Chapter 7: Noise

A. INTRODUCTION

This chapter assesses the potential for the Proposed Actions to result in significant adverse noise impacts. The analysis determines whether the Proposed Actions would result in increases in noise levels that could have a significant adverse impact on nearby sensitive receptors and also considers the effect of existing noise levels on the projected and potential developments that could result from the Proposed Actions.

As described in Chapter 1, "Project Description," the Proposed Actions include the rezoning of Block 2415, Lots 1, 6, 10, 7501, 7502 and a portion of Lots 16 and 38 (the Rezoning Area, coterminous with the Project Area) and would facilitate the redevelopment of Projected Development Site 1 (Block 2415, Lot 1; the Proposed Project) with a nine-story mixed-use building containing a total of approximately 101,000 gross square feet (gsf) of development, including retail, light industrial/office (split between 1/3 office use and 2/3 light industrial and manufacturing use for the purposes of CEQR analysis), and community facility uses. Projected Development Site 2 (Block 2415, Lot 6) could also be developed with a nine-story, 80,500-gsf mixed-use building containing retail, community facility, and office uses.

The analysis presented in Chapter 5, "Transportation," found that the Proposed Actions would not generate traffic volumes that have the potential to cause a significant noise impact (i.e., it would not result in a doubling of noise passenger car equivalents [Noise PCEs], which is necessary to cause a perceptible increase in noise levels). However, ambient noise levels adjacent to the development sites also must be examined to address any noise attenuation requirements, as found in the 2020 *City Environmental Quality Review (CEQR) Technical Manual*, for interior noise levels.

PRINCIPAL CONCLUSIONS

A noise assessment was undertaken to determine the levels of noise attenuation that may be needed to achieve interior noise levels that are acceptable and in accordance with the *CEQR Technical Manual* guidance. The *CEQR Technical Manual* has noise attenuation values for buildings based on exterior $L_{10(1)}$ noise levels for the purposes of achieving interior noise levels of 45 dBA or lower for residential and community facility uses and 50 dBA or lower for commercial office uses. The With Action condition $L_{10(1)}$ noise levels were determined by adjusting the existing noise measurements to account for future increases in traffic with the Proposed Actions based on the Noise PCE proportional analysis results including the noise contribution from vehicular traffic on adjacent roadways and by calculating the cumulative noise level in the future condition based on the playground noise and future vehicular traffic noise on adjacent roadways.

As previously discussed in EAS Attachment I, "Noise," published on January 10th, 2020, based on the projected noise levels, up to 28 dBA window/wall attenuation would be required to achieve

acceptable interior noise levels per the *CEQR Technical Manual* noise exposure guideline at residential and community facility uses.

To implement the attenuation requirements, an (E) Designation for noise would be applied specifying the appropriate window/wall attenuation. By meeting the design guidelines specified in the Noise (E) Designation, buildings developed as a result of the Proposed Actions would provide sufficient attenuation to achieve the *CEQR Technical Manual* interior noise level guidelines of 45 dBA L_{10} for residential or community facility uses and 50 dBA L_{10} for commercial office uses. With these measures in place, there would be no significant adverse impacts with the Proposed Actions.

B. ACOUSTICAL FUNDAMENTALS

Sound is a fluctuation in air pressure. 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 1 "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 (dBA)

In order 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 7-1**, 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.

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 3 dBA. At 5 dBA, the change will be readily noticeable.

Table 7-1
Common Noise Levels

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

Note: A 10 dBA increase in level appears to double the loudness, and a 10 dBA decrease halves the apparent loudness.
Sources: Cowan, James P. *Handbook of Environmental Acoustics,* Van Nostrand Reinhold, New York, 1994. Egan, M. David, Architectural Acoustics. McGraw-Hill Book Company, 1988.

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., 1 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. Statistical sound level descriptors such as L_1, L_{10}, L_{50}, L_{90}, and L_x, are used to indicate noise levels that are exceeded 1, 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}.

For purposes of the Proposed Actions, the L_{10} descriptor has been selected as the noise descriptor to be used in this noise impact evaluation. The 1-hour L_{10} is the noise descriptor used in the *CEQR Technical Manual* noise exposure guidelines for city environmental impact review classification.

C. NOISE STANDARDS AND CRITERIA

NEW YORK *CEQR TECHNICAL MANUAL* NOISE STANDARDS

The *CEQR Technical Manual* sets external noise exposure standards; these standards are shown in **Table 7-2**. Noise exposure is classified into four categories: acceptable, marginally acceptable, marginally unacceptable, and clearly unacceptable.

Table 7-2
Noise Exposure Guidelines For Use in City Environmental Impact Review

Receptor Type	Time Period	Acceptable General External Exposure	Airport[3] Exposure	Marginally Acceptable General External Exposure	Airport[3] Exposure	Marginally Unacceptable General External Exposure	Airport[3] Exposure	Clearly Unacceptable General External Exposure	Airport[3] Exposure
Outdoor area requiring serenity and quiet[2]		$L_{10} \leq 55$ dBA	---------- Ldn ≤ 60 dBA ----------	NA	NA	NA	(i) 65 < Ldn ≤ 70 dBA, (II) 70 ≤ Ldn	NA	---------- Ldn ≤ 75 dBA ----------
Hospital, nursing home		$L_{10} \leq 55$ dBA		$55 < L_{10} \leq 65$ dBA	---------- 60 < Ldn ≤ 65 dBA ----------	$65 < L_{10} \leq 80$ dBA		$L_{10} > 80$ dBA	
Residence, residential hotel, or motel	7 AM–10 PM	$L_{10} \leq 65$ dBA		$65 < L_{10} \leq 70$ dBA		$70 < L_{10} \leq 80$ dBA		$L_{10} > 80$ dBA	
	10 PM–7 AM	$L_{10} \leq 55$ dBA		$55 < L_{10} \leq 70$ dBA		$70 < L_{10} \leq 80$ dBA		$L_{10} > 80$ dBA	
School, museum, library, court, house of worship, transient hotel or motel, public meeting room, auditorium, outpatient public health facility		Same as Residential Day (7 AM–10 PM)		Same as Residential Day (7 AM–10 PM)		Same as Residential Day (7 AM–10 PM)		Same as Residential Day (7 AM–10 PM)	
Commercial or office		Same as Residential Day (7 AM–10 PM)		Same as Residential Day (7 AM–10 PM)		Same as Residential Day (7 AM–10 PM)		Same as Residential Day (7 AM–10 PM)	
Industrial, public areas only[4]	Note 4	Note 4		Note 4		Note 4		Note 4	

Note:
(i) In addition, any new activity shall not increase the ambient noise level by 3 dBA or more; (ii) *CEQR Technical Manual* noise criteria for train noise are similar to the above aircraft noise standards: the noise category for train noise is found by taking the L_{dn} value for such train noise to be an L^{y}_{dn} (L_{dn} contour) value.

Table Notes:
[1] 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.
[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 sanitariums and nursing homes.
[3] One may use FAA-approved L_{dn} contours supplied by the Port Authority, or the noise contours may be computed from the federally approved INM Computer Model using flight data supplied by the Port Authority of New York and New Jersey.
[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).
Source: New York City Department of Environmental Protection (adopted policy 1983).

The *CEQR Technical Manual* defines attenuation requirements for buildings based on exterior noise level (see **Table 7-3**). Recommended noise attenuation values for buildings are designed to maintain

interior noise levels of 45 dBA or lower for residential or community facility uses and 50 dBA or lower for commercial office uses, and are determined based on exterior $L_{10(1)}$ noise levels.

Table 7-3
Required Attenuation Values to Achieve Acceptable Interior Noise Levels

	Marginally Unacceptable				Clearly Unacceptable
Noise Level with Proposed Actions	$70 < L_{10} \leq 73$	$73 < L_{10} \leq 76$	$76 < L_{10} \leq 78$	$78 < L_{10} \leq 80$	$80 < L_{10}$
Attenuation[A]	(I) 28 dBA	(II) 31 dBA	(III) 33 dBA	(IV) 35 dBA	$36 + (L_{10} - 80)$[B] dBA

Notes:
[A] The above composite window-wall attenuation values are for residential dwellings and community facility uses. Commercial office spaces would be 5 dBA less in each category. All the above categories require a closed window situation and hence an alternate means of ventilation.
[B] Required attenuation values increase by 1 dBA increments for L_{10} values greater than 80 dBA.
Source: New York City Department of Environmental Protection.

D. EXISTING NOISE LEVELS

SELECTION OF NOISE RECEPTOR LOCATIONS

A total of 3 receptor locations within the Project Area were selected for evaluation of noise attenuation requirements. These locations are detailed below in **Table 7-4** and shown in **Figure 7-1**. Existing noise levels at Projected Development Site 1 were measured at three locations: Site 1 was located on South 2nd Street between Kent Avenue and Wythe Avenue; Site 2 was located on Kent Avenue midway between South 2nd Street and 3rd Street; and Site 3 was located on South 3rd Street between Kent Avenue and Wythe Avenue. These receptors, due to their proximity to the development sites, provide an effective and conservative representation of existing ambient noise levels at the projected and potential development sites.

Table 7-4
Noise Receptor Locations

Noise Receptor	Location
1	South 2nd Street between Kent Avenue and Wythe Avenue
2	Kent Avenue midway between South 2nd Street and 3rd Street
3	South 3rd Street between Kent Avenue and Wythe Avenue

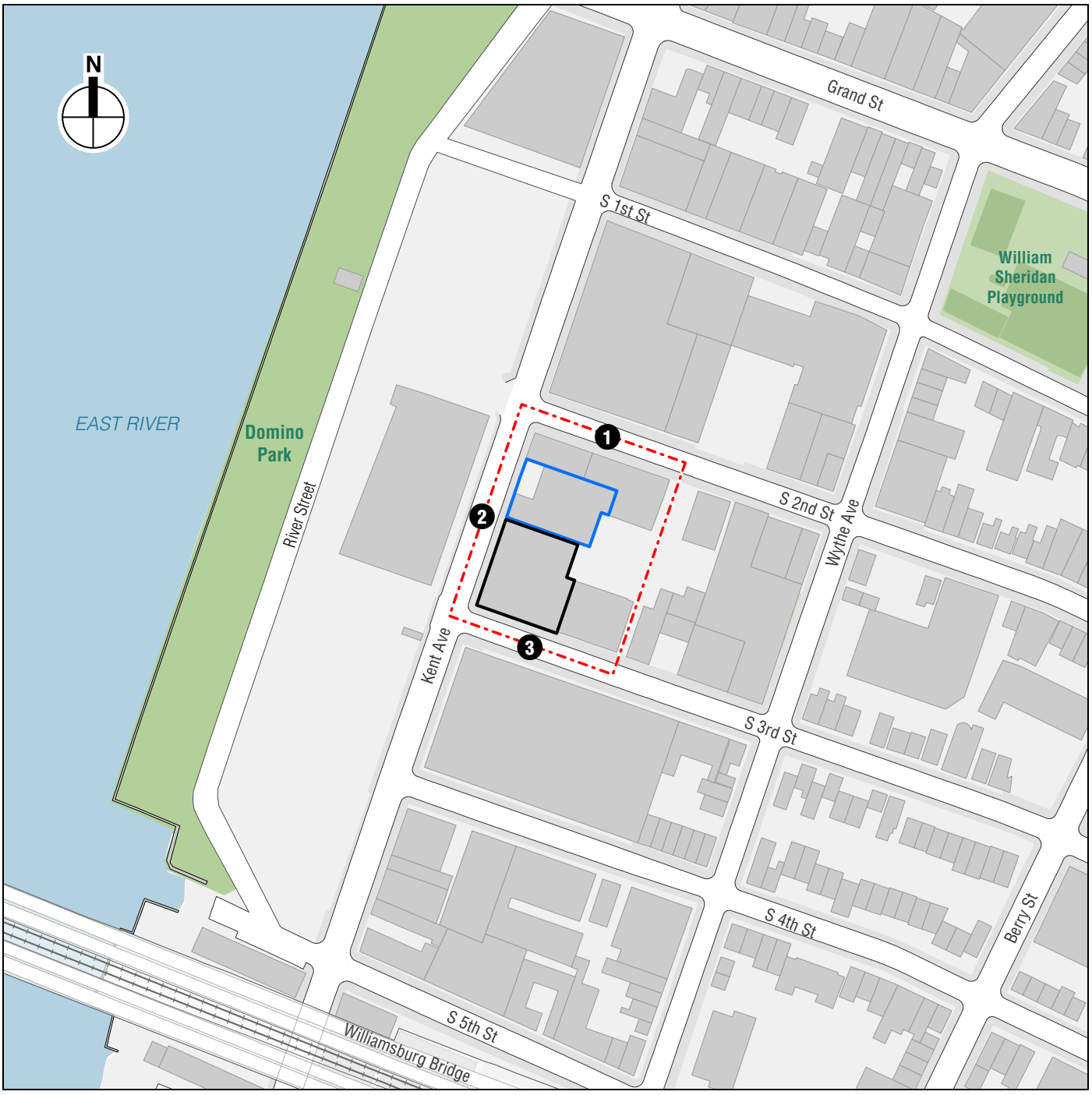
NOISE MONITORING

At each receptor location, existing noise levels were determined by field measurements. Noise monitoring was performed on September 13 and October 3, 2018. At each receptor location, 20-minute duration measurements were conducted. All measurements were performed during the weekday AM (8:00 AM to 9:00 AM), midday (MD) (12:00 PM to 1:00 PM), and PM (4:30 PM to 5:30 PM).

EQUIPMENT USED DURING NOISE MONITORING

Measurements were performed using a Brüel & Kjær Sound Level Meter (SLM) Type 2250, Brüel & Kjær Sound Level Meter (SLM) Type 2260, Brüel & Kjær ½-inch microphone Type 4189, and a Brüel & Kjær Sound Level Calibrator Type 4231. The Brüel & Kjær SLM is a Type 1 instrument according to ANSI Standard S1.4-1983 (R2006). The SLM has a laboratory calibration date within

12.15.20



Project Area (Proposed Rezoning Area)

Projected Development Site 1

Projected Development Site 2

1 *Noise Receptor*

Noise Receptor Locations

307 KENT AVENUE

Figure 7-1

1 year of the date of the measurement, as is standard practice. The microphone was mounted at a height of approximately 5 feet above the ground surface on a tripod and at least approximately 5 feet away from any large reflecting surfaces. The SLM was calibrated before and after readings with a Brüel & Kjær Type 4231 Sound Level Calibrator using the appropriate adaptor. Measurements were made on the A-scale (dBA). The data were digitally recorded by the sound level meter and displayed at the end of the measurement period in units of dBA. Measured quantities included L_{eq}, L_1, L_{10}, L_{50}, L_{90}, and ⅓ octave band levels. A windscreen was used during all sound measurements except for calibration. All measurement procedures were based on the guidelines outlined in ANSI Standard S1.13-2005.

EXISTING NOISE LEVELS AT NOISE RECEPTOR LOCATIONS

MEASURED NOISE LEVELS

The results of the measurements of existing noise levels are summarized in **Table 7-5**. At each receptor site, vehicular traffic was the dominant noise source and measured noise levels are moderate, reflecting the level of vehicular activity on the adjacent roadways. With regard to the CEQR criteria, the existing noise levels at Sites 1 and 3 are categorized as "marginally acceptable." The existing noise levels at Site 2 are categorized as "marginally unacceptable."

Table 7-5
Existing Noise Levels in dBA

Site	Location	Time Period	L_{eq}	L_1	L_{10}	L_{50}	L_{90}
1	South 2nd Street between Kent Avenue and Wythe Avenue	AM	63.9	72.3	65.7	62.5	60.6
		MD	64.7	73.0	66.7	62.0	59.6
		PM	63.0	71.6	66.2	60.3	58.3
2	Kent Avenue midway between South 2nd Street and 3rd Street	AM	68.5	78.0	71.6	65.2	62.0
		MD	69.9	83.1	71.1	63.8	59.5
		PM	70.0	81.0	71.8	64.8	59.4
3	South 3rd Street between Kent Avenue and Wythe Avenue	AM	62.8	69.9	64.6	61.7	59.7
		MD	62.7	72.2	63.8	59.9	57.6
		PM	65.2	73.1	67.9	63.6	61.0

Note: Noise measurements were performed on September 13 and October 5, 2018.

E. NOISE PREDICTION METHODOLOGY

GENERAL METHODOLOGY

Future noise levels (including in the future without the Proposed Actions and the future with the Proposed Actions) were calculated using a proportional modeling technique, which was used as a screening tool to estimate changes in noise levels. The proportional modeling technique is an analysis methodology recommended for analysis purposes in the *CEQR Technical Manual*. The noise analysis examined the weekday AM, midday (MD), and PM peak hours at all receptor locations. The selected time periods are when the Proposed Project would be expected to produce the maximum traffic generation (based on the traffic studies presented in Chapter 5, "Transportation") and therefore result in the maximum potential for significant adverse noise impacts. The proportional modeling used for the noise analysis is described below.

PROPORTIONAL MODELING

Proportional modeling was used to determine locations with the potential for having significant noise impacts. Proportional modeling is one of the techniques recommended in the *CEQR Technical Manual* for mobile source analysis.

Using this technique, the prediction of future noise levels where traffic is the dominant noise source is based on a calculation using measured existing noise levels and predicted changes in traffic volumes to determine No Action condition and With Action condition noise levels. Vehicular traffic volumes are converted into Noise Passenger Car Equivalent (Noise PCE) values, for which one medium-duty truck (having a gross weight between 9,900 and 26,400 pounds) is assumed to generate the noise equivalent of 13 cars, and one heavy-duty truck (having a gross weight of more than 26,400 pounds) is assumed to generate the noise equivalent of 47 cars, and one bus (vehicles designed to carry more than nine passengers) is assumed to generate the noise equivalent of 18 cars. Future noise levels are calculated using the following equation:

$F\ NL - E\ NL = 10 * \log_{10} (F\ PCE / E\ PCE)$

where:

F NL = Future Noise Level

E NL = Existing Noise Level

F PCE = Future Noise PCEs

E PCE = Existing Noise PCEs

Sound levels are measured in decibels and therefore increase logarithmically with sound source strength. In this case, the sound source is traffic volumes measured in Noise PCEs. For example, assume that traffic is the dominant noise source at a particular location. If the existing traffic volume on a street is 100 PCE and if the future traffic volume were increased by 50 PCE to a total of 150 PCE, the noise level would increase by 1.8 dBA. Similarly, if the future traffic were increased by 100 PCE, or doubled to a total of 200 PCE, the noise level would increase by 3.0 dBA.

F. THE FUTURE WITHOUT THE PROPOSED ACTIONS

Using the methodology previously described, No Action condition noise levels were calculated at the three mobile source noise analysis receptors for the 2023 analysis year. These No Action values are shown in **Table 7-6**.

By 2023, there are no increases in $L_{eq(1)}$ noise levels for the No Action condition greater than 0.5 dBA. In terms of CEQR noise exposure guidelines, noise levels at Sites 1 and 3 remain categorized as “marginally acceptable,” and noise levels at Site 2 remain categorized as “marginally unacceptable.”

Table 7-6
2023 No Action Condition Noise Levels in dBA

Site	Location	Time Period	Existing $L_{eq(1)}$	No Action $L_{eq(1)}$	$L_{eq(1)}$ Change	No Action $L_{10(1)}$
1	South 2nd Street between Kent Avenue and Wythe Avenue	AM	63.9	63.9	0.0	65.7
		MD	64.7	64.7	0.0	66.7
		PM	63.0	63.0	0.0	66.2
2	Kent Avenue midway between South 2nd Street and 3rd Street	AM	68.5	69.0	0.5	72.1
		MD	69.9	69.9	0.0	71.1
		PM	70.0	70.0	0.0	71.8
3	South 3rd Street between Kent Avenue and Wythe Avenue	AM	62.8	62.8	0.0	64.6
		MD	62.7	62.7	0.0	63.8
		PM	65.2	65.2	0.0	67.9

G. THE FUTURE WITH THE PROPOSED ACTIONS

Using the methodology previously described, With Action condition noise levels were calculated at the three mobile source noise analysis receptors for the 2023 analysis year. These With Action values are shown in **Table 7-7**.

Table 7-7
2023 With Action Condition Noise Levels in dBA

Site	Location	Time Period	No Action $L_{eq(1)}$	With Action $L_{eq(1)}$	$L_{eq(1)}$ Change	With Action $L_{10(1)}$
1	South 2nd Street between Kent Avenue and Wythe Avenue	AM	63.9	64.0	0.1	65.8
		MD	64.7	65.2	0.5	67.2
		PM	63.0	63.7	0.7	66.9
2	Kent Avenue midway between South 2nd Street and 3rd Street	AM	69.0	69.4	0.4	72.5
		MD	69.9	70.2	0.3	71.4
		PM	70.0	70.0	0.0	71.8
3	South 3rd Street between Kent Avenue and Wythe Avenue	AM	62.8	65.7	2.9	67.5
		MD	62.7	63.1	0.4	64.2
		PM	65.2	66.0	0.8	68.7

By 2023, the maximum increase in $L_{eq(1)}$ noise levels for the With Action condition would be 2.9 dBA or less at all three mobile source noise analysis receptors. Changes of this magnitude would be considered "just noticeable" according to *CEQR Technical Manual* guidance and would fall below the CEQR threshold for a significant adverse noise impact. In terms of CEQR noise exposure guidelines, noise levels at receptor Sites 1 and 3 remain in the "marginally acceptable" category, and noise levels at Site 2 remain categorized as "marginally unacceptable."

H. NOISE ATTENUATION MEASURES

As shown in **Table 7-3**, the *CEQR Technical Manual* has set noise attenuation values for buildings based on exterior $L_{10(1)}$ noise levels in order to maintain interior noise levels of 45 dBA or lower for residential and community facility uses and 50 dBA or lower for commercial office uses.

Table 7-8 shows the minimum window/wall attenuation necessary to meet *CEQR Technical Manual* requirements for internal noise levels at each of the noise measurement locations. The With Action condition $L_{10(1)}$ noise levels were determined by adjusting the existing noise measurements to account for future increases in traffic with the Proposed Actions based on the

Noise PCE screening analysis results. The projected future $L_{10(1)}$ noise levels include the noise contribution from vehicular traffic on adjacent roadways.

Table 7-8
CEQR Building Attenuation Requirements

Façade(s)	Associated Receptor Site	Maximum With Action L_{10} (in dBA)	Attenuation Required[1] (in dBA)
Along Kent Avenue and Along South 3rd Street within 50 feet of Kent Avenue	2	72.5	28
Along South 3rd Street at least 50 feet from Kent Avenue or Block Interior	1, 3	68.7	N/A[2]

Notes:
[1] The CEQR attenuation requirements shown are for residential dwellings and community facility development. Commercial office spaces and meeting rooms would require 5 dBA less attenuation.
[2] N/A indicates that the highest L_{10} is below 70 dBA. The *CEQR Technical Manual* does not specify minimum attenuation guidance for exterior L_{10} values below this level.

To implement the attenuation requirements shown in **Table 7-8**, an (E) Designation for noise would be applied to the Projected Development Site 1 and Projected Development Site 2, specifying a requirement for the appropriate amount of window/wall attenuation and an alternate means of ventilation. The text for the (E) Designation (E-592) would be as follows:

> ***Block 2415, Lot 1:*** *To ensure an acceptable interior noise environment, community facility/commercial office uses must provide a closed-window condition with a minimum of 28 dBA window/wall attenuation on all facades facing Kent Avenue and the facades facing South 3rd Street within 50 feet of Kent Avenue to ensure an interior noise level not greater than 45 dBA for community facility uses or not greater than 50 dBA for commercial office uses. To maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate ventilation includes, but is not limited to, air conditioning.*
>
> ***Block 2415, Lot 6:*** *To ensure an acceptable interior noise environment, future community facility/commercial office uses must provide a closed-window condition with a minimum of 28 dBA window/wall attenuation on facades facing Kent Avenue to ensure an interior noise level not greater than 45 dBA for community facility uses or not greater than 50 dBA for commercial office uses. To maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, air conditioning.*

The attenuation of a composite structure is a function of the attenuation provided by each of its component parts and how much of the area is made up of each part. Normally, a building façade consists of wall, glazing, and any vents or louvers associated with the building mechanical systems in various ratios of area. The anticipated buildings would be designed to provide a composite window/ wall attenuation greater than or equal to the values listed in above in **Table 7-8** (in dBA), along with an alternative means of ventilation to allow for the maintenance of a closed-window condition.

By adhering to the (E) Designation described above, buildings to be developed as a result of the Proposed Actions would provide sufficient attenuation to achieve the *CEQR Technical Manual* interior noise level guidelines of 45 dBA L_{10} for residential or community facility uses and 50 dBA L_{10} for commercial office uses.

I. MECHANICAL EQUIPMENT

It is assumed that the building mechanical systems (i.e., HVAC systems) 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. ✷