

Chapter 18 : NOISE

A. INTRODUCTION

This chapter assesses the potential for the Proposed Action to result in significant adverse noise impacts. Noise in an urban area comes from many sources. Some sources are activities essential to the health, safety, and welfare of a city's inhabitants, such as noise from emergency vehicle sirens, sanitation trucks, and construction and maintenance equipment. Other sources, such as train and traffic noise, are essential by products of maintaining the viability of a city as a place to live and do business. With respect to noise, the goal of CEQR is to determine both (1) a proposed project's potential effects on sensitive noise receptors, and (2) the effects of ambient noise levels on new sensitive uses introduced by the proposed project.

B. PRINCIPAL CONCLUSIONS

The Proposed Action would not result in significant adverse noise impacts due to operations of any potential development. The Proposed Action has the potential to introduce new sensitive receptors closer to existing train operations on elevated train tracks, therefore, the Proposed Action would potentially result in significant adverse noise impacts.

In accordance with the City Environmental Quality Review (CEQR) Technical Manual, screening analysis was conducted. The screening analysis concluded, based on prototypical development sites that two of the 27 prototypes have the potential to result in significant adverse noise impacts.

Prototypes 8 and 20 each model two No-Action scenarios that assume Long term care facilities or Affordable Independent Residents for Senior developments that utilize the existing height factor envelope, and the existing non-contextual envelope, and compares them to the With-Action envelope. This analysis identifies a noise impact associated with the shifting of bulk closer to the elevated rail line in the With Action scenario over the No Action height factor scenario. Although the height factor envelope provides a less desirable building model for the Affordable Independent Residences for Seniors, making development pursuant to height factor less likely than one with a Quality Housing envelope, there is the potential for a significant adverse noise impact.

C. METHODOLOGY

The assessment is concerned with both mobile and stationary noise sources. Mobile sources are those that move in relation to a noise-sensitive receptor. They include automobiles, buses, trucks, aircraft, and trains. Stationary sources of noise do not move in relation to a noise-sensitive receptor. Typical stationary noise sources of concern include machinery or mechanical equipment associated with industrial and manufacturing operations; building heating, ventilating, and air conditioning (HVAC) systems; speakers for public address and concert systems; playground noise; and spectators at concerts or sporting events. An action could raise noise levels either by introducing new stationary noise sources (such as outdoor playgrounds or rooftop air conditioning compressors) or by increasing mobile source noise (generally by generating additional traffic). Similarly, an action could introduce new residences or other sensitive receptors that would be subject to noise from either stationary or mobile sources.

The Proposed Action is a "Generic Action," and there are no known potential or projected development sites and, due to its broad applicability, it is difficult to predict the sites where development would be facilitated by the Proposed Action. To produce a reasonable analysis of likely effect of the Proposed Action, 27 representative development prototypes have been identified, as described in Chapter 2, Analytical Framework. Therefore, these prototypes form the basis for analysis.

Mobile Source

For most projects, an analysis may be employed using a logarithmic equation called the proportional modelling to determine the noise increment between no action and with action traffic condition. Proportional modeling is typically used to determine locations with the potential for having significant noise impacts. Vehicular traffic volumes would be converted into Noise Passenger Car Equivalent (Noise PCE) values, for which one medium-duty truck is assumed to generate the noise equivalent of 13 cars, and one heavy-duty truck is assumed to generate the noise equivalent of 47 cars, and one bus is assumed to generate the noise equivalent of 18 cars. Using this analysis, the prediction of the noise increment based on trips generated by each prototype can be assessed. For 25 out of the 27 prototypes, no mobile source analysis is warranted because the traffic generated by the Proposed Action would not have the potential to double the noise PCE. Two of the prototypes (Prototypes 8 and 20) are located in close proximity to elevated rail lines or other infrastructure, noise emissions from train operations or other vehicular operation have the potential to impact the sensitive land uses as illustrated by the prototypes. As described in Chapter 1, Project Description, the action would also have a potential to inadvertently put some senior housing or long term care units closer to the elevated train track in both the No Action and With Action Scenarios. Therefore, potential noise impacts from the elevated noise source to the sensitive receptor at these two prototype represented would be warranted.

Stationary Source

The Proposed Action has the potential to result in additional residential development. All rooftop mechanical equipment, including air conditioner compressors, for any potential development would have to be enclosed and would have to comply with New York City Noise Code requirements, which would limit noise levels generated by such equipment to 65 dBA during the daytime (7AM to 10 PM) and 55 dBA during the nighttime (10 PM to 7AM). Therefore, the Proposed Action would not result in significant adverse stationary source noise impact. No additional analysis is warranted.

D. MOBILE SOURCE NOISE ASSESSMENT

Future No-Action Condition

In the future without the Proposed Action, it is assumed that the existing roadway condition for each prototype would remain the same in the future without action condition. Moreover, the mobile source noise characteristics for each prototype would remain the same between the future without action and the existing condition. Thus, no mobile source analysis is warranted for the No-Action condition.

According to the *CEQR Technical Manual*, a noise analysis may be warranted if the With-Action development would introduce a new noise-sensitive location in an area with high ambient noise levels. As illustrated in Chapter 1, Proposed Action, With-Action Scenario for Prototype 8 and 20, the development would introduce new senior housing within 1,500 feet of an existing rail line with a direct line of sight from the proposed receptor to an elevated train track. A screening assessment of train noise is provided to determine whether or not a noise impact is expected for the two proposed No Action Scenarios.

Future With-Action Condition

In coordination with the traffic studies, traffic volumes should be estimated for the expected hour or hours with the greatest noise level change at sensitive receptors likely to be most affected by the proposed project. The method for assigning noise passenger car equivalent (Noise PCE) values to vehicle types are discussed in the methodology section of this chapter. If existing Noise PCE values are increased by 100 percent or more due to a proposed project (which is equivalent to an increase of 3 dB(A) or more), a detailed analysis is warranted. Conversely, if existing Noise PCE values are not increased by 100 percent or more, it is likely that the proposed project would not cause a significant adverse vehicular noise impact. As discussed in the Chapter 15 Transportation, for each prototype proposed by the ZQA, the projected auto volume are not expected to be doubled between the No action and the with action scenarios. Moreover, medium truck, heavy truck and bus volumes, with 13 Noise PCE, 47 Noise PCE, and 18 Noise PCE respectively, are not projected to be increased between the No Action and With Action Scenario.

Therefore, the noise total PCE values are not projected to be doubled between the No Action and With Action Scenarios. In conclusion, no vehicular mobile source noise impact is expected and no further analysis is warranted.

As illustrated in Prototypes 8 and 20, noise generated from train pass-bys on elevated train track is expected to be the dominant noise source for the proposed Affordable Independent Residences for Seniors and long term care facility. Distances differences between the elevated track and the senior housing or long term care facilities would determine whether or not an impact is expected. The noise level of 90 dBA at 15 feet was considered in this analysis. The distances between the train track and the closest sensitive receptor are illustrated below:

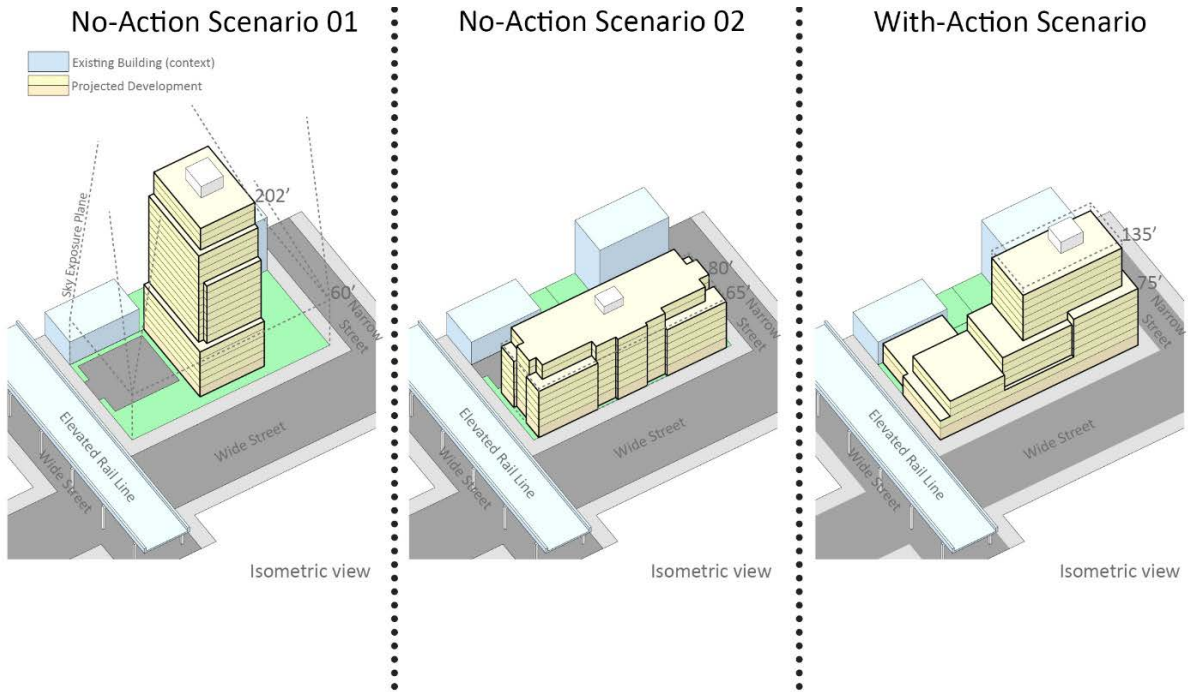


Table 18-1: Distances between senior housing and elevated rail line, Prototype 8

Prototype 8	Distance (ft)
No Action Scenario 1	100
No Action Scenario 2	32
With Action	27

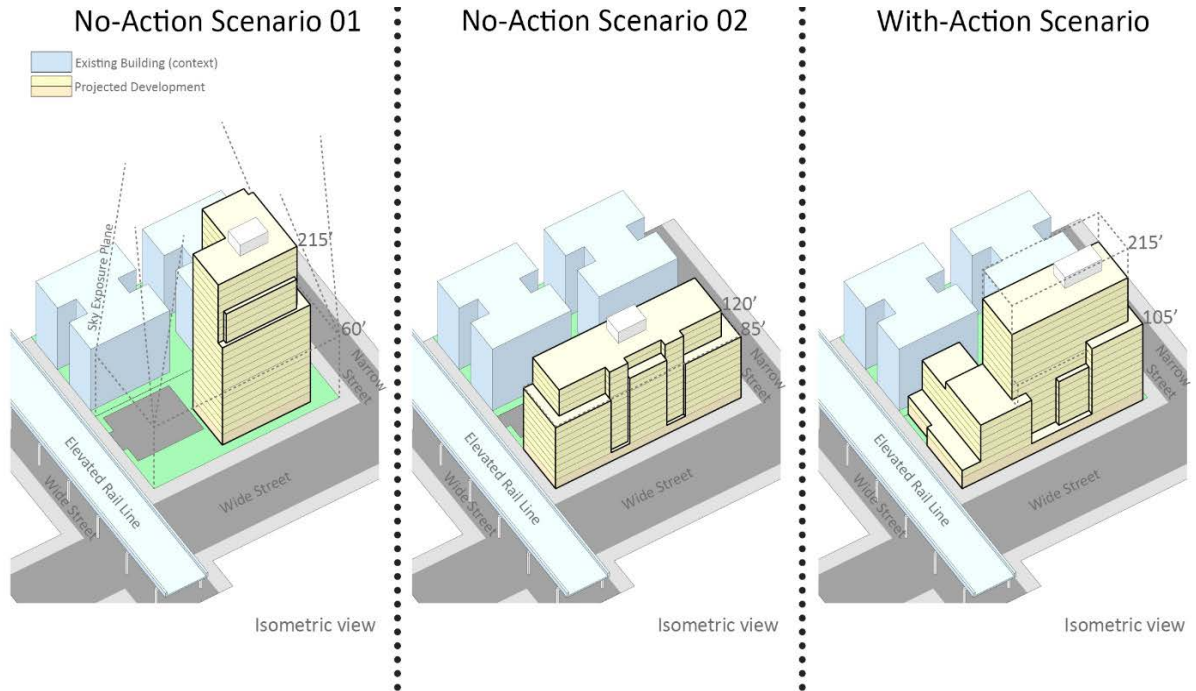


Table 18-2: Distances between senior housing and elevated rail line, Prototype 20

Prototype 20	Distance (ft)
No Action Scenario 1	107
No Action Scenario 2	27
With Action	27

As indicated by Table 1 for Prototype 8, the distance between the elevated train track and the closest receptor is expected to decrease by 73 feet between the No Action Scenario 1 and the With Action Scenario. As a result, a 6 dBA increase is expected between No Action Scenario 1 and With Action Scenario because the noise sensitive receptor would be closer to the elevated train track. Therefore, a significant adverse impact is expected between No Action Scenario 1 and With Action Scenario.

As indicated by Table 1 for Prototype 8, the distance between the elevated train track and the closest receptor is expected to decrease by 5 feet between the No Action Scenario 2 and the With Action Scenario. As a result, a 0.7 dBA increase is expected between No Action Scenario 1 and With Action Scenario. Therefore, a significant adverse impact is not expected between No Action Scenario 2 and With Action Scenario.

As indicated by Table 2 for Prototype 20, the distance between the elevated train track and the closest receptor is expected to decrease by 80 feet between the No Action Scenario 1 and the With Action Scenario. As a result, a 6 dBA increase is expected between No Action Scenario 1 and With Action Scenario because the noise sensitive receptor would be closer to the elevated train track. Therefore, a significant adverse impact is expected between No Action Scenario 1 and With Action Scenario.

As indicated by Table 2 for Prototype 20, the distance between the elevated train track and the closest receptor would remain the same between the no action scenario 2 and with action scenarios. Therefore, a significant adverse impact is not expected between No Action Scenario 2 and With Action Scenario. The impacted area would be located along MTA's elevated subway lines in parts of the Bronx, Queens, Brooklyn and Staten Island, elevated railroads such as the Metro North Railroad in Manhattan and the Bronx, and Long Island Railroad in Brooklyn and Queens, and corridors along elevated highways or highway cuts, such as the Cross Bronx Expressway and Long Island Expressway.

Despite the noise increment generated by placing noise sensitive receptor closer to an elevated train track or similar infrastructure, the potential for a significant adverse impact on noise is highly unlikely. In the future without the Proposed Action, Affordable Independent Residences for Seniors and Long Term Care Facilities adjacent to certain types of infrastructure in non-contextual R6-R8 districts would have two building envelope options: Quality Housing, and Height Factor. The significant adverse noise impact would only be expected to occur in the Future with the Proposed Action if the Future without the Proposed Action included a height factor building housing Affordable Independent Residences for Seniors or a long Term Care facility.

This type of building is not well suited for senior housing development. The relatively small floor plates associated with height-factor buildings subject to open space ratios don't conform to the best practices in Affordable Independent Residences for Seniors and Long Term Care Facilities development today. These types of housing require larger elevators to accommodate a substantial disabled population, and seek to develop buildings that can accommodate residential units and shared community spaces on a single floor. At the same time, the current Quality Housing envelope doesn't work for these types of facilities when located near features like an elevated rail line. Given the unworkable envelopes for Affordable Independent Residences for Seniors and Long Term Care Facilities under these conditions, lots in R6-R8 zoning districts adjacent to certain types of infrastructure would be unlikely to see Affordable Independent Residences for Seniors and Long Term Care Facilities development, and they would instead be expected to develop with other uses that can be accommodated by their permitted envelopes.