

A. INTRODUCTION

This chapter summarizes the unavoidable adverse effects resulting from the proposed project and mitigation measures to address those effects. According to the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, unavoidable significant effects are those that would occur if a proposed project or action is implemented regardless of the mitigation employed, or if mitigation is impossible. Unavoidable significant adverse impacts resulting from the proposed project have been identified in the area(s) of analysis under operational conditions: urban design and visual resources, natural resources; and under construction conditions: open spaces, and noise and vibration.

B. URBAN DESIGN AND VISUAL RESOURCES

Alternatives 2 through 5 could potentially result in significant adverse visual effects by blocking certain views to the East River from multiple locations within the study area. Since these effects result from the installation of the flood protection structures, these potential significant adverse effects could not be visually mitigated, resulting in unavoidable significant adverse effects. Lowering the floodwalls and/or raised landscapes to minimize or reduce obstructions of views to the East River would compromise the ability of the proposed project to provide adequate flood protection to the surrounding communities and would not meet the project goals. Although views to East River Park would be blocked under Alternatives 2 and 3, Alternative 3 would provide enhanced and more direct connections to the park, improving accessibility and the pedestrian experience. The Preferred Alternative and Alternative 5 would maintain views to East River Park, because the park would slope down to the grade of the Franklin Delano Roosevelt East River Drive (FDR Drive) and there would be no floodwalls along the park's western edge; these alternatives would also improve accessibility to the park. While the finishes of floodwalls would not mitigate the significant adverse effects of blocked views to the East River in Project Area One under Alternatives 2 and 3 or in Project Area Two under Alternative 5, the aesthetics of the finishes would affect the experience of pedestrians, residents, motorists, and bicyclists. Therefore, the finishes are being taken into account, and the floodwalls would be finished with board form concrete to create alternating smooth and textured surfaces to provide visual interest and relieve the monotony of an untextured blank wall. In addition, planting and landscape treatment can be used to minimize the visual impact of floodwalls.

C. NATURAL RESOURCES**TERRESTRIAL RESOURCES**

The total number of trees to be removed as a result of the Alternative 2 design would be 265, which represents a loss of 19 percent of the trees inventoried for the project.

The total number of trees to be removed as a result of the Alternative 3 design would be 776. This loss of trees represents 55 percent of the trees inventoried for the proposed project.

The total number of trees to be removed as a result of the Preferred Alternative and Alternative 5 design would be 991. This loss of trees represents 70 percent of the trees inventoried for the proposed project. For all alternatives, trees in excellent condition measuring up to 7 inches diameter breast height (dbh) would be considered potential transplant candidates and may reduce the total number of trees to be removed. The landscape restoration plan for these alternatives is comprised of a several elements. First, to the extent practicable, the City would transplant existing park trees that are in excellent condition and, based on prior NYC Parks arborist experiences and approvals, are suitable for a successful transplanting. Second, approximately 1,815 trees are proposed to be planted as part of the landscape design within the project areas, which would result in a net increase of 745 trees over the existing conditions. The value of this restoration plan, in combination with approximately \$32.9 million of restitution, would be in compliance with Chapter 5 of Title 56 of the Rules of New York (NYC Department of Parks and Recreation Rules) and Local Law 3 of 2010. The restitution funds would be used towards targeted tree planting and urban forest enhancements throughout the adjacent communities, including the Lower East Side greening program, which proposes to plant up to 1,000 trees in parks and streets, and create up to 40 bioswales starting in fall of 2019. The planting palette for the proposed park trees will consider size, growth rate, diversity, and resiliency, among other factors, in determining the tree selection. This tree planting plan including the species, distribution, and location will be included in the project's final design documents. The landscape restoration plan includes over 50 different species, reflecting research around the benefits of diversifying species to increase resilience and adaptive capacity in a plant ecosystem and also pays special attention to species that can handle salt spray, strong winds, and extreme weather events. The design also focuses on creating a more layered planting approach, allowing for informal planting areas that layer plant communities together to express ecological richness. A more diverse native plants palette can better adapt to climate change stressors. Once planted and established, the new landscape would represent an improvement in ecological sustainability, habitat creation, and adaptability in the face of a changing climate. The landscape restoration plan would ultimately result in a net increase of 745 total trees within the project area. While these trees would not be as mature as some existing trees, over time, the new tree canopy would fill in and represent an improved habitat over the existing conditions, which is largely dominated by London plane trees, known for their poor response to salt-water inundation.

Under Alternative 2, as part of the replanting plan, at a minimum the trees removed would be replaced, resulting in no net loss of trees. Under Alternative 3, as part of the replanting plan, there would be 1,180 trees planted within the project area. The net change to trees would be an increase of 325.

AQUATIC RESOURCES

A consultation with the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA NMFS) was reinitiated to reflect the Preferred Alternative as required by the Fish and Wildlife Coordination Act (FWCA), Magnuson Stevens Fishery Conservation and Management Act, the Endangered Species Act, and the Clean Water Act. A response letter dated August 15, 2019 indicated NOAA NMFS's concurrence that the project would not result in substantial impacts to Essential Fish and FWCA species with the implementation of conservation measures. Recommended conservation measures specific to the construction of the

Preferred Alternative are discussed in Chapter 6.5, “Construction—Natural Resources.”
WETLAND RESOURCES

Under the With Action Alternatives, a shared-use flyover bridge would be built cantilevered over the northbound FDR Drive to address the narrowed pathway (pinch point) near the East River Dock between East 13th Street and East 15th Street, thus providing a more accessible connection between East River Park and Captain Patrick J. Brown Walk. The support structures (shafts) for the flyover bridge would result in permanent adverse effects to 260 square feet of New York State Department of Environmental Conservation (NYSDEC) littoral zone tidal wetlands and U.S. Army Corps of Engineers (USACE) Waters of the United States within the East River.

The Preferred Alternative and Alternative 5 also include the filling and relocation of two existing embayments within the project area to increase community access to the water’s edge, a principal objective of the proposed project, and provide adequate space to site heavily utilized active recreation facilities. The Corlears Hook Bridge and the Houston Street overpass would lead the park user directly to newly designed embayments, providing maximum opportunities for the community to connect with the waterfront. The two proposed embayments would be comparable in size, would be similarly located within East River Park, and would be designed to provide enhanced ecological value to the aquatic environment compared to the existing embayments.

The embayment relocations would result in the permanent loss of 26,732 square feet of unvegetated littoral zone tidal wetland habitat as shown in Table 5.6-8. Under Alternative 5, the raised FDR Drive platform would require permanent support shafts to be constructed in tidal wetlands. Of the 15 support shafts proposed as part of the elevated FDR Drive platform, eight are anticipated to occur through the deck of the waterfront esplanade and into the East River. The support shafts would result in a permanent loss of an additional 157 square feet of unvegetated and shaded littoral zone tidal wetland habitat compared to the Preferred Alternative.

Adverse effects to aquatic resources would be mitigated for with the creation of approximately 24,868 square feet new embayments within the project area and off-site wetland restoration or through the purchase of credits from the Saw Mill Creek Wetland Mitigation Bank operated by New York City Economic Development Corporation (EDC) and located on Staten Island, New York, pursuant to NYSDEC and USACE permit requirements, and would not be considered significant. The mitigatory elements of the Preferred Alternative are consistent with the City’s WRP policies of protecting water quality, sensitive habitats, and the aquatic ecosystem.

CONCLUSION

Tree replacement would be conducted as part of a landscape restoration plan, which, in combination with 32.9 million dollars in restitution payments, would be provided in compliance with Chapter 5 of Title 56 of the Rules of New York (NYC Department of Parks and Recreation Rules) and Local Law 3 of 2010. The permanent loss of tidal wetland habitat associated with the With Action Alternatives would be mitigated for in accordance with all NYSDEC and USACE permit conditions.

D. CONSTRUCTION—OPEN SPACE

The open space resources within the project area, including East River Park, Murphy Brothers Playground, Stuyvesant Cove Park, Asser Levy Playground and Captain Patrick J. Brown Walk,

would be partially or fully closed for at least a portion of the approximately 3.5- to 5-year-long construction duration to accommodate the construction of the proposed project. Therefore, there is potential for temporary significant adverse direct effects over multiple analysis years due to the displacement of the numerous recreational resources in East River Park across all alternatives, except the No Action Alternative. The open space ratios would exceed the *CEQR Technical Manual* threshold of 5 percent change between the With Action and No Action conditions during construction. Temporary displacement of open space for construction over the 5 percent threshold is considered significant since it could result in the overburdening of remaining available open spaces within the study area. Therefore, the construction—open space analysis concluded that there would be potential significant adverse indirect effects on open space during the construction period across all alternatives, except the No Action Alternative. Planned on-site and off-site measures that are proposed, would be considered partial mitigation that would reduce the significant adverse effect to the greatest extent practicable; however, these impacts cannot be fully mitigated. Therefore, resulting in unavoidable significant adverse effects.

The Asser Levy Recreation Center is predicted to experience a significant adverse noise effect as a result of construction. The City will utilize quieter construction methods (i.e., press in pile) to partially mitigate noise effects that would be experienced at the Asser Levy Recreation Center.

PARTIAL MITIGATION OF EFFECTS

The proposed project would introduce potential temporary significant adverse direct and indirect effects on open space during the construction period. Therefore, on-site and off-site measures to mitigate the effect to the greatest extent practicable would be implemented by the city. However, with these measures, the effects would only partially mitigate construction effects on open space resources for the five-year construction duration under Alternatives 2 and 3, and for the first three years of the construction period under the Preferred Alternative and Alternative 5.

MITIGATION MEASURES

As per *CEQR Technical Manual* guidance, a mitigation effort would be to improve existing open spaces in the study area and increase the utility, safety, and capacity of those resources. To that end, the mitigation measures that would be implemented for the Preferred Alternative by the City include:

- NYC Parks will accommodate youth permit users within existing facilities under NYC Parks jurisdiction. Due to the high volume of permitted use across all NYC Parks, permittees may have to limit playing time to be accommodated;
- The City is working with other entities with open space resources, such as the New York City Department of Education (DOE) and the New York City Housing Authority (NYCHA), to identify recreational resources that may be opened to the community during construction;
- The City is assessing opportunities to open parts of East River Park as work is completed;
- NYC Parks is implementing a Lower East Side greening program and planting up to 1,000 trees in parks and streets, and up to 40 bioswales;
- NYC Parks is purchasing solar lighting to be used at six Lower East Side parks to extend playing time at fields for permitted use during construction of the proposed project;
 - Park sites may include Coleman Playground, Columbus Park, Corlears Hook Park, Sara D Roosevelt Park, Baruch Playground, and Chelsea Park

- NYC Parks will improve the synthetic turf at seven park locations; these sites may include the following:
 - New synthetic turf installation at five sites—sites include LaGuardia Bathhouse/Little Flower Playground, St. Vartan Park, Tanahey Playground, Robert Moses Playground
 - Turf improvements at two sites: Columbus Park and Baruch Playground
- NYC Parks will install new sports coating at seven sites; sites may include the following:
 - Tanahey Playground, Sara D. Roosevelt Park, Al Smith Recreation Center, St. Vartan Park, Columbus Park, Coleman Playground, Al Smith Playground
- NYC Parks will paint playgrounds and park equipment at up to 16 locations in Lower East Side Parks;
- NYC Parks will enhance existing Parks barbecue areas;
 - New picnic tables at Coleman Playground and replace existing barbecues at Al Smith Recreation Center
- NYC Parks will is identifying alternative tennis locations;
 - John Jay Park courts will be re-striped to formalize the tennis area
 - Queensboro Oval (in Manhattan) will be opened to NYC Parks tennis permit holders starting in summer 2019, and for even more weeks (increasing from 12 weeks to 22 weeks) per summer
 - Randall’s Island tennis facility is expanding with additional courts which will be opened to NYC Parks tennis permit holders
- NYC Parks is increasing staffing for recreation, operations and maintenance (O&M) in Lower East Side Parks;
 - New playground associates (nine new staff lines) will provide new programming and help organize events and activities for park users
 - All existing O&M staff for East River Park will remain on the east side of Manhattan, below 34th Street
- NYC Parks is exploring open space improvements at Waterside Pier; and
- The City will utilize quieter construction methods (i.e., press in pile), to partially mitigate noise effects that would be experienced at the Asser Levy Recreation Center.

In addition, as discussed in Chapter 6.9, “Construction—Transportation,” the following measures would be implemented to accommodate pedestrians and bicyclists at this area during construction:

- During construction, the East River Greenway would be closed from 23rd Street to Montgomery Street. NYCDOT would re-route bicyclists to the on-street bike network, primarily the protected bicycle lanes along First and Second Avenues, as well as those on Allen Street/Pike Street and Clinton Street (see Figure 6.9-20). These protected bicycle lanes would provide a reasonable alternative for many of those bicyclists who use the Greenway as a transportation route, as they are proximate to numerous destinations in the neighborhoods that run alongside the Greenway, and may actually provide a more direct route for many trips. NYCDOT is currently upgrading a number of intersections along these corridors with offset crossings to provide a more comfortable riding experience on these routes.
- NYCDOT is committed to expanding the City’s bicycle network, including adding more protected bicycle lanes. In July 2019, Mayor de Blasio unveiled the Green Wave Bicycle

- NYCDOT is committed to expanding the City's bicycle network, including adding more protected bicycle lanes. In July 2019, Mayor de Blasio unveiled the Green Wave Bicycle Plan, which, amongst other improvements, increases the number of planned protected bicycle lane miles to be installed each year to thirty miles city-wide. As part of these ongoing efforts to expand the bicycle lane network, NYCDOT is currently evaluating the feasibility of installing new north-south protected bicycling lanes in the East Village that would provide additional options for bicyclists during the Greenway closure and beyond.
- Access to the ferry landings at Stuyvesant Cove Park from First and Second Avenues would be maintained via the two-way protected bicycle lane along 20th Street.

Full mitigation of the temporary significant adverse open space effects during construction is not possible, as it is not feasible to acquire enough land to develop new open spaces in the study area. The measures proposed above would mitigate to the extent practicable, the construction effects on open space resources and are considered partial mitigation. There are other open space resources immediately adjacent to the open space study area that offer comparable resources of similar type and quality (e.g., Tompkins Square, Madison Square, Union Square, Sara D. Roosevelt Park, Hester Street Playground, Coleman Playground, etc.). Although farther away, these open space resources would be available to the public during the construction period. Furthermore, the proposed project would substantially improve existing open space resources. All temporary displacement would be met with the refurbishment and re-construction of the displaced open space amenities. After construction, Murphy Brothers Playground, Stuyvesant Cove Park, and Asser Levy Playground would be redesigned and reconstructed and East River Park would be reconstructed as a newly landscaped and raised open space with pathways, which would enhance the use experience of the park. Upon completion of the proposed project, the upland open space resources in the ½-mile study area would be protected against future storm events, thus increasing the utility and safety of those resources. Furthermore, the Preferred Alternative would be especially beneficial for the open space resources in East River Park, as the alternatives seek to enhance the park features to be fully resilient in future design storm events. The flood protection measures proposed to be integrated into park features aim to reduce the effects from future design storm events on the community.

IMPROVEMENT OF EXISTING PARKS

According to the CEQR Technical Manual, improving existing open spaces in the study area to increase their utility, safety, and capacity to meet identified needs in the study area is considered a mitigation measure. Although construction would temporarily displace open space resources in East River Park, Stuyvesant Cove Park, Murphy Brothers Playground, Asser Levy Playground, and Captain Patrick J. Brown Walk under the With Action Alternatives, the end result would be a refurbished open space resource. After construction, East River Park would be a newly landscaped and raised park with pathways, which would enhance the user experience of the park, under the Preferred Alternative. In addition, the upland open space resources in the ½-mile study area would be protected against future storm events, thus increasing the utility and safety of those resources. The Preferred Alternative would be especially beneficial for the open space resources in East River Park, as this alternative includes a full reconstruction of the park, raising it by approximately eight feet to meet the design flood protection criteria. These enhancements would ensure that East River Park would be more resilient in future storm events. The flood protection measures proposed to be integrated into park features aim to reduce the effects from future storm events on the community. The Preferred Alternative proposes the replacement of pedestrian crossings at Delancey Street, East 10th Street, and Corlears Hook Bridges. The

enhancement of pedestrian bridges to East River Park would improve the east–west connectivity for residents in the ½-mile study area to East River Park upon project completion. The improvements to these open space resources under the proposed project would be considered partial mitigation. By remedying a long-standing restriction/obstacle at the Con Edison “pinch-point,” the proposed project under all alternatives, except the No Action Alternative would significantly improve the usability and access to the greenway with the construction of the shared-use flyover bridge.

IMPROVEMENT OF NON-MOTORIZED ACCESS TO PARKS

The Preferred Alternative would include the replacement of the Delancey Street, East 10th Street, and the Corlears Hook Bridges. The enhancement of these bridges to East River Park would improve the east–west connectivity for residents in the ½-mile study area to East River Park upon project completion.

The proposed project would also include a shared-use fly-over bridge in the East River Bikeway along the East River Dock between East 13th Street and East 15th Streets. This would allow pedestrians and cyclists to travel between Stuyvesant Cove Park and the East River Esplanade/East River Bikeway without conflict with visitors travelling in the opposite directions or requiring cyclist dismounts. As stated in the *CEQR Technical Manual*, the implementation of missing segments of the City’s greenway network would be considered a mitigation measure. By remedying a long-standing restriction/obstacles, the proposed project would significantly improve the usability and access to the greenway.

E. CONSTRUCTION—NOISE AND VIBRATION

Under the Preferred Alternative, construction of the proposed project is predicted to result in significant adverse noise effects at 621 Water Street, 605 Water Street, 309 Avenue C Loop, 315-321 Avenue C, 620 East 20th Street, 601 East 20th Street, 8 Peter Cooper Road, 7 Peter Cooper Road, 530 East 23rd Street, 765 FDR Drive, 819 FDR Drive, 911 FDR Drive, 1023 FDR Drive, 1115 FDR Drive, 1141 FDR Drive, 1223 FDR Drive, 570 Grand Street, 455 FDR Drive, 71 Jackson Street, 367 FDR Drive, 645 Water Street, 322 FDR Drive, 525 FDR Drive, 555 FDR Drive, 60 Baruch Drive, 132 Avenue D, 465 East 10th Street, and 520 East 23rd Street, 123 Mangin Street, and the Asser Levy Recreation Center. The predicted significant adverse construction noise effects would be of limited duration and would be up to the mid 80s dBA during daytime construction and up to the mid 70s during nighttime construction. Noise levels in this range are typical in many parts of Manhattan along heavily trafficked roadways. The buildings at 315-321 Avenue C, 620 East 20th Street, 601 East 20th Street, 8 Peter Cooper Road, 7 Peter Cooper Road, 530 East 23rd Street, 911 FDR Drive, 1023 FDR Drive, 1115 FDR Drive, 1141 FDR Drive, 1223 FDR Drive, 570 Grand Street, 455 FDR Drive, 71 Jackson Street, 367 FDR Drive, 645 Water Street, 322 FDR Drive, 525 FDR Drive, 555 FDR Drive, 60 Baruch Drive, and 520 East 23rd Street already have insulated glass windows and an alternative means of ventilation (i.e., air conditioning), and would consequently be expected to experience interior $L_{10(1)}$ values less than 45 dBA during much of the construction period, which would be considered acceptable according to CEQR criteria. The buildings at 621 Water Street, 605 Water Street, 765 FDR Drive, 819 FDR Drive, 132 Avenue D, 465 Avenue D, 123 Mangin Street, and the Asser Levy Recreation Center appear to have monolithic glass (i.e., non-insulating) and would consequently be expected to experience interior $L_{10(1)}$ values up to the high 60s dBA, which is up to approximately 23 dBA higher than the 45 dBA threshold recommended for

residential use according to CEQR noise exposure guidelines. Any of the above buildings or units within the above-mentioned buildings that do not have an alternate means of ventilation (i.e., air conditioning) to allow for the maintenance of a closed-window condition, would also be expected to experience interior $L_{10(1)}$ values up to the high 60s dBA, which is up to approximately 23 dBA higher than the 45 dBA threshold recommended for residential use according to CEQR noise exposure guidelines (see Table 6.12-8 for a summary of construction noise analysis results for the Preferred Alternative).

Construction of the Preferred Alternative is expected to occur over a 3.5-year duration as compared to the 5-year duration for Alternatives 2, 3, and 5. This shorter construction duration for the Preferred Alternative is primarily due to less disruption to the FDR Drive since flood protection in East River Park would be primarily along the East River rather than along the FDR Drive and the Preferred Alternative also allows full closure of East River Park so it can be reconstructed in a single stage. In addition, compared to Alternatives 2 and 3, maximum construction noise levels at receptors nearest floodwall construction within East River Park for the Preferred Alternative would be slightly lower, because pile driving for the Preferred Alternative would occur further from the receptors.

Under Alternative 3, construction of the proposed project is predicted to result in significant adverse noise effects at 621 Water Street, 605 Water Street, 309 Avenue C Loop, 315-321 Avenue C, 620 East 20th Street, 601 East 20th Street, 8 Peter Cooper Road, 7 Peter Cooper Road, 530 East 23rd Street, 765 FDR Drive, 819 FDR Drive, 911 FDR Drive, 1023 FDR Drive, 1115 FDR Drive, 1141 FDR Drive, 1223 FDR Drive, 132 Avenue D, 465 East 10th Street, 520 East 23rd Street, and the Asser Levy Recreation Center. The predicted significant adverse construction noise effects would be of limited duration and would be up to the high 80s dBA during daytime construction and up to the mid 70s during nighttime construction. Noise levels in this range are typical in many parts of Manhattan along heavily trafficked roadways. The buildings at 315-321 Avenue C, 620 East 20th Street, 601 East 20th Street, 8 Peter Cooper Road, 7 Peter Cooper Road, 530 East 23rd Street, 911 FDR Drive, 1023 FDR Drive, 1115 FDR Drive, 1141 FDR Drive, 1223 FDR Drive, and 520 East 23rd Street already have insulated glass windows and an alternative means of ventilation (i.e., air conditioning), and would consequently be expected to experience interior $L_{10(1)}$ values less than 45 dBA during much of the construction period, which would be considered acceptable according to CEQR criteria.

Under Alternatives 2 and 5, significant adverse construction noise effects are expected to be similar to those under Alternatives 3 and the Preferred Alternative, respectively.

Even with the noise control measures described in Chapter 6.12, “Construction—Noise and Vibration,” construction of the proposed project would result in potential temporary significant adverse noise effects at 621 Water Street, 605 Water Street, 309 Avenue C Loop, 315-321 Avenue C, 620 East 20th Street, 601 East 20th Street, 8 Peter Cooper Road, 7 Peter Cooper Road, 530 East 23rd Street, 765 FDR Drive, 819 FDR Drive, 911 FDR Drive, 1023 FDR Drive, 1115 FDR Drive, 1141 FDR Drive, 1223 FDR Drive, 570 Grand Street, 455 FDR Drive, 71 Jackson Street, 367 FDR Drive, 645 Water Street, 322 FDR Drive, 525 FDR Drive, 555 FDR Drive, 60 Baruch Drive, 132 Avenue D, 465 East 10th Street, 520 East 23rd Street, 123 Mangin Street, and the Asser Levy Recreation Center. The predicted significant adverse construction noise effects would be of limited duration and would be up to the high 80s dBA during daytime construction and up to the mid 70s during nighttime construction. Noise levels in this range are typical in many parts of Manhattan along heavily trafficked roadways. Because the analysis is based on worst-case construction phases, it does not capture the natural daily and hourly

variability of construction noise at each receptor. The level of noise produced by construction fluctuates throughout the days and months of the construction phases, while the construction noise analysis is based on the worst-case time periods only, which is conservative.

Source or path controls beyond those already identified in Chapter 6.12, “Construction—Noise and Vibration,” were considered for feasibility and effectiveness in reducing the level of construction noise at the receptors that have the potential to experience significant adverse construction noise impacts. These measures would include the following:

- Pile installation activities associated with the floodwall and closures structures that are within 50 feet of residences and the Asser Levy Recreation Center, would produce no more than an 80 dBA L_{max} noise level (i.e., sound pressure level) at a distance of 50 feet. For example, a hydraulic press-in pile installation method would be used instead of the standard impact pile driving method.
- Pile installation activities, where feasible and practicable, would be limited to between the hours of 7 AM and 6 PM. This excludes any activities that need to occur adjacent to the FDR Drive where work would need to be conducted during night time as per DOT’s Office of Construction Management and Coordination (OCMC) requirements.
- Using barging for deliveries of construction materials (including concrete) and importing of fill to the project sites, rather than trucks on roadways to from the construction work areas, would provide approximately 3 to 6 dBA reduction in noise levels from dump trucks and/or delivery trucks. If noise from pile installation is reduced by one of the means described above, the trucks would be the next greatest contributor to the total construction noise level, so this reduction measure could be effective in further reducing the total construction noise levels at surrounding receptors. However, it may result in conflicts with esplanade work, in which case truck deliveries would be unavoidable.
- Selecting quieter equipment models for cranes, generators, compressors, and lifts may result in up to a 10 dBA reduction in noise levels from construction if the pile installation and truck noise are reduced by the means described above. This is subject to the availability of quieter equipment in the quantities necessary to complete the proposed project in the projected timeframe.
- Construction equipment that would operate on barges or within the river would be required to comply with all of the same regulations and commitments as on-land equipment that are subject to the New York City Noise Control Code.

In addition to the source and path control measures described above, the following operational commitments would be used to limit construction noise at nearby residences during night-time hours, when residences are most sensitive to noise. For construction activity that would occur during night-time (i.e., 6 PM to 7 AM) and weekend hours within 50 feet of a residence, the $L_{eq(t)}$ noise level resulting from construction must not exceed 80 dBA as measured at the exterior façade of any residential dwelling unit.

During construction of the proposed project, noise control measures would be implemented as required by the *New York City Noise Control Code*, including both path control (e.g., placement of equipment, implementation of barriers or enclosures between equipment and sensitive receptors) and source control (i.e., reducing noise levels at the source or during the most sensitive time periods). However, even with these measures, the cumulative analysis of construction vehicle trips and operation of on-site construction equipment indicated the potential for significant adverse noise effects as a result of construction at some receptors under each of the analyzed alternatives. *