A. INTRODUCTION

This chapter assesses the potential for the ~~Proposed Project~~previously proposed project to result in significant adverse noise impacts.[1] The analysis determines whether the ~~Proposed Project~~previously proposed project 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~~previously proposed project.

As discussed in Chapter 1, "Project Description and Screening Analyses," the ~~Proposed Actions~~previously proposed project would facilitate the ~~Proposed Project, the~~ development of an approximately 680,500-gsf mixed-use building containing market-rate and affordable housing, retail, office, and community facility spaces as well as parking on the Development Site (Block 98, Lot 1; the Development Site), as well as the restoration, reopening, and potential expansion of the South Street Seaport Museum (the Museum) at 89-93 South Street, 2-4 Fulton Street, and 167-175 John Street (Block 74, a portion of Lot 1; the Museum Site). The ~~Proposed Project~~previously proposed project would additionally include operational changes to facilitate passenger drop off on the Pier 17 access drive as well as minor improvements to the Pier 17 access drive area and building, and may also include streetscape, open space, or other improvements (e.g., planters) ~~under the Proposed Actions~~ within the Project Area. The analysis presented in Chapter 11, "Transportation," found that the ~~Proposed Actions~~previously proposed project 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* includes 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 Project~~previously

[1] Since the publication of the DEIS, the Applicant has withdrawn the application for the previously proposed project and submitted a modified application (Application Number C 210438(A) ZSM; the "A-Application") with proposed changes to the project—this modified version of the project is described and considered in this FEIS as the Reduced Impact Alternative, as outlined in Chapter 18, "Alternatives."

proposed project 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.

Based on the projected noise levels, up to 31 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 at the development sites, an (E) designation (E-621) or equivalent mechanism for noise would be applied specifying the appropriate window/wall attenuation. By meeting the design guidelines specified in the Noise (E) Designation or equivalent mechanism, ~~buildings developed as a result of the Proposed Actions~~the previously proposed project 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.

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 14-1**, 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 levels continue to increase

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 14-1
Noise Levels of Common Sources

Sound Source	SPL (dBA)
Air Raid Siren at 50 feet	120
Maximum Levels at Rock Concerts (Rear Seats)	110
On Platform by Passing Subway Train	100
On Sidewalk by Passing Heavy Truck or Bus	90
On Sidewalk by Typical Highway	80
On Sidewalk by Passing Automobiles with Mufflers	70
Typical Urban Area	60-70
Typical Suburban Area	50–60
Quiet Suburban Area at Night	40–50
Typical Rural Area at Night	30-40
Isolated Broadcast Studio	20
Audiometric (Hearing Testing) Booth	10
Threshold of Hearing	0
Source: 2020 *CEQR Technical Manual*	

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~~previously proposed project, the L_{eq} 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 14-2**. Noise exposure is classified into four categories: acceptable, marginally acceptable, marginally unacceptable, and clearly unacceptable.

Table 14-2
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	NA	NA	NA
Hospital, nursing home		$L_{10} \leq 55$ dBA		55 < $L_{10} \leq 65$ dBA	---------- 60 < Ldn ≤ 65 dBA ----------	65 < $L_{10} \leq 80$ dBA	(i) 65 < Ldn ≤ 70 dBA, (II) 70 ≤ Ldn	$L_{10} > 80$ dBA	---------- Ldn ≤ 75 dBA ----------
Residence, residential hotel, or motel	7 AM to 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 to 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	

Notes:
(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_{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 14-3**). 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 14-3
Required Attenuation Values to Achieve Acceptable Interior Noise Levels

	Marginally Unacceptable				Clearly Unacceptable
Noise Level with ~~Proposed Actions~~Previously Proposed Project	$70 < L_{10} \leq 73$	$73 < L_{10} \leq 76$	$76 < L_{10} \leq 78$	$78 < L_{10} \leq 80$	$80 < L_{10}$
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.

IMPACT SIGNIFICANCE CRITERIA

According to *CEQR Technical Manual*, for the purposes of determining a significant impact during daytime hours, it is reasonable to consider a L_{eq} noise level of 65 dBA as an absolute noise level that should not be significantly exceeded. Therefore, a significant noise impact would occur at a sensitive noise receptor (i.e., residences, play areas, parks, schools, libraries and houses of worship) during daytime hours under the following circumstances:

- A noise increase of 3 dBA or greater is predicted in the future as a result of the proposed action (the With Action condition), when the future noise levels without the proposed action (the No Action condition) is at 62 dBA or greater; or
- When the No Action noise level is below 62 dBA, a predicted noise increase with the proposed action exceeds the difference between 65 dBA and the No Action noise level. For example, if the No Action noise level is 61 dBA, then the maximum noise increment with the proposed action would be 4 dBA, since an increase higher than 4 dBA would result in a noise level that exceeds the 65 dBA L_{eq} significant impact threshold.
- Additionally, an increase of With Action noise levels by 5 dBA over a No Action noise level that is below 60 dBA would be considered significant.

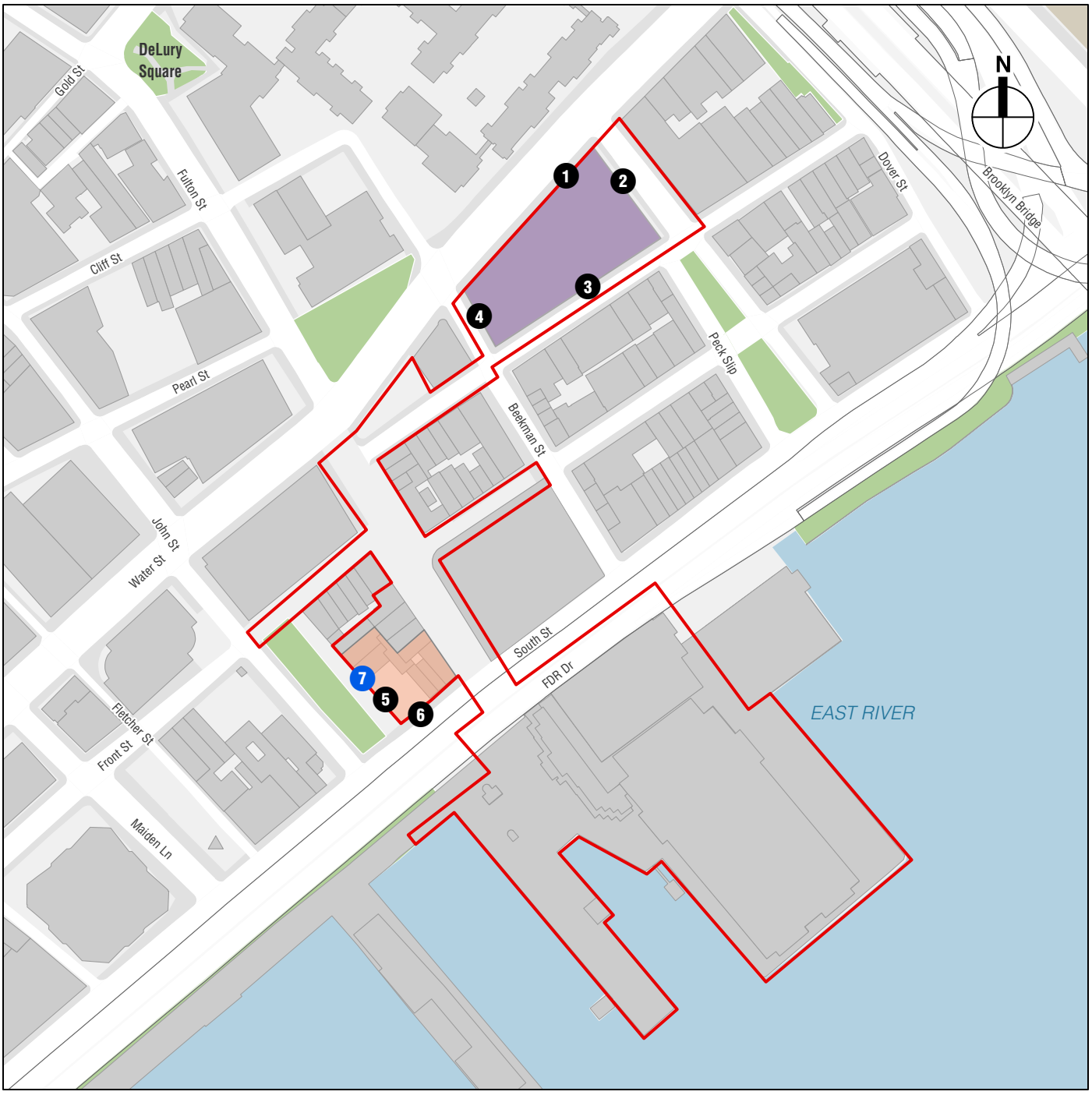
D. EXISTING NOISE LEVELS

SELECTION OF NOISE RECEPTOR LOCATIONS

A total of seven receptor locations within the Project Area were selected for evaluation of noise attenuation requirements. These locations are detailed below in **Table 14-4** and shown in **Figure 14-1**. The receptor locations were selected based on the following criteria: (1) locations near development sites; and (2) to provide comprehensive geographic coverage throughout the study area to get an accurate picture of the ambient noise environment. As discussed below, local traffic is the dominant source of noise in the vicinity of the Project Area. These receptors, due to their proximity to the development sites, provide an effective and conservative representation of existing ambient noise levels at the projected development sites.

NOISE MONITORING

At each receptor location, existing noise levels were determined by field measurements. Noise monitoring was performed on February 10, March 3 and 4, 2021. At all receptor locations, 20-



Noise Receptor Location

250 WATER STREET

Figure 14-1

minute duration measurements were conducted at grade level during the weekday AM (7:15 AM–9:15 AM), midday (12:00 PM–2:00 PM), PM (4:00 PM–6:00 PM) peak periods, with the exception of receptor location 7. At location 7, located on the rooftop of 167 John Street, measurements were conducted for 24 continuous hours. At all noise measurement locations except 7, the microphones were mounted at a height of approximately five feet above the ground surface on a tripod and approximately six feet or more away from any large sound-reflecting surface to avoid major interference with sound propagation. At location 7, the microphone was located approximately 62 feet above grade, and had direct line of sight to all traffic lanes on Franklin D. Roosevelt (FDR) Drive.

Table 14-4
Noise Receptor Locations

Noise Receptor	Location	Duration
1	Pearl Street between Beekman Street and Peck Slip	20 minutes
2	Peck Slip between Pearl Street and Water Street	20 minutes
3	Water Street between Beekman Street and Peck Slip	20 minutes
4	Beekman Street between Pearl Street and Water Street	20 minutes
5	Burling Slip adjacent to Museum Project Site	20 minutes
6	South Street adjacent to Museum Project Site	20 minutes
7	Southeastern edge of 167 John Street rooftop with direct line of sight to FDR Drive	24 hours

EQUIPMENT USED DURING NOISE MONITORING

Measurements were performed using a Brüel & Kjær Type 2250 Sound Level Meter (SLM), one Brüel & Kjær Type 4189 1/2-inch microphone, and a Brüel & Kjær Type 4231 Sound Level Calibrator. Additionally, one NTi-Audio Type XL2 SLM, one NTi-Audio Type M2230 1/2-inch microphone, and one NTi-Audio Class 1 calibrator was used during the measurements. The Brüel & Kjær and NTi-Audio SLMs are Class 1 instruments according to ANSI Standard S1.4-1983 (R2006). Each SLM had a laboratory calibration date within the past one year at the time of use. Each SLM was calibrated before and after readings with either a Brüel & Kjær Type 4231 or NTi-Audio Class 1 Sound Level Calibrator using the appropriate adaptor. The data were digitally recorded by the SLMs and displayed at the end of the measurement period in units of dBA. Measured quantities included the L_{eq}, L_1, L_{10}, L_{50}, and L_{90}. Windscreens were used during all sound measurements except for calibration. All measurement procedures were based on the guidelines outlined in ANSI Standard S1.13-2005. During all measurements weather conditions were consistent with the guidance of applicable standards and the *CEQR Technical Manual.*

EXISTING NOISE LEVELS AT NOISE RECEPTOR LOCATIONS

MEASURED NOISE LEVELS

The results of the measurements of existing noise levels are summarized in **Tables 14-5 and 14-6**. Roadway traffic was the dominant noise source for all receptor locations. Idling buses contributed to noise levels at receptor location 1, and playground noise was observed during most of the measurements conducted at receptor locations 5 and 6. Traffic on the FDR Drive was the dominant noise source measured at the elevated receptor location 7. Helicopter noise was audible during some measurements but was not a dominant source of noise.

In terms of *CEQR Technical Manual* criteria, receptor locations 3 and 4 are categorized as "acceptable," receptor locations 2 and 5 are categorized as "marginally acceptable," and receptor locations 1, 6, and 7 are categorized as "marginally unacceptable."

Table 14-5
Measured Existing Noise Levels (in dBA)

Receptor	Measurement Location	Time	L_{eq}	L_1	L_{10}	L_{50}	L_{90}
1	Pearl Street between Beekman Street and Peck Slip	AM	67.3	76.0	70.1	64.7	59.2
		MD	66.7	72.5	69.2	65.2	61.4
		PM	66.7	76.2	70.2	63.2	56.6
2	Peck Slip between Pearl Street and Water Street	AM	63.5	72.7	66.1	60.8	57.5
		MD	61.2	70.3	63.2	59.1	56.8
		PM	59.4	67.4	61.6	57.6	55.5
3	Water Street between Beekman Street and Peck Slip	AM	57.7	63.7	60.1	56.5	54.6
		MD	54.6	59.6	56.5	53.8	52.5
		PM	57.0	68.3	58.0	53.8	51.7
4	Beekman Street between Pearl Street and Water Street	AM	61.6	70.6	63.8	59.6	57.1
		MD	60.8	70.2	63.5	58.4	55.1
		PM	57.8	63.3	60.4	56.9	54.1
5	Burling Slip adjacent to Museum Project Site	AM	66.4	71.0	69.0	65.5	62.7
		MD	64.1	70.8	65.9	63.3	60.4
		PM	64.4	70.6	66.1	63.2	61.6
6	South Street adjacent to Museum Project Site	AM	69.2	75.6	71.4	68.1	65.6
		MD	68.6	74.9	70.1	67.7	65.1
		PM	69.2	76.2	71.2	68.1	65.6

Note: Field measurements were performed by AKRF, Inc. on February 10, and March 3 and 4, 2021

Table 14-6
Noise Levels Measured at 167 John Street Rooftop (Location 7), in dBA

Receptor	Location	Time	L_{eq}	L_{10}
7	Elevated measurement at southeastern edge of 167 John Street rooftop with direct line of sight to FDR Drive	12:00 PM*	70.7	72.9
		1:00 PM	70.5	72.7
		2:00 PM	71.2	73.2
		3:00 PM	71.6	73.4
		4:00 PM*	71.1	73.0
		5:00 PM	70.9	72.7
		6:00 PM	70.6	72.6
		7:00 PM	69.7	71.9
		8:00 PM	69.1	71.8
		9:00 PM	67.5	70.4
		10:00 PM	67.2	70.5
		11:00 PM	67.0	70.2
		12:00 AM	65.2	68.9
		1:00 AM	61.8	65.5
		2:00 AM	63.6	66.2
		3:00 AM	60.5	64.1
		4:00 AM	62.5	66.6
		5:00 AM	67.7	71.3
		6:00 AM	72.6	74.6
		7:00 AM*	73.1	74.7
		8:00 AM	71.8	73.9
		9:00 AM	70.8	73.1
		10:00 AM	70.4	72.6
		11:00 AM	70.6	72.7

Notes: Continuous noise level measurements were conducted by AKRF, Inc. March 3-4, 2021.
* Denotes AM, MD and PM peak hours

E. NOISE PREDICTION METHODOLOGY

GENERAL METHODOLOGY

Future noise levels (including in the future without the ~~Proposed Project~~previously proposed project and the future with the ~~Proposed Project~~previously proposed project) 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 the six at-grade mobile source noise analysis locations. The selected time periods are when the ~~Proposed Project~~previously proposed project would be expected to produce the maximum traffic generation (based on the traffic studies presented in Chapter 11, "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.

PLAYGROUND NOISE

The Imagination Playground on John Street, and the P.S. 343 Peck Slip School and Blue School rooftop playgrounds have the potential to contribute noise exposure at the adjacent development sites. At each of the noise receptor locations that has a direct line of sight to a playground, noise associated with any nearby playground was estimated using the Early Childhood playground boundary noise level (to conservatively represent children of any age using the playground) and any applicable noise level reduction due to distance.

Table 14-7 shows measured maximum hourly playground boundary noise levels. These values are based upon measurements made at a series of New York City school playgrounds for the New York City School Construction Authority (SCA).[1] The noise associated with nearby playgrounds was estimated using the Early Childhood playground boundary noise level to conservatively represent children of any age using the playground. Playground L_{10} noise levels are assumed to be 3 dBA greater than projected L_{eq} values or the difference between the measured L_{eq} and L_{10} values, whichever is most conservative. At receptors with line-of-sight to playgrounds, cumulative noise levels including contribution from traffic on adjacent roadways and playground noise is calculated.

Table 14-7
Playground Boundary Noise $L_{eq(1)}$ Noise Levels (in dBA)

Early Childhood	Elementary Schools	Intermediate Schools	High Schools
71.5	71.4	71.0	68.2
Source: 2020 *CEQR Technical Manual*			

F. THE FUTURE WITHOUT THE PREVIOUSLY PROPOSED PROJECT

Using the methodology previously described, No Action condition noise levels were calculated at the six mobile source noise analysis receptors for the 2026 analysis year. These No Action values are shown in **Table 14-8**.

By 2026, the maximum increase in $L_{eq(1)}$ noise levels for the No Action condition would be 1.1 dBA or less at the mobile source noise analysis receptors. Changes of this magnitude would not be readily noticeable. In terms of CEQR noise exposure guidelines, noise levels at receptor location 3 are categorized as "acceptable," noise levels at receptor locations 2 and 4 are categorized as "marginally acceptable," and noise levels at receptor locations 1, 5 and 6 are categorized as "marginally unacceptable."

[1] SCA Playground Noise Study, AKRF, Inc., October 23, 1992.

Table 14-8
2026 No Action Condition Noise Levels (in dBA)

Receptor	Measurement Location	Time	2020 Existing $L_{eq(1)}$[1]	No Action $L_{eq(1)}$[2]	$L_{eq(1)}$ Change	No Action $L_{10(1)}$
1	Pearl Street between Beekman Street and Peck Slip	AM	68.6	68.9	0.3	71.7
		MD	68.3	68.8	0.5	71.3
		PM	67.6	68.1	0.5	71.6
2	Peck Slip between Pearl Street and Water Street	AM	64.8	65.1	0.3	67.7
		MD	62.8	63.3	0.5	65.3
		PM	60.3	60.8	0.5	63.0
3	Water Street between Beekman Street and Peck Slip	AM	59.0	59.0	0.0	61.4
		MD	56.2	56.2	0.0	58.1
		PM	57.9	57.9	0.0	58.9
4	Beekman Street between Pearl Street and Water Street	AM	62.9	63.6	0.7	65.8
		MD	62.4	63.2	0.8	65.9
		PM	58.7	59.8	1.1	62.4
5	Burling Slip adjacent to Museum Project Site	AM	67.7	68.0	0.3	70.6
		MD	65.7	66.3	0.6	68.1
		PM	65.3	65.8	0.5	67.5
6	South Street adjacent to Museum Project Site	AM	70.5	70.8	0.3	73.0
		MD	70.2	70.8	0.6	72.3
		PM	70.1	70.6	0.5	72.6

Notes:
[1] Includes adjustment for pre-COVID-19 pandemic noise levels.
[2] Noise levels at all receptor locations were calculated by using proportional modeling.

G. THE FUTURE WITH THE PREVIOUSLY PROPOSED PROJECT

Using the methodology previously described, With Action condition noise levels were calculated at the six mobile source noise analysis receptors for the 2026 analysis year. These With Action values are shown in **Table 14-9**.

Table 14-9
2026 With Action Condition Noise Levels (in dBA)

Receptor	Measurement Location	Time	No Action $L_{eq(1)}$	With Action $L_{eq(1)}$	$L_{eq(1)}$ Change	With Action $L_{10(1)}$
1	Pearl Street between Beekman Street and Peck Slip	AM	68.9	69.0	0.1	71.8
		MD	68.8	68.9	0.1	71.4
		PM	68.1	68.3	0.2	71.8
2	Peck Slip between Pearl Street and Water Street	AM	65.1	65.1	0.0	67.7
		MD	63.3	63.3	0.0	65.3
		PM	60.8	60.8	0.0	63.0
3	Water Street between Beekman Street and Peck Slip	AM	59.0	59.0	0.0	61.4
		MD	56.2	56.2	0.0	58.1
		PM	57.9	57.9	0.0	58.9
4	Beekman Street between Pearl Street and Water Street	AM	63.6	65.2	1.6	67.4
		MD	63.2	63.9	0.7	66.6
		PM	59.8	62.2	2.4	64.8
5	Burling Slip adjacent to Museum Project Site	AM	68.0	68.2	0.2	70.8
		MD	66.3	66.4	0.1	68.2
		PM	65.8	65.9	0.1	67.6
6	South Street adjacent to Museum Project Site	AM	70.8	71.0	0.2	73.2
		MD	70.8	70.9	0.1	72.4
		PM	70.6	70.7	0.1	72.7

Note: Noise levels at all receptor locations were calculated by using proportional modeling.

By 2026, the maximum increase in $L_{eq(1)}$ noise levels for the With Action condition would be 2.4 dBA or less at all mobile source noise analysis receptors. Changes of this magnitude would not be 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 location 3 remain in the "acceptable" category, noise levels at receptor locations 2 and 4 remain categorized as "marginally acceptable," and noise levels at receptor locations 1, 5, and 6 remain categorized as "marginally unacceptable."

H. NOISE ATTENUATION MEASURES

As shown in **Table 14-3**, 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 14-10 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~~previously proposed project 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 and nearby playgrounds.

Table 14-10
CEQR-Required Attenuation at Noise Measurement Locations (in dBA)

Receptor	Location	Highest With Action $L_{10(1)}$ Value	Minimum Required Attenuation[2,3]
1	Pearl Street between Beekman Street and Peck Slip	71.8	28
2	Peck Slip between Pearl Street and Water Street	69.5[1]	N/A
3	Water Street between Beekman Street and Peck Slip	68.1[1]	N/A
4	Beekman Street between Pearl Street and Water Street	67.4	N/A
5	Burling Slip adjacent to Museum Project Site	73.4[1]	31
6	South Street adjacent to Museum Project Site	75.3[1]	31
7	Southeastern edge of 167 John Street rooftop with direct line of sight to FDR Drive	75.6[4]	31

Notes:
[1] Includes contribution from vehicular traffic and nearby playgrounds.
[2] Attenuation values are shown for residential or community facility uses; commercial office uses would require 5 dBA less attenuation.
[3] "N/A" indicates that the highest calculated L_{10} is below 70 dBA. The *CEQR Technical Manual* does not specify minimum attenuation guidance for exterior $L_{10(1)}$ values below this level.
[4] Includes 0.9 dBA adjustment to maximum measured $L_{10(1)}$ value to account for potentially reduced level of traffic during measurements due to the Covid-19 pandemic.

Based on the values shown in **Table 14-10**, required attenuation levels in order to provide an interior noise level of 45 dBA for residential or community facility uses and 50 dBA for commercial office uses were determined for all development sites. These values are shown in **Table 14-11**. Helicopter noise was included in measured noise levels and is a contributor to the noise exposure values on which attenuation requirements were based; consequently, the attenuation requirements are sufficient to reduce all sources of environmental noise (including

helicopters) such that interior noise levels would be acceptable at both proposed development sites.

Table 14-11
Minimum Required Attenuation at Development Sites (in dBA)

Development Site	Block	Lot	Façade(s)	Associated Noise Measurement Site(s)	Required Attenuation[1,2]
250 Water Street	98	1	North, East/West (within 50 feet of Pearl Street)	1	28
			East (more than 50 feet from Pearl Street)	2	N/A
			South	3	N/A
			West (more than 50 feet from Pearl Street)	4	N/A
South Street Seaport Museum	74	Partial Lot 1	North	5	31
			West	5, 6, 7	31
			South, East	6, 7	31

Notes:
[1] Attenuation values are shown for residential or community facility uses; commercial office uses would require 5 dBA less attenuation.
[2] "N/A" indicates that the highest calculated 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 require attenuation at the Development Site and Museum Site, an (E) Designation or equivalent mechanism for noise would be applied, specifying the appropriate amount of window/wall attenuation.

The text of the (E) Designation (E-621) restrictions that would be placed on the Development Site (Block 98, Lot 1) would be as follows:

> **Block 98, Lot 1 (Development Site): To ensure an acceptable interior noise environment, future residential/community facility/commercial office uses must provide a closed-window condition with a minimum of 28 dBA window/wall attenuation on façades facing Pearl Street and the facades facing Beekman Street within 50 feet of Pearl Street and the facades facing Peck Slip within 50 feet of Pearl Street in order to maintain an interior 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, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, air conditioning.**

On the Museum Site (Block 74, Lot 1), to ensure that there are no potential significant noise impacts, following restrictions would be placed through a mechanism equivalent to an (E) designation:

> **Block 74, Lot 1 (Museum Site): To ensure an acceptable interior noise environment, future community facility/commercial office uses must provide a closed-window condition with a minimum of 31 dBA window/wall attenuation on all façades in order to maintain 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 is composed of the wall, glazing, and any vents or louvers for HVAC systems in various ratios of area. Buildings proposed to be located on the (E) Designated sites would be designed to provide composite window/wall attenuation greater than or equal to the attenuation requirements listed in **Table 14-11**.

By adhering to the (E) Designation described above, ~~buildings to be developed as a result of~~ the ~~Proposed Actions~~previously proposed project 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. Therefore, the ~~Proposed Project~~previously proposed project would not result in any significant adverse noise impacts.

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~~ previously proposed project would not result in any significant adverse noise impacts related to building mechanical equipment. ✷