

## **A. INTRODUCTION**

The proposed action would not result in significant adverse impacts related to noise. As described in Chapter 1, “Project Description,” it would generate new residential and community facility uses in area historically occupied by manufacturing uses. As part of the proposed action, (E) designations would be placed on the zoning map for all projected and potential development sites where there is the potential for significant adverse noise impacts. Residential and community facility development on lots mapped with an (E) designation would be required to provide sufficient noise attenuation to maintain interior noise levels of 45 dBA or lower.

An analysis was therefore prepared to evaluate the potential effect of the proposed action on noise levels at existing and potential future noise sensitive locations in the surrounding area. Future noise sensitive locations include areas that may be redeveloped for residential and community facility uses.

In order to assess the potential for significant adverse noise impacts, an analysis was conducted that considered changes in noise due to increases in traffic and the introduction of sensitive receptors into an area with existing ambient noise levels classified as “Marginally Unacceptable” and “Clearly Unacceptable,” as defined in the *CEQR Technical Manual*. 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 action; and 2) the location of new sensitive receptors and the degree to which window/wall attenuation would provide acceptable interior noise levels.

## **B. NOISE FUNDAMENTALS**

Noise is “unwanted sound” and, by this definition, the perception of noise is a subjective process. Noise in our environment can be characterized by three distinguishing characteristics: loudness, pitch, and time variation.

- The loudness or magnitude of noise is a measure of its intensity, and it is measured in units called decibels (dB). The decibel unit is based on a logarithmic scale, and it compresses a large range of sound pressures into manageable numbers. For example, on the decibel scale, environmental noise ranges from 40 dB from the rustling of leaves to over 80 dB from a truck passage and up to 100 dB at the front rows of a rock concert. The louder the sound, the greater is its decibel value.
- Pitch describes the character and frequency content of noise. Measured in Hertz (Hz), the pitch is used to identify annoying characteristics of noise and help in determining appropriate mitigation to minimize annoyance. The human ear is sensitive to noise frequencies between 20 Hz (low-pitched noise) and 20,000 Hz (high-pitched noise). For example, a noise may be characterized as a low-pitched “rumble” from stereo sub-woofers or a high-pitched “whine” from a train whistle or a train wheel squeal.
- Time variation describes the pattern of the sound over the observation period. Time variation of environmental noise can be characterized as: 1) continuous, such as noise from a building ventilation fan; 2) intermittent, such as noise from a train passage; or 3) impulsive, like noise from a car backfire. Time variation is used in combination with loudness and pitch to determine the sound energy exposure from a particular noise during a period of time, such as a 24-hour day.

## C. HUMAN PERCEPTION OF NOISE AND NOISE DESCRIPTORS

Since the human ear does not respond equally to all frequencies, measured sound levels (in decibel units at standard frequency bands) are often adjusted or weighted to correspond to the frequency response of human hearing. The weighted sound level is expressed in units called “A”-weighted decibels (dBA) and is measured with a calibrated noise meter. A 10 dBA increase in noise level is generally perceived as a doubling of loudness, while a 3 dBA increase in noise is just barely perceptible to the human ear. Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived. A change in sound level of 5 dBA is subjectively noticeable. Typical A-weighted noise levels in the environment lie in the range of 0 dBA (approximate threshold of hearing) to 120 dBA (jet aircraft at 500 feet) (Fig.1).

The following A-weighted noise descriptors (noise metrics) are typically used to determine impacts from noise sources.

- $L_{eq}$  represents the level of a constant noise containing the same acoustical energy as a fluctuating noise (e.g., highway traffic) observed during a given interval, typically one hour. The  $L_{eq}$  is commonly used to describe energy average levels at places with primarily daytime uses such as offices, schools, and churches.  $L_{eq}$  (1 h) represents the cumulative noise exposure from all events averaged over one hour.
- $L_{90}$ : Noise level in dBA exceeded 90 percent of the observation time.  $L_{90}$  is often considered to represent the “background” noise in a community.
- $L_{10}$ : Noise level in dBA exceeded 10 percent of the observation time. This unit is used in CEQR regulations and establishes threshold levels for acceptable noise exposure.
- $L_1$ : Noise level in dBA exceeded 1 percent of the observation time. This unit is often taken to approximate the “maximum” noise level in the community over a period of time, since it is likely to be more representative than a single, instantaneous maximum level.

Outdoor A-weighted sound levels were used in the measurements and analysis of the noise effects from the proposed action, as dBA correlates well with the human perception of noise. The one-hour equivalent continuous noise level ( $L_{eq(1h)}$  in dBA), and the noise level exceeded 10 percent of the time ( $L_{10}$  in dBA), which represents average of maximum levels, were selected as the noise descriptors for this analysis.

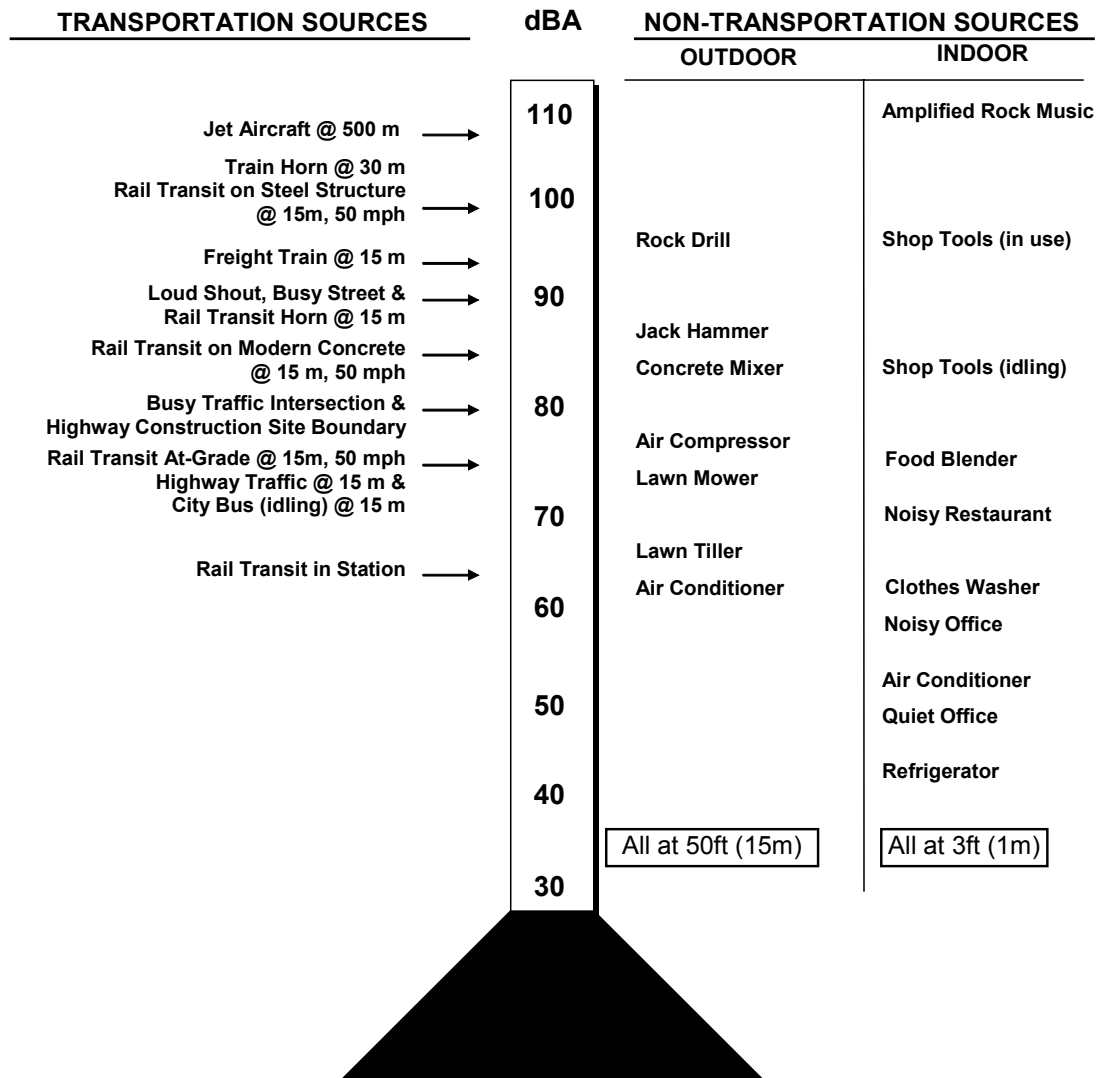
### 1. Criteria

The NYCDEP, Division of Noise Abatement, sets standards for external noise exposure. These standards are classified into four main categories: “Acceptable”; “Marginally Acceptable”; “Marginally Unacceptable”; and “Clearly Unacceptable” (see Table 19-1). The *CEQR Technical Manual* provides guidance for assessing project-generated noise impacts at sensitive receptors based on the category of external noise exposure at these receptor sites. These guidelines are used in this analysis to determine the applicable interior noise levels of sensitive uses, including potential future residential sites based on external noise exposure. For example, at a potential residential site located within areas with “Marginally Unacceptable” external noise levels, a minimum of 30 to 35 dBA reduction below daytime external noise level would be required according to CEQR guidelines to satisfy the interior noise level criteria.

Under the *CEQR Technical Manual*, increases in daytime noise levels as a result of the proposed action are not considered significant unless the resulting noise levels exceed 65 dBA. At night and during the day where the No-action noise levels exceed 65 dBA, a 3dBA increase from the No-action condition is

considered a significant adverse impact. In addition, the introduction of sensitive uses such as residences into an area with noise levels above 70 dBA constitutes a significant adverse impact unless interior noise levels for the buildings are attenuated to 45 dBA.

**Figure 19-1  
Common Indoor and Outdoor Noise Levels**



m = meters; mph = miles per hour.

Sources: FTA Report DOT-T-95-16. "Transit Noise and Vibration Impact Assessment: Final Report", April 1995

**Table 19-1, Noise Exposure Standards for Use in City Environmental Impact Reviews**

Receptor Type	Time Period	Acceptable General External Exposure	Airport <sup>3</sup> Environs	Marginally Acceptable General External Exposure	Airport <sup>3</sup> Environs	Marginally Unacceptable General External Exposure	Airport <sup>3</sup> Environs	Clearly Unacceptable General External Exposure	Airport <sup>3</sup> Environs
1. Outdoor area requiring serenity and quiet <sup>2</sup>		L <sub>10</sub> less or equal 55 dBA	L <sub>dn</sub> less than or equal to 60 dBA	--	L <sub>dn</sub> less than or equal to 65 dBA	--	(I) L <sub>dn</sub> less than or equal to 70 dBA (II) L <sub>dn</sub> less than or equal to 75 dBA	--	L <sub>dn</sub> > 75 dBA
2. Hospital, Nursing Home		L <sub>10</sub> less or equal 55 dBA		55 < L <sub>10</sub> but less or equal 65 dBA		65 < L <sub>10</sub> but less or equal 80 dBA		L <sub>10</sub> > 80 dBA	
3. Residence, Residential Hotel or Motel	7 AM to 11 PM	L <sub>10</sub> Less or equal 65 dBA		65 < L <sub>10</sub> but less or equal 70 dBA		70 < L <sub>10</sub> but less or equal 80 dBA		L <sub>10</sub> > 80 dBA	
	11 PM to 7 AM	L <sub>10</sub> Less or equal 55 dBA		55 < L <sub>10</sub> but less or equal 70 dBA		70 < L <sub>10</sub> but less or equal 80 dBA		L <sub>10</sub> > 80 dBA	
4. School, Museum, Library, Court, House of Worship, Transient Hotel or Motel, Public Meeting Room, Auditorium, Out- Patient Public Health Facility		Same as Residential Day (7AM-11PM)		Same as Residential Day (7AM-11PM)		Same as Residential Day (7AM-11PM)		Same as Residential Day (7AM-11PM)	
5. Commercial or Office		Same as Residential Day (7AM-11PM)		Same as Residential Day (7AM-11PM)		Same as Residential Day (7AM-11PM)		Same as Residential Day (7AM-11PM)	
6. Industrial, Public Areas Only <sup>4</sup>	Note <sup>4</sup>	Note <sup>4</sup>	Note <sup>4</sup>	Note <sup>4</sup>	Note <sup>4</sup>				

Source: CEQR Technical Manual (NYCDEP, adopted policy 1983).

**Notes:**

(I) In addition, any new activity shall not increase the ambient noise level by 3 dBA or more.

(II) Noise standards for train noise are similar to the aircraft noise standards: the category for train noise is derived by taking the L<sub>dn</sub> value for such train noise to be an L<sub>dn</sub> (L<sub>dn</sub> contour) value.

<sup>1</sup> Measurements and projections of noise exposures are to be made at appropriate heights above site boundaries as given by American National Standards Institute (ANSI) Standards. All values are for the worst hour in the time period.

<sup>2</sup> 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 requiring special qualities of serenity and quiet, such as at sanitariums and old-age homes.

<sup>3</sup> Either the FAA-approved L<sub>dn</sub> contours supplied by the Port Authority or the noise contours may be computed from the federally approved INM Computer Model, using data supplied by the Port Authority of New York and New Jersey.

<sup>4</sup> 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).

## **D. TRAFFIC NOISE ASSESSMENT**

### EXISTING CONDITIONS

#### **1. Noise Monitoring Locations**

Information about land uses in the rezoning area and trip assignment for potential future uses was reviewed to select monitoring sites and for assessing the future noise impacts on sensitive sites. The nine monitoring sites depicted in Figure 19-2 are representative of the sensitive land uses in the area and of locations where additional new vehicle trips are expected, which could result in an increase in noise. Measured noise levels at the nine monitoring sites represent the existing noise exposure conditions at these locations. Noise monitoring was performed on three weekdays in August (August 17 through 19, 2004) and on December 8, 2004, during different time periods of the days. Time periods chosen for sampling included AM peak (7 AM to 9 AM), Midday Peak (11 AM to 1 PM), PM peak (4 PM to 6 PM) and Nighttime (9 PM to 11 PM). In addition to  $L_{eq(h)}$  and  $L_{10}$  noise levels, other statistical noise descriptors ( $L_1$ ,  $L_{50}$ , and  $L_{90}$ ) were also sampled at all locations for all time periods. The monitored noise levels are summarized in Table 19-2. For noise assessment purposes, only  $L_{eq}$  and  $L_{10}$  were used in this report, consistent with *CEQR Technical Manual* guidelines.

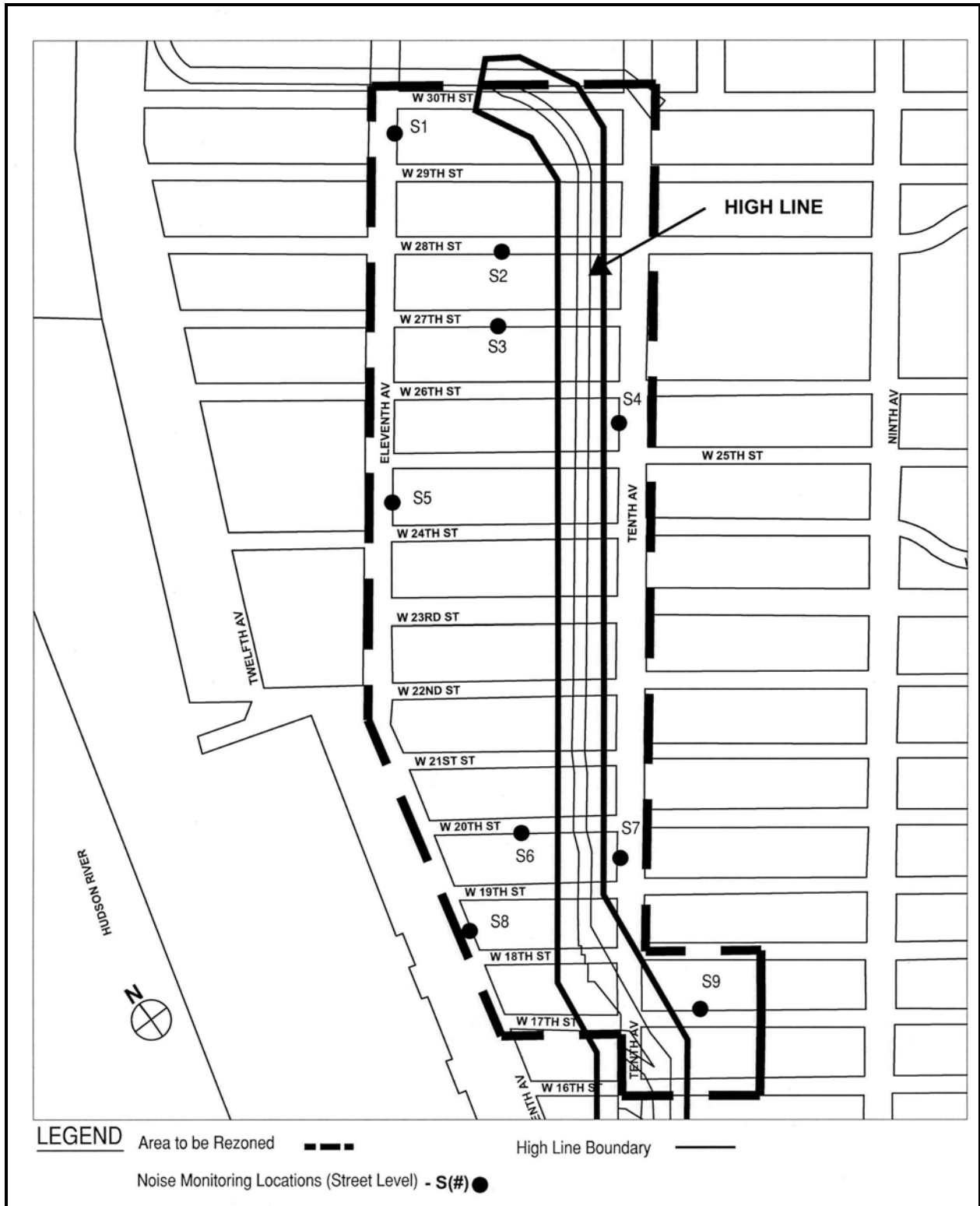
#### **2. Equipment Used in Noise Monitoring**

A calibrated Bruel and Kjaer Type 2231 sound level meter with a Type 4165 condenser microphone and windshield was located at the noise-monitoring sites. The meter was calibrated before and after each reading. The sound level meter was mounted on a tripod at a height of approximately 5.5 feet above ground level. At the end of the preset time period of twenty minutes, the statistical levels and the  $L_{eq}$  noise levels were read on the digital display of the meter. (For traffic noise measurements 20 minute readings at the monitoring sites are adequate and they are representative of one hour statistical and  $L_{eq}$  noise levels). Noise monitoring was performed under acceptable weather and road surface conditions: low wind speed (less than 20 mph) and dry road surface.

#### **3. Results of Baseline Noise Measurements**

The results of baseline noise measurements are presented in Table 19-2. Daytime noise levels at all of the receptor sites are fairly typical of noise levels in the study area. A steady background noise exists at all locations due to constant traffic on nearby streets. The background noise level  $L_{90}$  (lowest average minimum level) is in the range of 52 to 66 dBA. The highest  $L_{10}$  monitored noise level was measured during the Midday peak period at site S8 (80 Eleventh Avenue) and it is represented by an  $L_{10}$  noise level of 82.0 dBA. Noise level, in terms of twenty minutes  $L_{eq}$  at the same location during the same time period, was 78.8 dBA. This level of exposure places this site under CEQR defined “Clearly Unacceptable” category. Sites S1 (302 11<sup>th</sup> Avenue), S2 (530 West 28<sup>th</sup> Street), S4 (259 10<sup>th</sup> Avenue), S5 (210 11<sup>th</sup> Avenue), S7 (153 Tenth Avenue) and S9 (453 West 17<sup>th</sup> Street) fall under the “Marginally Unacceptable” category, while sites S3 (533 West 27<sup>th</sup> Street) and S6 (516 West 20<sup>th</sup> Street) falls under the “Marginally Acceptable” category. The categorization of these monitoring sites is based on the results of baseline noise monitoring and *CEQR Technical Manual* Attenuation Level Exposure Guidelines (Table 19-1).

Figure 19-2, Locations of Noise Monitoring Sites (S1 through S9)



**Table 19-2, Existing Short-term Noise Levels at Monitoring Sites S1 through S9 during August 17 through 19, 2004 (Noise exposure Category classification was based on the highest noise level measured during any of the four time periods)**

Site #	Location	Measurement Times*	Existing Noise Level					CEQR Noise Exposure Category
			Leq	L1	L10	L50	L90	
S1	302 11th Avenue	7:00 – 9:00 am	69.3	78.5	73.0	66.0	61.0	Marginally Unacceptable (I)
		11:00 – 1:00 pm	71.6	81.0	74.5	68.5	64.0	
		4:00 – 6:00 pm	68.4	78.0	71.0	66.0	61.5	
		9:00 – 11:00 pm	67.8	77.5	71.5	63.0	59.0	
S2	530 West 28th Street	7:00 – 9:00 am	69.9	80.5	72.0	66.5	62.5	Marginally Unacceptable (I)
		11:00 – 1:00 pm	66.5	76.0	69.0	63.5	59.5	
		4:00 – 6:00 pm	66.3	73.0	66.5	60.5	57.0	
		9:00 – 11:00 pm	59.1	68.0	62.0	55.5	52.0	
S3	533 West 27th Street	7:00 – 9:00 am	66.1	75.5	69.0	63.0	59.0	Marginally Acceptable
		11:00 – 1:00 pm	66.0	78.0	66.5	61.0	57.5	
		4:00 – 6:00 pm	62.7	73.0	66.0	58.5	54.5	
		9:00 – 11:00 pm	66.0	78.0	66.0	59.0	56.0	
S4	259 10th Avenue	7:00 – 9:00 am	75.6	86.0	78.5	71.5	65.0	Marginally Unacceptable (II)
		11:00 – 1:00 pm	73.1	82.5	75.5	68.0	64.0	
		4:00 – 6:00 pm	72.8	82.0	76.0	69.5	62.5	
		9:00 – 11:00 pm	69.1	78.0	73.0	65.5	58.5	
S5	210 11th Avenue	7:00 – 9:00 am	72.9	82.5	75.5	71.0	65.5	Marginally Unacceptable (II)
		11:00 – 1:00 pm	72.2	81.0	75.5	70.0	64.5	
		4:00 – 6:00 pm	70.4	77.5	73.5	68.5	65.5	
		9:00 – 11:00 pm	67.4	75.0	70.5	65.0	61.5	
S6	516 West 20th Street	7:00 – 9:00 am	68.4	78.5	70.0	64.0	61.5	Marginally Acceptable
		11:00 – 1:00 pm	66.3	74.5	67.5	64.5	62.5	
		4:00 – 6:00 pm	66.5	74.5	68.5	64.0	62.5	
		9:00 – 11:00 pm	63.2	70.5	66.5	61.0	58.5	
S7	153 10th Avenue	7:00 – 9:00 am	69.3	78.5	72.5	65.5	58.5	Marginally Unacceptable (I)
		11:00 – 1:00 pm	71.3	80.5	74.5	68.0	61.0	
		4:00 – 6:00 pm	68.8	77.5	72.0	66.0	59.0	
		9:00 – 11:00 pm	70.8	80.0	74.4	65.5	57.0	
S8	80 11th Avenue (New Residential Construction)	7:00 – 9:00 am	76.3	83.5	80.0	75.0	63.5	Clearly Unacceptable (I)
		11:00 – 1:00 pm	78.8	87.0	82.0	77.0	64.0	
		4:00 – 6:00 pm	77.8	86.0	81.5	75.5	61.0	
		9:00 – 11:00 pm	77.9	86.0	82.0	75.0	59.5	
S9	453 West 17th Street	7:00 – 9:00 am	67.8	77.0	73.0	63.0	60.5	Marginally Unacceptable (I)
		11:00 – 1:00 pm	66.1	76.0	69.0	63.0	61.5	
		4:00 – 6:00 pm	65.2	73.5	67.5	63.0	61.0	
		9:00 – 11:00 pm	64.4	73.0	67.5	61.5	60.0	

## E. FUTURE WITHOUT THE PROPOSED ACTION

As per *CEQR Technical Manual* Guidelines, in order to predict the noise levels in the future without the proposed action, monitored noise levels were adjusted by using a proportional modeling technique to take into account the increases in traffic associated with area growth. Future traffic volumes were obtained by adding future 2013 No Action traffic volumes to the existing baseline conditions. The vehicular traffic volumes under the existing and future No Action conditions were converted into Passenger Car Equivalent (PCE) values for which 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 generated the noise equivalent of 47 cars. Future No Action noise levels are calculated using the following equation:

$$\text{Future No Action Noise Level} - \text{Existing Noise Level} = 10 * \log_{10} (\text{Future No Action PCEs} / \text{Existing PCEs})$$

As indicated in Table 19-2, the existing noise levels range from the “Marginally Acceptable” to the “Clearly Unacceptable” category at the Development Sites. Future No Action noise levels at the nine monitoring sites as shown in Table 19-3 would be higher than the existing noise levels, with increases in the range of 0.1 to 1.3 dBA. Changes of this magnitude would be insignificant and imperceptible.

## F. FUTURE WITH THE PROPOSED ACTION

In order to predict noise levels in the future with the proposed action, the additional increase in traffic noise associated with the proposed action was added to the future No Action traffic noise condition. Using the methodology used to calculate noise previously described, there would be no perceptible increases in traffic noise levels at the Development Sites as a result of increases in traffic associated with the proposed action (see Table 19-3). At sites S2 and S6, where the highest increase in traffic volumes is expected, the increase in noise level conditions in the future with the proposed action compared to the future action condition noise levels is predicted to be ~~1.0 dBA~~. ~~At seven of the eight~~ 0.8 dBA. ~~At six of the~~ remaining monitoring sites (S1, ~~S2~~, S3, S5, S7, S8, and S9), the increase in future traffic volume would result in increased noise levels over the future no action condition, with noise level increments ranging between 0.1 to ~~0.9~~ 0.6 dBA, which is insignificant and imperceptible. At site S4, the future predicted traffic volume was reduced under build conditions, which resulted in a decrease in noise predicted to be 0.1 dBA. As result of the proposed action, the increase in the build action noise level over the no build noise level would not exceed the 3 dBA CEQR threshold at any of the receptor sites. Therefore, significant adverse impacts are not predicted to occur.



**Table 19-3, Existing and Future Traffic Noise Levels (Leq) at Short-term Monitored Sites**  
**THIS TABLE HAS BEEN REVISED FOR THE FEIS**

Site #	Peak Traffic Time Period	Existing PCEs *	Future No Action PCEs *	Future Proposed Action PCEs *	Existing Noise Level (dBA)	Predicted Future No Action Noise Level (dBA)	Proposed Action Noise Level (dBA)	Future Proposed Action Minus Future No Action (dBA)	Impact (Yes/No)
									Proposed Action
S1	MIDDAY	4189	5300	5482	71.6	72.6	72.8	0.2	No
S2	AM	655	842	1023	69.9	71.0	71.8	0.8	No
S3	AM	297	303	332	66.1	66.2	66.6	0.4	No
S4	AM	7601	9751	9585	75.6	76.7	76.6	- 0.1	No
S5	AM	4151	4780	4891	72.9	73.5	73.6	0.1	No
S6	AM	388	455	557	68.4	69.1	69.9	0.8	No
S7	MIDDAY	6283	7460	7707	71.3	72.0	72.2	0.2	No
S8	MIDDAY	11352	13147	13434	78.8	79.4	79.5	0.1	No
S9	AM	1146	1537	1770	67.8	69.1	69.7	0.6	No

- For impact assessment, the highest measured hourly level for the entire day, Am Peak (7:00 am to 9:00 am), Midday Peak (11:00 am to 1:00 pm) Pm Peak (4:00 pm to 6:00 pm) and Nighttime (9:00 pm to 11:00 pm), was used for each location to calculate change in noise level from calculated PCE's for the existing, the no-build and the build conditions.

**Table 19-4, Required Attenuation Values to Achieve Acceptable Interior Noise Levels**

	<b>Marginally Acceptable</b>	<b>Marginally Unacceptable</b>		<b>Clearly Unacceptable</b>		
Noise level with proposed action	$65 < L_{10} \leq 70$	$70 < L_{10} \leq 75$	$75 < L_{10} \leq 80$	$80 < L_{10} \leq 85$	$85 < L_{10} \leq 90$	$90 < L_{10} \leq 95$
Attenuation	25 dBA	30 dBA	35 dBA	40 dBA	45 dBA	50 dBA

Source: CEQR Technical Manual; NYCDEP.

**G. SENSITIVE RECEPTOR ASSESSMENT**

As indicated in Table 19-1 the existing noise levels range from "Marginally Acceptable" to "Clearly Unacceptable" at the proposed residential sites.

The proposed action would introduce new sensitive receptors into an area with high existing ambient noise levels. The existing noise levels at the ~~eight~~ nine monitoring sites and the future noise levels at ~~the majority~~ eight of the proposed residential sites would exceed 70 dBA. The proposed (E) designation for these sites would preclude the potential for significant adverse noise impacts. These sites would be suitable for residential uses only by providing window-wall attenuation ranging from 30 dBA to 40 dBA for the exterior facade of the affected residences in order to achieve a 45 dBA interior noise level (Table 19-4). Window attenuation requirements for the existing eight noise monitoring sites are shown in Table 19-5. Other potential and projected development sites for which (E) designation would be required are shown in Tables 19-6 and 19-7. The closed window condition at these sites can be maintained only by providing an alternate means of ventilation for the interior spaces. . Details of window insulation are the following:

- Sound attenuation of 30 dBA would be needed for sites where future noise levels would be between 70 and 75 dBA. This can be achieved through installing ¼ inch laminated single glazed window or double-glazed windows with 1/8 inch glass panes with ¼ inch air space between them mounted in a heavy frame.
- Sound attenuation of 35 dBA would be required for sites where future noise levels would be between 75 and 80 dBA. This can be achieved through installing double glazed windows on a heavy frame in masonry structures or windows consisting of laminated glass.
- Sound attenuation of 40 dBA would be required where future noise levels would be between 80 and 85 dBA. This mitigation requires the use of measures that typically exceed standard practice for new construction. Achieving the 40 dBA attenuation would require the placement of acoustically well-sealed ¼” laminated storm sash 1.5” to 3” from single glazed window on wood or metal frame.

To ensure an interior noise environment of 45 dBA or less, an (E) designation for noise will be placed on the zoning map. . For site location details including block and lot numbers see Table 19-6 (Projected Development Sites) and 19-7 (Potential Development Sites).

In addition, as described in Chapter 1, "Project Description," the proposed action would change the existing MX-3 zoning district, generally mapped along W 23rd Street and the south side of W 24th Street (Chelsea Rezoning, CEQR No. 99DCP030M), to underlying contextual C6-2A and C6-3A zoning districts. Mixed use districts require 35dBA noise attenuation for residential developments. In order to ensure that the appropriate level of noise attenuation is provided for these sites once the mixed-use district is eliminated, Potential Development sites 46 through 53 have been included in both the future with action and the future without the proposed action. As part of the proposed action (E) designations for noise, requiring 35dBA window-wall attenuation, will be mapped on these sites.

The text of the (E) designation would be as follows:

**In order to ensure an acceptable interior noise environment, new residential/commercial development must provide a closed window condition with a minimum of 30, 35 or 40 dBA window/wall attenuation on all facades in order to maintain an interior noise level of 45 dBA. In order to maintain a closed-window condition, an alternate means of ventilation includes, but is not limited to, central air conditioning or air conditioning sleeves containing air conditioners.**

Tax lots on the projected and potential development sites indicated with a triple asterisk (\*\*\*) in Tables 19-6 and 19-7 are not expected to be redeveloped under the proposed action, as they contain existing residential buildings. Therefore, they would not be mapped with an (E) designation. These lots would transfer air rights to adjacent lots within the development site.

**Table 19-5, Required Window Attenuation Values for Monitored sites S1, and S2 through S9\***  
**THIS TABLE HAS BEEN REVISED FOR THE FEIS**

Site	L10 (No-action)**	Change in noise level due to change in Traffic PCEs	Build L10 Noise Levels	Required Window Attenuation dBA
		Proposed Action	Proposed Action	Proposed Action
S1	75.5	0.2	75.7	35
S2	73.1	0.8	73.9	30
S3	69.1	0.4	69.5	25 (std.window)
S4	79.6	-0.1	79.5	35
S5	76.1	0.1	76.2	35
S6	72.5	0.8	73.3	30
S7	75.2	0.2	75.4	35
S8	82.6	0.1	82.7	40
S9	74.3	0.6	74.9	30

\* E designation for these sites would preclude the potential for adverse noise impacts.

\*\* As stated in the *CEQR Technical Manual* " L10 values can be calculated by adding the difference between the L10 and Leq descriptors found to exist in the measurement program to the calculated no action Leq noise level". For example for site 1 the difference between L10 and Leq in the measurement program is  $74.5 - 71.6 = 2.9$ . Future calculated no-action L10 is  $72.6 + 2.9 = 75.5$ .

**Table 19-6, Required Attenuation Values for Projected developmental sites (the representative monitoring site is shown next to the address)**  
**THIS TABLE HAS BEEN REVISED FOR THE FEIS**

Site Number	Address	Block Number	Lot(s) Number	Build Max L <sub>10</sub> (dBA)	Attenuation Required
1 **	306-310 Eleventh Ave (S1)	701	1	75.7	40 **
2 **	505 W 29 ST (S4)	701	33	79.5	40 **
	329 Tenth Ave (S4)	701	35***	79.5	40 **
	331 Tenth Ave (S4)	701	36	79.5	40 **
	333 Tenth Ave (S4)	701	37	79.5	40 **
	337 Tenth Ave (S4)	701	42	79.5	40 **
	502-504 W 30 ST (S4)	701	43	79.5	40 **
	506 W 30 ST (S4)	701	45	79.5	40 **
	509 W 29 ST (S4)	701	30	79.5	40 **
3 **	282-298 Eleventh Ave (S1)	700	1	75.7	40 **
	282-298 Eleventh Ave (S1)	700	1	75.7	40 **
4	547-559 W 27 ST (S2)	699	5	73.9	30
5	514-520 W 28 ST (S2)	699	44	73.9	30
6	503 W 27 ST (S4)	699	30***	79.5	35
	299 Tenth Ave (S4)	699	31***	79.5	35
	301 Tenth Ave (S4)	699	32***	79.5	35
	303-309 Tenth Ave (S4)	699	33	79.5	35
	311 Tenth Ave (S4)	699	37***	79.5	35
7	246-260 Eleventh Ave (S5)	698	1	76.2	35

Site Number	Address	Block Number	Lot(s) Number	Build Max L <sub>10</sub> (dBA)	Attenuation Required
8	279 Tenth Ave (S4)	698	32	79.5	35
	285 Tenth Ave (S4)	698	35	79.5	35
	289 Tenth Ave (S4)	698	37	79.5	35
	293 Tenth Ave (S4)	698	40	79.5	35
9	259 Tenth Ave (S4)	697	31	79.5	35
10	550 W 25 St (S2)	696	58	73.9	30
11	239 Tenth Ave (S4)	696	32	79.5	35
	245 Tenth Ave (S4)	696	33	79.5	35
	249 Tenth Ave (S4)	696	35	79.5	35
	253 Tenth Ave (S4)	696	37	79.5	35
	255 Tenth Ave (S4)	696	38	79.5	35
12	144-150 Eleventh Ave (S8)	693	1	82.7	40
	154-160 Eleventh Ave (S8)	693	64	82.7	40
13	130 Eleventh Ave (S8)	692	63	82.7	40
	550 W 21 ST (S8)	692	61	82.7	40
	550 W 21 ST (S8)	692	7	82.7	40
14	542 W 21 ST (S6)	692	57	73.3	30
	540 W 21 ST (S6)	692	53	73.3	30
15	169-183 Tenth Ave (S7)	692	30	75.4	35
	521-527 W 20 ST (S7)	692	28	75.4	35
16	100 Eleventh Ave (S8)	691	11	82.7	40
17	532-534 W 20 ST (S6)	691	50	73.3	30
	516-530 W 20 ST (S6)	691	43	73.3	30
18	153 Tenth Ave (S7)	691	29	75.4	35
	161 Tenth Ave (S7)	691	33	75.4	35
	165 Tenth Ave (S7)	691	35	75.4	35
	510 W 19 ST (S7)	691	25	75.4	35
	505 W 19 ST (S7)	691	27	75.4	35
	504 W 20 ST (S7)	691	37	75.4	35
19	96 Eleventh Ave (S8)	690	12	82.7	40
	80-92 Eleventh Ave (S8)	690	54	82.7	40
	511-525 W 18 ST (S8)	690	20	82.7	40
	511-525 W 18 ST (S8)	690	20	82.7	40
20	131 Tenth Ave (S7)	690	29	75.4	35
	131 Tenth Ave (S7)	690	29	75.4	35
21	99-111 Tenth Ave (S8)	689	17	82.7	40
22	128 Tenth Ave (S7)	715	63	75.4	35
	124 Tenth Ave (S7)	715	64, 65	75.4	35
	118 Tenth Ave (S7)	715	3	75.4	35
	116 Tenth Ave (S7)	715	2	75.4	35
	118 Tenth Ave (S7)	715	1***	75.4	35
	456 W 18 ST (S7)	715	60	75.4	35
23	453 W 17 ST (S9)	715	5	74.9	30
	447 W 17 ST (S9)	715	7	74.9	30
24	112 Tenth Ave (S7)	714	63***	75.4	35
	96 Tenth Ave (S7)	714	1	75.4	35
25	437 W 16 ST (S9)	714	14	74.9	30

Site Number	Address	Block Number	Lot(s) Number	Build Max L <sub>10</sub> (dBA)	Attenuation Required
	437 W 16 ST (S9)	714	16	74.9	30

\*\* The affect of additional trucks at the Morgan Annex was taken into consideration. Window / wall attenuation requirements were increased by 5 dBA along the assigned routes of Morgan Annex truck traffic.

\*\*\* These lots are not expected to be redeveloped under the proposed action, as they contain existing residential buildings.

**Table 19-7, Required Attenuation Values for potential developmental sites (the representative monitoring site is shown next to the address)**

**THIS TABLE HAS BEEN REVISED FOR THE FEIS**

Site Number	Address	Block Number	Lot(s) Number	Build Max L <sub>10</sub> (dBA)	Attenuation Required
26	314-316 Eleventh Ave (S1)	701	68	75.7	35
	312 Eleventh Ave (S1)	701	70	75.7	35
	534-538 W 30 ST (S1)	701	62	75.7	35
	532 W 30 ST (S1)	701	59	75.7	35
27 **	530 W 30 ST(S2)	701	58	73.9	35 **
	526-528 W 30 ST(S2)	701	56	73.9	35 **
	524 W 30 ST(S2)	701	55	73.9	35 **
	518-522 W 30 ST(S2)	701	52	73.9	35 **
28 **	529-539 W 29 ST(S2)	701	16	73.9	35 **
	527 W 29 ST(S2)	701	22	73.9	35 **
	525 W 29 ST(S2)	701	23	73.9	35 **
29 **	527 W 29 ST (S2)	701	24	73.9	35 **
	515 W 29 ST (S2)	701	28	73.9	35 **
30 **	550 W 29 ST (S2)	700	61	73.9	35 **
	548 W 29 ST (S2)	700	60	73.9	35 **
	546 W 29 ST (S2)	700	59	73.9	35 **
	542-544 W 29 ST (S2)	700	57	73.9	35 **
	540 W 29 ST (S2)	700	56	73.9	35 **
	538 W 29 ST (S2)	700	55	73.9	35 **
	536 W 29 ST (S2)	700	54	73.9	35 **
31 **	526-532 W 29 ST (S2)	700	49	73.9	35 **
	524 W 29 ST (S2)	700	48	73.9	35 **
32 **	522 W 29 ST (S2)	700	47	73.9	35 **
	518 W 29 ST (S2)	700	45	73.9	35 **
	516 W 29 ST (S2)	700	44	73.9	35 **
	512 W 29 ST (S2)	700	42	73.9	35 **
33	529-539 W 28 ST (S2)	700	9	73.9	30

Site Number	Address	Block Number	Lot(s) Number	Build Max L <sub>10</sub> (dBA)	Attenuation Required
34	517-527 W 28 ST (S2)	700	18	73.9	30
35 **	313 Tenth Ave (S4)	700	29***	79.5	40 **
	315 Tenth Ave (S4)	700	30***	79.5	40 **
	317 Tenth Ave (S4)	700	31***	79.5	40 **
	319-321 Tenth Ave (S4)	700	32	79.5	40 **
	323 Tenth Ave (S4)	700	34	79.5	40 **
	327 Tenth Ave (S4)	700	36	79.5	40 **
36	262-280 Eleventh Ave (S1)	699	1	75.7	35
	554 W 28 ST (S1)	699	63	75.7	35
	526-590 W 28 ST (S1)	699	49	75.7	35
37	537 W 27 ST (S2)	699	9	73.9	30
38	535-538 W 27ST (S2)	699	14	73.9	30
	526-590 W 28 ST (S2)	699	49	73.9	30
39	220-240 Eleventh Ave (S5)	697	1	76.2	35
40	210-216 Eleventh Ave (S4)	696	65	79.5	35
41	202-208 Eleventh Ave (S5)	696	1	76.2	35
42	505 W 22 ST (S4)	694	30***	79.5	35
	203 Tenth Avenue (S4)	694	31***	79.5	35
	205 Tenth Avenue (S4)	694	32***	79.5	35
	207 Tenth Avenue (S4)	694	33	79.5	35
	500 W 23 ST (S4)	694	39	79.5	35
	512 W 23 ST (S4)	694	40	79.5	35
43	527-533 W 19 ST (S6)	691	15	73.3	30
	521-525 W 19 ST (S6)	691	19	73.3	30
	517-519 W 19 ST (S6)	691	22	73.3	30
	515 W 19 ST (S6)	691	24	73.3	30
44	524 W 19 ST (S6)	690	46	73.3	30
	516-522 W 19 ST (S6)	690	42	73.3	30
45	442 W 18 ST (S9)	715	59	74.9	30
	436 W 18 ST (S9)	715	50	74.9	30
46*	536 W 23 ST	694	58	77.5	35
	548 W 23 ST	694	60	77.5	35
	522 W 23 ST	694	61	77.5	35
	170 Eleventh Ave	694	65	77.5	35
47*	182 Eleventh Ave	695	1	77.5	35
	186 Eleventh Ave	695	3	77.5	35
	188 Eleventh Ave	695	4	77.5	35
48*	549 W 23 ST	695	7	77.5	35
	543 W 23 ST	695	12	77.5	35
	536 W 24 ST	695	57	77.5	35
49*	508 W 24 ST	695	44	77.5	35
50*	514 W 24 ST	695	47	77.5	35
51*	540 W 24 ST	695	59	77.5	35
52*	200 Eleventh Ave	695	67	77.5	35
	198 Eleventh Ave	695	68	77.5	35
	196 Eleventh Ave	695	69	77.5	35
	194 Eleventh Ave	695	70	77.5	35

Site Number	Address	Block Number	Lot(s) Number	Build Max L <sub>10</sub> (dBA)	Attenuation Required
53*	524 W 23 ST	694	47	77.5	35

\* Mixed-use development on Potential Development Sites 46 through 53 requires 35 dBA window-wall attenuation, as per the EAS for the *Chelsea Rezoning (CEQR No. 99DCP030M)*. In order to ensure that the 35 dBA noise attenuation is provided once the mixed-use zoning district is eliminated, the Max L<sub>10</sub> (77.5 dBA) recorded in the above referenced EAS is used for these potential development sites.

\*\* The affect of additional trucks at the Morgan Annex was taken into consideration. Window / wall attenuation requirements were increased by 5 dBA along the assigned routes of Morgan Annex truck traffic.

\*\*\* These lots are not expected to be redeveloped under the proposed action, as they contain existing residential buildings.

## H. CONCLUSION

The proposed action would not result in significant adverse impacts related to noise. The proposed action would generate new residential and community facility uses in area historically occupied by manufacturing uses. As discussed above, as part of the proposed action, (E) designations would be placed on the zoning map for all projected and potential development sites where there is the potential for significant adverse noise impacts. Residential and community facility development on lots mapped with an (E) designation would be required to provide sufficient noise attenuation to maintain interior noise levels of 45 dBA or lower.