CHAPTER 21: CONSTRUCTION IMPACTS

21.1 Overview

This chapter provides a discussion of the construction associated with the Proposed Action and the potential impacts that could result from construction activities. While any impacts would be intermittent and temporary, the need to minimize the potential for impacts resulting from construction of the Proposed Action is recognized by the project sponsors.

The Proposed Action would include various construction activities over an approximate ten-year build-out period. Construction methods, sequencing and duration for certain aspects of the Proposed Action are fairly well known since they would be undertaken directly by the City. These actions include, for example, the change in the realignment of Front Street, the upgrade to the sewer system in Front Street, and the development of the waterfront esplanade and open space. Reasonable assumptions were made for construction methods, sequencing and schedule for other aspects of the Proposed Action since the exact design, materials and complexity of the buildings is not fully known (e.g. buildings on the Homeport Site and the properties to be rezoned west of Front Street). It is also assumed that the larger buildings in all areas to be developed would likely need to be supported on piles due to the nature of the substrate under the area (non-native fill material).

As detailed below, the Proposed Action would have no significant adverse impacts resulting from the construction. The analysis found that any impacts associated with construction activities would be intermittent and temporary, and would include various construction activities over an approximately ten-year build-out period.

21.2 Methodology

The methodology outlined in the *CEQR Technical Manual* was used to evaluate potential construction impacts within the Project Area. The amount of demolition and excavation debris was considered, as was the amount of construction and building materials, to assess potential impacts to the community due to implementation of the Proposed Action.

The study area for construction impacts evaluation is defined as the area generally bound by Hannah Street to the north, the elevated railroad tracks of the Staten Island Railway (SIR) to the west, Willow Avenue to the south and the U.S. Pierhead Line to the east. The upland portions of the Project Area are largely developed and paved. The adjacent Upper New York Bay shoreline consists of man-made structures such as bulkheads, piers and riprap. The near-shore area of the bay is currently used for marine activities while the off-shore area is used as a holding area for large transport ships and tankers.

21.3 Construction Scenario

The study area includes approximately 4,000 feet of bulkhead along the eastern edge. Upland from the bulkhead, the area between the bulkhead and the SIR track is largely

developed either with buildings and infrastructure, or vehicle parking lots. Utility infrastructure underlies portions of the Homeport Site and also underlies portions of Front Street. Some of the existing development in the study area, including structures and infrastructure, would be removed or relocated to provide sites for development envisioned in the Proposed Action.

The majority of the development resulting from the Proposed Action would involve in-ground construction in the form of foundation piles and/or basements for residential and commercial buildings. Utility relocation and connections would also occur below grade.

Excavation for foundations could extend as much as 20 to 30 feet below the surface and would likely encounter groundwater. Contaminated materials may also be encountered during excavation. Excavation material would need to be removed from the area. Constituents of excavation spoils, as well as water generated during dewatering, would be characterized and would be disposed of according to applicable regulations.

Foundation piles for large structures would likely be compression piles or drilled piles, depending on the depth to bedrock. Foundations and basements for buildings comprising the Proposed Action would likely be constructed with steel reinforced concrete. The above-ground components of buildings and structures would likely utilize steel superstructures with glass and/or masonry curtain walls. Smaller structures would likely use concrete and masonry in construction.

Utility relocation and upgrades would be required if development would interfere with existing utility infrastructure, or where existing infrastructure is insufficient for future needs. Generally this work occurs in the beginning stages of development. Utility work in City streets would be conducted with approval of the New York City Departments of Transportation and Environmental Protection.

A general sequence of construction involves: excavation; piles, foundation and basement construction; erection of superstructure; roughing-in of electrical, heating, air conditioning, plumbing, etc.; application of curtain wall; and interior and exterior finishes. At this time no specific schedule for construction has been advanced. Depending on the nature of the project component, construction of any one element could range in duration from several months (athletic field or open space) to three or four years (large residential, commercial or entertainment facility).

21.4 Schedule and Sequencing

It is anticipated that construction of the development allowed by the Proposed Action would take approximately ten years to complete. Construction would begin in 2006 and continue through 2015. While the Proposed Action would not be constructed in phases, there is a logical sequencing that the work would likely follow. The initial construction would be to develop the infrastructure to support the redevelopment. This would include demolition of all buildings on the Homeport Site, disconnection and abandonment of existing sewer hook-ups, removal of debris and construction of the proposed open space. The Front Street realignment would occur simultaneously and a new dedicated sewer line

servicing both sides of Front Street would be installed and put in operation. The five connector streets (Wave, Water, Thompson, Canal, and Prospect) would receive concurrent infrastructure upgrades, such as underground utilities, sidewalks, curbs, resurfaced roadways, etc. Improvements to control erosion and create open space would also be developed in this initial part of construction. This piece of the construction process would last approximately 18 to 24 months. It is likely that some construction on the Homeport Site would occur simultaneously with this work. Pile driving and foundations, for example, can be advanced while this work is in progress.

The structures currently on the Homeport Site would be removed by the City as part of a separate action prior to starting work on the Proposed Action. Thus, once developers are selected for the six parcels on the Homeport Site and the new sewer is installed in the realigned Front Street, construction can begin. The sequence of development of the six parcels is unknown, but it is likely that some of the work would occur simultaneously. It is estimated that construction of the Homeport Site would take approximately six years to accomplish. Construction would begin in 2007 and last through 2012. The initial work would require advancing structural support piles and development of foundations or slabs. This would be followed by erection of steel or masonry to develop exteriors and allow installation of roofs. Interior work such as dry wall, electrical, plumbing and mechanical would occur next. Finishing work such as painting, installing fixtures and landscaping would occur last.

It is thought that the work on the parcels west of Front Street, between Thompson Street and Wave Street, would occur last since parcels would need to be assembled, and work on tenant relocation, design, permitting, etc. would need to occur prior to construction. It is likely that some of the construction in this area would occur simultaneously with construction of the Homeport Site. While some construction could occur earlier, it is thought that construction in this area would ramp up in 2008 and be completed in 2015. The first part of the work would be demolition and land clearing. This portion of the work would be followed by driving structural support piles and the establishment of foundations or slabs. The next phase would be erection of exterior walls, followed by interior work, parking lots, finishing work and landscaping.

21.5 Key Resource Areas

21.5.1 Air Quality

Construction-related air quality impacts would be limited to the construction period. The major construction work for the Proposed Action would be completed within a five-year period. Air quality construction impacts from the Proposed Action could occur as a result of emissions from: construction activity; construction equipment, truck and other traffic; and diversion of non-construction related traffic to alternative routes. Construction activities such as site preparation, demolition, excavation, vehicle movement, and material transport release dust particles into the atmosphere. Construction equipment associated with the Proposed Action would include excavators, concrete pumps, concrete trucks, hydraulic cranes, rubber tire backhoe and loaders, dump trucks, hi-lift forklift, air compressors for pavement breakers and welding machines.

To minimize potential construction-related air quality impacts, the development of a construction plan is anticipated. The construction plan would incorporate sustainable design, energy conservation and enhancement of the environment with features in design. It is also anticipated that protocol would be developed for the construction phase of the Proposed Action, in order to proactively reduce the potential for adverse effects on air quality. Such measures may include:

- Limiting unnecessary idling times on diesel powered engines to three minutes.
- Locating diesel powered exhausts away from fresh air intakes.
- Controlling dust related to construction site through a Soil Erosion Sediment Control Plan that includes, among other things:
  - Spraying of a suppressing agent on dust pile (non-hazardous, biodegradable);
  - Containment of fugitive dust; and,
  - Adjustment for meteorological conditions as appropriate.

Should the Proposed Action utilize available engine retrofit technologies for construction equipment, as encouraged by national policies on a voluntary basis, then the potential for project-related construction impacts would be even further reduced.

21.5.2 Noise

Construction of the facilities envisioned as part of the New Stapleton Waterfront Development Plan would generate noise from mobile and stationary sources at the sensitive receptor locations. Land uses comprising the Project Area include commercial, manufacturing/light industrial, transportation, parking, and institutional. Sensitive residential, open space and public facility uses are not concentrated near the Project Area. Potential construction noise and vibration impacts are discussed in following sections.

Mobile Sources

Construction related to the New Stapleton Waterfront Development Plan would not result in full street closures and traffic diversion. Additional truck traffic in the proximity of the construction area would be negligible. The increased construction traffic would not result in a perceptible increase in noise levels during the peak traffic hour. There would be no adverse airborne noise impacts from mobile sources at any of the locations.

Stationary Sources from Construction

The major components of the construction of the New Stapleton Waterfront Development Plan that would generate noise are listed below:

- Demolition;
- Excavation of existing sites;
- Sub-grade foundation;
- Construction of new buildings; and
- Renovation of existing buildings.

It is expected that various kinds of construction equipment, including hydraulic excavators, jackhammers, cranes, compressors, trucks and loaders, etc., would be utilized during various stages of the construction. Blasting, which usually generates high levels of noise and vibration, would not be utilized during the construction.

Construction Control Measures and Mitigation
Several potential measures have been identified to control airborne noise and ground-borne noise and vibration impacts identified in the analyses. Typical measures may include:

- Source limits and performance standards to meet noise level thresholds for daytime, evening, and nighttime hours at sensitive land uses;
- Designated truck routes;
- Establishment of noise monitoring stations for measuring noise prior to and during construction;
- Implementing design considerations and project layout approaches including measures such as construction of temporary noise barriers, placing construction equipment farther from noise-sensitive receptors, and constructing walled enclosures/sheds around especially noisy activities such as pavement breaking;
- Sequencing of operations to combine especially noisy operations to occur in the same time period;
- Community Liaison and Complaint Hot Line; and,
- Use of alternative construction methods, using special low noise emission level equipment, and selecting and specifying quieter demolition or deconstruction methods.

Other special control measures to reduce the transmission of high vibratory levels to vibration-sensitive areas can be implemented, such as a preconstruction survey of any structure or use likely to be adversely affected by the construction activities, and establishing thresholds or limiting values of structures and existing land use.

21.5.3 Wetlands

Open water (littoral) tidal wetlands are located adjacent to the shoreline. Marine waters less than six feet in depth fall into this category. This tidal area is an important natural resource that contains a variety of marine species that may be sensitive to increased turbidity and siltation. There are no freshwater wetlands in the Project Area; therefore, there would be no construction-related impacts to these resources.

21.5.4 Floodplains

Floodplains occur along streams, rivers and coastal zones. Officially designated floodplains and floodways, established and delineated by the Federal Emergency Management Agency (FEMA), are areas where substantial flooding may result in property damage or threaten public safety. A floodplain that is designated by FEMA as a

Zone A is the area that may be inundated by a 100-year storm (i.e., a flood which has the probability of occurring once every 100 years). As necessary, areas within Zone A that are subject to wave action and may suffer from a velocity hazard during a 100-year storm event are separately designated as Area V. Areas delineated as Zone B are those that may be inundated by a 500-year storm (refer to Figure 11-3). Construction within the 100-year flood zone is permitted, but best management practices need to be followed to ensure sedimentation and erosion are controlled and that the floodway would not be obstructed by construction. Also excavations may be subject to flooding from heavy storms and dewatering or other measures may be required.

Most of the Project Area is located within Zone A, with a small area along both sides of Front Street between the westward extension of Baltic Street and Canal Street designated Zone B (within the 500-year area as designated by FEMA). Approximately one half of the in-water area from the pierhead line west to the shoreline is designated as an area subject to wave velocity hazard. Small portions at the northern end of the study area, adjacent to the SIR rail grade, are located in Zone C, which is not subject to flooding (including a small projection of land between Prospect Street and Cross Street that crosses Front Street onto the Homeport Site). The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 designate coastal high hazard areas and floodways and make federal flood insurance available to buildings and structures within these areas that are constructed so as to minimize danger to human lives.

21.5.5 Threatened, Endangered and Rare Species

In a letter dated April 27, 2005, the NYSDEC Natural Heritage Program identified four rare or State-listed plant species and the occurrence of one significant natural community on Staten Island. The significant natural community identified by the NHP is located approximately 1,500 feet west of the Project Site and would not be affected by construction activity. Three of the indicated plant species occur in habitats that are not found in the study area. Individuals of the fourth and final species, Slender Crabgrass (*Digitaria filiformis*), were not identified during field visits. Slender Crabgrass habitat is characterized by sandy soils or sterile open fields, a habitat type that the study area may support. According to the NHP, Slender Crabgrass is identified as having occurred historically in the study area. However, the latest date that this species was observed and documented in this area was August, 1878, well over a century ago. While the New York State rank for the Slender Crabgrass (S2) indicates that the species is very vulnerable in New York State, the Global Rank is G5, signifying that the species is demonstrably secure on the global level, although it may be rare in parts of its range, especially at the periphery. There would be no construction-related impacts to this species.

21.5.6 Coastal Resources

The New York State Department of State, Division of Coastal Resources delineates the State's Coastal Area Boundary and identifies: Significant Coastal Fish and Wildlife Habitats; Scenic Areas of Statewide Significance; federally-owned lands; and Native American owned lands. New York State's Coastal Area has been divided into four geographic regions: Long Island, New York City, Hudson Valley and Great Lakes. The

waters adjacent to the Project Area are not designated Significant Coastal Fish and Wildlife Habitats. Therefore, there would be no construction-related impacts to coastal resources.

21.5.7 Geology

The northeastern portion of Staten Island is located in the Atlantic Coastal Plain physiographic province. Thick layers of soft organic silty clays overlie glacial and interglacial deposits. These glacial and interglacial deposits, consisting of unconsolidated Cretaceous clay, overlie Precambrian crystalline basement rocks. Modifications to the natural geology have occurred in modern times and include filling, grading and the installation of bulkheads and piers. There would be no construction-related impacts to the underlying geology.

21.5.8 Groundwater

Groundwater is found in the pore spaces between soil particles and in fissures and cracks in bedrock. Depth to groundwater under the Project Site is approximately five to ten feet below the surface. Groundwater in Staten Island is not used for potable water. It is possible that groundwater may be reached during the construction process, at which time dewatering would occur, in accordance with all applicable rules and regulations.

21.5.9 Area Land Uses

The land use pattern of the Stapleton neighborhood is an amalgam of fairly dense urban blocks containing: low- to mid-rise commercial buildings; low-rise residential buildings; institutional buildings; industrial and manufacturing buildings; corridors of street-front retail stores; mixed commercial/residential buildings; and, public open spaces. The Homeport Site is zoned to permit manufacturing uses: M2-1 and M3-1. M2-1 is a medium manufacturing district with a maximum FAR of 2.0. M3-1 is a heavy manufacturing district with a maximum FAR of 2.0. This district is intended for heavy manufacturing that may involve more objectionable activities. The properties west of Front Street, between Wave and Thompson Streets are zoned M2-1 and C4-2. C4-2 is a general commercial district with a maximum FAR of 3.4. The area can be characterized as a buffer between light manufacturing and a general commercial district. These area land uses would not be adversely affected by construction activities related to the Proposed Action.

21.5.10 Hazardous Materials

A search of the regulatory records and review of the area's history has identified the following Recognized Environmental Conditions (RECs) associated with the Project Area that have the potential to impact the surface and/or subsurface soil and groundwater at the Site: expansion of the shoreline by use of fill of unknown origin; historical use of sites with uses such as coal yards, a dry cleaner, auto repair facilities, petroleum storage tanks and the SIR repair facility; hazardous materials handling and the generation and storage of hazardous waste; petroleum storage and upgradient releases and the presence of a nearby former Manufactured Gas Plant (MGP) site. All hazardous materials

encountered during construction would be managed and contained and/or removed from the Site, in accordance with all applicable rules and regulations.

Management measures can be applied as needed to address potential hazardous materials that may be encountered during construction through implementation of the Proposed Action (including development on the Homeport Site and the properties west of Front Street). Regarding the Homeport Site, the hazardous materials assessment presented in Chapter 12 identifies that no significant adverse impacts would occur as result of the developing the parcels provided that the following remedial measures are implemented during construction activities.

- Due to soil and groundwater contamination detected at the site, as well as known impacts to the groundwater, Remedial Action Plans (RAPs) would be prepared for the development sites and submitted to NYCDEP for review and approval. The RAPs would describe how all excavated soils and fill materials would be removed from the site and properly disposed of in accordance with all applicable NYSDEC regulations at an off-site disposal/recycling facility. Excavated soils, which would temporarily stockpiled on-site, will be covered with polyethylene sheeting (or protected by other means acceptable to NYCDEP) while disposal options are determined. The contractor retained to complete the work will maintain dust suppression during the excavation and grading activities at the site. Additional testing of the soils would be performed, as required by the disposal and/or recycling facility.

- As a result of elevated concentrations of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and heavy metals exceeding NYSDEC guidance levels, a site-specific Construction Health and Safety Plan (CHASP) will be prepared on the basis of worker exposure to these contaminants during construction. The CHASP will specify that the contractor must maintain dust suppression during the excavation and grading activities at the site. The CHASP will be submitted to NYCDEP for review and approval. Soil disturbance will not occur without NYCDEP's written approval of the site-specific CHASP.

- An appropriate vapor barrier (ranging in thickness from ten thousandths of one inch (ten mil) thick poly sheeting to a 60 mil thick spray application), which would sustain long-term exposure to petroleum constituents, will be incorporated into the design plan for the proposed structures. In conjunction with the appropriate vapor barrier, an active sub-slab depressurization system (SSD system) will be used in buildings with a basement slab or slab-on-grade foundation. The conceptual design of the vapor barrier and SSD system along with the manufacturers' specifications will be submitted to NYCDEP for review and approval.

- If any tanks (underground or aboveground storage tanks, including dispensers, piping, and fill-ports) are unearthed during excavation activities they will be removed/closed in accordance with all applicable NYSDEC regulations. If any petroleum-impacted soils (which display petroleum odors and/or staining) are encountered during the excavation/grading activities, the impacted soils will be removed and properly

disposed of in accordance with all NYSDEC regulations.

- Two feet of clean fill/top soil will be imported from an approved facility/source and graded across all landscaped/grass-covered areas of the site that are not capped with concrete/asphalt. The clean fill/top soil will be segregated at the source/facility, have qualified environmental personnel collect representative samples at a frequency of one sample for every 250 cubic yards, analyze the samples, and receive NYCDEP written approval to use the clean fill/top soil. Upon receipt of NYCDEP's written approval, the clean fill/top soil may be transported to the site for grading. The clean fill/top soil will not be comprised of any construction and demolition debris. Prior to importing and grading the two foot clean fill/top soil cap, a highly visible demarcation membrane/barrier (such as an orange plastic construction fence, etc.) will be installed beneath the two foot clean fill/top soil cap.

- Upon completion of the construction activities, a Closure Report certified by a professional engineer will be submitted to NYCDEP. This report will need to demonstrate that all remediation activities have been properly implemented. At a minimum, the report will need to include all transportation manifests, disposal/recycling certificates from the soil excavation process, proof of importing/grading two feet of certified clean fill/top soil that meets TAGM at any proposed landscaped or grass covered areas (uncapped) at the site, and proof of vapor barrier/active sub-slab depressurization system installation in accordance with manufacturers' specifications.

- To ensure that the Proposed Action would result in no significant adverse public health impacts from potential hazardous materials at development parcels to be disposed of by the City, a Restrictive Declaration, or other NYCDEP-approved institutional control, will be required of the developer.

The proposed rezoning of the privately-owned properties situated within the Project Area, west of Front Street, also would not result in significant adverse impacts on development sites identified with the potential to contain hazardous materials. No significant adverse hazardous materials impacts are anticipated as a result of the zoning map amendments because (E) Designations will be placed on the Zoning Map for all tax lots containing the potential to result in hazardous materials contamination. Refer to Table 12-5 for a complete list of tax lots that will be mapped with an (E) Designation for hazardous materials. The (E) Designation will require that the fee owner of an (E) designated site conduct a testing and sampling protocol, and management where appropriate, to the satisfaction of the NYCDEP before the issuance of a building permit by the Department of Buildings (pursuant to Section 11-15 of the Zoning Resolution-Environmental Requirements). The (E) Designation also includes mandatory construction-related health and safety plans which must also be approved by the NYCDEP.

21.6 Potential Construction Impacts

21.6.1 Infrastructure, Open Space and Parking

There are three basic infrastructure elements to be constructed by the City of New York to facilitate construction of the Proposed Action: infrastructure, open space and parking. The Proposed Action would contain 12 acres of open space along the waterfront. Construction of the open space would be completed in the early phases of construction. It would include demolition of several deteriorating waterfront features including a collapsed pier in the Cove area, and pilings/cribbing from prior wooden bulkhead structures. Debris and remnants of prior structures would be removed. Asphalt would be cut, and concrete would be broken-up as required to fit the design, and the proposed open space amenities discussed in detail in Chapter 1 would be constructed, including the end-to-end esplanade, the fishing pier, the Cove area, Pier Place and several small retail kiosks. Construction Best Management Practices (BMPs) would be utilized during construction to control erosion, sedimentation and degradation of the shoreline. Construction along the shoreline would be accomplished from the upland with the possible exception of removing or cutting away remnants of old pier supports. This part of the work is expected to take 18 to 24 months to complete. Equipment to be used would include pavement breakers, pavement cutting saws, bulldozers, cranes, dump trucks, and other types of equipment. Impacts from this part of construction would include noise from trucks and equipment use, dust and other air emissions from trucks and equipment use and increased traffic due to construction vehicles, material delivery, and workers accessing the site.

Also in this phase of the work would be the realignment of Front Street. The realignment would require the affected land to be cleared and graded and curbs, sidewalks, and lighting installed. The new sewers, drainage facilities, and water mains would be installed simultaneously with this phase of the work along Front Street. One moving travel lane in each direction would remain operational along Front Street and sidewalks would remain open. Equipment used could include bulldozers, graders, backhoes, pavement breakers, and saws. Construction activity would be temporary and intermittent varying with equipment use, location, and impact over time. Impacts would include an increase in dust and other air emissions, and noise. Business disruptions would be minimal. It is expected that the sanitary sewers, based on the proposed depths required to connect into the existing system, will require dewatering during installation. The storm sewers may also require dewatering of the trench, to be determined once final grades of the storm sewers are designed.

Construction of the new sewer line would take approximately 12 months. Sewer service in the area would not be affected while the new sewer line is connected to the pump station. The sewer line would be installed to an appropriate depth of nine feet for sanitary sewers and five feet for storm sewers along the length of Front Street, from approximately Canal Street north to the sewage pumping station located at the extension of Swan Street. At least one moving lane of traffic in each direction would remain open during an approximate 12-month construction period. Equipment used would include backhoes, pavement breakers, saws and other tools. It is anticipated that businesses on or

near Front Street would be able to operate fully, including deliveries and customer access, throughout the construction process. It is anticipated that sidewalks on the west side of Front Street between Thompson and Wave Streets would not be significantly adversely affected during construction of the sewer line. Impacts associated with this part of construction would include increased dust and air emissions from construction vehicles, equipment and the construction process, as well as increased noise. These impacts would vary over time and would be temporary in nature (for example, pavement breakers may be used part of each day for a two-month period and would discontinue thereafter).

The two triangular parking areas to be developed north of Wave Street and south of Thompson Street will also be developed during this phase of construction; currently these parcels are vacant. Construction would be limited to grading paving and installation of drainage and lighting. Each parcel would be constructed in six months or less. Equipment used would include bulldozers, grading equipment, trucks, and paving equipment. Impacts would be intermittent and temporary, and would include an increase of dust and other air emissions from construction, equipment and vehicles.

21.6.2 Homeport Site

There are six separate parcels to be developed on the Homeport Site. It is currently unknown in what order these parcels will be developed but it is likely that several of the parcels would be constructed simultaneously. The Site is large enough, with sufficient area surrounding potential buildings on each parcel, so that construction staging, storage and management would occur onsite. Additionally, for the most part, trucks delivering material to the site or hauling waste from the site would load/unload onsite. The streets most affected by heavy construction traffic would include Bay Street, Front Street, Edgewater Street and the feeder streets from Bay Street such as Canal and Water Streets. Construction of this part of the Proposed Action would generate approximately 50-100 truck trips per day. This number would vary by the nature and phase of construction in progress. It is anticipated that construction of the Homeport Site will take approximately six years to complete.

Equipment used in this phase of construction would include pile drivers, generators, trucks, small cranes/hoists, and bulldozers. The initial work would require driving structural support piles and development of foundations or slabs. The primary impact during this phase of the work would be the increase in noise levels due to pile driving and construction equipment and vehicles. Other impacts would be the increase in air emissions from the increase in traffic due to workers and material delivery. The pile-driving phase of construction for each building would last approximately six months. It is likely that several buildings would be built in this phase of construction simultaneously. This would be followed by construction of slabs or basement foundations and erection of steel or masonry to develop exteriors and allow installation of roofs. Interior work such as dry wall, electrical, plumbing and mechanical would occur next. Finishing work such as painting, installing fixtures and landscaping would occur last. Construction from the time the piles are driven until the building is fully developed would last 12 to 18 months. Typical equipment used during this phase would be

hoists/lifts, cement trucks, generators, and pneumatic tools. Potential impacts from this work would include additional traffic, noise and air emissions. These impacts would be temporary in nature and intermittent. It is anticipated that a percentage of material cut from the project grades maybe reused as fill in other locations on the site, to be determined during design once final grades are designed.

21.6.3 West of Front Street

The construction of parcels west of Front Street would be undertaken by private entities looking to take advantage of the rezoning to develop the parcels. There are no specific plans in place, but it is thought that this part of the development would occur over time as parcels are assembled and permits are obtained for construction. While some construction could occur earlier, it is thought that construction in this area would ramp up in 2008 and be completed in 2015.

Since these properties are not as large as those on the Homeport Site it is likely that construction staging and material storage may not all occur onsite. There may be a need to secure the roadway adjacent to sites to allow for staging, material storage, trailers or delivery of waste disposal unloading or loading. This could affect traffic movements on narrow streets. This may also cause temporary closure of sidewalks to allow vehicles and material to be brought onto or off of the site (perhaps for several hours at a time). Traffic would occur from worker vehicles outside of the normal background peak periods and by trucks throughout the normal workday. The streets affected would include Bay Street, Front Street, Edgewater Street and the feeder streets from Bay Street such as Canal and Water Streets. Assuming construction is more or less continuous in this area during construction of this part of the Proposed Action, there would be approximately 25-50 truck trips on a given day, varying by the nature and phase of the construction in progress. It is possible that deliveries and access to adjacent businesses may be compromised by construction activity. It is assumed that pedestrian access to all businesses would be permitted throughout construction and that sidewalks would remain open.

The first part of the work will be demolition and land clearing. This work could take up to several months for a given site, depending on current land use. Equipment to be used would include bulldozers, dump trucks, generators, and saws. Potential impacts would be temporary and intermittent and would include fugitive dust emissions and emissions from equipment and vehicle exhausts. Additional noise would occur.

The next portion of the work would be driving structural support piles and the establishment of foundations or slabs. Depending on what is constructed, structural piles would not be a required part of the structure. The equipment used would be a pile driver. The main impact would be an increase in noise, and possible vibration in neighboring structures. As with other construction impacts, these impacts would be temporary and intermittent.

The next phase would be erection of exterior walls, followed by interior work, parking lots, finishing work and landscaping. Construction from the time the piles are driven

until the building is fully developed would last 12 to 18 months. Typical equipment used during this phase would be hoists/lifts, cement trucks, generators, and pneumatic tools. Potential impacts from this work would include additional traffic, noise and air emissions. These impacts would be temporary in nature and intermittent.

21.7 Conclusion

The Proposed Action would include various construction activities over an approximately ten-year build-out period. The *CEQR Technical Manual* was utilized as a guide in evaluating potential construction impacts within the Project Area. This analysis found that any impacts associated with construction activities would be intermittent and temporary, with no significant adverse impacts resulting from the construction of the Proposed Action. The need to minimize the potential impacts is recognized by the project sponsors and all appropriate actions will be taken to ensure performance of this effort.