “shell,” of the building would include construction of the building’s framework (installation of beams and columns), floor decks, facade (exterior walls and cladding), and roof construction.

BUILDING FINISHES AND OPEN SPACE

During the exterior and interior finishes phase of building construction, final roofing and finishing details on the exterior walls would be completed. While this construction is taking

place, the publicly-accessible waterfront open space would be built. The 0.7 acres of open space would be completed towards the end of the construction schedule.

PROPOSED INFRASTRUCTURE IMPROVEMENTS

The proposed project would separate the stormwater flow from the sanitary flow by installing new separate stormwater sewers in 1st and 2nd Streets, with new stormwater outfalls to the Gowanus Canal. These new stormwater sewers would be designed and constructed in accordance with DEP standards (DEP would approve the design before installation). This separation of stormwater would remove the project site's stormwater from the local combined sewer system. All sanitary flow from the proposed project would be separately conveyed to the Red Hook WPCP by the existing combined sewer in Bond Street.

PROPOSED WATERFRONT OPEN SPACE AND BULKHEAD IMPROVEMENTS

Currently, the bulkhead along the project site is a timber crib design that, though currently functioning, could not be utilized or repaired for the purposes of meeting the proposed waterfront access goals of both the project and the City. Therefore, in order to improve the water's edge to provide waterfront open space, the proposed project would modify the existing infrastructure by installing a new steel sheet pile bulkhead for the entire length of the waterfront. The design, location and elevation of the proposed bulkhead are subject to the approval of DEC and ACOE. The new bulkhead would either be placed in the same footprint as the existing bulkhead or would be placed against the face of the existing timber crib bulkhead, subject to the approval of DEC and/or ACOE. The preferred design is to place the sheet steel against the face of the existing timber crib bulkhead (see Chapter 1, "Project Description"). This would require the removal of existing whalers and piles from the existing timber crib bulkhead. In addition, an anchoring system consisting of "deadmen" and steel "tie rods" would be installed upland below-grade, and inland of the existing crib (or approximately 40 feet upland). The tie rods would run from the new sheeting to the deadmen approximately every eight feet for the length of the bulkhead. The installation of the tie rods would require four to five foot deep trenches. The installation of the tie rods could potentially require removal of portions of the crib sufficient to allow the steel tie rods to pass through the area.

GENERAL CONSTRUCTION PRACTICES

Certain practices would be observed throughout the construction period for the proposed project. The applicant would designate a contact person for community relations throughout the construction period. This person would serve as the contact for the community to voice concerns about construction activities, and would be available to meet with the community to resolve concerns or problems.

The following describes typical construction practices in New York City. In certain instances, project practices may vary from those described below. However, the typical practices are expected to be used because they have been developed over many years and have been found to be necessary to successfully complete projects of this magnitude in a confined urban area. All deliveries, material removals, and hoist uses have to be tightly scheduled to maintain an orderly work area and to keep the construction on schedule and within budget.

REMEDIAL ACTION PLAN/CONSTRUCTION HEALTH AND SAFETY PLAN (RAP/CHASP)

To minimize the potential for impacts to the community and construction workers, all demolition, excavation, and construction work involving soil disturbance would be performed in accordance with a RAP/CHASP. The RAP would provide for the appropriate handling, stockpiling, testing, transportation and disposal of these materials in accordance with all applicable federal, state and local regulations. The CHASP would ensure that all such work is done in a manner protective of both the community and site workers. The RAP/CHASP has been submitted to the New York City Department of Environmental Protection (DEP) for review and was approved on January 29, 2009. The remediation will also be approved, and the implementation overseen, by DEC in order to close any active spill numbers. The RAP would specify procedures to identify, characterize, and remove any known or unexpectedly encountered contamination from the project site. The CHASP would specify appropriate testing and/or monitoring (e.g., real-time dust and organic vapor air monitoring) and detail appropriate measures to be implemented (including notification of regulatory agencies) if USTs, soil and groundwater contamination, or other unforeseen environmental conditions are encountered.

CONSTRUCTION EQUIPMENT

Typical equipment used for demolition, excavation, and foundation work would include excavators, bulldozers, portable crushing equipment, backhoes, compaction equipment, tractors, jackhammers, and concrete pumping trucks. Other equipment that would be used include pile drivers, dump trucks and loaders, concrete trucks, and back hoes. Trucks would deliver concrete and other building materials, and remove excavated material as well as demolition and construction debris. The construction equipment likely to be used during erection of the superstructure would include compressors, cranes, concrete pumps, hoists, bending jigs, and welding machines. During facade and roof construction, hoists may continue to be used. Trucks would remain in use for material supply and construction waste removal. Interior and finishing work would employ a large number of construction workers, and a wide variety of fixtures and supplies would have to be delivered to the site.

DELIVERIES AND ACCESS

Access to the construction sites would be controlled. The work areas would be fenced off to provide security protection, and limited access points for workers and trucks would be provided. The construction fence would also provide protection to the community from access to the construction site. Typically, worker vehicles would not be allowed into the construction area. Security guards and flaggers would be posted, and all persons and trucks would have to pass through security 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. Unauthorized access would be prevented after work hours and during the weekend.

Material deliveries to the site would be controlled and scheduled. Unscheduled or haphazard deliveries would be minimized.

HOURS OF WORK

Construction activities for the proposed buildings would take place in accordance with New York City laws and regulations, which allow construction activities to take place between 7:00 AM and 6:00 PM. Construction work would begin at 7:00 AM on weekdays, with most workers arriving between 6:00 AM and 7:00 AM. Typically, work would end at 3:30 PM, but could be

extended until 6:00 PM for such tasks as finishing a concrete pour for a pad, or completing the bolting of a steel frame erected that day. Extended workday activities would not include all construction workers on site, but only those involved in the specific task. Extended workdays would occur during foundation and superstructure tasks, and limited extended workdays could occur during other tasks over the course of construction.

At limited times over the course of constructing a building, weekend work would be required. Weekend work requires a permit from the New York City Department of Buildings (DOB) and, in certain instances, approval of a noise mitigation plan from DEP under the City's Noise Code. The New York City Noise Control Code, as amended in December 2005 and effective July 1, 2007 limits construction (absent special circumstances as described below) to weekdays between the hours of 7:00 AM and 6:00 PM, and sets noise limits for certain specific pieces of construction equipment. Construction activities occurring after hours (weekdays between 6:00 PM and 7:00 AM and on weekends) may be permitted only to accommodate: (i) emergency conditions; (ii) public safety; (iii) construction projects by or on behalf of City agencies; (iv) construction activities with minimal noise impacts; and (v) undue hardship resulting from unique site characteristics, unforeseen conditions, scheduling conflicts, and/or financial considerations. In such cases, the numbers of workers and pieces of equipment in operation would be limited to those needed to complete the particular authorized task. Therefore, the level of activity for any weekend work would be less than a normal workday. The typical weekend workday would be on Saturday, beginning with worker arrival and site preparation at 7:00 AM, and ending with site cleanup at 5:00 PM.

A few tasks may have to be completed without interruption, and the work may need to extend past 6:00 PM. In certain situations, concrete must be poured continuously to form one structure without joints. This type of concrete pour is usually associated with foundations and structural slabs at grade, which would require a minimum of 12 hours or more to complete. Movement of certain oversized materials, to comply with the requirements of the New York City Department of Transportation (NYCDOT), would occur at night.

SIDEWALK AND LANE CLOSURES

Depending on the location and stage of construction at a particular time on the project site, construction activities would require temporary sidewalk and lane closures along Bond Street, Carroll Street, 1st Street or 2nd Street. Sidewalk and lane closures require DOT permitting and compliance with measures to safeguard the public.

STAGING AND LAYDOWN AREAS

During the early stages of construction, the laydown and staging areas would be accommodated on the unconstructed parcels, and not on the streets or already constructed parcels. During construction of the proposed buildings' superstructure, laydown areas would likely be on the curb lane of Bond Street, Carroll Street, 1st Street or 2nd Street. Materials that are needed during the day, such as reinforcing bars and prefabricated pieces, are usually delivered early in the day and are stored until needed. In certain cases, several days' worth of construction materials would be stored.

RODENT CONTROL

Construction contracts would include provisions for a rodent (mouse and rat) control program. Before the start of construction, the contractor would survey and bait the appropriate areas and

provide for proper site sanitation. During the construction phase, as necessary, the contractor would carry out an ongoing prevention, inspection, and response program. Coordination would be maintained with appropriate public agencies. Only registered rodenticides would be permitted, and the contractor would be required to perform rodent control programs in a manner that avoids hazards to persons, domestic animals, and non-target wildlife.

C. PROBABLE IMPACTS OF THE PROPOSED ACTION

Construction may at times be disruptive to nearby residential buildings during the construction period. The following analysis describes the overall temporary effects of construction on the relevant areas of concern: land use and zoning, socioeconomic conditions, community facilities and services, historic resources, hazardous materials, traffic and parking, air quality, and noise.

LAND USE AND NEIGHBORHOOD CHARACTER

In general, construction would not alter surrounding land uses. During construction, access to all adjacent businesses, residences, and other uses would be maintained according to the regulations established by the DOB. When work takes place within building shells, effects on the surrounding uses would be substantially reduced, compared with excavation/grading and foundation activities. Construction management practices would be developed and implemented to minimize the effects of construction-related changes in access to land uses in the vicinity of the development parcels. Other changes, such as limited sidewalk closures, would also affect people living and working in the surrounding area, but implementation of the construction management practices would minimize the effects of these closures. Also, construction activities would not significantly affect neighborhood character in the study area, although there would be some inconvenience to neighboring land uses, as with any construction. In sum, there would be no significant adverse impacts on land use and neighborhood character due to construction activity.

SOCIOECONOMIC CONDITIONS

Construction activities may include limited curb lane and/or sidewalk closures for different stages of construction. However, the sidewalk and lane closures would occur on the side of streets abutting the project site where there would be no existing businesses. Therefore, no adverse impacts to surrounding businesses are expected to occur as a direct effect of construction activities.

Construction would create major direct benefits resulting from expenditures on labor, materials, and services, as well as substantial indirect benefits created by expenditures by material suppliers, construction workers, and other employees involved in the direct activity. Construction would also contribute to increased tax revenues for the City and State, including those from personal income taxes. Local businesses may also expect increased sales from construction worker spending (i.e., coffee, food, convenience products).

In summary, there would be no significant adverse impacts on socioeconomic conditions from construction.

HISTORIC RESOURCES

Archaeological Resources

To make possible the construction of the proposed waterfront open space along the canal, the proposed project would construct a new steel sheet pile bulkhead along the length of the eastern boundary of the project site either in-place or against the face of the existing timber crib bulkhead, subject to the approval of DEC and/or ACOE. Furthermore, two new storm water outfalls would be constructed through the existing bulkhead, one at the end of 1st Street and the other at the end of 2nd Street.

The bulkhead rehabilitation work and storm water outfall installation described above would adversely impact portions of the archaeologically sensitive bulkhead at the project site. Therefore, an archaeological field investigation would be undertaken in coordination with LPC that would document the extent and significant characteristics of the Gowanus Canal bulkhead. This archaeological documentation would serve as mitigation of the adverse impact to the bulkhead under CEQR (see Chapter 7, "Historic Resources"). The field investigation would occur either in advance of or in concert with the bulkhead reconstruction and storm water outfall installation. An Archaeological Testing Protocol in compliance with the LPC Guidelines for Archaeological Work in New York City would be prepared and implemented in coordination with LPC. In addition, as requested by SHPO, an Unanticipated Discovery Plan for both human and non-human remains would be prepared in consultation with SHPO and implemented during project-related construction at the site.

Architectural Resources

All of the buildings on the project site would be demolished under the proposed project, with the exception of the Gowanus Canal bulkhead. None of the buildings that would be demolished are considered contributing elements within the S/NR-eligible Gowanus Canal Historic District.

One architectural resource, the Carroll Street Bridge and Operator's House (S/NR-eligible; NYCL) is located within 90 feet of projected construction activities. To avoid any construction-related impacts to this resource, a Construction Protection Plan (CPP) would be developed and implemented in consultation with LPC, SHPO, and the New York City Department of Transportation (NYCDOT) prior to project demolition and construction activities. No other architectural resources are located close enough to the project site to experience potential construction-period impacts.

NATURAL RESOURCES

As described above, the proposed project would include the installation of a new steel sheet pile bulkhead for the entire length of the project site's eastern boundary. The following presents the potential impacts from the proposed infrastructure improvements.

WETLANDS

Since all construction activities would be land-based, the installation of the new sheet pile would result in minimal loss of DEC littoral zone tidal wetland that may be located in the area within the footprint of the new bulkhead.

Implementation of the Stormwater Pollution Prevention Plan (SWPPP) prepared for the project, as described in Chapter 10, "Natural Resources," would minimize erosion and deposition of soil

into surface waters and littoral zone tidal wetlands of the canal during construction of the proposed project. Potential impacts would be minimized through the implementation of measures identified during the permitting process for these shoreline improvements by federal and state agencies. For these reasons, there would be a *de minimis* impact on littoral zone wetlands as a result of the installation. This *de minimis* impact would not be considered a significant impact on tidal wetlands that would require mitigation. Upland plantings would serve to compensate this *de minimis* impact by providing additional native vegetation and habitat at the water's edge and along the Coastal Zone.

WATER QUALITY

The installation of the timber sheeting bulkhead has the potential to result in short-term construction related impacts to water quality due to increases in suspended sediment and re-suspension of contaminated sediments. Bottom disturbing activities associated with the installation of the bulkhead would include driving of the new sheet pile system. Water quality changes associated with these increases in suspended sediment would be expected to be temporary and limited to the immediate area of the activity. Suspended sediments would be expected to dissipate shortly after the shoreline improvements are completed and would not result in long-term adverse impacts to water quality. Measures to reduce and control increases in suspended sediment (e.g., silt curtains and erosion control) would be implemented where appropriate and consistent with any additional requirements identified by federal and state agencies during the permitting process.

AQUATIC BIOTA

The proposed bulkhead installation would permanently remove benthic habitat and some benthic macroinvertebrates unable to move from within the footprint of the new sheet pile bulkhead structure. The loss of some benthic habitat and some macroinvertebrates during demolition of the existing structures and construction of new bulkhead would not result in significant adverse impacts to populations of macroinvertebrates, as limited populations have been observed using this portion of the Gowanus Canal, nor would it significantly impact the food supply for fish foraging in the area. Encrusting organisms and benthic macroinvertebrates would be expected to recolonize the new bulkhead shortly after construction is completed.

HAZARDOUS MATERIALS

The construction measures to avoid and minimize hazardous materials impacts of the proposed project are described above in "Abatement and Demolition, Excavation/Grading and Foundation." With these measures in place, there would be no anticipated significant adverse impacts resulting from the construction of the proposed project.

TRAFFIC AND TRANSPORTATION

Construction of the proposed project would generate trips from workers traveling to and from the project site, as well as from the movement of materials and equipment, and removal of construction waste. Workers would typically arrive before the AM commuter peak period and depart before the PM commuter peak hour, and would not represent a substantial increment during peak travel periods. It is expected that construction worker travel would be primarily by public transportation, with a smaller percentage by private auto. Therefore, vehicle trips associated with construction workers would not be likely to have any significant adverse impacts

on surrounding streets. An average of approximately 30 to 50 trucks per day (for materials delivery and removal of debris/scrap from construction operations) is anticipated during each of the construction stages. During the interior construction and finishing stage, it is likely that there will be fewer large trucks and a greater number of smaller delivery vehicles. Wherever possible, the scheduling of deliveries and other construction activities would take place during off-peak travel hours. As a result of the anticipated future levels of traffic and scheduling measures to avoid peak periods, significant interruptions of traffic would not be expected during the construction period for either the proposed project or the projected development sites. While truck staging may occur on the curb lanes of Bond Street, Carroll Street, 1st Street or 2nd Street, it is likely that moving lanes of traffic would be available at all times. To the extent that there would be any disruption in traffic flow from construction of the proposed project, the changes would be relatively minor and expected to occur on side streets.

STREET LANE AND SIDEWALK CLOSURES

There could be various lane and/or sidewalk closures associated with the project's construction activities. Temporary lane and/or sidewalk closures are expected on Bond Street, Carroll Street, 1st Street, and 2nd Street. Truck movements would be spread throughout the day and would generally occur between the hours of 7:00 AM and 3:30 PM, depending on the stage of construction. No rerouting of traffic is anticipated and, as mentioned above, moving lanes of traffic would be expected to be available at all times. With respect to sidewalk closures, pedestrian access would be provided either on the opposite side of the street or in a sectioned-off portion of the street. The New York City Department of Transportation (NYCDOT) would be consulted to determine the appropriate protective measures for ensuring pedestrian safety surrounding the project site.

AIR QUALITY

Possible issues of concern regarding local air quality during construction of the projected development sites include:

- Fugitive dust (particulate) emissions from land clearing operations; and
- Mobile source emissions, including hydrocarbons, nitrogen oxide, and carbon monoxide.

FUGITIVE EMISSIONS

Fugitive dust emissions during urban construction typically occur from land clearing, excavation, hauling, filling, spreading, and grading. The quantities of emissions depend on the extent and nature of the land-clearing operations, the type of equipment employed, the physical characteristics of the underlying soil, the speed at which construction vehicles are operated, and the type of fugitive dust control methods employed. The U.S. Environmental Protection Agency (EPA) has suggested, in general, an overall emission rate of about 1.2 tons of particulate matter per acre per month of active construction from all phases of land clearing operations with no fugitive dust control measures. However, this is a national estimate and actual emissions vary widely depending on many factors, including the intensity and type of land clearing operations. Much of the fugitive dust generated by construction activities consists of relatively large-size particles, which typically settle within a short distance from the construction site and do not significantly impact nearby buildings or people. Because fugitive dust is a common impact of construction, it is regulated under the City's code. During construction, all appropriate fugitive dust control measures—including watering exposed areas and using dust covers for trucks—

must be used to satisfy Section 1402.2-9.11 of the New York City Air Pollution Code. To prevent fugitive dust from becoming airborne, the measures include:

- Use of water to control dust in the construction operations and during the clearing and grading of land;
- Application of water to dirt paths, materials, stockpiles, and other surfaces that can generate airborne dust over extended period. Construction of temporary toads would be built with properly sized stone or concrete equivalent over filling material;
- Covering of open-body trucks transporting materials likely to generate airborne dust at all times when in motion; and
- Prompt removal of earth or other materials from paved streets where earth or other material has been deposited by trucking or earth-moving equipment, erosion by water, or other means.

MOBILE SOURCE EMISSIONS

Mobile source emissions may result from the operation of construction equipment, trucks delivering materials and removing debris, workers' private vehicles, or occasional disruptions in traffic near the construction site. While these increases are also temporary, localized increases in mobile source emissions can be minimized by following standard traffic maintenance requirements, such as:

- Construction requiring temporary street closings is performed during off-peak hours wherever possible;
- The existing number of traffic lanes is maintained to the maximum extent possible (see also "Traffic and Transportation" above); and
- Idling of delivery trucks or other equipment is not permitted during unloading or other inactive times in accordance with local law.

Under both New York State and New York City Environmental Quality Review regulations, the determination of the significance of impacts is based on an assessment of the predicted intensity, duration, geographic extent, and the number of people who would be affected by the predicted impacts. The project site is removed from publically accessible locations where people would be expected to be present for extended durations. The majority of the construction would not affect the public. Construction activities associated with the proposed project would not be expected to result in any significant adverse air quality impacts.

NOISE

Impacts on community noise levels during construction of the proposed project can result from noise from construction equipment operation, and from construction vehicles and delivery vehicles traveling to and from the site. Noise and vibration levels at a given location are dependent on the kind and number of pieces of construction equipment being operated, the acoustical utilization factor of the equipment (i.e., the percentage of time a piece of equipment is operating), the distance from the construction site, and any shielding effects (from structures such as buildings, walls, or barriers). Noise levels caused by construction activities would vary widely, depending on the phase of construction and the location of the construction relative to receptor locations.

A wide variety of measures can be used to minimize construction noise and reduce potential noise impacts. Specific measures to reduce noise levels from construction, and sound level standards for specific noise sources have been included in the New York City Noise Control Code. In accordance with §24-219 of the New York City Noise Code, every construction site where construction activities take place shall have a complete and accurate Construction Noise Mitigation Plan. The Noise Mitigation Plan for the proposed project would include the specific requirements of the New York City Noise Control Code, and would be readily available for inspection at the construction site.

The *CEQR Technical Manual* states that significant noise impacts due to construction would occur “only at sensitive receptors that would be subjected to high construction noise levels for an extensive period of time.” In general, this has been interpreted to mean that such impacts would occur only at sensitive receptors where high noise levels would occur for two years or longer. In addition, the *CEQR Technical Manual* states that impact criteria for vehicular sources, using existing noise levels as the baseline, should be used for assessing construction impacts. The criteria are as follows:

If the existing noise levels are less than 60 dBA Leq(1) and the analysis period is not a nighttime period, the threshold for a significant impact would be an increase of at least 5 dBA Leq(1). For the 5 dBA threshold to be valid, the resulting proposed action condition noise level with the proposed action would have to be equal to or less than 65 dBA. If the existing noise level is equal to or greater than 62 dBA Leq(1), or if the analysis period is a nighttime period (defined in the CEQR criteria as being between 10:00 PM and 7:00 AM), the incremental significant impact threshold would be 3 dBA Leq(1). (If the existing noise level is 61 dBA Leq(1), the maximum incremental increase would be 4 dBA, since an increase higher than this would result in a noise level higher than the 65 dBA Leq(1) threshold.)

While construction activities may result in increases in noise levels at some locations which exceed the CEQR impact criteria, and construction activities may produce noise levels at some locations that may be noisy and intrusive, the increases in noise levels which exceed the CEQR impact criteria would be for less than two years. Consequently, they would not be considered to be significant adverse noise impacts. In addition, no night work is expected, and any exceedences of the CEQR criteria at sensitive locations would occur during day. Therefore, no long-term, significant adverse noise impacts are expected from construction activities. *