

A. INTRODUCTION

This chapter summarizes the construction plan for the Proposed Project and assesses whether updates in the development plans or schedule would result in any significant adverse construction-related impacts that were not identified in the *Final Generic Environmental Impact Statement for the Phased Redevelopment of Governors Island* (2011 FGEIS).

As described in Chapter 1, “Project Description,” the 2011 FGEIS analyzed potential future development of the Island as follows: Phase 1 (2013), which consisted of park and open space development and infrastructure improvements that were funded at that time (construction of which is underway); and Later Phases (through 2030), which consisted of Later Phases–Park and Public Space development and Later Phases—Island Redevelopment. The Later Phases–Park and Public Space development consisted of proposed open space development established in a Park and Public Space Master Plan (the Park Master Plan) developed by The Trust for Governors Island (The Trust). The Later Phases—Island Redevelopment consisted of two components: redevelopment of the North Island Historic Structures and development within two areas called the South Island Future Development Zones. Chapter 1, “Project Description,” includes a detailed description of the current proposal that is analyzed in this Supplemental GEIS (SGEIS).

Construction of Phase 1 is underway and is expected to be completed in 2013. It is assumed for this analysis that renovation and re-tenanting of the North Island and full development of the Park Master Plan will be complete in 2022, with the completion of the South Island Development Zones by 2030. As in the 2011 FGEIS, since the South Island Development Zones have not yet been specifically proposed, defined, or designed, it is not possible to perform quantified construction analyses for this component of the Proposed Project. When the South Island Development Zones have been planned and designed, it is anticipated that it would require zoning or other land use actions that would be subject to City Environmental Quality Review (CEQR), and that the associated future environmental review would take into account a quantified analysis of the potential for construction impacts from the full development of the Proposed Project.

In this chapter, construction phases and activities are described to the extent that they are known and are followed by a description of typical construction practices. Lastly, the types of potential impacts to occur during construction are assessed. The technical areas where the potential for impacts are analyzed include: transportation, air quality, noise and vibration, historic and cultural resources, hazardous materials, water quality and natural resources, park use, and socioeconomic conditions. The assessment also describes methods that may be employed to minimize those impacts.

B. PRINCIPAL CONCLUSIONS

Potential construction impacts on transportation, air quality, noise and vibration, historic and cultural resources, hazardous materials, water quality and natural resources, park use, and socioeconomic conditions were analyzed for the Proposed Project.

TRANSPORTATION

Construction worker trips would be concentrated in off-peak hours and would not represent a substantial increment during peak travel periods. The construction workers would likely travel to the Island from the Battery Maritime Building (BMB) or Brooklyn. However, certain construction companies could arrange travel to the Island from different locations, using commercial vessels. The sites where workers would gather for transportation on other commercial vessels could be located throughout the metropolitan area. No one locality would experience a concentration of construction workers gathering during renovation and re-tenancing of the North Island and construction of the park and public spaces, each with components of less than two-year duration of construction. Therefore, no significant adverse impacts on vehicular traffic are expected from construction workers during renovation and re-tenancing of the North Island and construction of the park and public spaces.

Construction of the South Island Development Zones would likely require longer construction periods and substantially more construction workers and deliveries, which may result in significant adverse transportation impacts. These impacts and potential mitigation measures will be assessed as part of future environmental reviews when details on the South Island Development Zones components become more defined.

Like vehicular traffic, the public transit lines that workers would use are scattered throughout the metropolitan area, and no one subway or bus line would experience all workers using it. In addition, as described above, worker trips would be concentrated in off-peak hours. Therefore, no significant adverse impacts on public transit facilities are expected. Certain contractors may choose to stock-pile construction materials at off-Island locations before transporting them on trucks via open deck barges to the Island. These stock-piling locations would be spread throughout New York Harbor, and no one location would be used for all Governors Island construction materials. Therefore, no significant adverse impacts are expected to be caused by the truck movement of construction materials. It is anticipated that waterborne transportation would be the primary means of moving construction workers, materials, and equipment to Governors Island during construction of the Proposed Project. The maritime trips generated by construction on Governors Island are expected to be limited to ferries and water taxis for the workers, and tug-assisted barges for equipment and materials. The number of daily trips to Governors Island for construction is expected to be minimal compared with the existing trips and would not add significantly to the waterborne traffic in New York Harbor. Therefore, no significant adverse impacts on marine traffic are expected as a result of construction of the Proposed Project.

AIR QUALITY

Much of the fugitive dust generated by construction activities consists of relatively large particles, which are expected to settle within a short distance from the construction sites and not significantly impact any nearby buildings or people. All appropriate fugitive dust control measures, including watering of exposed areas and dust covers for trucks, would be employed

during construction of all components of the Proposed Project. These measures would prevent fugitive dust from resulting in a significant adverse impact. To ensure that construction on Governors Island results in the lowest feasible diesel particulate matter (DPM) emissions, an emissions reduction program for all construction activities associated with the Proposed Project would be implemented. These measures would prevent engine emissions from resulting in a significant adverse impact.

NOISE AND VIBRATION

Construction noise is regulated by the New York City Noise Control Code and by the U.S. Environmental Protection Agency (USEPA) noise emission standards for construction equipment. In addition, appropriate low-noise emission level equipment and operational procedures would be used. Compliance with noise control measures would be included in the contract documents as material specifications and by directives to the construction contractor. Noise, while being intrusive for short periods of time during certain construction activities, would not result in a significant adverse impact. Given the locations of construction on Governors Island, no significant adverse impacts caused by vibration are expected; as described below, for historic and cultural resources where construction activity would occur on or in close proximity to historic resources, a Construction Protection Plan (CPP) would be prepared and implemented to avoid potential construction impacts.

HISTORIC AND CULTURAL RESOURCES

Approximately 1.2 million square feet of vacant space in existing historic structures on the North Island is expected to be re-tenanted by 2022. While more information on proposed disturbance is necessary to identify potential adverse effects, it is possible that some subsurface disturbance may be required as part of these actions. If subsurface disturbance is required, coordination with the New York City Landmarks Preservation Commission (LPC) and the New York State Office of Parks Recreation & Historic Preservation (OPRHP) (as appropriate) would be conducted to determine the need for any additional archaeological work for this area.

The Proposed Project also would include construction of a new building on the Soissons Concession Site, and Wing O of Building 400 (Liggett Hall) and Building S-517 could be renovated, or demolished and replaced with new structures of the same floor area. The Design Manual identifies the additions within Building 400's west courtyard (which include Wing O) as being without architectural merit and inappropriate in scale and design, and notes that they can be removed. Building S-517 is a Category 3/non-contributing resource, and according to the Design Manual, it can be demolished. Furthermore, the demolition of these structures was evaluated in 2008. The proposed demolitions and new construction would be reviewed by OPRHP (as appropriate) and presented to LPC at a public hearing. In addition, since the demolition and new construction activities would occur on or in close proximity to contributing elements of the Governors Island Historic District, a CPP would be developed—based on the requirements stipulated in the New York City Department of Buildings (NYCDOB) *Technical Policy and Procedure Notice (TPPN) #10/88*.

The South Island is not archaeologically sensitive and has no historic or architectural resources. Therefore, any activity and subsurface disturbance that would occur on the South Island would not have any significant adverse impacts on such resources.

HAZARDOUS MATERIALS

As noted in the 2011 FGEIS, impacts during construction of any component of the Proposed Project would avoid hazardous materials impacts by preparing a site-specific the Remedial Action Plan (RAP) and Construction Health and Safety Plan (CHASP), submitted to the New York City Department of Environmental Protection (NYCDEP) for review and approval, for implementation prior to and during renovation and construction. The RAP would provide the appropriate clean fill importation criteria and criteria for allowable reuse of excavated site soils (whether in the uppermost layer of landscaped areas or elsewhere), and handling, stockpiling, testing, transportation, and disposal of excavated materials, including any unexpectedly encountered contaminated soil and petroleum storage tanks, in accordance with applicable regulatory requirements. The CHASP would ensure that subsurface disturbance is performed in a manner protective of workers, others on the Island, and the environment. With these measures, construction of the Proposed Project would not result in any significant adverse impacts related to hazardous materials.

WATER QUALITY AND NATURAL RESOURCES

As described in Chapter 2, “Analytical Framework,” the modifications to the 2030 development program would not alter the findings of the 2011 FGEIS with respect to natural resources during construction of the Proposed Project. The South Island Development Zones largely overlap with ~~currently previously~~ developed areas, ~~and the location of these development zones would not change under the Proposed Project.~~ Therefore, little existing open space habitat would be modified or lost by future construction activities within these areas, or with the North Island re-tenancing.

Portions of the park and open space elements to be developed in the South Island (assumed to be completed in 2030 in the 2011 FGEIS and now scheduled for 2022 completion) would be located within the current 100-year floodplain. Fill material would be added to these areas to raise the elevation above the projected future 100-year flood elevation. The design of any new buildings within the South Island Development Zones would have to be consistent with the New York City Building Code requirements for construction within the 100-year floodplain at that future time.

With the reduction in impervious cover and implementation of erosion and sediment control measures and the stormwater management measures that would be specified in the Stormwater Pollution Prevention Plans (SWPPP), stormwater discharged during construction the Proposed Project would not result in significant adverse impacts to littoral zone tidal wetlands, or to water quality, or aquatic biota of the Upper Bay.

Thus, as with the development program analyzed in the 2011 FGEIS, the Proposed Project would not have the potential to result in any significant adverse impacts to existing terrestrial plant and wildlife communities, floodplains, wetlands, water quality, or aquatic biota in the Upper New York Bay.

PARK USERS

Construction activities are noisy, can create dust, cause air emissions, and generate heavy equipment and truck traffic. The Trust would institute a number of measures to minimize the effects on park users. While some park users would find their park experience disrupted to some degree, these measures would minimize the disruption during renovation and re-tenancing of the

North Island and construction of the park and public spaces, each with components of less than two-year duration of construction. Therefore, construction would not result in a significant adverse impact on park users.

SOCIOECONOMICS

Construction of the Proposed Project would create direct benefits on the economy from expenditures on labor, materials, and services over the course of the construction period. Construction would also result in substantial indirect and induced economic effects. The construction activity would also generate tax revenues for New York City and State. In addition, the Proposed Project would generate income taxes, and corporate and business taxes from direct, indirect, and induced activity. There would be no significant adverse impacts on socioeconomic conditions due to construction.

C. SUMMARY OF 2011 FGEIS FINDINGS

PHASE 1

The 2011 FGEIS concluded that the construction of the Phase 1 of the Approved Project would not result in significant adverse impacts on park use, socioeconomic conditions, cultural resources, hazardous materials, transportation, air quality, noise, vibration, water quality, and natural resources.

LATER PHASES

The 2011 FGEIS concluded that the construction of the Later Phases–Park and Public Spaces of the Approved Project would not result in significant adverse impacts on park use, socioeconomic conditions, cultural resources, hazardous materials, transportation, air quality, noise, vibration, water quality, and natural resources. As described in the 2011 FGEIS, the development for the Later Phases–Island Redevelopment has not yet been specifically proposed, defined, or designed. Therefore, it was (and remains) not possible to perform detailed construction analyses for the Later Phases–Island Redevelopment component.

D. CONSTRUCTION PHASING AND SCHEDULE

With construction of the Phase 1 Park Master Plan underway, re-tenanting of the North Island’s historic buildings and completion of the Park Master Plan are the next steps in the development process. It is anticipated that renovation and re-tenanting of the North Island and full development of the Park Master Plan will be complete in 2022, while the completion of the South Island Development Zones is anticipated by 2030.

Because of a lack of direct vehicular access, it is expected that construction materials, supplies, equipment, and workers for the Proposed Project would arrive via waterborne transportation, as assumed in the 2011 FGEIS. The construction workers would likely access the Island using the existing ferry system. However, certain contractors could arrange for private waterborne transportation from their construction yard or other locations. These vessels would use the existing on-Island ferry terminals or other suitable docks or piers. The construction equipment would be brought onto the Island via a scow (flat deck, non-propelled barge) and it would remain on the Island for the duration of that particular contract. The scow would leave Governors Island as soon as the equipment is unloaded. The equipment would include trucks,

cranes, pumps, compressors, generators, and similar types of machines. Lima Pier or temporary landing facilities near Lima Pier at the southeastern part of the Island are expected to be used. Construction supplies, such as reinforcing bars, sand, and gravel would also likely arrive via barge. The supplies may be stored at a laydown area on the Island or on moored barges.

PHASE 1

In addition to open space improvements, Phase 1 includes upgrades and stabilization of existing infrastructure to support the Phased Redevelopment of Governors Island, specifically: (1) the replacement, reconstruction, rehabilitation, or repair of the seawall, as appropriate, and the reconstruction and consolidation of a number of stormwater outfalls; and (2) the construction of two 12-inch water mains from Brooklyn to provide potable water to the Island (subsequent to the 2011 FGEIS, only one water main has been pursued). Phase 1 park and public space improvements are now under construction with all components expected to be completed in 2013. Water main and seawall improvements are expected to be completed by early 2014. **Table 13-1** presents the construction schedule for the Phase 1 features. The majority of the Phase 1 work is earthwork, walkways, plazas, and landscaping with some utility and infrastructure work.

**Table 13-1
Phase 1 Construction Schedule**

Project	Start Date	Expected End Date
Soissons Landing	October 2012	May 2013
Nolan Park	February 2013	May 2013
Parade Ground	September 2013	October 2013
South Battery	October 2012	May 2013
Colonels Row	February 2013	October 2013
Liggett Terrace	July 2012	October 2013
Hammock Grove	July 2012	October 2013
Play Lawn	July 2012	October 2013
New Water Main(s)	February 2013	April 2014
Seawall Rehabilitation	February 2013	February 2014
Source: The Trust for Governors Island.		

REHABILITATION OF THE SEAWALL

Rehabilitation of the seawall would start in February 2013 and is expected to be completed by February 2014. The construction work associated with the rehabilitation of the seawall ranges from repointing to full replacement. In addition to reconstructing the seawall, in-water work includes reconstructing and consolidating stormwater outfalls and installing new riprap revetment to protect the seawall along the southern and southwestern portions of the Island.

2022 ANALYSIS YEAR

RE-TENANTING OF THE NORTH ISLAND HISTORIC STRUCTURES

Approximately 1.375 million square feet of space exists in historic structures of which approximately 1.2 million is available for reuse and re-tenancing. As part of the re-tenancing, it is expected that two non-historic building additions may be demolished and potentially replaced

with new structures of the same floor area and similar bulk. In addition, a new structure would be constructed on the open area north of Building 110, immediately west of Soissons Landing.

The Trust has issued a RFP for the North Island re-tenanting. Although no start or finish date has been established, renovation of historic structures to allow their re-tenanting is expected to largely include exterior rehabilitation and interior renovation work and is not expected to be long-term. Since the schedule for the renovation of historic structures has not been specifically identified, this analysis assumes that construction could take place any time from 2014 to 2022.

PARK AND PUBLIC SPACES

The Proposed Project would include the open space improvements identified in the 2011 FGEIS as the “Later Phases–Park and Public Spaces.” The FGEIS assumed that these would be completed in 2030; however, the Proposed Project now anticipates completion of the following components by 2022:

- The Great Promenade;
- Liberty Terrace;
- Yankee Landing;
- The Hills; and
- South Prow

Although no start or finish date has been established, design work completed to date indicates that the construction work would take 20 to 22 months.

2030 ANALYSIS YEAR

SOUTH ISLAND DEVELOPMENT ZONES

As stated in the 2011 FGEIS, future uses in these two development zones have not yet been specifically proposed, determined, or defined; therefore, this SGEIS provides an analysis of two generic development programs for the South Island Development Zones. No schedule for the development zones has been established, except that full development of the Proposed Project would be in place by 2030. Therefore, the description of this phase of work is generic.

E. CONSTRUCTION PRACTICES

GENERAL CONSTRUCTION PRACTICES

Certain activities would occur throughout the construction of the Proposed Project. The Trust would have a field representative on-site throughout the entire construction period. The representative would serve as the contact point and would be available to meet and work with the public to resolve concerns or problems that arise during the construction process. New York City maintains a 24-hour-a-day telephone hotline (311) so that concerns can be registered with the City. A security staff would also be on site 24 hours a day, 365 days a year.

GOVERNMENTAL COORDINATION AND OVERSIGHT

The following describes construction oversight by government agencies, which in New York City is extensive and involves a number of city, state, and federal agencies. **Table 13-2** shows

the main agencies involved in construction oversight and the agency’s areas of responsibilities. The NYCDOB, which has the primary responsibility for ensuring that the construction meets the requirements of the Building Code and that buildings are structurally, electrically, and mechanically safe. In addition, NYCDOB enforces safety regulations to protect both workers

**Table 13-2
Construction Oversight in New York City**

Agency	Areas of Responsibility
New York City	
Department of Buildings (NYCDOB)	Primary oversight for Building Code and site safety
Department of Environmental Protection (NYCDEP)	Noise, hazardous materials, dewatering, tanks
Fire Department (FDNY)	Compliance with Fire Code, tanks
Department of Transportation (NYCDOT)	Lane and sidewalk closures
Landmarks Preservation Commission (LPC)	Archaeological and architectural protection
New York State	
Department of Labor (NYSDOL)	Asbestos workers
Department of Environmental Conservation (NYSDEC)	Hazardous materials and tanks; adherence to permit conditions
United States	
Environmental Protection Agency (USEPA)	Air emissions, noise, hazardous materials, poisons
Occupational Safety and Health Administration (OSHA)	Worker safety
U.S. Army Corps of Engineers (USACE)	Adherence to permit conditions
Coast Guard (USCG)	Seaworthiness of vessels

and the public. The areas of responsibility include installation and operation of the equipment, such as cranes and lifts, sidewalk shed, and safety netting and scaffolding. In addition, NYCDOB approves the CPP when the construction is in proximity to historic structures. NYCDEP enforces the Noise Code, approves the RAP and CHASP, and regulates water disposal into the sewer system and removal of tanks. The Fire Department of New York City (FDNY) has primary oversight for compliance with the Fire Code and for the installation of tanks containing flammable materials. The New York City Department of Transportation (NYCDOT) reviews and approves any traffic lane and sidewalk closures. The LPC approves studies, the CPP, and monitoring to prevent damage to historic structures.

The New York State Department of Labor (NYSDOL) licenses asbestos workers. The New York State Department of Environmental Conservation (NYSDEC) regulates disposal of hazardous materials and construction and operation of bulk petroleum and chemical storage tanks. In addition, NYSDEC regulates runoff from sites during construction under its States Pollutant Discharge Elimination System (SPDES) permit program.

On the federal level, the United States Environmental Protection Agency (USEPA) has wide ranging authority over environmental matters, including air emissions, noise, hazardous materials, and the use of poisons. Much of the responsibility is delegated to the state level. The Occupational Safety and Health Administration (OSHA) sets standards for work site safety and construction equipment. For the installation of the new water mains and work on the seawall and stormwater outfalls, permits would be needed for in-water work from USACE and NYSDEC. These types of permits typically contain general permit conditions and special permit conditions. The general permit conditions are those that the agencies have found to be necessary to prevent environmental impacts and to ensure adherence to laws and regulations on almost all projects. The special permit conditions are specific to a particular project and address the agencies’

concerns about the project. Both agencies send inspectors to the site on an as-needed basis to check for adherence to the permit conditions. The United States Coast Guard (USCG) must also authorize the water mains under navigable waters under Section 9 of the Rivers and Harbors Act of 1899.

DELIVERIES AND ACCESS

Barges would likely be used for much of the delivery, storage, and staging of construction materials and equipment on Governors Island. Lima Pier and the temporary landing facilities set up in the areas immediately adjacent to Lima Pier at the southeast corner of Governors Island would be used to land the materials and equipment. To prevent the potential spillage of bulk items, such as sand or concrete, into Upper New York Bay and Buttermilk Channel, hopper barges (barges with sides) would be used for bulk materials, rather than open deck barges. Construction equipment and non-bulk items (fixtures, benches, railings, etc.) would be secured on trucks that would be transported on open deck barges. To address spillage of fuel from the refueling of equipment on barges, construction contracts would specify fuel sumps under the fill valves of equipment during refueling.

Because of the presence of large equipment and the type of work required, access to the construction sites would be tightly controlled. The work areas would be fenced off, and limited access points would be provided for workers and trucks. 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. Security guards would patrol the Island to prevent unauthorized access.

As is the case with almost all construction sites, material deliveries to the site would be regimented and scheduled. Because of the high level of construction activity and constrained space, unscheduled or haphazard deliveries would not be allowed. For example, during construction of the Hills, fill material would be barged to the Island, and dump trucks on the Island would haul materials from barges to the construction site along predetermined routes. It is anticipated that for construction requiring large volumes of concrete, associated with new building construction in the South Island Development Zones, it is possible that the contractor may set up a batch plant on Governors Island. If an on-site batch plant is not used, a similar regimen would be instituted for concrete deliveries (required for new building construction in the development zones).

To aid in adhering to the delivery schedules, flaggers may be employed near the BMB. The flaggers would control truck traffic so that they would not interfere with one another.

HOURS OF WORK

Construction is expected to take place Monday through Friday and on some rare Saturdays and Sundays. Certain exceptions to the work schedule are discussed separately below. In accordance with New York City laws and regulations, construction work would generally begin at 7:00 AM on weekdays, with some workers arriving to prepare work areas between 6:00 and 7:00 AM. Normally, weekday work would end at 3:30 or 4:30 PM, but it can be expected that to meet the construction schedule or to complete certain construction tasks, the workday would be extended beyond normal work hours on occasion. This work could include such tasks as finishing a large concrete pour. The extended workday would generally last until about 6:00 PM and would not

include all construction workers on site, just those involved in the specific task requiring additional work time.

At limited times, weekend work would be required. Again, the numbers of workers and pieces of equipment in operation would be limited to those needed to complete the particular task at hand. For extended weekday and weekend work, the level of activity would be reduced from the normal workday. The typical weekend workday would be on Saturday from 8:00 AM with worker arrival and site preparation to 4:30/5:00 PM for site cleanup.

A few tasks may have to be completed without a break with the work extending for longer than a typical 8-hour day. For example, in certain situations concrete must be poured continuously to form one structure without joints. If the concrete is poured and then stopped for a period of time before more concrete is poured, a weak joint is formed. This weak joint may not be structurally sound. This type of concrete pour can require over 12 hours to complete.

A noise mitigation plan would be developed and implemented to minimize intrusive noise emanating into nearby areas and affecting sensitive receptors on the Island. A copy of the noise mitigation plan would be kept on site for compliance review by NYCDEP and NYCDOB.

RODENT CONTROL

Construction contracts would include provisions for a rodent (mouse and rat) control program. Prior to 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 a maintenance program. Coordination would be maintained with appropriate public agencies. Only EPA-and NYSDEC-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.

GOVERNORS ISLAND CONSTRUCTION TASKS

RENOVATION, DEMOLITION, AND NEW CONSTRUCTION

Renovation of Existing Buildings

Abatement of potentially hazardous materials is the first task in renovating existing buildings. Prior to renovation, a New York City-certified asbestos investigator would inspect the portions of the building to be renovated for asbestos-containing materials (ACMs). If ACMs are found in these portions of the building, they must be removed by a NYSDOL-licensed asbestos abatement contractor prior to the renovation project. Asbestos abatement is strictly regulated by NYCDEP, NYSDOL, USEPA, and OSHA to protect the health and safety of construction workers and others nearby. Depending on the extent and type of ACMs, these agencies would be notified in advance of the asbestos removal project and may inspect the abatement areas to ensure that work is being performed in accordance with applicable regulations, including new NYCDEP regulations enacted in February 2, 2011. These regulations specify abatement methods, including wet removal of ACMs that minimize asbestos fibers from becoming airborne. The areas of the building with ACMs would be isolated from the surroundings with a containment and decontamination systems. The types of systems used would depend on the type and quantity of ACMs, and may include hard barriers, isolation barriers, critical barriers, and caution tape. Specially trained and certified workers wearing personal protective equipment would remove the ACMs and place them in bags or containers lined with plastic sheeting for disposal at an off-Island, licensed asbestos landfill. Depending on the extent

and type of ACMs, an independent third-party air-monitoring firm would collect air samples before, during, and after the asbestos abatement. These samples would be analyzed in a laboratory to ensure that regulated fiber levels are not exceeded. After the abatement is completed and the work areas have passed a visual inspection and additional air monitoring, if applicable, the general renovation work can begin. Depending on the amount of ACMs to be removed and the phasing of the renovation, up to 25 workers per building could be needed. Usually about one to four truckloads of material could be removed per day.

Any project activities with the potential to disturb lead-based paint (LBP) would be performed in accordance with the applicable OSHA regulation (OSHA 29 CFR 1926.62—*Lead Exposure in Construction*). When conducting renovation (unlike asbestos abatement work), LBP is generally not stripped from surfaces. Structures are disassembled or broken apart with most paint still intact. Dust control measures (spraying with water) would be used. 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 LBP or cutting of steel coated with LBP. Such monitoring would be performed to ensure that workers performing these activities are properly protected against lead exposure.

Polychlorinated biphenyls (PCBs) were historically used in transformers (as a dielectric fluid), some underground high-voltage electric lines, hydraulically operated machinery, and fluorescent lighting ballasts. Suspected PCB-containing equipment 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.

For work on the exterior of buildings, scaffolding is typically installed with netting over the scaffolding to prevent materials or tools from inadvertently falling. If required, part or all of the roof may be replaced, and depending on the condition of the building, some or all of the windows may be replaced. Depending on the size of the building, exterior renovations could take between 6 to 12 months, and employ about 30 to 70 workers per building. About 10 to 12 truck deliveries are expected per day for all buildings being renovated. Equipment would include mobile cranes in the backyard, mortar mixers, power trowels, generators, and welding machines.

The interior renovation work would not be particularly intrusive to the surrounding uses. Interior walls and ceilings are demolished. If needed, floors are leveled. As the interior is being deconstructed, the existing elevators shafts or stairwells would be used to move debris from the higher floors to ground level. Enclosed chutes would be installed in the vertical openings and used to move the debris to the ground level. Front-end loaders would be used on the ground floor to load materials into dump trucks. The demolition debris would be sorted prior to being disposed at landfills to maximize recycling opportunities. A building could have from 20 to 60 workers and up to 30 total truck deliveries per day.

Demolition of an Existing Building

If required, structural demolition may commence once abatement of asbestos and any other hazardous materials has been completed. When structures on the roof are being razed, enclosed chutes would be used to move the debris to the ground level. Depending on the properties of the existing structures, large excavators may be needed. Front-end loaders would be used on the ground floor to load materials into dump trucks. The demolition debris would be sorted prior to

being disposed at landfills to maximize recycling opportunities. Non-hazardous construction debris would also be recycled for reuse on the Island to the extent practicable. Typically, about 40 to 50 workers are expected to be on-site, and 5 to 10 truckloads of debris would be removed per day.

Construction of a New Building

The specific massing, design, and materials of the building to be built on the open area north of Building 110 immediately west of Soissons Landing, small replacement additions to historic structures, and the buildings to be developed in the development zones on the South Island Development Zones have not yet been determined. Therefore, the following describes the construction process for a typical new building, which consists of four steps: excavation and foundations, superstructure, exterior, and interior finishing.

Because of the high water table on Governors Island, excavation would likely be shallow and involve bulldozers, cranes, and dump trucks. It is likely that piles would be driven to support the buildings. Pile caps would be formed and concrete poured to build the foundations for the buildings. The pile driving and foundations would typically employ about 30 construction workers. In addition to an excavator and a mini-excavator, a pile driver and generator would be used.

Depending on the size and height of the buildings, different construction materials would be used. For buildings lower than six or eight stories, masonry and block walls are typically used. This type of construction requires about 50 masons and workers to build the walls, floors, and roof. A rough terrain fork lift would be used to move the masonry around the site and into position for the masons. Mortar mixers would also be used. A second possible method is using large, pre-cast concrete planks brought to the site on tractor trailers. The pre-cast elements would be lifted by large cranes from the bed of the tractor trailers and secured into place. This type of construction requires the same number of workers on site, about 50 per day. At this point in the construction process, electric service may be available, and generators would no longer be needed.

For buildings taller than six or eight stories that may be built on the South Island, two different types of superstructure construction are typically used for the core. The more common is concrete structural members, but steel columns are also used, depending on the circumstances. Superstructure consists of the interior core of the building, the structural columns along the perimeter and interior of the building, and the floor decks. For a building using concrete for the structural members, plywood forms are built, reinforcing places within the forms, and concrete is poured for the columns. Concrete is pumped from the ground level up to the floor being constructed. Then steel sheets are typically used to form the floor plates with concrete being pumped up to the floor. Building the concrete superstructure requires the use of the tower crane, compressors, personnel and material hoists, concrete pumps, on-site reinforcing bar bending jigs, welding equipment, and a variety of hand-held tools. Typical high-rise concrete superstructure construction requires about 10 to 20 delivery and concrete trucks per day, and approximately 100 to 200 workers. The main difference for a steel superstructure is that the columns are lifted into place by cranes and riveted into place. Concrete pumps are still needed for the floors. Fewer concrete pumps would be needed, but rivet guns, welding machines and other steel working equipment would be needed.

As the superstructure progresses upward, the exterior façade is installed on the lower floors, usually 6 to 10 stories below the superstructure construction. The façade pieces are usually

fabricated off-site, transported to the site, and lifted into place with cranes. Hand tools are used to fasten the façade to the superstructure. Typically, about 200 workers are needed to install the exterior façade and include 5 to 10 truck deliveries per day.

The interior fit-out is the same for low- and high-rise buildings and is the most labor intensive part of constructing buildings, with about 70 workers per building on-site. Interior finishing involves electrical installation; heating, ventilation, and air conditioning; sheet rocking; painting; and furnishing. Small hand tools are mostly used for interior finishing, but a high number of deliveries for materials, such as sheet rock, ceiling tiles, flooring and interior electrical, mechanical, and plumbing fixtures are required. About 15 to 20 delivery trucks would enter and exit the site each working day in connection with this task. High-rise construction uses temporary hoists on the exterior buildings to provide vertical transportation for workers and materials. On low rise buildings, mobile lifts are typically used for vertical transportation.

PARK AND PUBLIC SPACES

Walkways and Plazas

For the construction of the walkways and plazas, the soils are first graded and shaped. Then a subbase is placed and compacted, followed by the base layer. Depending on the final surface, construction could proceed in several different ways. For a concrete surface, reinforcing mesh is laid down and the concrete poured. If the surface is to be asphalt, such as for a road, a binder layer is placed and then the asphalt is poured. For a surface made of paving pieces, such as a mosaic, mastic is laid down, and the paving pieces placed in the mastic before it sets. Then the paving pieces are grouted into place. For porous pavements, mastic is not used, but a layer of permeable materials is put down, then the porous pavers are placed, and more permeable material is put down to lock the permeable pavers in place.

Construction of the walkways and plazas would involve graders, bull dozers, and compactors. The asphalt would need a paving machine, and concrete would be brought by truck. The paving materials would be brought to the work locations by trucks. The compactor would be used after the first two layers have been placed. The equipment would range from large mechanical equipment to small hand tools.

Construction of curb and appurtenances is more labor intensive than the plaza and walkway construction. Forms are placed by hand to shape the curbing and appurtenances. Prefabricated concrete curbs would be manufactured off-site and transported to the Island. Small cranes would be used to put the curbing pieces into place.

Landscaping

The first step in landscaping is to rough grade the ground. Top soil would then be brought in to raise the ground to finished grade. The thickness of the top soil would vary depending on the type of plantings to be used. If sod is to be used to make lawns, the rough grading would be to about 4 inches below finished grade. If the lawns are to be seeded, the rough grading would be to just below finished grade, and the top soil would be thin. For perennial and annual flower beds, the rough grading would be 1 to 2 feet below finished grade.

Shrubs and saplings below about 2 inches in diameter at breast height would typically be planted by hand. For larger trees, a backhoe would likely be used to dig and backfill the hole. The work would be overseen by a horticulturist or arborist. The equipment for this activity would include graders, skids, backhoes, and hand tools.

The Hills

While the smallest two hills would consist of general fill covered in planting soils (slightly taller versions of the new topography currently being constructed as part of the Phase 1 park and public space improvements), the two largest hills would employ special construction techniques. The largest hill would be constructed using lightweight fill (expanded aggregate) up to an elevation of 40 feet, covered with a crust of expanded aggregate and planting soil on a layer of geofoam. Long strips of geogrid embedded in the expanded aggregate would help provide overall stability and stability for steeper slopes elsewhere on the hill. The second largest hill would be built with general fill up to an elevation of 40 feet, covered with expanded aggregate and planting soil with strips of geogrid to help provide overall stability and stability for steeper slopes elsewhere on the hill.

GOVERNORS ISLAND LOGISTICS

Being an island, maritime transportation would have to be used for bringing workers, equipment, and materials to the construction site. This requires some unusual logistics that are not needed in a typical New York City construction project.

TRANSPORTATION TO GOVERNORS ISLAND

Workers

Site construction activities would mostly take place during the typical construction shift of 7:00 AM to 3:30 PM. However, some construction tasks would extend to 6:00 PM, requiring a portion of the construction workforce to remain for this extended shift. Workers could be transported to the Island in several ways. It is expected that ferries operating from the BMB would be available to construction workers. Water taxis operating from Pier 6 in Brooklyn may also be available to construction workers. Construction companies could also arrange for private water transportation service. A number of potential sites are available through New York Harbor, but it is likely that existing ferry operators would be contracted and their existing sites would be used. These sites are located through the waterfronts of Manhattan, Brooklyn, and Queens. Many of the private ferry and water taxi operators have parking at their facilities and also offer transportation to the ferry site from nearby public transportation stations. The marine contractors for repairing the seawall would likely have its own waterfront site and would transport the workers from that location. Almost all of the New York Harbor marine construction companies have their yards on the north and west shores of Staten Island. It is not expected that workers would be allowed to use their own private boats to travel to Governors Island.

Equipment

It is expected that large construction equipment, such as cranes, dump trucks, and bull dozers, would be transported to the Island via a scow, and the equipment would be left on-Island for the duration of its use on the construction project. Any large construction equipment transported via BMB would be coordinated with NYCDOT. Smaller equipment, such as compressors, welding machines, and reinforcing bar benders, would be brought to the Island in a similar manner, but could also be transported on the deck of a work boat, and not require a scow and tug. The Trust would set up a logistics area in the vicinity of Lima Pier at the southern end of the Island for use by the construction contractors. It is expected that the equipment, when not in use, would be stored in areas that are not accessible to the public. Hand tools, such as shovels, hammers, and

saws, could be carried by the workers when they come to the Island or by work boats. The tools would likely be stored on the construction site.

Materials

It is expected that materials would be transported by barge to the Island. Loose materials, such as sand and gravel would come in hopper barges to minimize spillage. Other materials, such as precast concrete pieces and reinforcing bars, would likely come on trucks loaded onto flat deck scows to minimize loading and unloading time. Sand and gravel barges usually load at the quarry site and wait at designated mooring fields until the materials are needed at the site. Then the barge would be moved by a tug to Governors Island. It is likely that sand and gravel barges would moor near Lima Pier and be unloaded by crane as the materials are needed. Therefore, a hopper barge could spend one to several weeks moored off-shore as it is unloaded. When the hopper barge is emptied, a new loaded barge would take its place, and a tug would move the empty barge back to the quarry.

Other materials would have to be marshaled at a maritime facility until a barge load has accumulated. One typical New York Harbor barge can carry 200 truck loads, and there are a number of large waterfront sites that have the space to accommodate the materials. The majority of the waterfront sites are on the New Jersey side of the harbor, but several exist on the New York side. These include, among others, Erie Basin, South Brooklyn Marine Terminal, and Brooklyn Army Terminal in Brooklyn, and various sites on Newtown Creek in Queens/Brooklyn.

For projects that need large volumes of concrete, associated with new building construction in the South Island Development Zones, it is possible that the contractor may set up a batch plant on Governors Island. The cement would be stored on a closed barge and the aggregate on a hopper barge in the vicinity of Lima Pier. Concrete would be made in batches, as needed, and transported by concrete truck to the construction site.

STOCKPILING AND TRANSPORTATION ON GOVERNORS ISLAND

It is planned that the majority of the construction materials storage and handling would be at the southern end of the Island and this activity would be away from the North Island, except during actual construction within the North Island. The materials loading and unloading would be in the southeastern section of the Island adjacent to Lima Pier and would not be open to the public. Some materials would be stored on moored barges. Other materials, such as trees, shrubs, and drywall, would be stored in laydown or stockpile areas that are not accessible to the public.

Trucks would bring materials to the construction sites daily and haul excess material back to the laydown and stockpile areas for future use. The trucks would use existing roadways or temporary roads may be constructed across unused land. Existing roadways on the Island also function as walkways and bikeways, and to the extent practical walking and biking routes would be re-routed away from active areas of construction. The use of other walkways and bikeways, except to cross into or out of construction sites would be minimized.

PARK USER PROTECTION MEASURES

Because of the park use of Governors Island, additional measures beyond normal construction practices would be taken to protect the park users from the construction activities. As described above, construction sites are normally fenced off from the surrounding areas and secured when construction is not active. The fences would be solid to reduce the construction noise and the spread of dust. Flaggers would be stationed at the vehicle entrances to the construction sites to

control the vehicular and pedestrian flows. Where practical, walkways and bikeways would be re-routed away from active areas of construction. Drivers of on-Island trucks would receive pedestrian safety instruction at the start of each construction contract.

Signage about the Proposed Project and its expected completion date would be posted. The signs would also include the telephone number to report any observed dangerous or unusual conditions. The Trust personnel would be assigned to coordinate with the contractors to minimize disturbance to the park users. These personnel would also be available to receive any comments from the public about the construction and its possible effects on the park users. The Trust's web site would carry information about the location, timing, and type of each construction project.

F. THE FUTURE WITHOUT THE PROPOSED PROJECT

2022 ANALYSIS YEAR

In the future without the Proposed Project, it is assumed that Governors Island will continue to operate as an open space resource as previously anticipated with Phase 1 of the Approved Project. Phase 1 park and public space improvements are now under construction with an expected completion date in 2013. Water main and seawall improvements are expected to be completed by 2014. The park and public spaces, including the entire North Island, the new Liggett Terrace, Hammock Grove, Play Lawn as well as the perimeter roadway and Picnic Point, will continue to be made accessible to the public on designated visitation days. Vacant historic buildings within the Governors Island Historic District will remain vacant. The South Island will contain a mix of open space uses and vacant land.

2030 ANALYSIS YEAR

In the 2030 future without the Proposed Project, no additional changes to background conditions are anticipated.

G. PROBABLE IMPACTS OF THE PROPOSED PROJECT

Potential construction impacts on the relevant areas of concern are discussed below. These include transportation, air quality, noise and vibration, historic and cultural resources, hazardous materials, water quality and natural resources, park use, and socioeconomic conditions. At this time, the development for the South Island Development Zones has not yet been specifically proposed, defined, or designed. Therefore, it is not possible to perform detailed construction analyses for the South Island Development Zones component.

TRANSPORTATION

The project would generate trips from workers traveling to and from the site, as well as from the movement of goods and equipment.

TRAFFIC

The workers would gather at the ferry and water taxi sites or locations arranged by individual contractors prior to the start of the day's work for transportation to the Island. As discussed above, typical construction hours are from 7:00 AM to 3:30 PM. Worker trips would be concentrated in off-peak hours and would not represent a substantial increment during peak

travel periods. Construction worker travel would be primarily by public transportation, with a very small percentage by private auto, which would be parked off-Island. The average number of construction workers on site at any one time would depend on the phase of construction: the range is expected to be from about 20 during the initial and final phases to up to 200 during the peak construction period. No one location would experience a concentration of peak-hour construction worker trips during renovation of the North Island and construction of the park and public spaces. Therefore, no significant adverse impacts on vehicular traffic are expected from construction workers during renovation of the North Island and construction of the park and public spaces.

The construction at the South Island Development Zones would likely require longer construction periods and substantially more construction workers and deliveries, which may result in significant adverse transportation impacts. These impacts and potential mitigation measures will be assessed as part of future environmental reviews when details on the South Island Development Zones components become more defined.

TRANSIT

Like vehicular traffic, the public transit lines that workers would use are scattered throughout the metropolitan area, and no one subway or bus line would experience all workers using it. In addition, as described above, worker trips would be concentrated in off-peak hours. Therefore, no significant adverse impacts on public transit facilities are expected.

CONSTRUCTION MATERIALS

Certain contractors may choose to stock pile construction materials at off-Island locations before transporting them to the Island on trucks via open deck barges. As discussed above, one typical barge load is equivalent to about 200 truckloads. The stock-piling locations could be at marine contractors work yards or at under-used industrial waterfront sites. These stock-piling locations would be spread throughout New York Harbor, and no one location would be used for all Governors Island construction materials. Therefore, no significant adverse impacts are expected to be caused by the truck movement of construction materials.

MARINE

It is anticipated that waterborne transportation would be the primary means of moving construction workers, materials, and equipment to Governors Island during construction of the Proposed Project. New York Harbor is a busy maritime port with tour ferries, tugs, barges, ocean going ships, tour boats, and recreational vessels transversing the waters 24 hours a day. The Buttermilk Channel alone saw 1,660 commercial vessels trips in 2010, and this number does not include non-commercial and recreational transits. USCG operates a harbor surveillance system to help provide separation between large vessels. The maritime trips generated by construction on Governors are expected to be limited to ferries and water taxis for the workers, and tug-assisted barges for equipment and materials. All of these vessels are operated by captains licensed by USCG. The number of daily trips to Governors Island for construction is expected to be minimal compared with the existing trips and would not add significantly to the waterborne traffic in New York Harbor. Therefore, no significant adverse impacts on marine traffic are expected as a result of construction of the Proposed Project.

AIR QUALITY

Possible impacts on local air quality during construction of the Proposed Project include fugitive dust (particulate) emissions from land clearing operations and demolition, and emissions from on-site construction equipment and on-road construction-related vehicles. Fugitive dust generated by construction activities is composed of particulate matter. In general, much of the heavy equipment used in construction has diesel-powered engines and produces relatively high levels of nitrogen oxides (NO_x) and PM. Gasoline engines produce relatively high levels of carbon monoxide (CO). For more background information on air quality, see Chapter 8, “Air Quality.”

FUGITIVE EMISSIONS

Fugitive dust emissions from land-clearing operations can occur from excavation, hauling, dumping, spreading, grading, compaction, wind erosion, and traffic over unpaved areas. Actual quantities of emissions depend on the extent and nature of the 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. Much of the fugitive dust generated by construction activities consists of relatively large particles, which are expected to settle within a short distance from the construction sites and not significantly impact any nearby buildings or people. All appropriate fugitive dust control measures, including watering of exposed areas and dust covers for trucks, would be employed. These measures would prevent fugitive dust from resulting in a significant adverse impact.

EMISSIONS

Construction activity in general has the potential to adversely affect air quality as a result of diesel emissions. The main component of diesel exhaust that has been identified as having an adverse effect on human health is fine particulates. As described above under “Hours of Work,” construction is expected to take place Monday through Friday and on some rare Saturdays and Sundays when the Island is open to the public (from the end of May to the end of September). Therefore, construction activities would not likely impair the enjoyment of public park users. As in the 2011 FGEIS, the development for the South Island Development Zones has not yet been specifically proposed, defined, or designed. Therefore, the effects of the construction activities for the South Island Development Zones component will be assessed as part of future environmental reviews when details on this component become more defined. As described in Chapter 1, “Project Description” Governors Island is currently occupied by several active uses, including the Urban Assembly New York Harbor School, a New York City public high school, artists’ studios, administrative offices, and a temporary open air entertainment facility. However, the renovation and re-tenancing of the North Island would not involve extensive excavation, foundation, or superstructure construction activities, which often generate the highest levels of air emissions. In addition, the construction duration for each of the project components in the Proposed Project is expected to be short term (less than two years). Furthermore, the construction equipment would be dispersed throughout the construction sites such that no engine is expected to be located in a single location for a long period of time. Therefore, due to the factors described above and with the implementation of an emissions control program as outlined below, the air quality effects of construction activities on current users of the Island would be minimized. To ensure that construction on Governors Island results in the lowest feasible diesel particulate matter (DPM) emissions and to minimize the effects of construction

activities on current users of the Island, an emissions reduction program for all construction activities would be implemented and would consist of the following components:

1. *Diesel Equipment Reduction.* Construction of the Proposed Project would minimize the use of diesel engines and use electric engines, to the extent practicable. The applicant would apply for a grid power connection early on so as to ensure the availability of grid power, reducing the need for on-site generators, and require the use of electric engines in lieu of diesel where practicable.
2. *Clean Fuel.* Ultra-low sulfur diesel fuel (ULSD) would be used exclusively for all diesel engines throughout the construction sites.
3. *Best Available Tailpipe Reduction Technologies.* Nonroad diesel engines with a power rating of 50 horsepower (hp) or greater and controlled truck fleets (i.e., truck fleets under long-term contract with the project) including but not limited to concrete mixing and pumping trucks, would utilize the best available tailpipe (BAT) technology for reducing DPM emissions. Diesel particle filters (DPFs) have been identified as being the tailpipe technology currently proven to have the highest reduction capability. Construction contracts would specify that all diesel nonroad engines rated at 50 hp or greater would utilize DPFs, either installed on the engine by the original equipment manufacturer (OEM) or retrofit with a DPF verified by EPA or the California Air Resources Board, and may include active DPFs if necessary; or other technology proven to reduce DPM by at least 90 percent.
4. *Utilization of Tier 2 or Newer Equipment.* In addition to the tailpipe controls commitments, the construction program would mandate the use of Tier 2¹ or later construction equipment for non-road diesel engines greater than 50 hp. The use of “newer” engines, especially Tier 2, is expected to reduce the likelihood of DPF plugging due to soot loading (i.e., clogging of DPF filters by accumulating particulate matter); the more recent the “Tier,” the cleaner the engine for all criteria pollutants, including PM. In addition, to minimize hourly emissions of NO₂, non-road diesel-powered vehicles and construction equipment meeting or achieving the equivalent of higher USEPA non-road diesel emission standards would be used in construction, where practical and feasible.

These measures would prevent engine emissions from resulting in a significant adverse impact.

NOISE AND VIBRATION

NOISE

Impacts on community noise levels during construction of the Proposed Project include noise and vibration from construction equipment operation and noise from construction vehicles and delivery vehicles traveling to and from the site. The level of impact of these noise sources depends on the noise characteristics of the equipment and activities involved, the construction schedule, and the location of potentially sensitive noise receptors.

¹ The first federal regulations for new non-road diesel engines were adopted in 1994, and signed by USEPA into regulation in a 1998 Final Rulemaking. The 1998 regulation introduces Tier 1 emissions standards for all equipment 50 hp and greater and phases in the increasingly stringent Tier 2 and Tier 3 standards for equipment manufactured in 2000 through 2008. The Tier 1 through 3 standards regulate the USEPA criteria pollutants, including particulate matter (PM), hydrocarbons (HC), oxides of nitrogen (NO_x) and carbon monoxide (CO). Prior to 1998, emissions from non-road diesel engines were unregulated. These engines are typically referred to as Tier 0.

Noise and vibration levels at a given location are dependent on the kind and number of pieces of construction equipment being operated, as well as the distance from the construction site. Typical noise levels of construction equipment that may be employed during the construction process are given in **Table 13-3**. Noise levels caused by construction activities would vary widely, depending on the phase and location of construction. It is anticipated that the most significant noise source associated with the construction equipment would be jackhammers, paving breakers, and pile drivers.

Table 13-3
Typical Construction Equipment Noise Emission Levels (dBA)

Equipment List	DEP and FTA Typical Noise Level at 50 feet¹	Mandated Noise Level at 50 feet² Under Subchapter 5 of the NYC Noise Control Code	Noise Level with Path Controls at 50 feet³
Asphalt Paver	85	85	75
Asphalt Roller	85	74	
Backhoe/Loader	80	77	
Compressors	80	67	
Concrete Pump	82	79	
Concrete Trucks	85	79	
Cranes	85	77	
Cranes (Tower Cranes)	85	85	75
Delivery Trucks	84	79	
Drill Rigs	84	84	74
Dump Trucks	84	79	
Excavator	85	77	
Excavator with Ram Hoe	90	90	80
Fuel Truck	84	79	
Generators	82	68	
Hoist	85	80	70
Impact Wrenches	85	85	75
Jackhammer	85	82	72
Mortar Mixer	80	63	
Pile Driver	101	95	73 ⁴
Power Trowel	85	85	75
Powder Actuated Device	85	85	75
Pump (Spray On Fire Proof)	82	76	
Pump (Water)	77	76	
Rebar Bender	80	80	
Rivet Buster	85	85	75
Rock Drill	85	85	75
Saw (Chain Saw)	85	75	
Saw (Concrete Saw)	90	85	75
Saw (Masonry Bench)	85	76	
Saw (Circular & Cut off)	76	76	
Saw (Table Saw)	76	76	
Sledge Hammers	85	85	75
Street Cleaner	80	80	
Tractor Trailer	84	79	
Vibratory Plate Compactor	80	80	
Welding Machines	73	73	

Notes:

- ¹ Sources: Citywide Construction Noise Mitigation, Chapter 28, Department of Environmental Protection of New York City, 2007. Transit Noise and Vibration Impact Assessment, FTA, May 2006.
- ² Mandated noise levels are achieved by using quieter equipment, better engine mufflers, and refinements in fan design and improved hydraulic systems.
- ³ Path controls include portable noise barriers, enclosures, acoustical panels, and curtains, whichever feasible and practical.
- ⁴ Based on information from noise bellow system manufacturer.

Construction noise is regulated by the New York City Noise Control Code and by the USEPA noise emission standards for construction equipment. These local and federal requirements mandate that certain classifications of construction equipment and motor vehicles meet specified noise emissions standards; that, except under exceptional circumstances, construction activities be limited to weekdays between the hours of 7 AM and 6 PM; and that construction material be handled and transported in such a manner as not to create unnecessary noise. If overtime work is required, appropriate work permits from the NYCDOB would be obtained. In addition, appropriate low-noise emission level equipment and operational procedures would be used.

As in the 2011 FGEIS, the development for the South Island Development Zones has not yet been specifically proposed, defined, or designed. Therefore, the effects of the construction activities for the South Island Development Zones component will be assessed as part of future environmental reviews when details on this component become more defined. The renovation and re-tenanting of the North Island would not involve extensive excavation, foundation, or superstructure construction activities, which often generate the highest noise levels. In addition, the construction duration for each of the project components in the Proposed Project is expected to be short term (less than two years), and therefore any potentially intrusive noise levels generated by construction activities would be of limited duration. Furthermore, the construction equipment would be dispersed throughout the construction sites such that no engine is expected to be located in a single location for a long period of time. Therefore, any noise disruptions to the current users of the Island (including users at the Urban Assembly New York Harbor School, a New York City public high school, artists' studios, administrative offices, and a temporary open air entertainment facility) would be temporary and limited. As described above under "Hours of Work," construction is expected to take place Monday through Friday and on some rare Saturdays and Sundays when the Island is open to the public (from the end of May to the end of September). Therefore, construction activities would not likely impair the enjoyment of public park users. Compliance with noise control measures would be included in the contract documents as material specifications and by directives to the construction contractor. Noise, while being intrusive for short periods of time during certain construction activities, would not result in a significant adverse impact.

VIBRATION

Construction activities have the potential to result in vibration levels that may in turn result in structural or architectural damage, and/or annoyance or interference with vibration-sensitive activities. In general, vibration levels at a location are a function of the source strength (which in turn is dependent upon the construction equipment and methods utilized), the distance between the equipment and the location, the characteristics of the transmitting medium, and the building construction type at the location. Construction equipment operation causes ground vibrations which spread through the ground and decrease in strength with distance. Vehicular traffic, even in locations close to major roadways, typically does not result in perceptible vibration levels unless there are discontinuities in the roadway surface. With the exception of the case of fragile and possibly historically significant structures or buildings, construction activities generally do not reach levels that can cause architectural or structural damage, but can achieve levels that may be perceptible and annoying in buildings very close to a construction site. Given the locations of construction on Governors Island, no significant adverse impacts caused by vibration are expected.

For more background information on noise and vibration, see Chapter 10, "Noise."

HISTORIC AND CULTURAL RESOURCES

Approximately 1.2 million square feet of vacant space in existing historic structures on the North Island is expected to be re-tenanted by 2022. While more information on proposed disturbance is necessary to identify potential adverse effects, it is possible that some subsurface disturbance may be required as part of these actions. If subsurface disturbance is required, coordination with LPC and/or OPRHP (as appropriate) would be conducted to determine the need for any additional archaeological work for this area.

The Proposed Project also would include construction of a new building on the Soissons Concession Site, and Wing O of Building 400 (Liggett Hall) and Building S-517 could be renovated, or demolished and replaced with new structures of the same floor area. The Design Manual identifies the additions within Building 400's west courtyard (which include Wing O) as being without architectural merit and inappropriate in scale and design, and notes that they can be removed. Building S-517 is a Category 3/non-contributing resource, and according to the Design Manual, it can be demolished. Furthermore, the demolition of these structures was evaluated in 2008. The proposed demolitions and new construction would be reviewed by OPRHP (as appropriate) and presented to LPC at a public hearing. In addition, since the demolition and new construction activities would occur on or in close proximity to contributing elements of the Governors Island Historic District, a CPP would be developed—based on the requirements stipulated in the New York City Department of Buildings (NYCDOB) *Technical Policy and Procedure Notice (TPPN) #10/88*.

The South Island is not archaeologically sensitive and has no historic or architectural resources. Therefore, any activity and subsurface disturbance that would occur on the South Island would not have any significant adverse impacts on such resources.

For more detail on the potential impacts of the Proposed Project on historic and cultural resources, see Chapter 5, "Historic and Cultural Resources."

HAZARDOUS MATERIALS

As discussed in the 2011 FGEIS, recent subsurface testing did not identify any areas with significant soil or groundwater contamination. In the past, known areas of soil contamination and other subsurface hazardous materials, such as petroleum products and unexploded ordinance, were remediated. Nevertheless, some areas of contamination may not have been identified during the various historical studies and there is some potential to encounter subsurface contamination or underground storage tanks during project work requiring subsurface disturbance. Therefore, certain precautions would be taken prior to and during construction in a particular area to avoid impacts from hazardous materials.

Impacts during construction would be avoided by preparing a site-specific RAP and CHASP for implementation during construction and submitted to NYCDEP for review and approval. The RAP would provide the appropriate clean fill importation criteria and criteria for allowable reuse of excavated site soils (whether in the uppermost layer of landscaped areas or elsewhere), and handling, stockpiling, testing, transportation, and disposal of excavated materials, including any unexpectedly encountered contaminated soil and petroleum storage tanks, in accordance with applicable regulatory requirements. The CHASP would ensure that subsurface disturbance is performed in a manner protective of workers, others on the Island, and the environment. With these measures, construction of the Proposed Project would not result in any significant adverse impacts related to hazardous materials.

WATER QUALITY AND NATURAL RESOURCES

As described in Chapter 2, “Analytical Framework,” the modifications to the 2030 development program would not alter the findings of the 2011 FGEIS with respect to natural resources during construction of the Proposed Project. The South Island Development Zones largely overlap with currently developed areas, and the location of these development zones would not change under the Proposed Project. Therefore, little existing open space habitat would be modified or lost by future construction activities within these areas, as well the North Island re-tenanting.

As analyzed in the 2011 FGEIS, portions of the park and open space elements to be developed in the South Island by 2030 would be located within the current 100-year floodplain. Fill material would be added to these areas to raise the elevation above the projected future 100-year flood elevation. The design of any new buildings within the South Island Development Zones would have to be consistent with the New York City Building Code requirements for construction within the 100-year floodplain.

With the reduction in impervious cover and implementation of erosion and sediment control measures and the stormwater management measures that would be specified in the Stormwater Pollution Prevention Plans (SWPPP), stormwater discharged during construction the Proposed Project would not result in significant adverse impacts to littoral zone tidal wetlands, or to water quality, or aquatic biota of the Upper Bay.

Thus, as with the development program analyzed in the 2011 FGEIS, the Proposed Project would not have the potential to result in any significant adverse impacts to existing terrestrial plant and wildlife communities, floodplains, wetlands, water quality, or aquatic biota in the Upper New York Bay.

PARK USE

Construction activities are noisy, can create dust, cause air emissions, and generate heavy equipment and truck traffic. As discussed above, The Trust would institute a number of measures to minimize the effects on park users. These measures include:

- The Trust personnel assigned to address user complaints;
- Solid fencing around active construction sites;
- Covering and watering of soil piles;
- Flaggers for traffic control;
- Routing of construction traffic away for areas in active park use; and
- Temporary re-routing of walkways and bikeways away from active construction.

While some park users would find their park experience disrupted to some degree, the above measures would minimize the disruption during construction renovation and re-tenanting of the North Island and construction of the park and public spaces, each with components of less than two-year duration of construction. In addition, park visitation would be highest during weekends and holidays, while construction activities would occur generally from Monday through Friday and not on weekends or holidays. Thus, construction activities would not be expected to affect park users on Saturdays, Sundays, or holidays. In addition, construction activities would be temporary and would not persist in a single location for long periods of time. Therefore, construction would not result in a significant adverse impact on park users.

When the South Island Development Zones have been planned and designed, it is anticipated that the associated future environmental review would take into account an analysis of the potential for construction impacts on park users from the full development of the Proposed Project.

SOCIOECONOMIC CONDITIONS

Construction activity associated with the Proposed Project would affect the New York City and State economies. Construction of the Proposed Project would create direct benefits on the economy from expenditures on labor, materials, and services over the course of the construction period. Construction would also result in substantial indirect and induced economic effects. Indirect effects would stem from inter-industry purchases—contractors buying goods and services from other businesses. Induced effects would stem from the new economic demand created by households spending salaries earned through the direct and indirect jobs.

The construction activity would also generate tax revenues for New York City and State. Sales tax revenue may be generated by the sale of construction. Certain elements of the project may be exempt from paying sales tax on construction materials. For example, materials used for park construction would not be subject to sales tax because the project is public. In addition, the Proposed Project would generate income taxes, and corporate and business taxes from direct, indirect, and induced activity. There would be no significant adverse impacts on socioeconomic conditions due to construction. *