

A. INTRODUCTION

Public health is the effort of society to protect and improve the health and well-being of its population. The goal of a public health analysis per the 2014 *City Environmental Quality Review (CEQR) Technical Manual* is to determine whether adverse effects on public health may occur as a result of a proposed project, and if so, to identify measures to mitigate such effects. The potential effects of the proposed project were considered with regard to effects on the surrounding community

A public health assessment is warranted for a specific technical area if there is a significant unmitigated adverse effect found in other analysis areas, such as air quality, water quality, hazardous materials, or noise. As identified in Chapter 6.12, “Construction—Noise and Vibration,” the proposed project may result in unmitigated construction noise effects. No significant adverse effects are anticipated for air quality, water quality or hazardous materials. Therefore, this chapter provides a public health assessment of construction noise.

B. PRINCIPAL CONCLUSIONS

The analyses presented in this DEIS conclude that the proposed project would not result in unmitigated significant adverse effects in air quality, water quality, or hazardous materials. The analysis presented in Chapter 6.12, “Construction—Noise and Vibration,” determined that construction activities could potentially result in unmitigated significant adverse construction-period noise effects at receptors in the vicinity of the proposed project’s construction work areas. However, construction of the proposed projects would not result in chronic exposure to high levels of noise, prolonged exposure to noise levels above 85 dBA, or episodic and unpredictable exposure to short-term effects of noise at high decibel levels, as per the *CEQR Technical Manual*. Consequently, construction of the proposed project would not result in a significant adverse public health effect.

NO ACTION ALTERNATIVE (ALTERNATIVE 1)

The No Action Alternative assumes that no new comprehensive coastal protection system is installed in the proposed project area. No construction noise is expected to occur with the No Action Alternative.

PREFERRED ALTERNATIVE (ALTERNATIVE 4): FLOOD PROTECTION SYSTEM WITH A RAISED EAST RIVER PARK

Construction of the Preferred Alternative would not result in chronic exposure to high levels of noise, prolonged exposure to noise levels above 85 dBA, or episodic and unpredictable exposure to short-term effects of noise at high decibel levels. Since the area of potential noise effects is limited and as described below, the noise would not be chronic and would not exceed the

threshold of short-term, high-decibel levels, the predicted noise resulting from construction of the proposed project would not constitute a potential significant adverse public health impact according to the criteria of the *CEQR Technical Manual*.

OTHER ALTERNATIVES

Construction of Alternative 3 is predicted to result in significant adverse construction noise effects at certain locations, as described in Chapter 6.12, “Construction—Noise and Vibration.” Under the Flood Protection System on the West Side of East River Park – Baseline Alternative (Alternative 2) and The Flood Protection System East of FDR Drive (Alternative 5), significant adverse construction noise effects are expected to be similar to those under the Preferred Alternative.

C. REGULATORY CONTEXT

The regulatory context for the proposed project includes the following requirement for which the proposed project has been analyzed with respect to in order to make a determination of potential environmental effects associated with project implementation.

EO 13045-PROTECTION OF CHILDREN FROM ENVIRONMENTAL HEALTH RISKS AND SAFETY RISKS

Executive Order (EO) 13045, Protection of Children from Environmental Health Risks and Safety Risks, specifies prioritization of the identification and assessment of potential environmental health and safety risks that may disproportionately affect children (it should be however be noted that in general the regulatory standards and guidelines, used for comparison purposes, already incorporate protection of sensitive individuals, including children). If adverse effects are identified, CEQR requires that the effects be disclosed and mitigated or avoided to the greatest extent practicable.

D. METHODOLOGY

The construction noise analysis presented in Chapter 6.12, “Construction—Noise and Vibration,” was used to identify the extent of the potential temporary noise exposure to the public as a result of construction of the proposed project. The *CEQR Technical Manual* thresholds for construction noise are based on nuisance levels that could include quality of life and public health effects. The potential temporary noise exposure identified in Chapter 6.12, “Construction—Noise and Vibration,” was evaluated for its potential to impact the health of the affected population by comparing it with the relevant health-based noise criteria as described in the *CEQR Technical Manual*.

Although the *CEQR Technical Manual* thresholds for significant adverse effects are predicted to be exceeded at certain locations during construction, these exceedances would not necessarily constitute a significant adverse public health effect. The *CEQR Technical Manual* identifies public health concerns from noise related to three factors:

- Chronic exposure to high levels of noise (i.e., high levels of noise that occur indefinitely and do not fluctuate or abate);
- Prolonged exposure to noise levels above 85 dBA (the *CEQR Technical Manual* recommended threshold for potential hearing loss); and

- Episodic and unpredictable exposure to short-term effects of noise at high decibel levels.

To determine whether public health effects could occur as a result of the construction noise related to the proposed project, predicted noise levels at the locations where significant adverse effects were predicted to occur were evaluated for the potential to impact the health of the affected population using these three criteria provided in the *CEQR Technical Manual*.

E. ENVIRONMENTAL EFFECTS

NO ACTION ALTERNATIVE (ALTERNATIVE 1)

The No Action Alternative assumes that no new comprehensive coastal protection system is installed in the proposed project area. No construction noise is expected to occur with the No Action Alternative.

PREFERRED ALTERNATIVE (ALTERNATIVE 4): FLOOD PROTECTION SYSTEM WITH A RAISED EAST RIVER PARK

Construction of the Preferred Alternative would include noise control measures 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). Even with these measures, the analysis presented in Chapter 6.12, “Construction—Noise and Vibration,” shows that construction of the proposed project is predicted to result in significant adverse effects at the following locations: 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 Asser Levy Recreation Center. Affected locations include residential areas immediately adjacent to proposed construction areas.

The predicted temporary noise effects identified would not constitute chronic exposure to high levels of noise because of the temporary and intermittent nature of construction noise as described in Chapter 6.0, “Construction Overview.” The maximum construction noise levels predicted to occur under the Preferred Alternative at the locations identified above (up to the high 80s dBA during daytime construction and up to the mid 70s during nighttime construction) would occur primarily as a result of sheet pile installation activities occurring at very short distances from receptors. Such noise levels are highly dependent on the specific location of pile installation activity relative to the receptors, and since sheet pile installation would occur in any single location for no more than approximately four months, the maximum noise levels would not persist at any one receptor over an extended duration. At locations where maximum predicted levels of construction noise would result from construction activities other than sheet pile installation (e.g., locations near pedestrian bridge reconstruction, landscaping work, or excavation activity), maximum construction noise levels would also occur over a limited duration depending on the amount, type, and location of the construction work in that area. Since the construction noise would fluctuate in intensity, no sensitive receptors would be subject to the full effects of construction for the entire construction period, and it would not persist for the full duration of construction, these temporary noise effects are would not be prolonged (or chronic)

noise effect as defined under *CEQR* for determining public health effects. In addition, with the Preferred Alternative, the duration of construction is limited to approximately 3.5 years for project completion.

For a majority of the receptors where significant adverse noise effects would occur, the predicted absolute noise levels would be below the threshold for potential hearing loss of 85 dBA. As shown in Table 6.12-8 in Chapter 6.12, “Construction—Noise and Vibration,” the maximum predicted levels of noise resulting from nighttime construction associated with the Preferred Alternative would be less than 85 dBA for all receptors and the maximum predicted levels of noise resulting from daytime construction associated with the Preferred Alternative would be less than 85 dBA or less for all receptors except receptor 1 (Corlears Hook Park). The maximum predicted levels of noise resulting from daytime construction associated with the Preferred Alternative would be less than 85 dBA or less for all receptors except receptor 15 (605 Water Street) and receptor 23 (the Asser Levy Recreation Center).

As described in Chapter 6.12, “Construction—Noise and Vibration,” under the Preferred Alternative, construction noise levels up to the mid 80s dBA would occur at receptor 1, Corlears Hook Park. While pile installation within the park is expected to occur over the course of approximately 19 months during construction of the Corlears Hook Bridge, pile installation activities associated with Reach C flood protection would occur intermittently in a single location for a relatively brief period of time not greater than 4 months. Outside of this duration, it is expected that pile installation associated with flood protection installation would be at least 100 feet from the building and would consequently not result in noise levels greater than 85 dBA. During the times that pile installation adjacent to this receptor produces maximum noise levels, if noise levels in the park were to reach the threshold that would result in discomfort, it is unlikely that the users of the park would remain. Consequently, it is not expected that users of Corlears Hook Park would experience noise levels high enough to potentially result in hearing loss, but such noise levels in the park would be unpleasant.

As described in Chapter 6.12, “Construction—Noise and Vibration,” construction noise levels up to the high 80s dBA would occur at receptor 23, Asser Levy Recreation Center, during pile installation in Reach P west of the FDR Drive immediately adjacent to this building. Although construction in Reach P is expected to occur over the course of approximately 19 months, pile installation activities would occur intermittently in a single location for a relatively brief period not greater than 4 months. Outside of this duration, it is expected that pile installation would be at least 100 feet from the building and would consequently not result in noise levels greater than 85 dBA. Such noise levels in the recreation center would be unpleasant. It is expected that this pile installation would be scheduled outside of the summer months when the Recreation Center’s pool would be in use.

Based on the limited duration of the predicted high levels of noise at these receptors, the lower noise levels that would occur inside 605 Water Street, and the likelihood that users of the Corlears Hook Park and Asser Levy Recreation Center would not remain in these areas during times of maximum construction noise, construction associated with the proposed project would not result in prolonged exposure to noise levels greater than 85 dBA.

As described in Chapter 6.0, “Construction Overview,” a team of Community Construction Liaisons (CCLs), managed and staffed by a Borough Outreach Coordinator, would be available from pre-construction through the completion of the proposed project to serve as contacts for the community and local leaders. The CCLs would be available to address concerns or problems that may arise during construction, maintain direct communication with the construction project

managers, and be able to quickly troubleshoot and respond to construction-related inquiries. The CCLs would send out email advisories and notifications, weekly construction bulletins, newsletters, and other forms of information through the Neighborhood Network Notification (NNN) list. The CCLs would also attend meetings held by District Service Cabinet, Community Boards, Elected Officials and other community meetings as necessary. In addition, New York City maintains a 24-hour telephone hotline (311) so that concerns can be registered with the City. This coordination would keep the communities informed of the construction activities associated with the proposed project and minimize unpredictable exposure to noise at high decibel levels for surrounding receptors.

Additionally, at residential and school buildings predicted to experience adverse construction noise effects, the predicted noise exposure for the residents would depend on the amount of façade noise attenuation provided by the buildings. The façade noise attenuation is a factor of the building façade construction as well as whether the building’s windows are able to remain closed. Buildings that have insulated glass windows and an alternate means of ventilation (e.g., some form of air conditioning) allowing for the maintenance of a closed-window condition would provide approximately 25 dBA window/wall attenuation. With this closed window condition, maximum nighttime interior noise levels at these receptors would not exceed the mid 50s dBA. This is up to approximately 11 dBA higher than the 45 dBA threshold recommended for residential areas according to the *CEQR Technical Manual* noise exposure guidelines but is typical of existing condition noise levels with windows open or daytime noise levels inside the residences. Consequently, the predicted levels of construction noise would not constitute episodic or unpredictable exposure to noise at high decibel levels at these buildings.

At buildings that do not have façade construction that would provide such levels of attenuation (i.e., 605 Water Street, 621 Water Street, 765 FDR Drive, 819 FDR Drive, 132 Avenue D, 465 East 10th Street, and 123 Mangin Street), maximum nighttime interior noise levels at these receptors would not exceed the high 60s dBA, up to approximately 23 dBA higher than the 45 dBA threshold recommended for residential or classroom uses according to the *CEQR Technical Manual* noise exposure guidelines. For these buildings, further noise reduction measures will be considered to reduce the level of noise exposure such that it would not constitute unpredictable exposure to noise at high decibel levels for surrounding receptors. Such additional measures may include source control measures (e.g., alternative construction methods, quieter equipment, changes in construction scheduling), and path control measures (e.g., noise barriers) and are discussed in further details in Chapter 6.12, “Construction—Noise and Mitigation.”

As discussed above, construction of the Preferred Alternative would not result in chronic exposure to high levels of noise, prolonged exposure to noise levels above 85 dBA, or episodic and unpredictable exposure to short-term effects of noise at high decibel levels. Since the area of potential noise effects is limited and as described above, the noise would not be chronic and would not exceed the threshold of short-term, high-decibel levels, the predicted noise resulting from construction of the proposed project would not constitute a potential significant adverse public health impact according to the criteria of the *CEQR Technical Manual*.

OTHER ALTERNATIVES

Construction of Alternative 3 is predicted to result in significant adverse construction noise effects are expected at certain locations, as described in Chapter 6.12, “Construction—Noise and Vibration.” Under the Flood Protection System on the West Side of East River Park – Baseline Alternative (Alternative 2) and The Flood Protection System East of FDR Drive (Alternative 5),

significant adverse construction noise effects are expected to be similar to those under the Preferred Alternative.

As described in Chapter 6.12, “Construction—Noise and Vibration,” under Alternative 3, construction noise levels up to the high 80s dBA would occur at Receptor 15, 605 Water Street, during the construction activity in Reach A near Montgomery Street immediately adjacent to these buildings. This would include construction of flood protection structures under the FDR Drive and north of the FDR Drive, which is anticipated to occur for approximately nine months. During that time, residents would experience lower noise levels inside the building, because the building façade would provide approximately 15 dBA attenuation. Consequently, these residents would not experience noise levels in excess of 85 dBA. While the predicted interior noise levels, in the mid 70s dBA, would be intrusive, they would not constitute prolonged exposure to noise levels above 85 dBA.

As described in Chapter 6.12, “Construction—Noise and Vibration,” construction noise levels up to the high 80s dBA would occur at receptor 23, Asser Levy Recreation Center, during pile installation in Reach P west of the FDR Drive immediately adjacent to this building. Although construction in Reach P is expected to occur over the course of approximately 20 months, pile installation activities would occur intermittently in a single location for a relatively brief period not greater than 4 months. Outside of this duration, it is expected that pile installation would be at least 100 feet from the building and would consequently not result in noise levels greater than 85 dBA. Such noise levels in the recreation center would be unpleasant. It is expected that this pile installation would be scheduled outside of the summer months when the Recreation Center’s pool would be in use.

Based on the limited duration of the predicted high levels of noise at these receptors, the lower noise levels that would occur inside 605 Water Street, and the likelihood that users of the Corlears Hook Park and Asser Levy Recreation Center would not remain in these areas during times of maximum construction noise, construction associated with the proposed project would not result in prolonged exposure to noise levels greater than 85 dBA.

EO 13045-PROTECTION OF CHILDREN FROM ENVIRONMENTAL HEALTH AND SAFETY RISKS

The Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, specifies the prioritization the identification and assessment of potential environmental health and safety risks that may disproportionately affect children. Of the significant adverse noise impacts resulting from construction of the proposed project discussed above, only the potential impact at 123 Mangin Street under the Preferred Alternative would have the potential to disproportionately affect children, because of that building’s school use. The maximum predicted noise level increment resulting from construction at the exterior of the school building during daytime hours is approximately 11 dBA, which would be considered a perceived doubling of loudness compared to existing levels. However, the predicted total noise levels would be considered “marginally unacceptable” according to *CEQR Technical Manual* noise exposure criteria and is typical of many schools in Manhattan. Based on an estimate of 15 dBA window/wall attenuation from the school’s monolithic glass windows and window air conditioning units, the maximum interior noise levels at the school resulting from construction are predicted to be in the low 60s dBA. This level would exceed the 45 dBA threshold recommended for classroom use according to *CEQR Technical Manual* noise exposure criteria, but would also be comparable to many other classroom environments in New York City adjacent

to heavily trafficked roadways or other urban noise sources. Furthermore, the predicted construction noise at this location would be temporary and would occur only during the period of floodwall construction and landscaping immediately adjacent to the school, which would not be expected to occur for more than 11 months. Consequently, while the predicted construction noise at the school was determined to result in a significant adverse effect, it would not constitute a potential environmental health or safety risk to the students. *