Chapter 23: Unavoidable Adverse Impacts

A. INTRODUCTION

This chapter summarizes unavoidable significant adverse impacts that may result from the Proposed Actions. According to the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, unavoidable significant adverse impacts are those that would occur if a proposed project or action is implemented regardless of the mitigation employed, or if mitigation is infeasible.

As described in Chapter 21, "Mitigation," the Proposed Actions would result in significant adverse impacts with respect to shadows, historic and cultural resources, transportation, and construction. To the extent practicable, mitigation has been proposed for these identified significant adverse impacts. However, in some instances no practicable mitigation has been identified to fully mitigate significant adverse impacts, and there are no reasonable alternatives to the Proposed Actions that would meet the Proposed Actions' purpose and need, eliminate potential impacts, and not cause other or similar significant adverse impacts. In other cases, mitigation has been proposed, but absent a commitment to implement the mitigation, the impacts may not be eliminated.

B. SHADOWS

As described in Chapter 6, "Shadows," the Proposed Actions would result in significant adverse shadow impacts to three open space resources. The detailed analysis found that El Catano Garden, Eugene McCabe Field, and Jackie Robinson Garden would be significantly impacted by new shadow originating from projected and potential development sites. The duration or extent of incremental shadow cast on these open spaces would be great enough to significantly impact the use of the open space or its ability to support vegetation. The impacted resources are discussed in more detail below.

EL CATANO GARDEN

Projected and potential development resulting from the Proposed Actions would cast El Catano Garden in new shadow on all analysis days. El Catano Garden is located on East 110th Street directly west of Potential Development Site AH and across Third Avenue from Projected Development Site 17. Compared with the No Action Condition, the incremental shadow would not significantly alter the public's use of the open space resource but may significantly change the variety of plant life supported in the garden. The duration of new shadow would last between approximately five and six hours, depending on the analysis day. However, most of the new shadow would occur before the garden's 10 AM opening hour. Garden users wishing to enjoy sun would, in most cases, find direct sunlight in a nearby area of the small garden. The time of day on May 6 and June 21 when the Proposed Actions would prevent any direct sunlight from reaching the garden would occur when the garden is closed. During December, the garden would be expected to be closed to the public for most of the day.

Within the growing season, development resulting from the Proposed Actions would reduce the hours of direct sunlight received by the garden by up to approximately 2 hours and 30 minutes on March 21, 4 hours on May 6, and 5 hours on June 21. On March 21, most of the garden would receive less than 2 hours of direct sunlight. On May 6 and June 21, the central portion of the garden receiving at least 4 hours of direct sunlight would be mostly eliminated and instead receive less than 2 hours of direct sunlight. With the limited hours of direct sunlight, it is possible that the garden would no longer be able to support the variety of plant life that it would in the No Action Condition. Therefore, El Catano Garden would experience a significant adverse shadow impact due to the Proposed Actions. The *CEQR Technical Manual* identifies several different measures that could mitigate significant adverse shadow impacts on open spaces. These measures include relocating sunlight-sensitive features within an open space to avoid sunlight loss; relocating or replacing vegetation; undertaking additional maintenance to reduce the likelihood of species loss; or providing replacement facilities on another nearby site. Other potential mitigation strategies include the redesign or reorientation of the open space site plan to provide for replacement facilities, vegetation, or other features. The *CEQR Technical Manual* also identifies strategies to reduce or eliminate shadow impacts, including modifications to the height, shape, size, or orientation of the proposed development that creates the significant adverse shadow impact.

The New York City Department of City Planning (DCP), as lead agency, will explore possible mitigation measures in coordination with the New York City Department of Parks and Recreation (NYC Parks) between the Draft Environmental Impact Statement (DEIS) and Final Environmental Impact Statement (FEIS). If feasible mitigation is found, the impacts will be considered mitigated or partially mitigated. In the absence of feasible mitigation, the significant adverse impact to El Catano Community Garden would be unavoidable.

EUGENE MCCABE FIELD

Projected development resulting from the Proposed Actions would cast Eugene McCabe Field in new shadow on all analysis days. Eugene McCabe Field is located on the west side of Park Avenue between East 120th and East 121st Streets. The field is directly adjacent to Projected Development Sites 2, 6, and 24. Compared with the No Action Condition, the incremental shadow could significantly alter the public's use of the open space by reducing the direct sunlight received by the resource throughout the year and lowering its utilization rate. Development resulting from the Proposed Actions would not significantly impact the limited vegetation growing within the park. The duration of new shadow on the analysis days would last between approximately 6 hours and 8 hours, depending on the analysis day. On March 21 and December 21, all areas of the field would experience a 2-hour reduction in the duration of direct sunlight. On the May 6 and June 21 analysis days, incremental shadow could reduce the total hours of direct sunlight on the resource by up to approximately 4 hours and 35 minutes, and 5 hours, respectively. The addition of shadow on all analysis days may change a user's experience within a resource that, in the No Action Condition, receives long, interrupted durations of direct sunlight.

Shadow cast by the Proposed Actions would not significantly alter the resource's ability to support vegetation. The field is synthetic turf and does not require sunlight. The limited landscaping around the edges of the field would receive enough direct sunlight within the growing season to support its viability. But because the duration of incremental shadow may significantly impact use of the resource, McCabe Field would experience a significant adverse shadow impact due to the Proposed Actions.

The With Action Condition shadows assessment found that due to the duration and breadth of the new shadows the open space would experience a significant impact to its utilization. Possible mitigation measures may include artificial lighting and the reduction of building heights. Mitigation measures will be explored in coordination with NYC Parks between the DEIS and FEIS. If feasible mitigation is found, the impact will be considered partially mitigated. In the absence of feasible mitigation, the significant adverse impact to Eugene McCabe Field would be unavoidable.

JACKIE ROBINSON GARDEN

Projected development resulting from the Proposed Actions would cast Jackie Robinson Garden in new shadow on all analysis days. Jackie Robinson Garden is located at East 122nd Street and Park Avenue. Compared with the No Action Condition, the incremental shadow would not significantly alter the public's use of the open space resource but may significantly change the variety of plant life supported in the park. The duration of new shadow on the analysis days would be relatively long. Even though most of new shadow would occur in the afternoon when the garden would presumably be open to the public, at no time would the new shadow prevent all direct sunlight from reaching the garden. Garden users wishing to enjoy direct sunlight in the newly shaded areas could find direct sunlight in a different location of the garden.

The Proposed Actions would significantly alter the hours of direct sunlight received by the park on the analysis days within the growing season. On March 21, few areas of the garden would receive more than 4 hours of direct sunlight. On May 6 and June 21, when compared with the No Action Condition, most areas of the garden would no longer receive 4 hours of direct sunlight throughout the day. Because at least 4 hours of direct sunlight are needed to support a variety of plant life, it is possible that the garden would no longer be able to support the same plant life that it would in the No Action Condition. Therefore, the Jackie Robinson Community Garden would experience a significant adverse shadow impact due to the Proposed Actions. The *CEQR Technical Manual* identifies several different measures that could mitigate significant adverse shadow impacts on open spaces. These measures include relocating sunlight-sensitive features within an open space to avoid sunlight loss; relocating or replacing vegetation; undertaking additional maintenance to reduce the likelihood of species loss; or providing replacement facilities on another nearby site. Other potential mitigation strategies include the redesign or reorientation of the open space site plan to provide for replacement facilities, vegetation, or other features. The *CEQR Technical Manual* also identifies strategies to reduce or eliminate shadow impacts, including modifications to the height, shape, size, or orientation of the proposed development that creates the significant adverse shadow impact.

Jackie Robinson Garden is located directly east of Projected Development Site 69 on East 122nd Street. Mitigation measures will be explored in coordination with NYC Parks between the DEIS and FEIS. If feasible mitigation is found, the impact will be considered mitigated or partially mitigated. In the absence of feasible mitigation, the significant adverse shadow impact on Jackie Robinson Garden would be unavoidable.

C. HISTORIC AND CULTURAL RESOURCES

As discussed in Chapter 7, "Historic and Cultural Resources," the Proposed Actions would result in significant adverse construction-related impacts to four architectural resources. In addition, construction activity at two development sites located on the south side of East 128th Street (east of Park Avenue) have the potential to result in significant adverse archaeology impacts associated with burial remains.

ARCHITECTURAL RESOURCES

The Proposed Actions would result in significant adverse construction-related impacts to four eligible architectural resources located within 90 feet of projected or potential development sites. The impacted resources include:

- St. Paul's Rectory and School (Resource #17, S/NR-Eligible) is located within 90 feet of Potential Development Site C;
- Chambers Memorial Baptist Church (Resource #28, S/NR-Eligible) is located within 90 feet of Potential Development Site AI;
- 166 East 124th Street (Resource #27, S/NR-Eligible) is located within 90 feet of Projected Development Site 11; and,
- The Park Avenue Viaduct (Resource #39, S/NR-Eligible) is located within 90 feet of several projected and potential development sites.

Designated New York City Landmarks (NYCL) or S/NR-Listed architectural resources located within 90 feet of a projected or potential new construction site are subject to the protections of DOB's TPPN #10/88. The resources listed above are not NYCLs or S/NR-Listed, therefore they would not be afforded any of the protections under TPPN #10/88. If the eligible resources are designated in the future prior to the initiation of construction, the protective measures of TPPN #10/88 would apply and significant adverse impacts from construction would be avoided. Should the resources remain undesignated, the additional protective measures of TPPN #10/88 would not apply and the potential for significant adverse construction-related impacts would be unavoidable.

In order to make TPPN #10/88 or comparable measures applicable to the eligible historic resources in the absence of site-specific discretionary approval, a mechanism would have to be developed to ensure implementation and compliance, since it is not known and cannot be assumed that owners of these properties would voluntarily implement the mitigation. The viability of these or other mitigation measures will be explored between the DEIS and FEIS. Should no feasible mitigation be identified, the significant adverse construction impact on the historic resources would be unavoidable.

The Park Avenue Viaduct is owned and maintained by the Metropolitan Transportation Authority (MTA). Those development sites within 90 feet of the Park Avenue Viaduct and currently owned in part by the City could be required to implement a Construction Protection Plan to protect from inadvertent construction-related damage. The Department of City Planning will explore possible mitigation measures specific to the Park Avenue Viaduct with the Landmarks Preservation Commission (LPC), MTA and HPD between DEIS and FEIS. Should no feasible mitigation be identified, the significant adverse construction impacts to the four S/NR-Eligible architectural resources would be unavoidable.

ARCHAEOLOGICAL RESOURCES

Construction activity at two development sites located on the south side of East 128th Street and east of Park Avenue have the potential to result in significant adverse archaeology impacts associated with human remains. Potential Development Site V and Projected Development Site 4 possess potential archaeological significance. A Phase 1A study of Potential Development Site V and Projected Development Site 4 was completed in March 2017. The Phase 1A study identified the potential and projected development sites as potentially sensitive for human remains associated with the churchyard and burial vaults of Saint Andrew's Church, which was

formerly located within both development sites. The Proposed Actions therefore have the potential to result in a significant adverse impact on archaeological resources if archaeological resources are present.

The Phase 1A Study concluded that Phase 1B archaeological testing is necessary to confirm the presence or absence of human remains on the sites in question as outlined in the 2014 *CEQR Technical Manual* and LPC's 2002 *Guidelines for Archaeological Work in New York City*. Phase 1B testing is designed to confirm the presence or absence of archaeological resources in any areas of archaeological sensitivity that are identified in the Phase 1A study. Based on the results of the Phase 1B investigation and in consultation with the New York City Landmarks Preservation Commission (LPC), if the Phase 1B investigation reveals the presence of human remains, recovery of human remains would be required. In the event that the Phase 1B archaeological investigation determines that Projected Development Site 4 possesses no archaeological sensitivity and that human remains are not present, then further archaeological analysis would not be warranted.

Projected Development Site 4 contains a City-owned lot under New York City Department of Housing Preservation and Development (HPD) jurisdiction. Development of Projected Development Site 4 would be in accordance with HPD requirements, including measures to require prospective sponsors to conduct archaeological testing and if warranted, recovery of human remains. Measures to require a Phase 1B and mitigation, if warranted, would be required through provisions in the Land Disposition Agreement (LDA) between HPD and the project sponsor. Additional archaeological investigations, including a Phase 1B, would be required on Projected Development Site 4. As noted above, Phase 1B testing is designed to confirm the presence or absence of archaeological resources in any areas of archaeological sensitivity that are identified in the Phase 1A study. Prior to the completion of the Phase 1B archaeological investigation, a Phase 1B Testing Protocol and Human Remains Discovery Plan would be prepared and submitted to LPC for review and concurrence.

Potential Development Site V is owned by a private entity. There is no mechanism in place to require archaeological testing prior to construction or require the preservation or documentation of archaeological resources, should they exist. In the event that human remains are encountered during the construction of an as-of-right project, it is expected that the developer would contact the New York City Police Department (NYPD) and the New York City Office of the Chief Medical Examiner. However, because there is no mechanism to ensure that the potential impacts would be avoided or mitigated in full at Potential Development Site V, the significant adverse impact would be an unavoidable impact.

D. TRANSPORTATION

The Proposed Actions would result, as detailed below, in significant adverse impacts to: a) vehicular traffic at 26 intersections, b) six subway stairs at three stations, c) public bus service on one route, and d) pedestrians at one sidewalk.

TRAFFIC

As discussed in Chapter 14, "Transportation," under *CEQR Technical Manual* impact criteria (which are based on lane group delay and levels of service), the Proposed Actions would result in significant adverse traffic impacts at 26 intersections (all signalized) during one or more analyzed peak hours. Significant adverse impacts were identified to 31 lane groups at 19 intersections during the weekday 7:30-8:30 AM peak hour, 15 lane groups at 12 intersections in

the 1:30-2:30 PM (midday) peak hour, 32 lane groups at 22 intersections in the 4:30-5:30 PM peak hour and 19 lane groups at 16 intersections during the Saturday 4-5 PM peak hour. Most of these impacts could be mitigated through the implementation of traffic engineering improvements, including:

- Modification of traffic signal phasing and/or timing; and
- Elimination of on-street parking within 100 feet of intersections to add a limited travel lane.

The types of traffic mitigation measures proposed herein are standard measures that are routinely identified by the City and considered feasible for implementation. Implementation of the recommended traffic engineering improvements is subject to review and approval by the New York City Department of Transportation (DOT). DCP, as lead agency, will coordinate with DOT between the DEIS and FEIS to obtain their approval of the proposed mitigation measures. In the absence of the application of mitigation measures, the impacts would remain unmitigated.

According to *CEQR Technical Manual* criteria, an impact is considered fully mitigated when the resulting level of service (LOS) degradation under the Action-with-Mitigation Condition compared with the No Action Condition is no longer deemed significant following the impact criteria described in Chapter 14, "Transportation." With implementation of the recommended traffic engineering improvements, significant adverse traffic impacts would be fully mitigated at all but seven lane groups at two intersections during the weekday AM peak hour, eight lane groups at three intersections in the weekday PM peak hour, and one lane group at one intersection during each of the weekday midday and Saturday peak hours. In total, impacts to one or more lane groups would remain unmitigated in one or more peak hours at four intersections. These unmitigated impacts would generally occur along East 125th Street at First Avenue (Willis Avenue Bridge), Second Avenue (RFK Bridge), and Lexington Avenue, and at East 126th Street at Second Avenue (RFK Bridge exit). Further measures to address these impacts will be explored with the relevant agencies between the DEIS and FEIS. If no additional practicable mitigation is identified, these impacts would constitute unavoidable significant adverse traffic impacts as a result of the Proposed Actions.

TRANSIT

SUBWAY

Regarding significant adverse transit/subway impacts, six stairs at three stations served by the Nos. 4, 5, and/or 6 trains on the Lexington Avenue Line would be significantly adversely impacted by project demand in the weekday 7:30-8:30 AM and/or 5-6 PM. These would include one street stair at the 103rd Street station, one street stair at the 116th Street station, and two street stairs and two platform stairs at the 125th Street station. Completion of three new subway stations at East 106th Street, East 116th Street, and East 125th Street under Phase II of the Second Avenue Subway would substantially reduce demand at existing Lexington Avenue Line stations as well as provide new and/or expanded entrances and pedestrian circulation spaces at the 125th Street Lexington Avenue Line station. The Proposed Actions would also generate fewer peak hour trips at analyzed Lexington Avenue Line stations, as it is anticipated that a substantial number would instead utilize the three new Second Avenue Line stations. Therefore, it is anticipated that some, if not all of the Proposed Actions' significant peak hour stair impacts at Lexington Avenue Line subway stations would not occur with implementation of Phase II of the Second Avenue Subway. Regardless of whether Second Avenue Subway Phase II advances, possible mitigation measures will be evaluated with NYCT between the Draft EIS and Final EIS.

In the absence of Phase II of the Second Avenue Subway or practicable mitigation measures, the subway stair impacts would be unavoidable impacts of the Proposed Actions.

BUS

The Proposed Actions would result in a passenger capacity shortfall of 22 on southbound M15 SBS buses in the weekday 8-9 AM commuter peak hour. This significant adverse impact to the M15 SBS could be fully mitigated by the addition of one bus in the southbound direction in this peak hour. If these changes are not made, these impacts would be considered unavoidable.

PEDESTRIANS

Future pedestrian conditions were assessed both without and with the three new subway stations that would be built under Phase II of the Second Avenue Subway. The analyses focus on the weekday 7:30-8:30 AM, 2-3 PM (midday), and 5:15-6:15 PM peak hours, along with the Saturday 3-4 PM peak hour. Based on *CEQR Technical Manual* criteria, under the Proposed Actions without Second Avenue Subway Phase II, the south sidewalk along East 125th Street between Park and Lexington Avenues would be significantly adversely impacted by the Proposed Actions in all four analyzed peak hours, and there would be no significant impacts to any corner areas or crosswalks. The removal of a tree pit at a constrained point on the impacted sidewalk would fully mitigate the Proposed Actions' significant adverse impact. Under a scenario with completion of Second Avenue Subway Phase II in 2027, it is anticipated that the north and south crosswalks on Park Avenue at East 125th Street would also be significantly adversely impacted in the AM peak hour. Widening the segment of the north crosswalk west of the Park Avenue median by 1.5 feet (to a total of 19.5 feet) and the segment of the south crosswalk east of the median by 0.5 feet (to a total of 18.5 feet) would fully mitigate these impacts. In the absence of these measures, the significant adverse impacts would be unavoidable.

E. CONSTRUCTION

HISTORIC AND CULTURAL RESOURCES

ARCHITECTURAL RESOURCES

As mentioned above, the Proposed Actions would result in significant adverse construction-related impacts to four eligible architectural resources located within 90 feet of projected or potential development sites. The impacted resources include:

- St. Paul's Rectory and School (Resource #17, S/NR-Eligible) is located within 90 feet of Potential Development Site C;
- Chambers Memorial Baptist Church (Resource #28, S/NR-Eligible) is located within 90 feet of Potential Development Site AI;
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designated in the future prior to the initiation of construction, the protective measures of TPPN #10/88 would apply and significant adverse impacts from construction would be avoided. Should the resources remain undesignated, the additional protective measures of TPPN #10/88 would not apply and the potential for significant adverse construction-related impacts would be unavoidable.

In order to make TPPN #10/88 or comparable measures applicable to the eligible historic resources in the absence of site-specific discretionary approval, a mechanism would have to be developed to ensure implementation and compliance, since it is not known and cannot be assumed that owners of these properties would voluntarily implement the mitigation. The viability of these or other mitigation measures will be explored between the DEIS and FEIS. Should no feasible mitigation be identified, the significant adverse construction impact on the historic resources would be unavoidable.

The Park Avenue Viaduct is owned and maintained by the Metropolitan Transportation Authority (MTA). Those development sites within 90 feet of the Park Avenue Viaduct and currently owned in part by the City could be required to implement a Construction Protection Plan to protect from inadvertent construction-related damage. The Department of City Planning will explore possible mitigation measures specific to the Park Avenue Viaduct with the Landmarks Preservation Commission (LPC), MTA and HPD between DEIS and FEIS. Should no feasible mitigation be identified, the significant adverse construction impacts to the four S/NR-Eligible architectural resources would be unavoidable.

ARCHAEOLOGICAL RESOURCES

Construction activity at two development sites located on the south side of East 128th Street and east of Park Avenue have the potential to result in significant adverse archaeology impacts associated with human remains. Potential Development Site V and Projected Development Site 4 possess potential archaeological significance. A Phase 1A study of these two sites was completed that identified them as potentially sensitive for human remains associated with the churchyard and burial vaults of Saint Andrew's Church, which was formerly located within both development sites. The Proposed Actions therefore have the potential to result in a significant adverse impact on archaeological resources if archaeological resources are present.

The Phase 1A Study concluded that Phase 1B archaeological testing is necessary to confirm the presence or absence of human remains on the sites in question as outlined in the *CEQR Technical Manual* and LPC's 2002 *Guidelines for Archaeological Work in New York City*. Phase 1B testing is designed to confirm the presence or absence of archaeological resources in any areas of archaeological sensitivity that are identified in the Phase 1A study. Based on the results of the Phase 1B investigation and in consultation with LPC, if the Phase 1B investigation reveals the presence of human remains, recovery of human remains would be required. In the event that the Phase 1B archaeological investigation determines that Projected Development Site 4 possesses no archaeological sensitivity and that human remains are not present, further archaeological analysis would not be warranted.

Projected Development Site 4 contains a City-owned lot under HPD jurisdiction. Development of Projected Development Site 4 would be in accordance with HPD requirements, including measures to require prospective sponsors to conduct archaeological testing and if warranted, recovery of human remains. Measures to require a Phase 1B and mitigation, if warranted, would be required through provisions in the LDA between HPD and the project sponsor. Additional archaeological investigations, including a Phase 1B, would be required on Projected

Development Site 4. As noted above, Phase 1B testing is designed to confirm the presence or absence of archaeological resources in any areas of archaeological sensitivity that are identified in the Phase 1A study. Prior to the completion of the Phase 1B archaeological investigation, a Phase 1B Testing Protocol and Human Remains Discovery Plan would be prepared and submitted to LPC for review and concurrence.

Potential Development Site V is owned by a private entity. There is no mechanism in place to require a developer to conduct archaeological testing or require the preservation or documentation of archaeological resources, should they exist. Because there is no mechanism to avoid or mitigate potential impacts at Potential Development Site V, the significant adverse impact would be unavoidable. In the event that human remains are encountered during the construction of an as-of-right project, it is expected that the developer would contact the NYPD and the New York City Office of the Chief Medical Examiner.

NOISE

Three representative construction sites were selected for analysis. The largest projected development site (Projected Development Site 4a), a typical projected development site on Park Avenue (Projected Development Site 9), and a projected development site on Third Avenue (Projected Development Site 16) were selected to be analyzed for each phase of construction: excavation and foundation; superstructure; and interior fit-out. Projected Development Site 9 was selected to represent all projected development sites along Park Avenue (except for Projected Development Site 4a) and Projected Development Site 16 was selected to represent all projected development sites along Lexington Avenue, Third Avenue, Second Avenue, and other streets. This analysis was based on a conceptual site plan and construction schedule. The conceptual construction schedule conservatively accounts for overlapping construction activities at development sites in proximity to one another to capture the cumulative nature of construction impacts with respect to number of worker vehicles, trucks, and construction equipment at any given time, within reasonable construction scheduling constraints for each of the development sites in the rezoning area. Because the analysis is based on 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.

Based on the schedule and location of the three projected development sites selected for quantitative analysis, they would not have the potential to simultaneously affect noise levels at any surrounding receptor sites (i.e., these projected development sites would not be constructed simultaneously. Consequently, they were analyzed independently. Based on the construction stage predicted to occur at each development site according to the conceptual construction schedule during each of the selected analysis periods, each receptor expected to experience an exceedance of the *CEQR Technical Manual* noise impact threshold was determined for each period. One peak construction period per year was analyzed, from 2018 to 2027. Based on these determinations, receptors where noise level increases are predicted to exceed the noise impact threshold criteria for two or more consecutive years were identified.

The noise analysis results show that the predicted noise levels could exceed the *CEQR Technical Manual* impact criteria throughout the Project Area. The analysis is based on a conceptual site plan and construction schedule. It is possible that the actual construction may be of less magnitude, or that construction on multiple projected development sites may not overlap, in which case construction noise would be less intense than the analysis predicts.

NOISE REDUCTION MEASURES

Construction of the Proposed Project would be required to follow the requirements of the NYC Noise Control Code for construction noise control measures. Specific noise control measures would be incorporated in noise mitigation plan(s) required under the NYC Noise Code. These measures could include a variety of source and path controls.

The following proposed mitigation measures go beyond the noise control measures already identified in Chapter 20, "Construction" and may partially mitigate significant adverse impacts (and substantially reduce construction-related noise levels) at some locations:

- Noise barriers constructed from plywood or other materials at a height of 12 to 16 feet utilized to provide shielding;
- Utilization of isolation pads between the pile driver hammer and piles;
- Acoustical shrouds surrounding the pile driver hammer and piles;
- Electric cranes or cranes with exhaust silencers that have lower noise emission levels; and
- Excavators with exhaust silencers that have lower noise emission levels.

Between the DEIS and FEIS, the above mitigation measures will be explored, which are intended to address the pieces of construction equipment that would produce the highest noise levels. However, even if all of the above mitigation measures are determined to be feasible and practicable, some significant adverse construction noise impacts could potentially continue to be experienced at sensitive receptors and, as the result, be unavoidable. In the event no additional practicable or feasible mitigation measures are determined, the significant adverse construction noise impacts identified in Chapter 20, "Construction," would be unavoidable. ✷