# 16.0 Noise

## A. Introduction

This chapter discusses potential impacts to the neighborhood noise environment as a result of the Proposed Actions. Approval of the Proposed Actions would generate additional mobile sources (i.e., vehicular traffic) in the Affected Area. Therefore, a noise analysis is prepared to evaluate the potential effect of the Proposed Actions at projected and potential development sites and nearby noise sensitive locations in the Affected Area. Existing noise levels in the Affected Area are predominantly the result of vehicular traffic. Noise sensitive locations include residential, commercial, and open space uses.

In order to assess the potential for significant adverse noise impacts, the noise analysis considers changes in noise due to increases in traffic and the introduction of sensitive receptors into an area with high existing noise levels. The noise analysis addresses two factors: (1) the change in noise levels from the Existing condition in the area as a result of the Proposed Actions; and (2) the location of new sensitive receptors and the degree to which window/wall attenuation would provide acceptable interior noise levels.

## B. Principal Conclusions

The noise analysis concludes that the Proposed Actions would not generate sufficient traffic to have the potential to cause a significant noise impact on any of the 68 projected or potential development sites. At all the projected and potential development site noise receptor locations, the maximum noise level increase would be below three dBA between No-Action and With-Action conditions. Therefore, the noise analysis concludes that the traffic generated by the Proposed Actions would not have the potential to produce significant increases to noise levels at any sensitive receptors among the 68 projected and potential development sites within the Affected Area.

The Proposed Actions would introduce new sensitive receptors at projected and potential development sites and conversion to residential development within the Affected Area. Ambient noise levels adjacent to the projected and potential development sites were examined to determine whether building noise attenuation requirements for maintaining interior noise levels would be necessary due to an increase in vehicular traffic. The assessment finds that noise levels would range between the “marginally acceptable” and “marginally unacceptable” exterior CEQR noise exposure categories, resulting in a noise attenuation requirement range of 28 to 33 dBA to ensure noise levels within the projected and potential development sites would comply with applicable CEQR interior noise level target requirements. As a result, the Proposed Actions includes (E) designations for most of the projected and potential development sites. The window/wall attenuation levels required under the (E) designation (E-830) would avoid the potential for significant adverse noise impacts due to the Proposed Actions; see Appendix G, for the proposed (E) designation. Since the RWCDS conversion model is not site-specific, if located outside of the proposed Mixed Use Districts, residential conversion area could be located in areas with high ambient noise level and without appropriate attenuation measures to maintain CEQR

interior noise target level. Therefore, significant adverse noise impacts cannot be precluded for the residential conversion area.

~~Noise chapter and analyses will be revised based on more detailed evaluation between Draft and Final EIS.~~

## C. Acoustical Fundamentals

Sound is a fluctuation in air pressure, and sound pressure levels are measured in units called decibels (dB). The particular character of the sound that we hear (a whistle compared with a French horn, for example) is determined by the speed, or "frequency," at which the air pressure fluctuates, or "oscillates." Frequency defines the oscillation of sound pressure in terms of cycles per second. One cycle per second is known as one hertz (Hz). People can hear over a relatively limited range of sound frequencies, generally between 20 Hz and 20,000 Hz, and the human ear does not perceive all frequencies equally well. High frequencies (e.g., a whistle) are more easily discernible and therefore more intrusive than many of the lower frequencies (e.g., the lower notes on the French horn).

### *"A" Weighted Sound Level*

To establish a uniform noise measurement that simulates people's perception of loudness and annoyance, the decibel measurement is weighted to account for those frequencies most audible to the human ear. This is known as the A-weighted sound level, or dBA, and it is the descriptor of noise levels most often used for community noise. As shown in **Table 16-1**, the threshold of human hearing is defined as 0 dBA; very quiet conditions (as in a library, for example) are approximately 40 dBA; levels between 50 dBA and 70 dBA define the range of noise levels generated by normal daily activity; levels above 70 dBA would be considered noisy, and then loud, intrusive, and deafening as the scale approaches 130 dBA.

**Table 16-1: Typical Noise Values**

| Sound Source | dBA |
|---|---|
| Military jet, air raid siren | 130 |
| Amplified rock music | 110 |
| Jet takeoff at 500 meters | 100 |
| Freight train at 30 meters | 95 |
| Train horn at 30 meters | 90 |
| Heavy truck at 15 meters | 80-90 |
| Busy city street, loud shout | 80 |
| Busy traffic intersection | 70-80 |
| Highway traffic at 15 meters, train | 70 |
| Predominantly industrial area | 60 |
| Light car traffic at 15 meters, city or commercial areas, or residential areas close to industry | 50-60 |
| Background noise in an office | 50 |
| Suburban areas with medium-density transportation | 40-50 |
| Public library | 40 |
| Soft whisper at 5 meters | 30 |
| Threshold of hearing | 0 |

Source: Cowan, James P. Handbook of Environmental Acoustics, Van Nostrand Reinhold, New York, 1994; Egan, M. David, Architectural Acoustics. McGraw-Hill Book Company, 1988.

Note: A 10 dBA increase in level appears to double in loudness, and a 10 dBA decrease halves the apparent loudness.

In considering these values, it is important to note that the dBA scale is logarithmic, meaning that each increase of 10 dBA describes a doubling of perceived loudness. Thus, the background noise in an office, at 50 dBA, is perceived as twice as loud as a library at 40 dBA. For most people to perceive an increase in noise, it must be at least three dBA. At five dBA, the change will be readily noticeable.

### *Noise Descriptors used in Impact Assessment*

Because the sound pressure level unit of dBA describes a noise level at just one moment and very few noises are constant, other ways of describing noise over extended periods have been developed. One way of describing fluctuating sound is to describe the fluctuating noise heard over a specific time period as if it had been a steady, unchanging sound. For this condition, a descriptor called the "equivalent sound level," $L_{eq}$, can be computed. $L_{eq}$ is the constant sound level that, in a given situation and time period (e.g., one hour, denoted by $L_{eq(1)}$, or 24 hours, denoted as $L_{eq(24)}$), conveys the same sound energy as the actual time−varying sound. The Day−Night Sound Level (i.e., $L_{dn}$) refers to a 24−hour average noise level with a 10 dB penalty applied to the noise levels during the hours between 10:00 p.m. and 7:00 a.m., due to increased sensitivity to noise levels

during these hours. Statistical sound level descriptors such as $L_{10}$, $L_{50}$, $L_{90}$, and $L_x$, are used to indicate noise levels that are exceeded 10, 50, 90, and x percent of the time, respectively.

The relationship between $L_{eq}$ and levels of exceedance is worth noting. Because $L_{eq}$ is defined in energy rather than straight numerical terms, it is not simply related to the levels of exceedance. If the noise fluctuates very little, $L_{eq}$ will approximate $L_{50}$ or the median level. If the noise fluctuates broadly, the $L_{eq}$ will be approximately equal to the $L_{10}$ value. If extreme fluctuations are present, the $L_{eq}$ will exceed $L_{90}$ or the background level by 10 or more decibels. Thus, the relationship between $L_{eq}$ and the levels of exceedance will depend on the character of the noise. In community noise measurements, it has been observed that the $L_{eq}$ is generally between $L_{10}$ and $L_{50}$.

The $L_{dn}$ is the average noise level over a 24-hour period. The hourly noise level measurements between the hours of 10:00 p.m. and 7:00 a.m. are adjusted by 10 dB before averaging. This noise is weighted to take into account the decrease in community background noise of 10 dB during this period and accounts for the extra sensitivity people have to noise during typical sleeping hours. According to *CEQR Technical Manual* standards, it is recommended that the $L_{dn}$ be used in the analysis of train noise. In some cases, assessing train noise using $L_{eq(1)}$ may be necessary, particularly when assessing peak hour levels or when determining cumulative effects of several noise sources, i.e., in combination with vehicle, aircraft, and/or industrial process noise.

For purposes of this noise assessment, the maximum one-hour equivalent sound level (i.e., $L_{eq(1)}$) has been selected as the noise descriptor to be used to quantify potential changes in noise levels under the no-action and with-action conditions. $L_{eq(1)}$ is the noise descriptor recommended for use in the *CEQR Technical Manual* for vehicular traffic and is used to provide an indication of highest expected sound levels. Depending on the dominant source of noise, $L_{dn}$ or one-hour $L_{10}$ is the noise descriptor used in the *CEQR Technical Manual* noise exposure guidelines for city environmental impact review classification.

## D. Noise Exposure Standards and Criteria

In 1983, the New York City Department of Environmental Protection (DEP) adopted noise standards for exterior noise levels. These standards are used to classify noise exposure into four categories: Acceptable, Marginally Acceptable, Marginally Unacceptable, and Clearly Unacceptable (see **Table 16-2**).

**Table 16-2: CEQR Noise Exposure Guidelines for Use in City Environmental Impact Review[1]**

| Receptor Type | Time Period | Acceptable General External Exposure | Airport Exposure[3] | Marginally Acceptable General External Exposure | Airport Exposure | Marginally Unacceptable General External Exposure | Airport Exposure | Clearly Unacceptable General External Exposure | Airport Exposure |
|---|---|---|---|---|---|---|---|---|---|
| 1. Outdoor area requiring serenity and quiet[2] | | $L_{10} \leq 55$ dBA | DNL ≤ 60 dBA | | 60 < DNL £ 65 dBA | | 65 < DNL ≤ 75 dBA | | DNL > 75 dBA |
| 2. Hospital, Nursing Home | | $L_{10} \leq 55$ dBA | | 55 < $L_{10} \leq$ 65 dBA | | 65 < $L_{10} \leq$ 80 dBA | | $L_{10}$ > 80 dBA | |
| 3. Residence, residential hotel or motel | 7 a.m.-10 p.m. | $L_{10} \leq 65$ dBA | | 65 < $L_{10} \leq$ 70 dBA | | 70 < $L_{10} \leq$ 80 dBA | | $L_{10}$ > 80 dBA | |
| | 10 p.m.-7 a.m. | $L_{10} \leq 55$ dBA | | 55 < $L_{10} \leq$ 70 dBA | | 70 < $L_{10} \leq$ 80 dBA | | $L_{10}$ > 80 dBA | |
| 4. School, museum, library, court, house of worship, transient hotel or motel, public meeting room, auditorium, out-patient health facility | | Same as Residential Day (7 a.m. –10 p.m.) | | Same as Residential Day (7 a.m.–10 p.m.) | | Same as Residential Day (7 a.m.–10 p.m.) | | Same as Residential Day (7 a.m. – 10 p.m.) | |
| 5. Commercial or office | | Same as Residential Day (7 a.m.–10 p.m.) | | Same as Residential Day (7 a.m.–10 p.m.) | | Same as Residential Day (7 a.m.–10 p.m.) | | Same as Residential Day (7 a.m.–10 p.m.) | |
| 6. Industrial, public areas only[4] | Note 4 | Note 4 | | Note 4 | | Note 4 | | Note 4 | |

Source: New York City DEP (1983).

Notes:

In addition, any new activity shall not increase the ambient noise level by 3 dBA or more:

Note 1. Measurements and projections of noise exposures are to be made at appropriate heights above site boundaries as given by ANSI Standards; all values are for the worst hour in the time period.

Note 2. Tracts of land where serenity and quiet are extraordinarily important and serve an important public need and where the preservation of these qualities is essential for the area to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of parks or open spaces dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet. Examples are grounds for ambulatory hospital patients and patients and residents of sanatoriums and nursing homes.

Note 3. One may use Federal Aviation Administration (FAA)-approved land contours supplied by the Port Authority, or the noise contours may be computed from the Federally approved Integrated Noise Model ("INM") Computer Model using flight data supplied by the Port Authority of New York and New Jersey.

Note 4. External Noise Exposure standards for industrial areas of sounds produced by industrial operations other than operating motor vehicles or other transportation facilities are spelled out in the New York City Zoning Resolution, Sections 42-20 and 42-21. The referenced standards apply to M1, M2, and M3 manufacturing districts and to adjoining residence districts (performance standards are octave band standards).

The *CEQR Technical Manual* defines attenuation requirements for buildings based on exterior noise levels (see **Table 16-3**). For dominant traffic noise, recommended noise attenuation values for buildings are designed to maintain interior $L_{10}$ noise levels of 45 dBA or lower for residential and community facility uses and 50 dBA or lower for commercial office uses. For dominant train noise, recommended noise attenuation values for buildings are designed to maintain interior $L_{dn}$ noise levels of 40 dBA or lower for residential uses.

**Table 16-3: Required Attenuation Values to Achieve Acceptable Interior Noise Levels**

| | Marginally Unacceptable | | | | Clearly Unacceptable |
|---|---|---|---|---|---|
| Vehicular Traffic | $70 < L_{10} \leq 73$ | $73 < L_{10} \leq 76$ | $76 < L_{10} \leq 78$ | $78 < L_{10} \leq 80$ | 80 < L10 |
| Aircraft[a] | 65 < DNL ≤ 68 | 68 < DNL ≤ 71 | 71 < DNL ≤ 73 | 73 < DNL ≤ 75 | 75 < DNL |
| Train | $65 < L_{dn} \leq 68$ | $68 < L_{dn} \leq 71$ | $71 < L_{dn} \leq 73$ | $73 < L_{dn} \leq 75$ | 75 < Ldn |
| Attenuation[b] | (I)<br>28 dB(A) | (II)<br>31 dB(A) | (III)<br>33 dB(A) | (IV)<br>35 dB(A) | See note[c] |

Source: New York City DEP (1983).
Notes:
[a] DNL descriptor based on average values of Ldn over a year period.
[b] he above composite window-wall attenuation values are for residential dwellings and community facility development. Commercial office spaces and meetings rooms would be 5 dB(A) less in each category. All of the above categories require a closed-window situation and hence an alternate means of ventilation.
[c] The required attenuation value is the difference between Lbuild and Linterior, using the appropriate noise descriptor Where: Lbuild is the projected noise level under the build condition rounded up to the whole number, and Linterior is the designed interior noise level (45 dB(A) for vehicular noise, 40 dB(A) for aircraft and train noise)

### *New York City Noise Control Code*

Specific noise standards for the projected and potential development sites would be governed by the 2005 New York City Noise Code. **Table 16-4** shows the permitted sound levels for sources operating in connection with any residential, commercial, or business enterprises. These noise levels do not apply to construction activities or equipment but do apply to mechanical systems which may be related to the Proposed Actions' operation.

**Table 16-4: New York City Noise Code**

| Octave Band | Maximum Sound Pressure Levels (dB) as measured within a receiving property, as specified below | |
|---|---|---|
| **Frequency (Hz)** | **Residential receiving property for mixed-use buildings and residential buildings (as measured within any room of the residential portion of the building with windows open, if possible).** | **Commercial receiving property (as measured within any room containing offices within the building with windows open, if possible).** |
| 31.5 | 70 | 74 |
| 63 | 61 | 64 |
| 125 | 53 | 56 |
| 250 | 46 | 50 |
| 500 | 40 | 45 |
| 1000 | 36 | 41 |
| 2000 | 34 | 39 |
| 4000 | 33 | 38 |
| 8000 | 32 | 37 |

Source: New York City Noise Code, 2005.

## E. Environmental Conditions for Buildings in MX Districts

The Proposed Actions would rezone all or portions of existing M1-6 and M1-6D districts within the project area, eliminate the Special garment Center District from the zoning map, and establish a Special Midtown South Mixed-Use (MSMX) District comprised of M1-9A/R12, M1-8A/R12, and M1-8A/R11 districts that allow manufacturing and residential uses. Zoning Resolution (ZR) Section 123-32-Environmental Conditions requires that all new dwelling units (DUs) in Special Mixed-Use Districts be provided with a minimum of 35 dBA window-wall attenuation to maintain an interior noise level of 45 dBA or less. The 35 dBA window-wall attenuation is for a closed-window condition; consequently, a means of alternate ventilation that does not degrade the acoustical performance of the building facade is required for all residential developments. However, it is possible to review and alter the minimum attenuation requirements via a process overseen by the New York City Mayor's Office of Environmental Remediation (OER), which could be undertaken at a later time.

### *Noise from Manufacturing Use in the Same Building*

The Proposed Actions would allow for manufacturing and residential uses in the same building. To protect occupants of mixed-use residential and manufacturing buildings and surrounding properties from vibrations and noise, any manufacturing uses operating on the ground floor of these buildings would need to adhere to the NYC Noise Code and the performance standards for

M1 districts outlined in ZR 42-40. Manufacturing uses operating on the same story or above residential uses would need to adhere to the environmental requirements of ZR 32-423, as referenced in ZR 133-31(c)(2) to ensure there would be no significant adverse noise impacts.

# F. Existing Noise Levels

### *Selection of Noise Monitoring Locations*

Information concerning specific land use in and around the projected and potential development sites, as well as trip assignments for potential future uses, were reviewed to select monitoring sites and assess future noise impacts on existing and future sensitive land uses. The 22 monitoring sites depicted in **Table 16-5** and shown on **Figure 16-1** are nearby sites of projected and potential development and are representative of the sensitive land uses in the Affected Area.

**Figure 16-1: Noise Measurement Locations**

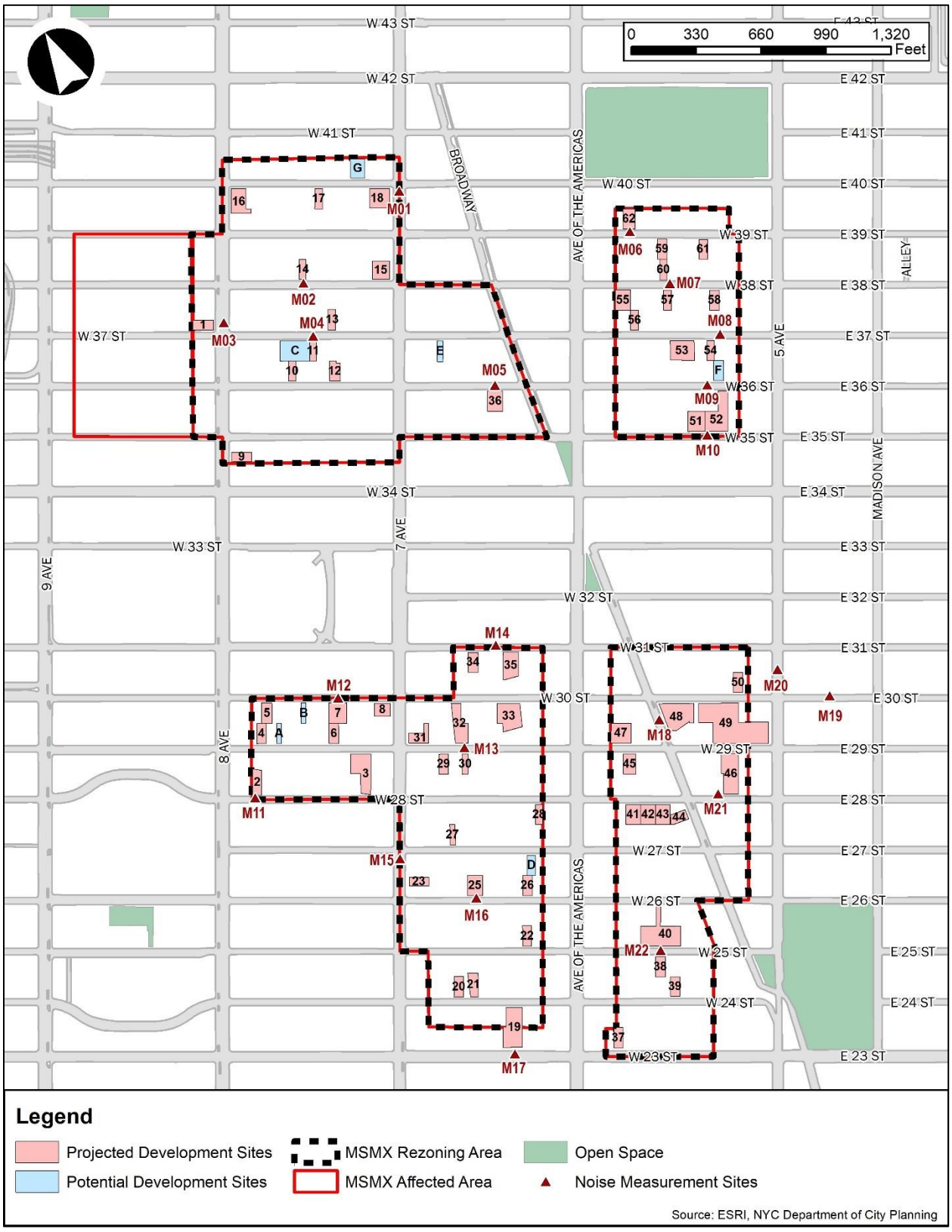


**Table 16-5: Noise Monitoring Locations**

| Receptor | Location |
|---|---|
| M01 | 7th Avenue Between W 39th and W 40th Streets |
| M02 | W 38th Street Between 7th and 8th Avenues |
| M03 | Corner of 8th Avenue and W 37th Street |
| M04 | W 37th Street Between 7th and 8th Avenues |
| M05 | W 36th Street Between 7th Avenue and Broadway |
| M06 | W 39th Street Between 5th and 6th Avenues |
| M07 | W 38th Street Between 5th and 6th Avenues |
| M08 | W 37th Street Between 5th and 6th Avenues |
| M09 | W 36th Street Between 5th and 6th Avenues |
| M10 | W 35th Street Between 5th and 6th Avenues |
| M11 | W 28th Street Between 7th and 8th Avenues |
| M12 | W 30th Street Between 7th and 8th Avenues |
| M13 | W 29th Street Between 6th and 7th Avenues |
| M14 | W 31st Street Between 6th and 7th Avenues |
| M15 | Corner of 7th Avenue and W 27th Street |
| M16 | W 26th Street Between 6th and 7th Avenues |
| M17 | W 23rd Street Between 6th and 7th Avenues |
| M18 | Broadway Between W 29th and W 30th Streets |
| M19 | E 30th Street Between 5th Avenue and Madison Avenue |
| M20 | 5th Avenue Between W 30th and W 31st Streets |
| M21 | W 28th Street Between 5th Avenue and Broadway |
| M22 | W 25th Street Between Broadway and 6th Avenue |

Source: HMMH, 2024.

## *Noise Monitoring*

Noise monitoring was performed on two weekdays and one weekend from September 11, 2024, to September 14, 2024. Time periods chosen for monitoring include the weekday AM (8:00 AM – 9:30 AM), Midday [MD] (1:30 PM – 3:30 PM), PM (4:00 PM – 6:30 PM), and Saturday Midday

(1:15 PM –3:15 PM) peak periods. Peak periods were identified based on the traffic peak hours identified as part of the traffic analysis for the proposed project and review of New York State Department of Transportation (NYSDOT) traffic count data. The peak hour noise monitoring took into account the peak weekday office, commercial, and school-related traffic, and the peak weekend commercial traffic. Measurements were conducted for a 20-minute time period so that the typical fluctuations in peak hour traffic could be properly accounted for.

In addition to $L_{eq}(h)$ and $L_{10}$ noise levels, other statistical noise descriptors ($L_{50}$, $L_{90}$, $L_{max}$, and $L_{min}$) were sampled at all locations for all time periods. For the Proposed Actions, the analysis of potential noise impacts utilizes the $L_{10}$ and $L_{eq}(h)$ descriptors. The other noise descriptors collected during the monitoring program are utilized to assist in the characterization of the existing noise environment. Typically, $L_{50}$ tends to describe the statistical median noise value, while the $L_{90}$ typically describes the residual background noise level in an environment.

## *Equipment Used During Noise Monitoring*

Noise measurements were conducted with Bruel & Kjaer 2245, Bruel & Kjaer 2250, and Svantek Class I Sound Level Meters (SLMs). A windscreen was placed over the microphone for all measurements. The SLMs had laboratory calibration dates within the past year at the time of use, as is standard practice. The SLMs were also properly field-calibrated for all measurements using Bruel & Kjaer 4231 calibrators. There were no significant variances between the beginning and ending calibration measurements. To avoid interference with sound propagation, the measuring microphone was placed approximately six feet away from any reflecting surfaces and at a height of approximately five feet from the ground surface. Weather conditions during the measurement periods, with respect to temperature and wind conditions, were conducive to obtaining valid noise readings, per guidelines outlined in ANSI Standard S1.13-2005.

## *Existing Noise Levels at Noise Receptor Locations*

*Measured Noise Levels*

The Affected Area is exposed to noise from vehicular traffic on local streets, car horns, and pedestrians talking. The dominant source of neighborhood noise comes from local vehicular traffic. Receptors which are exposed to the most noise are those which are in close proximity to principal and minor arterial streets such as Broadway and Fifth through Eighth Avenues. Extraneous events occurring during noise measurements were excluded from the data sets. Based on *CEQR Technical Manual* noise exposure criteria, receptors M01 through ~~M09~~M10, M11, M12, M15, M16, M17, M19, ~~and~~ M20, and M22 would be in the “Marginally Unacceptable” category. Receptors ~~M10,~~ M13, M14, M18, and M21~~, and M22~~ would be within the “Marginally Acceptable” category. The results of the measurements of existing noise levels are summarized in **Table 16-6**.

**Table 16-6: Measured Existing Noise Levels (in dBA) (Table revised for the FEIS)**

| Receptor | Measurement Location | Time | $L_{eq}$ | $L_{10}$ | $L_{50}$ | $L_{90}$ | CEQR Category |
|---|---|---|---|---|---|---|---|
| M01 | 7th Avenue Between W 39th and W 40th Streets | AM | 67.4 | 69.5 | 66.2 | 64.2 | Marginally Acceptable |
| | | MD | 71.0 | 73.8 | 69.9 | 67.4 | Marginally Unacceptable |
| | | PM | 69.7 | 71.7 | 68.7 | 67.1 | Marginally Unacceptable |
| | | SAT | 66.8 | 69.6 | 65.4 | 63.1 | Marginally Acceptable |
| M02 | W 38th Street Between 7th and 8th Avenues | AM | 66.7 | 68.9 | 65.1 | 62.7 | Marginally Acceptable |
| | | MD | 66.4 | 68.2 | 65.1 | 63.7 | Marginally Acceptable |
| | | PM | 66.3 | 68.3 | 65.5 | 63.9 | Marginally Acceptable |
| | | SAT | 66.5 | 70.2 | 65.1 | 63.2 | Marginally Unacceptable |
| M03[1] | Corner of 8th Avenue and W 37th Street | AM | 69.3 | 72.1 | 68.5 | 66.1 | Marginally Unacceptable |
| | | MD | 71.1 | 73.7 | 70.2 | 68.0 | Marginally Unacceptable |
| | | PM | 74.7 | 77.0 | 73.6 | 71.3 | Marginally Unacceptable |
| | | SAT | 69.5 | 71.0 | 69.1 | 68.1 | Marginally Unacceptable |
| M04 | W 37th Street Between 7th and 8th Avenues | AM | 67.3 | 70.4 | 66.0 | 62.6 | Marginally Unacceptable |
| | | MD | 69.0 | 72.0 | 67.5 | 64.5 | Marginally Unacceptable |
| | | PM | 67.3 | 70.2 | 66.1 | 63.5 | Marginally Unacceptable |
| | | SAT | 67.9 | 71.4 | 67.2 | 62.9 | Marginally Unacceptable |
| M05[2] | W 36th Street Between 7th Avenue and Broadway | AM | 71.7 | 74.8 | 70.3 | 66.7 | Marginally Unacceptable |
| | | MD | 71.9 | 75.2 | 70.3 | 67.8 | Marginally Unacceptable |
| | | PM | 70.5 | 72.5 | 70.1 | 68.1 | Marginally Unacceptable |
| | | SAT | N/A | | | | |
| M06 | W 39th Street Between 5th and 6th Avenues | AM | 69.5 | 72.6 | 67.7 | 64.1 | Marginally Unacceptable |
| | | MD | 69.7 | 72.4 | 68.9 | 65.7 | Marginally Unacceptable |
| | | PM | 67.2 | 69.2 | 66.1 | 64.7 | Marginally Acceptable |
| | | SAT | 65.0 | 67.8 | 63.4 | 61.9 | Marginally Acceptable |
| M07 | W 38th Street Between 5th and 6th Avenues | AM | 67.9 | 70.2 | 66.2 | 64.4 | Marginally Unacceptable |
| | | MD | 68.0 | 69.7 | 67.5 | 66.1 | Marginally Acceptable |
| | | PM | 66.8 | 68.9 | 65.5 | 64.2 | Marginally Acceptable |
| | | SAT | 63.7 | 65.8 | 63.3 | 61.0 | Marginally Acceptable |
| M08 | W 37th Street Between 5th and 6th Avenues | AM | 68.5 | 71.7 | 66.9 | 64.5 | Marginally Unacceptable |
| | | MD | 68.1 | 70.3 | 66.3 | 64.6 | Marginally Unacceptable |
| | | PM | 68.3 | 71.0 | 67.3 | 65.1 | Marginally Unacceptable |
| | | SAT | 65.6 | 68.2 | 63.5 | 61.2 | Marginally Acceptable |

| Receptor | Measurement Location | Time | $L_{eq}$ | $L_{10}$ | $L_{50}$ | $L_{90}$ | CEQR Category |
|---|---|---|---|---|---|---|---|
| M09[2] | W 36th Street Between 5th and 6th Avenues | AM | 69.4 | 72.4 | 67.0 | 63.2 | Marginally Unacceptable |
| | | MD | 67.9 | 70.6 | 66.6 | 64.3 | Marginally Unacceptable |
| | | PM | 67.3 | 69.8 | 65.6 | 63.4 | Marginally Acceptable |
| | | SAT | N/A | | | | |
| M10[1,2] | W 35th Street Between 5th and 6th Avenues | AM | 66.3 | 69.4 | 64.7 | 62.2 | Marginally Acceptable |
| | | MD | 69.4 | 69.9 | 65.7 | 63.7 | Marginally Acceptable |
| | | PM | 70.7 | 72.7 | 69.2 | 66.9 | Marginally Unacceptable |
| | | SAT | N/A | | | | |
| M11 | W 28th Street Between 7th and 8th Avenues | AM | 68.5 | 71.2 | 65.7 | 62.3 | Marginally Unacceptable |
| | | MD | 65.9 | 68.3 | 64.3 | 62.7 | Marginally Acceptable |
| | | PM | 65.4 | 68.1 | 63.4 | 61.6 | Marginally Acceptable |
| | | SAT | 65.5 | 68.3 | 63.9 | 61.8 | Marginally Acceptable |
| M12[2] | W 30th Street Between 7th and 8th Avenues | AM | 67.6 | 69.8 | 66.8 | 63.0 | Marginally Acceptable |
| | | MD | 69.8 | 72.1 | 69.1 | 66.8 | Marginally Unacceptable |
| | | PM | 65.0 | 66.8 | 63.6 | 62.1 | Marginally Acceptable |
| | | SAT | N/A | | | | |
| M13 | W 29th Street Between 6th and 7th Avenues | AM | 66.1 | 67.9 | 65.2 | 63.3 | Marginally Acceptable |
| | | MD | 66.6 | 68.9 | 65.5 | 64.4 | Marginally Acceptable |
| | | PM | 66.8 | 68.0 | 65.9 | 64.6 | Marginally Acceptable |
| | | SAT | 67.0 | 69.3 | 64.6 | 63.0 | Marginally Acceptable |
| M14 | W 31st Street Between 6th and 7th Avenues | AM | 67.3 | 69.1 | 66.3 | 64.7 | Marginally Acceptable |
| | | MD | 67.6 | 68.7 | 66.0 | 65.2 | Marginally Acceptable |
| | | PM | 67.7 | 69.4 | 67.2 | 65.9 | Marginally Acceptable |
| | | SAT | 66.4 | 68.3 | 65.7 | 63.9 | Marginally Acceptable |
| M15[3] | Corner of 7th Avenue and W 27th Street | AM | 68.7 | 72.0 | 67.3 | 63.2 | Marginally Unacceptable |
| | | MD | 68.5 | 71.4 | 67.1 | 64.0 | Marginally Unacceptable |
| | | PM | 68.1 | 70.4 | 67.4 | 63.4 | Marginally Unacceptable |
| | | SAT | N/A | | | | |
| M16[3] | W 26th Street Between 6th and 7th Avenues | AM | 68.7 | 70.3 | 68.0 | 67.1 | Marginally Unacceptable |
| | | MD | 70.4 | 71.4 | 70.0 | 69.2 | Marginally Unacceptable |
| | | PM | 69.8 | 71.2 | 69.4 | 68.2 | Marginally Unacceptable |
| | | SAT | N/A | | | | |
| M17[3] | W 23rd Street | AM | 72.0 | 74.8 | 70.0 | 65.7 | Marginally Unacceptable |

| Receptor | Measurement Location | Time | $L_{eq}$ | $L_{10}$ | $L_{50}$ | $L_{90}$ | CEQR Category |
|---|---|---|---|---|---|---|---|
| | Between 6th and 7th Avenues | MD | 69.0 | 71.7 | 67.2 | 63.3 | Marginally Unacceptable |
| | | PM | 69.9 | 72.7 | 67.7 | 64.7 | Marginally Unacceptable |
| | | SAT | N/A | | | | |
| M18 | Broadway Between W 29th and W 30th Streets | AM | 65.2 | 68.1 | 63.2 | 61.3 | Marginally Acceptable |
| | | MD | 66.3 | 68.7 | 65.5 | 63.0 | Marginally Acceptable |
| | | PM | 67.0 | 68.8 | 65.0 | 62.6 | Marginally Acceptable |
| | | SAT | 66.0 | 67.8 | 64.4 | 62.1 | Marginally Acceptable |
| M19 | E 30th Street Between 5th Avenue and Madison Avenue | AM | 66.2 | 68.3 | 65.3 | 63.3 | Marginally Acceptable |
| | | MD | 68.5 | 70.8 | 67.5 | 65.8 | Marginally Unacceptable |
| | | PM | 69.7 | 70.7 | 66.6 | 64.7 | Marginally Unacceptable |
| | | SAT | 65.9 | 67.3 | 65.3 | 64.1 | Marginally Acceptable |
| M20 | 5th Avenue Between W 30th and W 31st Streets | AM | 72.1 | 74.8 | 69.9 | 67.4 | Marginally Unacceptable |
| | | MD | 74.6 | 77.5 | 71.6 | 67.9 | Marginally Unacceptable |
| | | PM | 72.9 | 74.3 | 70.7 | 67.7 | Marginally Unacceptable |
| | | SAT | 71.0 | 73.6 | 68.9 | 66.2 | Marginally Unacceptable |
| M21 | W 28th Street Between 5th Avenue and Broadway | AM | 68.0 | 69.9 | 66.9 | 65.0 | Marginally Acceptable |
| | | MD | 66.6 | 68.0 | 65.5 | 64.1 | Marginally Acceptable |
| | | PM | 67.4 | 69.4 | 66.0 | 64.0 | Marginally Acceptable |
| | | SAT | 66.2 | 67.7 | 65.2 | 63.7 | Marginally Acceptable |
| M22[1] | W 25th Street Between Broadway and 6th Avenue | AM | 66.3 | 68.2 | 62.3 | 60.5 | Marginally Acceptable |
| | | MD | 66.2 | 68.7 | 64.8 | 62.6 | Marginally Acceptable |
| | | PM | 68.6 | 71.4 | 67.0 | 64.2 | Marginally Unacceptable |
| | | SAT | 64.6 | 66.5 | 64.0 | 62.3 | Marginally Acceptable |

Source: HMMH, 2024.

Notes:

1. Measurement Sites M03, M10, and M22 PM peak noise levels were adjusted to account for a significant difference between traffic counts associated with the traffic analysis and traffic counts conducted during the noise measurements. The adjusted noise metrics were calculated by adding the decibel increase from the traffic PCE comparison to each measured noise level for each noise metric.

~~1.~~2. Equipment failure occurred resulting in data loss for the Saturday MD peak period at Sites M05, M09, and M10. At Site M12, there was a street fair, which closed W. 30th street as well as several other surrounding streets. Therefore, valid measurements could not be obtained on W. 30th or surrounding streets.

~~2.~~3. M15, M16, and M17 – No measurement data available at these sites for the Saturday MD peak hour.

~~3. Measurement Site M22 PM peak noise levels were adjusted to account for a significant difference between traffic counts associated with the traffic analysis and traffic counts conducted during the noise measurements. The adjusted noise metrics were calculated by adding the decibel increase from the traffic PCE comparison to each measured noise level for each noise metric.~~

# G. Methodology

## *Traffic Noise*

In order to predict noise levels in the future with and without the Proposed Actions (No-Action and With-Action conditions), monitored noise levels are projected by using a proportional modeling procedure, per *CEQR Technical Manual* guidance. This procedure accounts for the changes in noise levels due to increases in traffic associated with area growth. Vehicular traffic volumes under the baseline and future conditions are converted to Passenger Car Equivalent (PCE) values. For this conversion, one medium truck is estimated to generate the noise equivalent of 13 cars, one bus is estimated to generate the noise equivalent of 18 cars, and one heavy truck is estimated to generate the noise equivalent of 47 cars. Future $L_{eq}$ noise levels are calculated using the following equation:

Future Noise Level = 10 * log ($Future\ PCE/Existing\ PCE$) + Baseline Noise Level

The calculation is conducted using the $L_{eq}$ noise measurement results as the baseline noise level. No-action and With-action $L_{10}$ values are calculated by adding the difference between the $L_{10}$ and $L_{eq}$ descriptors found to exist in the measurement program to the calculated future $L_{eq}$ noise level. However, when Noise PCEs calculated using traffic data counted during noise measurements differ significantly from the Noise PCEs estimated using existing-condition traffic data from the Transportation study at the same location, and traffic on the immediately adjacent roadway segment is the dominant source of noise, the measured noise levels were adjusted based on the difference between existing Noise PCEs.

## *Train Noise*

Based on *CEQR Technical Manual* guidance, train activity generally does not have a significant impact on new noise-sensitive land use unless those land uses are within 1,500 feet and have a direct line of sight to existing train activity. In addition, increases in existing train activity within a direct line of sight and 1,500 feet of a receptor may also result in a significant mobile source noise impact. Given the project's location in Midtown Manhattan, there are no above-ground train sources that would affect proposed noise-sensitive land use. Further, the Proposed Actions would not increase train trips. Therefore, a rail noise assessment is not warranted for the Proposed Actions.

## *Aircraft Noise*

In accordance with *CEQR Technical Manual* guidance, when a new receptor is located within a 65 dBA DNL contour from nearby airports, an aircraft noise assessment may be warranted. Aircraft noise exposure screening was performed, which consists of reviewing Noise Exposure Maps (NEMs) for nearby airports to identify if the Proposed Actions create noise-sensitive receptors within the 65 DNL contours. NEMs were reviewed for the three major airports in the vicinity of the Proposed Actions, including Newark Liberty International Airport (EWR), JFK Airport (JFK), and LaGuardia Airport (LGA). The Affected Area is not within the 65 DNL contour for any of the three major airports; therefore, a detailed assessment of aircraft noise is not warranted.

### *Stationary Noise*

Stationary sources of noise typically include building HVAC systems, loading docks, playgrounds, etc. In accordance with *CEQR Technical Manual* guidance, existing stationary sources of noise within 1,500 feet of a receptor and with a direct line of sight may result in the potential for noise impact. Sources of noise associated with the Proposed Action may also have the potential to impact existing noise-sensitive land use. Proposed HVAC systems are considered circulation devices and are therefore regulated by the NYC Noise Code. Based on CEQR guidance, new HVAC sources do not require a detailed quantitative assessment. Additionally, there are no major stationary sources of noise that would impact the Proposed Actions. Therefore, no detailed quantitative assessment of stationary noise sources is warranted.

## H. The Future without the Proposed Actions (No-Action Condition)

### *Noise Impact Identification*

Using the methodologies described in the methodology section, No-Action condition noise levels for the 2034 analysis year are calculated at 17 of the 22 noise measurement locations. The dominant source of neighborhood noise comes from local vehicular traffic. As such, these No-Action noise levels are shown in **Table 16-7** where vehicular traffic is the dominant noise source (in dBA). At receptors M01, M05, M06, M07, and M09, traffic analysis associated traffic counts were not conducted because total project-generated vehicle trips would be less than 50. It is also expected that there is no potential for significant PCE increases under the No-Action condition in these locations, and noise levels under the No-Action condition are likely to be similar to existing noise levels.

For receptor locations where traffic is the dominant noise source, the maximum $L_{eq}$ noise level increase under the 2034 No-Action condition relative to the Existing condition would be 1.1 dBA at Receptor M02. All other receptor locations would encounter an increase between 0 and 0.9 dBA. ~~Between the draft and final EIS, existing noise PCEs calculated from the traffic study conducted for the project will be compared to existing noise PCEs calculated from traffic volumes documented during the noise measurement program. If significant differences between these two sets of existing noise PCEs are identified, existing noise levels will be adjusted accordingly.~~

**Table 16-7: 2034 No-Action Condition Noise Levels where traffic is dominant noise source (dBA) (Table revised for the FEIS)**

| Site | Measurement Location | Time Period | Existing $L_{eq}$ | No Action $L_{eq}$ | No Action-Existing Delta | No Action $L_{10}$ | CEQR Category |
|---|---|---|---|---|---|---|---|
| M01[1] | 7th Avenue Between W 39th and W 40th Streets | AM | 67.4 | 67.4 | 0 | 69.5 | Marginally Acceptable |
| | | MD | 71.0 | 71.0 | 0 | 73.8 | Marginally Unacceptable |
| | | PM | 69.7 | 69.7 | 0 | 71.7 | Marginally Unacceptable |
| | | SAT | 66.8 | 66.8 | 0 | 69.6 | Marginally Acceptable |
| M02 | W 38th Street | AM | 66.7 | 67.6 | 0.9 | 69.8 | Marginally Acceptable |

| Site | Measurement Location | Time Period | Existing $L_{eq}$ | No Action $L_{eq}$ | No Action-Existing Delta | No Action $L_{10}$ | CEQR Category |
|---|---|---|---|---|---|---|---|
| | Between 7th and 8th Avenues | MD | 66.4 | 67.5 | 1.1 | 69.3 | Marginally Acceptable |
| | | PM | 66.3 | 66.8 | 0.5 | 68.8 | Marginally Acceptable |
| | | SAT | 66.5 | 67.0 | 0.5 | 70.7 | Marginally Unacceptable |
| M03[2] | Corner of 8th Avenue and W 37th Street | AM | 69.3 | 69.6 | 0.3 | 72.4 | Marginally Unacceptable |
| | | MD | 71.1 | 71.4 | 0.3 | 74.0 | Marginally Unacceptable |
| | | PM | 74.7 | 74.9 | 0.2 | 77.2 | Marginally Unacceptable |
| | | SAT | 69.5 | 69.7 | 0.2 | 71.2 | Marginally Unacceptable |
| M04 | W 37th Street Between 7th and 8th Avenues | AM | 67.3 | 67.6 | 0.3 | 70.7 | Marginally Unacceptable |
| | | MD | 69.0 | 69.3 | 0.3 | 72.3 | Marginally Unacceptable |
| | | PM | 67.3 | 67.7 | 0.4 | 70.6 | Marginally Unacceptable |
| | | SAT | 67.9 | 68.3 | 0.4 | 71.8 | Marginally Unacceptable |
| M05[1,2,3] | W 36th Street Between 7th Avenue and Broadway | AM | 71.7 | 71.7 | 0 | 74.8 | Marginally Unacceptable |
| | | MD | 71.9 | 71.9 | 0 | 75.2 | Marginally Unacceptable |
| | | PM | 70.5 | 70.5 | 0 | 72.5 | Marginally Unacceptable |
| | | SAT | | | | | |
| M06[1] | W 39th Street Between 5th and 6th Avenues | AM | 69.5 | 69.5 | 0 | 72.6 | Marginally Unacceptable |
| | | MD | 69.7 | 69.7 | 0 | 72.4 | Marginally Unacceptable |
| | | PM | 67.2 | 67.2 | 0 | 69.2 | Marginally Acceptable |
| | | SAT | 65.0 | 65.0 | 0 | 67.8 | Marginally Acceptable |
| M07[1] | W 38th Street Between 5th and 6th Avenues | AM | 67.9 | 67.9 | 0 | 70.2 | Marginally Unacceptable |
| | | MD | 68.0 | 68.0 | 0 | 69.7 | Marginally Acceptable |
| | | PM | 66.8 | 66.8 | 0 | 68.9 | Marginally Acceptable |
| | | SAT | 63.7 | 63.7 | 0 | 65.8 | Marginally Acceptable |
| M08 | W 37th Street Between 5th and 6th Avenues | AM | 68.5 | 69.0 | 0.5 | 72.2 | Marginally Unacceptable |
| | | MD | 68.1 | 68.5 | 0.4 | 70.7 | Marginally Unacceptable |
| | | PM | 68.3 | 68.6 | 0.3 | 71.3 | Marginally Unacceptable |
| | | SAT | 65.6 | 66.0 | 0.4 | 68.6 | Marginally Acceptable |
| M09[1,2,3] | W 36th Street Between 5th Avenue and Madison Avenue | AM | 69.4 | 69.4 | 0 | 72.4 | Marginally Unacceptable |
| | | MD | 67.9 | 67.9 | 0 | 70.6 | Marginally Unacceptable |
| | | PM | 67.3 | 67.3 | 0 | 69.8 | Marginally Acceptable |
| | | SAT | | | | | |
| M10[2,3] | W 35th Street | AM | 66.3 | 67.0 | 0.7 | 70.1 | Marginally Unacceptable |

| Site | Measurement Location | Time Period | Existing $L_{eq}$ | No Action $L_{eq}$ | No Action-Existing Delta | No Action $L_{10}$ | CEQR Category |
|---|---|---|---|---|---|---|---|
| | Between 5th and 6th Avenues | MD | 69.4 | 69.7 | 0.3 | 70.2 | Marginally Unacceptable |
| | | PM | ~~67.1~~70.7 | 70.8 | 0.1 | 72.8 | Marginally Unacceptable |
| | | SAT | | | | | |
| M11 | W 28th Street Between 7th and 8th Avenues | AM | 68.5 | 68.5 | 0.0 | 71.2 | Marginally Unacceptable |
| | | MD | 65.9 | 65.9 | 0.0 | 68.3 | Marginally Acceptable |
| | | PM | 65.4 | 65.4 | 0.0 | 68.1 | Marginally Acceptable |
| | | SAT | 65.5 | 65.5 | 0.0 | 68.3 | Marginally Acceptable |
| ~~M12[2]~~M12[3] | W 30th Street Between 7th and 8th Avenues | AM | 67.6 | 67.7 | 0.1 | 69.9 | Marginally Acceptable |
| | | MD | 69.8 | 69.9 | 0.1 | 72.2 | Marginally Unacceptable |
| | | PM | 65.0 | 65.0 | 0.0 | 66.8 | Marginally Acceptable |
| | | SAT | | | | | |
| M13 | W 29th Street Between 6th and 7th Avenues | AM | 66.1 | 66.2 | 0.1 | 68.0 | Marginally Acceptable |
| | | MD | 66.6 | 66.8 | 0.2 | 69.1 | Marginally Acceptable |
| | | PM | 66.8 | 66.9 | 0.1 | 68.1 | Marginally Acceptable |
| | | SAT | 67.0 | 67.1 | 0.1 | 69.4 | Marginally Acceptable |
| M14 | W 31st Street Between 6th and 7th Avenues | AM | 67.3 | 67.6 | 0.3 | 69.4 | Marginally Acceptable |
| | | MD | 67.6 | 67.8 | 0.2 | 68.9 | Marginally Acceptable |
| | | PM | 67.7 | 67.8 | 0.1 | 69.5 | Marginally Acceptable |
| | | SAT | 66.4 | 66.7 | 0.3 | 68.6 | Marginally Acceptable |
| M15[3] | Corner of 7th Avenue and W 27th Street | AM | 68.7 | 68.8 | 0.1 | 72.1 | Marginally Unacceptable |
| | | MD | 68.5 | 68.7 | 0.2 | 71.6 | Marginally Unacceptable |
| | | PM | 68.1 | 68.3 | 0.2 | 70.6 | Marginally Unacceptable |
| | | SAT | N/A | | | | |
| M16[3] | W 26th Street Between 6th and 7th Avenues | AM | 68.7 | 68.7 | 0.0 | 70.3 | Marginally Unacceptable |
| | | MD | 70.4 | 70.4 | 0.0 | 71.4 | Marginally Unacceptable |
| | | PM | 69.8 | 69.8 | 0.0 | 71.2 | Marginally Unacceptable |
| | | SAT | N/A | | | | |
| M17[3] | W 23rd Street Between 6th and 7th Avenues | AM | 72.0 | 72.3 | 0.3 | 75.1 | Marginally Unacceptable |
| | | MD | 69.0 | 69.4 | 0.4 | 72.1 | Marginally Unacceptable |
| | | PM | 69.9 | 70.0 | 0.1 | 72.8 | Marginally Unacceptable |
| | | SAT | N/A | | | | |
| M18 | Broadway | AM | 65.2 | 65.2 | 0.0 | 68.1 | Marginally Acceptable |

| Site | Measurement Location | Time Period | Existing $L_{eq}$ | No Action $L_{eq}$ | No Action-Existing Delta | No Action $L_{10}$ | CEQR Category |
|---|---|---|---|---|---|---|---|
| | Between W 29th and W 30th Streets | MD | 66.3 | 66.3 | 0.0 | 68.7 | Marginally Acceptable |
| | | PM | 67.0 | 67.0 | 0.0 | 68.8 | Marginally Acceptable |
| | | SAT | 66.0 | 66.0 | 0.0 | 67.8 | Marginally Acceptable |
| M19 | E 30th Street Between 5th Avenue and Madison Avenue | AM | 66.2 | 66.3 | 0.1 | 68.4 | Marginally Acceptable |
| | | MD | 68.5 | 68.7 | 0.2 | 71.0 | Marginally Unacceptable |
| | | PM | 69.7 | 69.8 | 0.1 | 70.8 | Marginally Unacceptable |
| | | SAT | 65.9 | 66.1 | 0.2 | 67.5 | Marginally Acceptable |
| M20 | 5th Avenue Between W 30th and W 31st Streets | AM | 72.1 | 72.2 | 0.1 | 74.9 | Marginally Unacceptable |
| | | MD | 74.6 | 74.7 | 0.1 | 77.6 | Marginally Unacceptable |
| | | PM | 72.9 | 73.0 | 0.1 | 74.4 | Marginally Unacceptable |
| | | SAT | 71.0 | 71.1 | 0.1 | 73.7 | Marginally Unacceptable |
| M21 | W 28th Street Between 5th Avenue and Broadway | AM | 68.0 | 68.0 | 0.0 | 69.9 | Marginally Acceptable |
| | | MD | 66.6 | 66.6 | 0.0 | 68.0 | Marginally Acceptable |
| | | PM | 67.4 | 67.4 | 0.0 | 69.4 | Marginally Acceptable |
| | | SAT | 66.2 | 66.2 | 0.0 | 67.7 | Marginally Acceptable |
| ~~M22~~[3]M22[2] | W 25th Street Between Broadway and 6th Avenue | AM | 66.3 | 66.4 | 0.1 | 68.3 | Marginally Acceptable |
| | | MD | 66.2 | 66.3 | 0.1 | 68.8 | Marginally Acceptable |
| | | PM | 68.~~7~~6 | 68.~~7~~6 | 0.0 | 71.~~5~~4 | Marginally Unacceptable |
| | | SAT | 64.6 | 64.6 | 0.0 | 66.5 | Marginally Acceptable |

Source: HMMH 2024.

Notes:

1. Based on the traffic analysis, project-generated vehicle trips would be less than 50 through intersections near Sites M01, M05, M06, M07, and M09. Therefore, a detailed traffic analysis was not conducted in these areas. Noise PCEs are not anticipated to double, and No Action noise levels would be similar to existing noise levels.
2. Measurement Sites M03, M10, and M22 PM peak noise levels were adjusted to account for a significant difference between traffic counts associated with the traffic analysis and traffic counts conducted during the noise measurements. The adjusted noise metrics were calculated by adding the decibel increase from the traffic PCE comparison to each measured noise level for each noise metric.

~~2.~~3. Equipment failure occurred resulting in data loss for the Saturday MD peak period at Sites M05, M09, and M10. At Site M12, there was a street fair, which closed W. 30th street as well as several other surrounding streets. Therefore, valid measurements could not be obtained on W. 30th or surrounding streets. Noise measurement data available for Saturday MD period at M15, M16, and M17.

~~3. Measurement Site M22 PM peak noise levels were adjusted to account for a significant difference between traffic counts associated with the traffic analysis and traffic counts conducted during the noise measurements. The adjusted noise metrics were calculated by adding the decibel increase from the traffic PCE comparison to each measured noise level for each noise metric.~~

# I. The Future with the Proposed Actions (With-Action Condition)

## *Noise Impact Identification*

Using the procedures described in the methodology section, With-Action noise levels are calculated at 17 of the 22 noise receptor locations for the 2034 analysis year. The With-Action noise levels for all receptors are shown in **Table 16-8** where traffic is the dominant noise source (in dBA). At receptors M01, M05, M06, M07, and M09, traffic counts were not conducted because total project-generated vehicle trips would be less than 50. Therefore, there is no potential for PCEs to double in these locations, and noise levels under the With Action condition are likely to be similar to existing and No Action noise levels.

For receptor locations where traffic is the dominant noise source, the maximum $L_{10}$ noise levels decrease in many locations under the 2034 With-Action condition relative to the No-Action condition due to residential conversions (i.e., the conversion of office space to residential spaces would result in a net decrease in vehicle trips). With-Action noise levels are anticipated to decrease by as much as 0.6 dBA at receptor M02 and increase by a maximum of 0.9 dBA at receptors M13.

**Table 16-8: 2034 With-Action Condition Noise Levels Where Traffic is the Dominant Noise Source (dBA) (Table revised for the FEIS)**

| Site | Measurement Location | Time Period | No Action $L_{eq}$ | With Action $L_{eq}$ | With Action-No Action Delta | With Action $L_{10}$ | CEQR Category |
|---|---|---|---|---|---|---|---|
| M01[1] | 7th Avenue Between W 39th and W 40th Streets | AM | 67.4 | 67.4 | 0 | 69.5 | Marginally Acceptable |
| | | MD | 71.0 | 71.0 | 0 | 73.8 | Marginally Unacceptable |
| | | PM | 69.7 | 69.7 | 0 | 71.7 | Marginally Unacceptable |
| | | SAT | 66.8 | 66.8 | 0 | 69.6 | Marginally Acceptable |
| M02 | W 38th Street Between 7th and 8th Avenues | AM | 67.6 | 67.2 | -0.4 | 69.4 | Marginally Acceptable |
| | | MD | 67.5 | 66.9 | -0.6 | 68.7 | Marginally Acceptable |
| | | PM | 66.8 | 66.8 | 0.0 | 68.8 | Marginally Acceptable |
| | | SAT | 67.0 | 67.2 | 0.2 | 70.9 | Marginally Unacceptable |
| M03[2] | Corner of 8th Avenue and W 37th Street | AM | 69.6 | 69.4 | -0.2 | 72.2 | Marginally Unacceptable |
| | | MD | 71.4 | 71.2 | -0.2 | 73.8 | Marginally Unacceptable |
| | | PM | 74.9 | 75.0 | 0.1 | 77.3 | Marginally Unacceptable |
| | | SAT | 69.7 | 69.9 | 0.2 | 71.4 | Marginally Unacceptable |
| M04 | W 37th Street Between 7th and 8th Avenues | AM | 67.6 | 67.5 | -0.1 | 70.6 | Marginally Unacceptable |
| | | MD | 69.3 | 69.2 | -0.1 | 72.2 | Marginally Unacceptable |
| | | PM | 67.7 | 67.7 | 0.0 | 70.6 | Marginally Unacceptable |
| | | SAT | 68.3 | 68.6 | 0.3 | 72.1 | Marginally Unacceptable |

| Site | Measurement Location | Time Period | No Action $L_{eq}$ | With Action $L_{eq}$ | With Action-No Action Delta | With Action $L_{10}$ | CEQR Category |
|---|---|---|---|---|---|---|---|
| M05[1,2,3] | W 36th Street Between 7th Avenue and Broadway | AM | 71.7 | 71.7 | 0 | 74.8 | Marginally Unacceptable |
| | | MD | 71.9 | 71.9 | 0 | 75.2 | Marginally Unacceptable |
| | | PM | 70.5 | 70.5 | 0 | 72.5 | Marginally Unacceptable |
| | | SAT | N/A | | | | |
| M06[1] | W 39th Street Between 5th and 6th Avenues | AM | 69.5 | 69.5 | 0 | 72.6 | Marginally Unacceptable |
| | | MD | 69.7 | 69.7 | 0 | 72.4 | Marginally Unacceptable |
| | | PM | 67.2 | 67.2 | 0 | 69.2 | Marginally Acceptable |
| | | SAT | 65.0 | 65.0 | 0 | 67.8 | Marginally Acceptable |
| M07[1] | W 38th Street Between 5th and 6th Avenues | AM | 67.9 | 67.9 | 0 | 70.2 | Marginally Unacceptable |
| | | MD | 68.0 | 68.0 | 0 | 69.7 | Marginally Acceptable |
| | | PM | 66.8 | 66.8 | 0 | 68.9 | Marginally Acceptable |
| | | SAT | 63.7 | 63.7 | 0 | 65.8 | Marginally Acceptable |
| M08 | W 37th Street Between 5th and 6th Avenues | AM | 69.0 | 69.0 | 0.0 | 72.2 | Marginally Unacceptable |
| | | MD | 68.5 | 68.5 | 0.0 | 70.7 | Marginally Unacceptable |
| | | PM | 68.6 | 68.6 | 0.0 | 71.3 | Marginally Unacceptable |
| | | SAT | 66.0 | 66.2 | 0.2 | 68.8 | Marginally Acceptable |
| M09[1,2,3] | W 36th Street Between 5th and 6th Avenues | AM | 69.4 | 69.4 | 0 | 72.4 | Marginally Unacceptable |
| | | MD | 67.9 | 67.9 | 0 | 70.6 | Marginally Unacceptable |
| | | PM | 67.3 | 67.3 | 0 | 69.8 | Marginally Acceptable |
| | | SAT | N/A | | | | |
| M10[2,3] | W 35th Street Between 5th and 6th Avenues | AM | 67.0 | 67.2 | 0.2 | 70.3 | Marginally Acceptable |
| | | MD | 69.7 | 69.9 | 0.2 | 70.4 | Marginally Acceptable |
| | | PM | 70.8 | 71.0 | 0.2 | 73.0 | Marginally Unacceptable |
| | | SAT | N/A | | | | |
| M11 | W 28th Street Between 7th and 8th Avenues | AM | 68.5 | 68.7 | 0.2 | 71.4 | Marginally Unacceptable |
| | | MD | 65.9 | 65.9 | 0.0 | 68.3 | Marginally Acceptable |
| | | PM | 65.4 | 65.6 | 0.2 | 68.3 | Marginally Acceptable |
| | | SAT | 65.5 | 65.7 | 0.2 | 68.5 | Marginally Acceptable |
| M12[3] | W 30th Street Between 7th and 8th Avenues | AM | 67.7 | 67.9 | 0.2 | 70.1 | Marginally Unacceptable |
| | | MD | 69.9 | 70.1 | 0.2 | 72.4 | Marginally Unacceptable |
| | | PM | 65.0 | 65.3 | 0.3 | 67.1 | Marginally Acceptable |
| | | SAT | N/A | | | | |

| Site | Measurement Location | Time Period | No Action $L_{eq}$ | With Action $L_{eq}$ | With Action-No Action Delta | With Action $L_{10}$ | CEQR Category |
|---|---|---|---|---|---|---|---|
| M13 | W 29th Street Between 6th and 7th Avenues | AM | 66.2 | 66.8 | 0.6 | 68.6 | Marginally Acceptable |
| | | MD | 66.8 | 67.2 | 0.4 | 69.5 | Marginally Acceptable |
| | | PM | 66.9 | 67.2 | 0.3 | 68.4 | Marginally Acceptable |
| | | SAT | 67.1 | 68.0 | 0.9 | 70.3 | Marginally Unacceptable |
| M14 | W 31st Street Between 6th and 7th Avenues | AM | 67.6 | 67.8 | 0.2 | 69.6 | Marginally Acceptable |
| | | MD | 67.8 | 68.0 | 0.2 | 69.1 | Marginally Acceptable |
| | | PM | 67.8 | 67.9 | 0.1 | 69.6 | Marginally Acceptable |
| | | SAT | 66.7 | 67.1 | 0.4 | 69.0 | Marginally Acceptable |
| M15[3] | Corner of 7th Avenue and W 27th Street | AM | 68.8 | 68.8 | 0.0 | 72.1 | Marginally Unacceptable |
| | | MD | 68.7 | 68.6 | -0.1 | 71.5 | Marginally Unacceptable |
| | | PM | 68.3 | 68.4 | 0.1 | 70.7 | Marginally Unacceptable |
| | | SAT | N/A | | | | |
| M16[3] | W 26th Street Between 6th and 7th Avenues | AM | 68.7 | 68.9 | 0.2 | 70.5 | Marginally Unacceptable |
| | | MD | 70.4 | 70.4 | 0.0 | 71.4 | Marginally Unacceptable |
| | | PM | 69.8 | 70.0 | 0.2 | 71.4 | Marginally Unacceptable |
| | | SAT | N/A | | | | |
| M17[3] | W 23rd Street Between 6th and 7th Avenues | AM | 72.3 | 72.4 | 0.1 | 75.2 | Marginally Unacceptable |
| | | MD | 69.4 | 69.5 | 0.1 | 72.2 | Marginally Unacceptable |
| | | PM | 70.0 | 70.1 | 0.1 | 72.9 | Marginally Unacceptable |
| | | SAT | N/A | | | | |
| M18 | Broadway Between W 29th and W 30th Streets | AM | 65.2 | 65.1 | -0.1 | 68.0 | Marginally Acceptable |
| | | MD | 66.3 | 66.0 | -0.3 | 68.4 | Marginally Acceptable |
| | | PM | 67.0 | 67.3 | 0.3 | 69.1 | Marginally Acceptable |
| | | SAT | 66.0 | 66.4 | 0.4 | 68.2 | Marginally Acceptable |
| M19 | E 30th Street Between 5th Avenue and Madison Avenue | AM | 66.3 | 66.6 | 0.3 | 68.7 | Marginally Acceptable |
| | | MD | 68.7 | 68.8 | 0.1 | 71.1 | Marginally Unacceptable |
| | | PM | 69.8 | 69.9 | 0.1 | 70.9 | Marginally Unacceptable |
| | | SAT | 66.1 | 66.6 | 0.5 | 68.0 | Marginally Acceptable |
| M20 | 5th Avenue Between W 30th and W 31st Streets | AM | 72.2 | 72.2 | 0.0 | 74.9 | Marginally Unacceptable |
| | | MD | 74.7 | 74.7 | 0.0 | 77.6 | Marginally Unacceptable |
| | | PM | 73.0 | 73.0 | 0.0 | 74.4 | Marginally Unacceptable |
| | | SAT | 71.1 | 71.1 | 0.0 | 73.7 | Marginally Unacceptable |

| Site | Measurement Location | Time Period | No Action $L_{eq}$ | With Action $L_{eq}$ | With Action-No Action Delta | With Action $L_{10}$ | CEQR Category |
|---|---|---|---|---|---|---|---|
| M21 | W 28th Street Between 5th Avenue and Broadway | AM | 68.0 | 68.6 | 0.6 | 70.5 | Marginally Unacceptable |
| | | MD | 66.6 | 66.8 | 0.2 | 68.2 | Marginally Acceptable |
| | | PM | 67.4 | 67.7 | 0.3 | 69.7 | Marginally Acceptable |
| | | SAT | 66.2 | 66.4 | 0.2 | 67.9 | Marginally Acceptable |
| M22[2] | W 25th Street Between Broadway and 6th Avenue | AM | 66.4 | 67 | 0.6 | 68.9 | Marginally Acceptable |
| | | MD | 66.3 | 66.5 | 0.2 | 69.0 | Marginally Acceptable |
| | | PM | 68.~~7~~6 | 68.9 | 0.2 | 71.~~7~~6 | Marginally Unacceptable |
| | | SAT | 64.6 | 64.9 | 0.3 | 66.8 | Marginally Acceptable |

Source: HMMH 2024.

1. Based on the traffic analysis, project-generated vehicle trips would be less than 50 through intersections near Sites M01, M05, M06, M07, and M09. Therefore, a detailed traffic analysis was not conducted in these areas. Noise PCEs are not anticipated to double, and ~~No~~ With Action noise levels would be similar to existing and No Action noise levels.
2. Measurement Sites M03, M10, and M22 PM peak noise levels were adjusted to account for a significant difference between traffic counts associated with the traffic analysis and traffic counts conducted during the noise measurements. The adjusted noise metrics were calculated by adding the decibel increase from the traffic PCE comparison to each measured noise level for each noise metric.

~~2.~~3. Equipment failure occurred resulting in data loss for the Saturday MD peak period at Sites M05, M09, and M10. At Site M12, there was a street fair, which closed W. 30th street as well as several other surrounding streets. Therefore, valid measurements could not be obtained on W. 30th or surrounding streets. No measurement data available for Saturday MD period at M15, M16, and M17.

~~3. Measurement Site M22 PM peak noise levels were adjusted to account for a significant difference between traffic counts associated with the traffic analysis and traffic counts conducted during the noise measurements. The adjusted noise metrics were calculated by adding the decibel increase from the traffic PCE comparison to each measured noise level for each noise metric.~~

In accordance with the *CEQR Technical Manual* noise exposure guidelines, if a proposed project is within an area where the noise levels are expected to exceed the marginally acceptable limit, a significant impact would occur, and mitigation measures would be necessary to bring its interior noise levels down to a level of 25 dB(A) or more below the maximum marginally acceptable levels (by receptor type). As a result, noise attenuation requirements are proposed as identified in the following section.

### *Noise Attenuation Measures*

The *CEQR Technical Manual* has set noise attenuation requirements for buildings based on exterior noise levels. Where traffic noise dominates, recommended noise attenuation values for buildings are designed to maintain interior noise levels of 45 dBA or lower for residential uses and 50 dBA or lower for commercial office uses and are determined based on exterior $L_{10(1)}$ noise levels. As discussed above, the minimum 35 dBA of facade attenuation and the requirement for an alternate means of ventilation included in ZR Section 123-32, as enforced by the New York City Department of Buildings (DOB), would apply to all DUs. Further study under the purview of OER would be required to alter the attenuation requirements. Unless CEQR minimum required attenuation results in attenuation higher than 35 dBA, requirements of ZR Section 123-32 would be sufficient to ensure acceptable interior noise levels at all DUs. As ZR Section 123-32 would be

applicable to DUs only, other noise sensitive uses in the proposed Special MSMX district would need to meet the sufficient attenuation requirement as described in the noise E-Designation below. **Table 16-9** shows the minimum window/wall attenuation necessary to meet *CEQR Technical Manual* requirements for interior noise levels at each of the noise measurement locations. The With-Action $L_{10(1)}$ noise levels are calculated using the existing noise measurements and the traffic noise analysis for all receptor locations. Based on the values shown in **Table 16-9**, required attenuation levels are determined for all projected and potential development sites. These values are shown in Appendix G, Noise.

**Table 16-9: Required Attenuation at Noise Measurement Locations <u>(Table revised for the FEIS)</u>**

| Site | Measurement Location | Maximum Calculated Total $L_{10(1)}$ Noise Level in dBA | CEQR Minimum Required Attenuation in dBA[1] |
|---|---|---|---|
| M01 | 7th Avenue Between W 39th and W 40th Streets | 73.8 | 31 |
| M02 | W 38th Street Between 7th and 8th Avenues | 70.9 | 28 |
| M03 | Corner of 8th Avenue and W 37th Street | 77.3 | 33 |
| M04 | W 37th Street Between 7th and 8th Avenues | 72.2 | 28 |
| M05 | W 36th Street Between 7th Avenue and Broadway | 75.2 | 31 |
| M06 | W 39th Street Between 5th and 6th Avenues | 72.6 | 28 |
| M07 | W 38th Street Between 5th and 6th Avenues | 70.2 | 28 |
| M08 | W 37th Street Between 5th and 6th Avenues | 72.2 | 28 |
| M09 | W 36th Street Between 5th and 6th Avenues | 72.4 | 28 |
| M10 | W 35th Street Between 5th and 6th Avenues | 73.0 | 28 |
| M11 | W 28th Street Between 7th and 8th Avenues | 71.4 | 28 |
| M12 | W 30th Street Between 7th and 8th Avenues | 72.4 | 28 |

| Site | Measurement Location | Maximum Calculated Total $L_{10(1)}$ Noise Level in dBA | CEQR Minimum Required Attenuation in dBA[1] |
|---|---|---|---|
| M13 | W 29th Street Between 6th and 7th Avenues | 70.3 | 28 |
| M14 | W 31st Street Between 6th and 7th Avenues | 69.6 | NA |
| M15 | Corner of 7th Avenue and W 27th Street | 72.1 | 28 |
| M16 | W 26th Street Between 6th and 7th Avenues | 71.4 | 28 |
| M17 | W 23rd Street Between 6th and 7th Avenues | 75.2 | 31 |
| M18 | Broadway Between W 29th and W 30th Streets | 69.1 | NA |
| M19 | E 30th Street Between 5th Avenue and Madison Avenue | 71.1 | 28 |
| M20 | 5th Avenue Between W 30th and W 31st Streets | 77.6 | 33 |
| M21 | W 28th Street Between 5th Avenue and Broadway | 70.5 | 28 |
| M22 | W 25th Street Between Broadway and 6th Avenue | 71.6 | 28 |

Source: HMMH 2024.
[a] Attenuation values are shown for residential or community facility uses; commercial office uses would require 5 dBA less

The attenuation of a composite structure is a function of the attenuation provided by each of its component parts and the surface area of each part. Normally, a building facade consists of wall, window glazing, and any vents or louvers associated with the building mechanical systems in various ratios of area. The designs for the projected and potential development site's With-Action buildings would include acoustically rated windows and air conditioning (a means of alternate ventilation). The buildings would be designed, including these elements, to provide a composite Outdoor−Indoor Transmission Class (OITC) rating[1] greater than or equal to the values listed in Appendix G, Noise along with an alternative means of ventilation in all habitable rooms of the residential units.

To implement the attenuation requirements shown in Appendix G, Noise an (E) Designation for noise would be applied to all privately held projected and potential development sites specifying the appropriate amount of window/wall attenuation. The text of Noise (E) Designation **E-830** for window/wall attenuation would be as follows:

To ensure an acceptable interior noise environment, the building facade(s) or future development must provide minimum composite building facade attenuation as shown in Appendix G, Noise, to

[1] The OITC classification is defined by ASTM International (ASTM E1332) and provides a single−number rating that is used for designing a building façade including walls, doors, glazing, and combinations thereof. The OITC rating is designed to evaluate building elements by their ability to reduce the overall loudness of ground and air transportation noise.

maintain an interior $L_{10}$ noise level not greater than 45 dBA for residential and community facility uses or not greater than 50 dBA for commercial office uses. To maintain a closed-window condition in these areas, an alternate means of ventilation that brings outside air into the building without degrading the acoustical performance of the building facade(s) must also be provided.

By adhering to the requirements specified in ZR 123-32 and the (E) Designation described above, buildings to be developed on the 68 projected and potential development sites as a result of the Proposed Actions would provide sufficient attenuation to achieve the *CEQR Technical Manual* interior $L_{10}$ noise level guidelines of 45 dBA $L_{10}$ for residential or community facility uses and 50 dBA $L_{10}$ for commercial office uses.

## J. Noise Impacts at Residential Conversion

As described in Chapter 1, "Project Description," it is assumed that 1,093,808 gsf of existing nonresidential floor area would convert to residential use over the next decade, but this RWCDS residential conversion model is not site-specific. Due to the non-site-specific nature of the 1,093,808 gsf area modeled for residential conversion, a conversion's proximity to mobile sources such as heavily trafficked roadways, rail lines or other rail infrastructure, within the path of aircraft, or near other stationary sources of noise, such as large boiler or generator systems, is not known. However, as ambient noise assessment evidenced that residential development in the Project Area would need to provide up to 33 dBA of window/wall attenuation requirement to meet the acceptable interior noise level, residential conversions in the proposed Midtown South Mixed-Use (MSMX) Districts would achieve the acceptable interior noise goal as any new dwelling units in the proposed Mixed-Use Districts would require minimum of 35 dBA of attenuation per ZR 123-~~32~~31(c)(2). On the other hand, while the majority of residential conversion is expected to be within the Mixed-Use Districts, project generated residential conversion is also assumed at portions of MSMX Affected Area in C6-4M Districts that would be outside of the proposed Mixed-Use District as shown in Figure 1-3. Therefore, as there are no mechanism to ensure adequate noise attenuation measures at project generated residential conversions to occur outside of the proposed Mixed-Use District, the potential for elevated interior noise levels (in the absence of sufficient building attenuation measures) cannot be ruled out, and significant adverse noise impacts could occur for the area modeled for residential conversion though it is expected that in order to maintain the marketability and attractiveness of new residential conversion, developers would consider window wall attenuation even when not required.

## K. Mechanical Equipment

It is assumed that building mechanical systems (i.e., HVAC systems) for all buildings associated with the Proposed Actions would be designed to meet all applicable noise regulations (i.e., Subchapter 5, §24−227 of the New York City Noise Control Code, the New York City Department of Buildings Code) and to avoid producing levels that would result in any significant increase in ambient noise levels. Therefore, the Proposed Actions would not result in any significant adverse noise impacts related to building mechanical equipment.