A. INTRODUCTION

Noise pollution in an urban area comes from many sources. Some sources are activities essential to the health, safety, and welfare of a city's inhabitants, such as noise from emergency vehicle sirens, garbage collection operations, and construction and maintenance equipment. Other sources, such as traffic, are essential to the viability of a city as a place to live and do business. Although these and other noise-producing activities are necessary to a city, the noise they produce is undesirable. Urban noise detracts from the quality of the living environment, and there is increasing evidence that excessive noise represents a threat to public health.

The noise analysis for the Coney Island Rezoning plan consisted of three parts:

- A screening analysis to determine whether there are any locations where project-generated traffic or amusement noise sources would have the potential to result in significant noise impacts;
- A detailed analysis at any location where project-generated traffic or amusement noise sources would have the potential to result in significant noise impacts, to determine the magnitude of the increase in noise levels; and
- An analysis to determine noise levels of building attenuation necessary to ensure that interior noise levels on the project buildings satisfy applicable interior noise criteria.

B. NOISE FUNDAMENTALS

Quantitative information on the effects of airborne noise on people is well-documented. If sufficiently loud, noise may interfere with human activities such as sleep, speech communication, and tasks requiring concentration or coordination. It may also cause annoyance, hearing damage, and other physiological problems. Several noise scales and rating methods are used to quantify the effects of noise on people, taking into consideration such factors as loudness, duration, time of occurrence, and changes in noise level with time. However, it must be noted that all the stated effects of noise on people vary greatly with each individual.

"A"-WEIGHTED SOUND LEVEL (dBA)

Noise is typically measured in units called decibels (dB), which are 10 times the logarithm of the ratio of the sound pressure squared to a standard reference presence squared. Because loudness is important in the assessment of the effects of noise on people, the dependence of loudness on frequency must be taken into account in the noise scale used in environmental assessments. One of the simplified scales that accounts for the dependence of perceived loudness on frequency is the use of a weighting network, known as "A"-weighting, in the measurement system to simulate the response of the human ear. For most noise assessments, the A-weighted sound pressure level in units of dBA is used in view of its widespread recognition and its close correlation with perception.

In the current study of the proposed actions, all measured noise levels are reported in A-weighted decibels (dBA). Common noise levels in dBA are shown in **Table 19-1**.

Table 19-1
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.

ABILITY TO PERCEIVE CHANGES IN NOISE LEVELS

The average ability of an individual to perceive changes in noise levels is well-documented (see **Table 19-2**). Generally, changes in noise levels of less than 3 dBA are barely perceptible to most listeners, whereas changes in noise levels of 10 dBA are normally perceived as doubling (or halving) of noise loudness. These guidelines permit direct estimation of an individual's probable perception of changes in noise levels.

NOISE DESCRIPTORS USED IN IMPACT ASSESSMENT

Because the sound pressure level unit of dBA describes a noise level at just one moment, and because very few noises are constant, other ways of describing noise over more extended periods have been developed. One way is to describe the fluctuating noise heard over a specific 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 period (e.g., 1 hour, denoted by $L_{eq(1)}$, or 24 hours, denoted by $L_{eq(24)}$), 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 sometimes used to indicate noise levels that are exceeded 1, 10, 50, 90, and x percent of the time, respectively. Discrete event peak levels are given as L_{01} levels.

The maximum 1-hour equivalent sound level ($L_{eq(1)}$) has been selected as the noise descriptor to be used in this noise impact evaluation of the proposed actions. $L_{eq(1)}$ is the noise descriptor recommended for use in the *CEQR Technical Manual* for vehicular traffic and construction noise impact evaluation, and is used to provide an indication of highest expected sound levels. The 1-hour L_{10} is the noise descriptor used in the *CEQR Technical Manual* noise exposure guidelines for City environmental impact review classification.

Table 19-2
Average Ability to Perceive Changes in Noise Levels

Change (dBA)	Human Perception of Sound
2–3	Barely perceptible
5	Readily noticeable
10	A doubling or halving of the loudness of sound
20	A "dramatic change"
40	Difference between a faintly audible sound and a very loud sound

Source: Bolt, Beranek and Newman, Inc., *Fundamentals and Abatement of Highway Traffic Noise*, Report No. PB-222-703. Prepared for Federal Highway Administration, June 1973.

C. NOISE STANDARDS AND CRITERIA

Noise levels associated with the construction and operation of the proposed actions' reasonable worst-case development scenario (RWCDS), which is described in Chapter 1, "Project Description," would be subject to the emission source provisions of the New York City Noise Control Code and to noise criteria set for the CEQR process. Other standards and guidelines promulgated by federal agencies do not apply to project noise control, but are useful to review in that they establish measures of impacts. Construction equipment is regulated by the Noise Control Act of 1972.

NEW YORK CITY NOISE CONTROL CODE

The New York City Noise Control Code, amended in December 2005, contains prohibitions regarding unreasonable noise, requirements for noise due to construction activities, and specific noise standards, including plainly audible criteria for specific noise sources. In addition, the amended code specifies that no sound source operating in connection with any commercial or business enterprise may exceed the decibel levels in the designated octave bands shown in **Table 19-3** at the specified receiving properties.

Table 19-3
New York City Noise Codes

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

Source: Section §24-232 of the Administrative Code of the City of New York, as amended December 2005.

NEW YORK CEQR NOISE CRITERIA

The *CEQR Technical Manual* contains noise exposure guidelines for use in City environmental impact review, and required attenuation values to achieve acceptable interior noise levels. These values are shown in **Tables 19-4** and **19-5**. Noise exposure is classified into four categories: "acceptable," "marginally acceptable," "marginally unacceptable," and "clearly unacceptable." The *CEQR Technical Manual* criteria are based on maintaining an interior noise level for the worst-case hour L_{10} of less than or equal to 45 A-weighted decibels (dBA).

Table 19-4
Noise Exposure Guidelines For Use in City Environmental Impact Review[1]

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-11 PM)		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 PM)	
Commercial or office		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 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^{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).

Table 19-5
Required Attenuation Values to Achieve Acceptable Interior Noise Levels

	Marginally Acceptable	Marginally Unacceptable		Clearly Unacceptable		
Noise level with proposed actions	65<L_{10}≤70	70<L_{10}≤75	75<L_{10}≤80	80<L_{10}≤85	85<L_{10}≤90	90<L_{10}≤95
Attenuation[1]	25 dB(A)	30dB(A)	35 dB(A)	40 dB(A)	45 dB(A)	50 dB(A)

Note: [1] The above composite window-wall attenuation values are for residential dwellings. Commercial office spaces and meeting rooms would be 5 dB(A) less in each category. All the above categories require a closed window situation and hence an alternate means of ventilation.
Source: New York City Department of Environmental Protection

NEW YORK STATE DEPARTMENT OF TRANSPORTATION ENVIRONMENTAL PROCEDURES MANUAL

The guidelines of the *CEQR Technical Manual* were used to determine appropriate intersection locations for the proposed noise receptors, basically between the rezoning area and its connections to the larger regional transportation network (including the West Shore Expressway/New York State Route 440). Although environmental analysis of State roadways under the jurisdiction of the New York State Department of Transportation (NYSDOT) normally follows the procedures contained in the NYSDOT *Environmental Procedures Manual (EPM)*, the *CEQR Technical Manual* procedures and guidance are generally more stringent and are considered more appropriate for this analysis.

D. IMPACT DEFINITION

As recommended in the *CEQR Technical Manual*, this study uses the following criteria to define a significant adverse noise impact:

- An increase of 5 dBA, or more, in Build $L_{eq(1)}$ noise levels at sensitive receptors (including residences, play areas, parks, schools, libraries, and houses of worship) over those calculated for the No Build scenario, if the No Build levels are less than 60 dBA $L_{eq(1)}$ and the analysis period is not a nighttime period.
- An increase of 4 dBA, or more, in Build $L_{eq(1)}$ noise levels at sensitive receptors over those calculated for the No Build scenario, if the No Build levels are 61 dBA $L_{eq(1)}$ and the analysis period is not a nighttime period.
- An increase of 3 dBA, or more, in Build $L_{eq(1)}$ noise levels at sensitive receptors over those calculated for the No Build scenario, if the No Build levels are greater than 62 dBA $L_{eq(1)}$ and the analysis period is not a nighttime period.
- An increase of 3 dBA, or more, in Build $L_{eq(1)}$ noise levels at sensitive receptors over those calculated for the No Build scenario, if the analysis period is a nighttime period (defined by the *CEQR Technical Manual* criteria as being between 10 PM and 7 AM).

E. NOISE PREDICTION METHODOLOGY

INTRODUCTION

The noise impact assessment predicted separately the effects of noise from increased traffic and noise from amusement uses. Total noise levels with the proposed actions (Build values) were obtained by adding noise due to project-generated traffic and amusement uses to noise levels without the proposed actions (No Build values). The methodologies used to determine noise effects from traffic and amusement uses are discussed below. Impacts were determined based upon the combined effects of both of these noise sources.

MOBILE NOISE SOURCES

In the study area, the major noise sources are vehicular traffic on adjacent and nearby streets, the N, Q, D, and F subway lines, activities in KeySpan Park, and amusement uses in the proposed amusement park. Noise from the project-generated traffic would be one of the dominant noise sources to contribute to total future noise levels. Noise from other sources, such the subway lines and activities in KeySpan Park, would not increase significantly to total future noise levels.

To screen vehicular traffic in the study area for a potential significant project impact, a proportional modeling technique was used to determine approximate increases in noise levels. To calculate noise from traffic on adjacent and nearby streets and roadways, the Federal Highway Administration [FHWA] *Traffic Noise Model* (TNM, version 2.5) was used. The noise analysis examined three weekday conditions: AM, midday, and PM time periods, and two Saturday conditions: midday and PM time periods. The selected time periods are when the RWCDS would have maximum traffic generation and/or the maximum potential for significant adverse noise impacts based on the traffic studies presented in Chapter 16, "Traffic and Parking." The proportional modeling and TNM procedures used for analysis are 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 Build and Build levels. Using this methodology, vehicular traffic volumes were converted into passenger car equivalent (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; 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 PCEs

E PCE = Existing PCEs

With this methodology, assuming 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.

TNM MODEL

The TNM is a computerized model developed for the FHWA that calculates the noise contribution of each roadway segment to a given noise receptor. The noise from each vehicle type is determined as a function of the reference energy-mean emission level, corrected for vehicle volume, speed, roadway grade, roadway segment length, and source-receptor distance. Further considerations included in modeling the propagation path include identifying the shielding provided by rows of buildings, analyzing the effects of different ground types, identifying source and receptor elevations, and analyzing the effects of any intervening noise barriers.

AMUSEMENT NOISE SOURCES

In the study area, noise from amusement uses is one of the major noise sources that contribute to the total ambient noise levels at receptor sites for both the analysis midday period and the analysis PM period. Deno's Wonder Wheel Amusement Park, Astroland Amusement Park, and the Cyclone operate in the existing conditions. (Noise measurements were taken in 2007 and 2008 before Astroland closed at the end of Summer 2008.) While included in the existing conditions analysis, it is noted that Astroland Amusement Park will be closed in the No Build scenario, and the Cyclone would continue to operate in both the No Build and the Build scenarios. For analysis purposes, it is envisioned that a new water park and more roller coasters and other open amusements would operate in the proposed amusement park.

There would be various amusement noise sources from amusement activities that are potential noise generators. After evaluating the magnitude of noise generated by amusement uses within the park, the major noise sources include ride operations, public address speakers, people noise, and ride motors, which would have the potential for causing a significant increase in noise levels at nearby sensitive receptors. Noise from other sources, such as games, indoor amusements, and commercial activities, would not contribute significantly to total ambient noise levels. Consequently, the major noise sources (i.e., ride operations, public address speakers, people noise, and ride motors) were selected for the project noise impact assessment purposes. The emission noise levels for these noise sources were determined based upon the measured data from the Steeplechase Amusement Park FEIS[1]. Based upon the analysis results in the *Steeplechase Amusement Park FEIS*, average $L_{eq(1)}$ noise levels at a distance of 30 feet from the proposed amusement park boundary would be 77 dBA for the ride operations, 75 dBA for the public speakers, 70 dBA for people, and 65 dBA for ride motors. Calculations of noise levels from these major noise sources on receptor sites in the study area are described below.

RIDE OPERATIONS AND PEOPLE

To determine the average L_{eq} noise levels from the ride operations or from people, assuming the noise sources at a distance of 30 feet from the amusement park boundary, noise levels with the ride operations or with people at receptor sites were calculated based on the emission level using the following equation:

$$L_{eq1} = L_{eq2} - 10 * \text{Log}\,(d_1/d_2) - A_{screen}$$

where:

L_{eq1} is the noise level at the receptor location;
L_{eq2} is the emission noise level at 30 feet from the amusement park boundary;
d_1 is the distance from the emission source to the receptor;
d_2 is 30 feet; and
A_{screen} is the attenuation due to screening.

PUBLIC SPEAKERS

To determine the average L_{eq} noise levels from public speakers, assuming the noise sources at a distance of 30 feet from the amusement park boundary, noise levels with the public speakers at receptor sites were calculated based on the emission level using the following equation:

[1] *Steeplechase Amusement Park FEIS*, Allee King Rosen & Fleming Inc., 1989.

$L_{eq1} = L_{eq2} - 20 * Log (d_1/d_2) - A_{screen}$

where:

L_{eq1} is the noise level at the receptor location;
L_{eq2} is the emission noise level at 30 feet from the amusement park boundary;
d_1 is the distance from the emission source to the receptor;
d_2 is 30 feet; and
A_{screen} is the attenuation due to screening.

RIDE MOTORS

To determine the average L_{eq} noise levels from the ride motors, assuming the noise sources at a distance of 30 feet from the amusement park boundary, noise levels with the ride motors at receptor sites were calculated based on the emission level using the following equation:

$L_{eq1} = L_{eq2} - 15 * Log (d_1/d_2) - A_{screen}$

where:

L_{eq1} is the noise level at the receptor location;
L_{eq2} is the emission noise level at 30 feet from the amusement park boundary;
d_1 is the distance from the emission source to the receptor;
d_2 is 30 feet; and
A_{screen} is the attenuation due to screening.

COMBINATION

The total L_{eq} noise levels from noise sources from the amusement park were combined using the following equations.

$$L_{eq}(total) = 10\log\left(\sum_{all-sources} 10^{L_{eq}/10}\right)$$

It is noted that using these equations for the noise impact analysis would be conservative since attenuation effects from environmental factors (i.e., atmospheric absorption, terrain, and meteorological conditions) were not included in calculations.

ANALYSIS PROCEDURE

The baseline measurements were conducted in December 2007 and January 2008. The adjusted baseline noise levels for the RWCDS were determined by adding the traffic correction factors and noise levels generated by the existing amusement uses to the measured baseline noise levels. In general, the following procedure was used in performing the noise analysis:

- Noise monitoring was performed to determine baseline noise levels at each analysis (receptor) site;
- The traffic component of the baseline noise levels was calculated based on traffic count values at each receptor site, using the TNM model;
- The RWCDS traffic component of the baseline noise levels was adjusted based on existing traffic values on adjacent and nearby streets, using the TNM model;

- The traffic correction factors were determined based on differences between the traffic component noise levels and the RWCDS traffic component noise levels;
- The summer noise levels generated by amusement uses were calculated based on the predicted methods previously described;
- The adjusted RWCDS baseline noise levels were determined by adding the traffic correction factors and noise levels generated by amusement uses to the measured baseline noise levels; and
- Noise levels for No Build and Build scenarios for the analysis time periods were determined as the sum of the calculated noise components from traffic increases and amusement uses.

Summary tables showing the specific components of the noise analysis are provided in Appendix H.

F. EXISTING CONDITIONS

SITE DESCRIPTION

The proposed rezoning area (described in detail in Chapter 1, "Project Description") is generally bounded to the east by West 8th Street, to the west by West 24th Street, to the north by Mermaid Avenue, and to the south by the Boardwalk in the Coney Island neighborhood of Brooklyn. The rezoning area consists primarily of vacant land, parking lots, amusements, commercial uses, and residential uses.

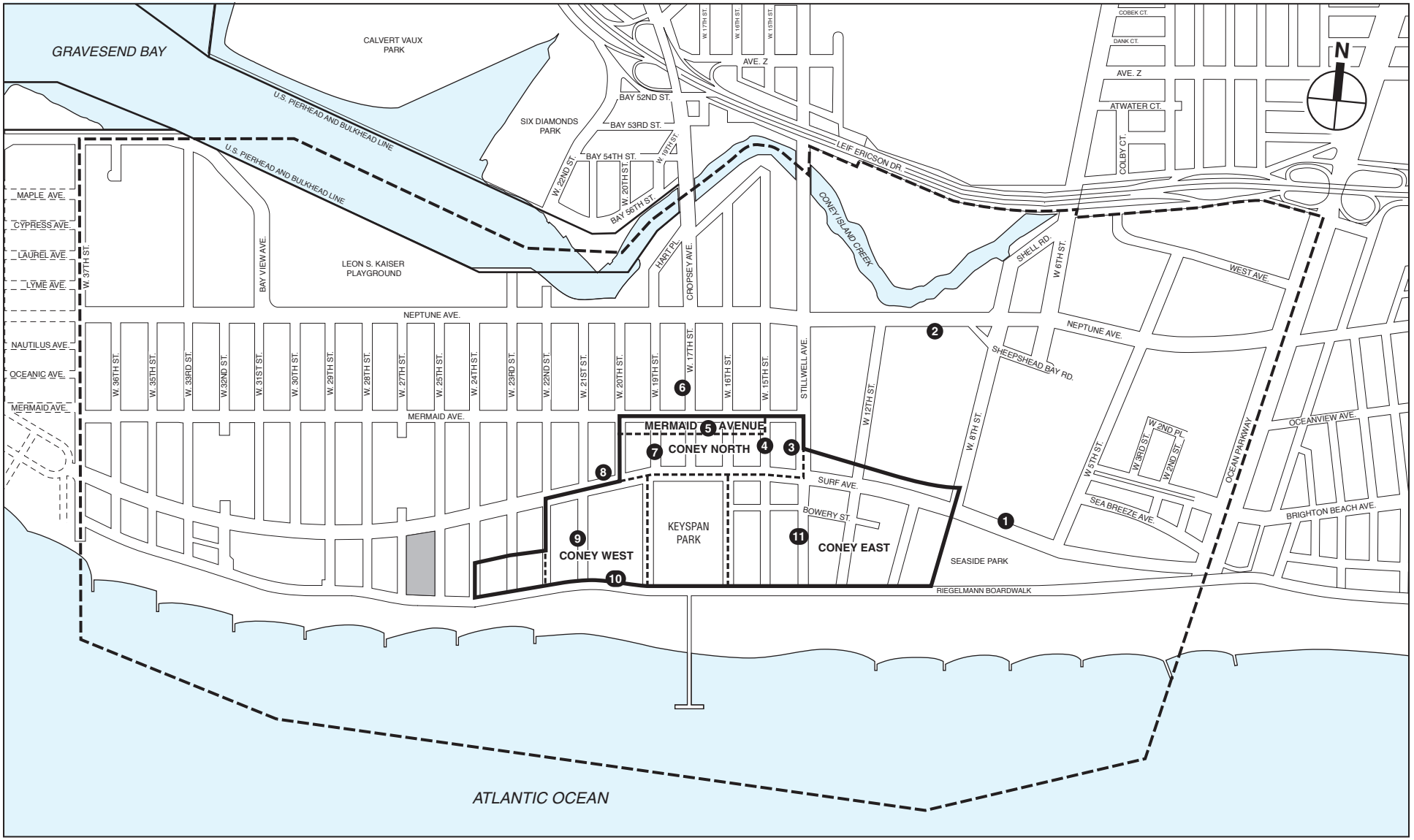
SELECTION OF NOISE RECEPTOR LOCATIONS

Two types of receptor sites (i.e., vehicular traffic and amusement noise, and building attenuation) were selected for the noise analysis. **Table 19-6** lists the locations of each noise receptor and their associated existing surrounding land uses. The selected receptor sites are located within and adjacent to the rezoning area and are the locations where the maximum increases in project-generated traffic and amusement uses would be expected to occur. These locations have the highest potential for noise impacts from both RWCDS-generated traffic and amusement uses. In addition, nine receptor sites (sites 1, 3, 4, 5, 7, 8, 9, 10, and 11) were selected for building attenuation analysis. In general, the nine sites are adjacent to the RWCDS buildings and were used to determine the level of attenuation that would be necessary to comply with CEQR interior noise standards. The locations of the eleven receptor sites are shown on **Figure 19-1**.

Table 19-6
Noise Receptor Locations

Receptor	Location	Associated Land Use
1	Surf Avenue between West 5th Street and West 8th Street	Residential & Open space
2	Neptune Avenue between West 8th Street and West 12th Street	Residential
3	Stillwell Avenue between Surf Avenue and Mermaid Avenue	Commercial &Transportation
4	West 15th Street between Surf Avenue and Mermaid Avenue	Commercial
5	Mermaid Avenue between West 16th Street and West 17th Street	Mixed-use residential
6	West 17th Street between Neptune Avenue and Mermaid Avenue	Residential
7	West 19th Street between Surf Avenue and Mermaid Avenue	Vacant
8	Surf Avenue between West 20th Street and West 21st Street	Residential & Vacant
9	West 21st Street between Surf Avenue and Boardwalk	Commercial & Vacant
10	Boardwalk between West 21st Street and West 20th Street	Open space
11	Stillwell Avenue between Surf Avenue and Boardwalk	Vacant & Commercial

1.10.09



Primary Study Area Boundary (Rezoning Area Boundary)

Special District Subdistrict Boundary

West 25th Street Parking Site

Secondary Study Area Boundary

❶ *Noise Monitoring Location*

0 1000 2000 FEET

SCALE

CONEY ISLAND REZONING

Noise Monitoring Locations

Figure 19-1

NOISE MONITORING

At each receptor location, 20-minute noise measurements were made for five time periods to determine existing noise levels. For weekday conditions, noise measurements were taken on December 11, 12, 13, and 18, 2007. For weekend conditions, noise measurements were taken on December 8 and 15, 2007; and on January 12, 2008.

EQUIPMENT USED DURING NOISE MONITORING

Measurements were performed using Brüel & Kjær Noise Level Meters Type 2260, Brüel & Kjær Sound Level Calibrators Type 4231, and Brüel & Kjær ½-inch microphones Type 4189. The Brüel & Kjær meters are Type 1 noise meters. The instruments were mounted on a tripod at a height of 5 feet above the ground. The meters were calibrated before and after readings using Brüel & Kjær Type 4231 sound level calibrators with the appropriate adaptors. The data were digitally recorded by the sound meters and displayed at the end of the measurement period in units of dBA. Measured quantities included L_{eq}, L_1, L_{10}, L_{50}, and L_{90}. Windscreens were used during all sound measurements except for calibration. All measurement procedures conformed to the requirements of ANSI Standard S1.13-2005.

RESULTS OF EXISITNG NOISE LEVELS

Table 19-7 summarizes the results of the baseline measurements and the adjusted existing noise levels for the Weekday AM, midday, and PM and the Saturday midday and PM analysis hours. In general, at receptor sites from 1 to 8 noise levels are moderate to relatively high and reflect the level of vehicular and subway activities on the adjacent streets, and at receptor sites from 9 to 11 noise levels are relatively low and reflect the level of limited vehicular activity on the adjacent streets.

In terms of CEQR noise exposure guidelines, during the hour with the highest adjusted existing noise levels, based on the measured L_{10} values, existing noise levels at receptors 1, 2, 3, 5, 6, and 8 are in the "marginally unacceptable" category, existing noise levels at receptor site 4 are in the "marginally acceptable" category, and existing noise levels at receptor sites 7, 9, 10, and 11 are in the "acceptable" category.

G. THE FUTURE WITHOUT THE PROPOSED ACTIONS

Using the methodology previously described, future noise levels without the proposed actions were calculated for the eleven receptors for the 2019 analysis year. These No Build values are shown in **Table 19-8**.

In 2019, the increase in $L_{eq(1)}$ noise levels without the proposed actions would be less than 2 dBA at all receptor sites. Changes of these magnitudes would be barely perceptible and insignificant, and they would be below the CEQR threshold for a significant adverse impact. In terms of CEQR Noise Exposure Guidelines, noise levels at receptor sites 1, 2, 3, 5, 6, and 8 would remain in the "marginally unacceptable" category, noise levels at receptor site 4 would remain in the "marginally acceptable" category, and noise levels at receptor sites 7, 9, 10, and 11 would remain in the "acceptable" category. These values are based on the predicted $L_{10(1)}$ values.

Table 19-7
Existing Noise Levels (in dBA)

Receptor	Location	Date	Time	Measured Noise Levels		Adjusted Noise Levels	
				$L_{eq(1)}$	$L_{10(1)}$	$L_{eq(1)}$	$L_{10(1)}$
1	Surf Avenue between West 5th Street and West 8th Street	Weekday	AM	68.2	71.4	68.3	71.5
			MD	65.7	68.9	67.3	70.5
			PM	64.6	67.9	67.0	70.3
		Saturday	MD	65.4	67.7	68.9	71.2
			PM	64.0	67.7	68.3	72.0
2	Neptune Avenue between West 8th Street and West 12th Street	Weekday	AM	68.1	70.8	67.4	70.1
			MD	71.7	74.4	71.6	74.3
			PM	66.8	69.7	65.4	68.3
		Saturday	MD	68.3	71.5	68.2	71.4
			PM	68.8	72.1	67.5	70.8
3	Stillwell Avenue between Surf Avenue and Mermaid Avenue	Weekday	AM	71.6	75.8	72.2	76.4
			MD	70.6	74.3	70.9	74.6
			PM	70.0	73.7	72.0	75.7
		Saturday	MD	71.7	75.2	73.6	77.1
			PM	71.0	75.3	73.9	78.2
4	West 15th Street between Surf Avenue and Mermaid Avenue	Weekday	AM	60.5	64.1	62.2	65.8
			MD	59.1	60.3	60.3	61.5
			PM	59.8	61.5	60.8	62.5
		Saturday	MD	56.9	59.8	60.5	63.4
			PM	59.4	61.2	63.7	65.5
5	Mermaid Avenue between West 16th Street and West 17th Street	Weekday	AM	70.2	72.3	69.2	71.3
			MD	65.6	67.7	64.9	67.0
			PM	64.7	66.2	65.9	67.4
		Saturday	MD	62.8	65.0	64.4	66.6
			PM	62.4	64.4	64.3	66.3
6	West 17th Street between Neptune Avenue and Mermaid Avenue	Weekday	AM	70.2	73.6	70.8	74.2
			MD	69.4	72.9	67.7	71.2
			PM	69.3	73.3	69.2	73.2
		Saturday	MD	70.6	72.9	70.0	72.3
			PM	67.3	71.5	66.9	71.1
7	West 19th Street between Surf Avenue and Mermaid Avenue	Weekday	AM	59.0	61.0	59.3	61.3
			MD	57.3	59.8	58.3	60.8
			PM	57.9	60.6	59.7	62.4
		Saturday	MD	56.4	59.3	58.2	61.1
			PM	56.1	59.2	58.7	61.8
8	Surf Avenue between West 20th Street and West 21st Street	Weekday	AM	72.1	75.4	72.7	76.0
			MD	69.1	71.4	70.4	72.7
			PM	67.5	71.1	68.2	71.8
		Saturday	MD	67.7	71.0	69.6	72.9
			PM	66.2	69.0	68.1	70.9
9	West 21st Street between Surf Avenue and Boardwalk	Weekday	AM	57.6	60.4	60.4	63.2
			MD	60.3	60.5	63.3	63.5
			PM	56.7	59.7	60.1	63.1
		Saturday	MD	54.4	56.8	61.4	63.8
			PM	53.6	55.7	58.3	60.4
10	Boardwalk between West 21st Street and West 20th Street	Weekday	AM	55.4	56.0	56.2	56.8
			MD	52.9	54.3	55.1	56.5
			PM	54.1	56.5	55.8	58.2
		Saturday	MD	49.5	51.5	54.1	56.1
			PM	52.4	53.8	55.4	56.8
11	Stillwell Avenue between Surf Avenue and Boardwalk	Weekday	AM	56.7	57.4	56.8	57.5
			MD	55.5	57.8	60.9	63.2
			PM	56.0	58.6	61.5	64.1
		Saturday	MD	54.9	56.5	61.7	63.3
			PM	54.4	56.9	61.6	64.1

Notes: Field measurements were performed by AKRF, Inc. on December 8, 11, 12, 13, 15, and 18, 2007, and on January 12, 2008.

Table 19-8
The Future without the Proposed Actions Noise Levels (in dBA)

Receptor	Location	Date	Time	Existing Noise Levels		No Build Noise Levels		
				$L_{eq(1)}$	$L_{10(1)}$	$L_{eq(1)}$	$L_{10(1)}$	Change
1	Surf Avenue between West 5th Street and West 8th Street	Weekday	AM	68.3	71.5	69.3	72.5	1.0
			MD	67.3	70.5	67.9	71.1	0.6
			PM	67.0	70.3	67.8	71.1	0.8
		Saturday	MD	68.9	71.2	69.7	72.0	0.8
			PM	68.3	72.0	69.1	72.8	0.8
2	Neptune Avenue between West 8th Street and West 12th Street	Weekday	AM	67.4	70.1	68.3	71.0	0.9
			MD	71.6	74.3	72.8	75.5	1.2
			PM	65.4	68.3	65.9	68.8	0.5
		Saturday	MD	68.2	71.4	69.0	72.2	0.8
			PM	67.5	70.8	68.3	71.6	0.8
3	Stillwell Avenue between Surf Avenue and Mermaid Avenue	Weekday	AM	72.2	76.4	72.8	77.0	0.6
			MD	70.9	74.6	71.9	75.6	1.0
			PM	72.0	75.7	72.9	76.6	0.9
		Saturday	MD	73.6	77.1	74.3	77.8	0.7
			PM	73.9	78.2	74.7	79.0	0.8
4	West 15th Street between Surf Avenue and Mermaid Avenue	Weekday	AM	62.2	65.8	63.4	67.0	1.2
			MD	60.3	61.5	61.1	62.3	0.8
			PM	60.8	62.5	61.5	63.2	0.7
		Saturday	MD	60.5	63.4	61.2	64.1	0.7
			PM	63.7	65.5	64.4	66.2	0.7
5	Mermaid Avenue between West 16th Street and West 17th Street	Weekday	AM	69.2	71.3	69.8	71.9	0.6
			MD	64.9	67.0	65.5	67.6	0.6
			PM	65.9	67.4	66.7	68.2	0.8
		Saturday	MD	64.4	66.6	65.1	67.3	0.7
			PM	64.3	66.3	65.0	67.0	0.7
6	West 17th Street between Neptune Avenue and Mermaid Avenue	Weekday	AM	70.8	74.2	71.6	75.0	0.8
			MD	67.7	71.2	68.6	72.1	0.9
			PM	69.2	73.2	70.3	74.3	1.1
		Saturday	MD	70.0	72.3	71.1	73.4	1.1
			PM	66.9	71.1	68.0	72.2	1.1
7	West 19th Street between Surf Avenue and Mermaid Avenue	Weekday	AM	59.3	61.3	60.4	62.4	1.1
			MD	58.3	60.8	59.6	62.1	1.3
			PM	59.7	62.4	60.8	63.5	1.1
		Saturday	MD	58.2	61.1	59.3	62.2	1.1
			PM	58.7	61.8	59.6	62.7	0.9
8	Surf Avenue between West 20th Street and West 21st Street	Weekday	AM	72.7	76.0	73.5	76.8	0.8
			MD	70.4	72.7	71.3	73.6	0.9
			PM	68.2	71.8	69.1	72.7	0.9
		Saturday	MD	69.6	72.9	70.6	73.9	1.0
			PM	68.1	70.9	68.9	71.7	0.8
9	West 21st Street between Surf Avenue and Boardwalk	Weekday	AM	60.4	63.2	61.0	63.8	0.6
			MD	63.3	63.5	64.8	65.0	1.5
			PM	60.1	63.1	60.5	63.5	0.4
		Saturday	MD	61.4	63.8	61.8	64.2	0.4
			PM	58.3	60.4	59.0	61.1	0.7
10	Boardwalk between West 21st Street and West 20th Street	Weekday	AM	56.2	56.8	56.8	57.4	0.6
			MD	55.1	56.5	55.8	57.2	0.7
			PM	55.8	58.2	56.0	58.4	0.2
		Saturday	MD	54.1	56.1	54.9	56.9	0.8
			PM	55.4	56.8	56.0	57.4	0.6
11	Stillwell Avenue between Surf Avenue and Boardwalk	Weekday	AM	56.8	57.5	57.7	58.4	0.9
			MD	60.9	63.2	61.7	64.0	0.8
			PM	61.5	64.1	62.4	65.0	0.9
		Saturday	MD	61.7	63.3	62.5	64.1	0.8
			PM	61.6	64.1	62.4	64.9	0.8

H. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

The future conditions with the proposed actions were analyzed for the 2019 analysis year. Noise impacts were assessed based on increased traffic and amusement noise sources.

2019 BUILD ANALYSIS

Using the methodology previously described, future noise levels with the proposed actions were calculated for the eleven receptors for the 2019 analysis year. These Build values are shown in **Table 19-9**.

In 2019, with the exception of receptor sites 6, 10, and 11, the increase in $L_{eq(1)}$ noise levels with the proposed actions would be less than 3 dBA at all receptor sites. Changes of these magnitudes would be barely perceptible and insignificant, and they would be below the CEQR threshold for a significant adverse impact. In terms of CEQR Noise Exposure Guidelines, noise levels at receptor sites 1, 2, 3, 5, 6, and 8 would remain in the "marginally unacceptable" category, noise levels at receptor site 4 would remain in the "marginally acceptable" category, noise levels at receptor sites 7 and 9 would change from the "acceptable" category to the "marginally acceptable" category, noise levels at receptor site 10 would remain in the "acceptable" category, and noise levels at receptor site 11 would change from the "acceptable" category to the "marginally unacceptable" category. These values are based on the predicted $L_{10(1)}$ values.

At receptor site 6, the proposed actions would result in increases in noise levels between the Build and No Build scenarios of more than 3 dBA for the weekday AM and midday peak periods, which would exceed the CEQR threshold for a significant adverse impact. The exceedance of the 3 dBA CEQR impact criteria would be due principally to noise generated by the large incremental traffic volumes on West 17th Street.

At receptor site 10, the proposed actions would result in increases in noise levels between the Build and No Build scenarios of more than 3 dBA for the weekday midday and PM periods, and the Saturday midday and PM peak periods. The increases in noise levels would be due principally to noise generated by the incremental traffic volumes and the activities in the proposed amusement park. Because of low No Build noise levels (less than 60 dBA) at this location, the CEQR threshold for a significant adverse noise impact would be 5 dBA. The increase in noise levels at this receptor site, during all time periods, would be less than the 5 dBA CEQR threshold for a significant adverse impact and, therefore, while the proposed actions would result in perceptible increases in noise levels at this location, the increases would not constitute a significant adverse noise impact.

At receptor site 11, the proposed actions would result in increases in noise levels between the Build and No Build scenarios of more than 10 dBA for all analysis peak periods, except for the weekday AM peak period. This increase in noise levels would exceed the CEQR impact criteria and would constitute a significant adverse noise impact. The exceedances of the CEQR impact criteria at this receptor site would be due principally to noise generated by the activities in the proposed amusement park. However, no existing noise-sensitive uses were identified in the vicinity of this receptor site. Further, this receptor site is located within the proposed 27-acre entertainment and amusement district that would be developed with a broad range of amusement-related uses, including open and enclosed amusements, hotels, small-scale accessory retail, dining and drinking establishments of all sizes, and performance venues. Amusement noise is not expected to result in noise impacts to residential areas outside of the Coney East subdistrict.

Table 19-9
The Future with the Proposed Actions Noise Levels (in dBA)

Receptor	Location	Date	Time	No Build Noise Levels		Build Noise Levels		
				$L_{eq(1)}$	$L_{10(1)}$	$L_{eq(1)}$	$L_{10(1)}$	Change
1	Surf Avenue between West 5th Street and West 8th Street	Weekday	AM	69.3	72.5	69.6	72.8	0.3
			MD	67.9	71.1	68.8	72.0	0.9
			PM	67.8	71.1	68.7	72.0	0.9
		Saturday	MD	69.7	72.0	70.4	72.7	0.7
			PM	69.1	72.8	69.9	73.6	0.8
2	Neptune Avenue between West 8th Street and West 12th Street	Weekday	AM	68.3	71.0	68.8	71.5	0.5
			MD	72.8	75.5	73.6	76.3	0.8
			PM	65.9	68.8	67.2	70.1	1.3
		Saturday	MD	69.0	72.2	70.1	73.3	1.1
			PM	68.4	71.7	69.4	72.7	1.0
3	Stillwell Avenue between Surf Avenue and Mermaid Avenue	Weekday	AM	72.8	77.0	73.3	77.5	0.5
			MD	71.9	75.6	73.2	76.9	1.3
			PM	72.9	76.6	74.0	77.7	1.1
		Saturday	MD	74.3	77.8	75.2	78.7	0.9
			PM	74.7	79.0	75.6	79.9	0.9
4	West 15th Street between Surf Avenue and Mermaid Avenue	Weekday	AM	63.4	67.0	64.0	67.6	0.6
			MD	61.1	62.3	63.0	64.2	1.9
			PM	61.5	63.2	63.2	64.9	1.7
		Saturday	MD	61.2	64.1	63.1	66.0	1.9
			PM	64.4	66.2	65.6	67.4	1.2
5	Mermaid Avenue between West 16th Street and West 17th Street	Weekday	AM	69.8	71.9	69.9	72.0	0.1
			MD	65.5	67.6	66.0	68.1	0.5
			PM	66.7	68.2	67.1	68.6	0.4
		Saturday	MD	65.1	67.3	65.6	67.8	0.5
			PM	65.0	67.0	65.5	67.5	0.5
6	West 17th Street between Neptune Avenue and Mermaid Avenue	Weekday	AM	71.6	75.0	75.1	78.5	3.5
			MD	68.6	72.1	73.1	76.6	4.5
			PM	70.3	74.3	72.6	76.6	2.3
		Saturday	MD	71.1	73.4	73.0	75.3	1.9
			PM	68.1	72.3	68.8	73.0	0.7
7	West 19th Street between Surf Avenue and Mermaid Avenue	Weekday	AM	60.4	62.4	61.2	63.2	0.8
			MD	59.6	62.1	62.0	64.5	2.4
			PM	60.8	63.5	62.5	65.2	1.7
		Saturday	MD	59.3	62.2	61.5	64.4	2.2
			PM	59.6	62.7	61.6	64.7	2.0
8	Surf Avenue between West 20th Street and West 21st Street	Weekday	AM	73.5	76.8	73.9	77.2	0.4
			MD	71.3	73.6	72.0	74.3	0.7
			PM	69.1	72.7	69.8	73.4	0.7
		Saturday	MD	70.6	73.9	71.3	74.6	0.7
			PM	68.9	71.7	69.6	72.4	0.7
9	West 21st Street between Surf Avenue and Boardwalk	Weekday	AM	61.0	63.8	62.9	65.7	1.9
			MD	64.8	65.0	66.7	66.9	1.9
			PM	60.5	63.5	62.5	65.5	2.0
		Saturday	MD	61.8	64.2	63.2	65.6	1.4
			PM	59.0	61.1	61.2	63.3	2.2
10	Boardwalk between West 21st Street and West 20th Street	Weekday	AM	56.8	57.4	57.0	57.6	0.2
			MD	55.8	57.2	59.5	60.9	3.7
			PM	56.0	58.4	59.7	62.1	3.7
		Saturday	MD	54.9	56.9	59.3	61.3	4.4
			PM	56.0	57.4	59.7	61.1	3.7
11	Stillwell Avenue between Surf Avenue and Boardwalk	Weekday	AM	57.7	58.4	58.6	59.3	0.9
			MD	61.7	64.0	74.3	76.6	12.6
			PM	62.4	65.0	74.4	77.0	12.0
		Saturday	MD	62.5	64.1	74.4	76.0	11.9
			PM	62.4	64.9	74.4	76.9	12.0

In summary, the proposed actions would result in significant adverse noise impacts at two of the eleven receptor locations—at receptor site 6 outside of the rezoning area on West 17th Street between Neptune Avenue and Mermaid Avenue, and at receptor site 11 within the Coney East subdistrict on Stillwell Avenue between Surf Avenue and the Boardwalk. At receptor site 6, project-generated traffic on West 17th Street would impact noise sensitive uses on the block,

which include both residential uses and the Our Lady of Solace Roman Catholic Church. This significant adverse impact is identified in this DEIS as unmitigated. However, between the Draft and Final EIS, additional studies will be performed to examine whether there are any feasible and practicable mitigation measures that could be implemented to reduce or eliminate this impact. At receptor site 6, both traffic and façade treatment (i.e., storm windows and air conditioners for alternative ventilation) mitigation options will be explored. Identified feasible and practicable mitigation will be described in the FEIS.

At receptor site 11, which is located within the Coney East subdistrict, project-generated traffic, combined with noise generated by the proposed amusement uses, would result in a significant adverse noise impact at this location. This significant adverse impact is also identified in this DEIS as unmitigated. Additional studies will be performed to examine whether there are any feasible and practicable mitigation measures that could be implemented to reduce or eliminate this impact. For receptor site 11, traffic mitigation measures and noise reduction measures for the amusement uses will be evaluated. Identified feasible and practicable mitigation will be described in the FEIS.

With mitigation in place, there would be no adverse noise impacts around the two receptor sites. However, absent the implementation of such measures the proposed actions would result in significant unmitigatable noise impacts at these locations (see Chapter 24, "Unavoidable Significant Adverse Impacts).

ACCEPTABILITY OF AMBIENT NOISE LEVELS IN THE PROPOSED HIGHLAND VIEW PARK

Noise levels within the new mapped park (Highland View Park) on the Boardwalk between West 22nd and West 23rd Streets would be above the 55 dBA $L_{10(1)}$. This exceeds the noise level for outdoor areas requiring serenity and quiet contained in the *CEQR Technical Manual* noise exposure guidelines (see **Table 19-4**). Average $L_{10(1)}$ noise levels would be in the high 60s dBA in the proposed park. These predicted noise levels would result from the noise generated by traffic on nearby Surf Avenue and there are no practical and feasible mitigation measures that could be implemented to reduce noise levels to below the 55 dBA $L_{10(1)}$ guideline. However, the noise levels in the new park would be comparable to noise levels in portions of other public open spaces in Coney Island that are also located adjacent to trafficked roadways, including Asser Levy Park, Luna Park, and Carey Gardens. Further, the proposed Highland View Park, which would be located on the Boardwalk, is intended to take advantage of the beach and Boardwalk setting and is not intended to be a secluded neighborhood park. Although the 55 dBA $L_{10(1)}$ guideline is a worthwhile goal for outdoor areas requiring serenity and quiet, this relatively low noise level is typically not achieved in parks and open space areas in New York City. Consequently, noise levels in the proposed Highland View Park, while exceeding the 55 dBA $L_{10(1)}$ CEQR guideline value, would not result in a significant adverse noise impact.

I. BUILDING ATTENUATION FOR RWCDS BUILDINGS

The *CEQR Technical Manual* also requires an analysis of the effect of introducing a sensitive use, such as a residential building, into an urban environment. As shown in **Table 19-5** earlier in this chapter, the *CEQR Technical Manual* has set noise attenuation values for new buildings that are to be constructed as part of the proposed actions, based on exterior noise levels. Recommended noise attenuation values for residential and school buildings are designed to

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

Table **19-10** shows the highest calculated $L_{10(1)}$ noise levels at the receptor locations in the rezoning area and the building attenuation that would be required for the RWCDS buildings to achieve acceptable interior noise levels at each location.

Table 19-10
Building Attenuation (in dBA): Year 2019

Development Site	Block	Governing Noise Receptor Site	Maximum Build L_{10}	Building Attenuation
1 (North)	7072	8,9	77.2	35
1 (South)	7072	9,10	66.9	25
2 (North)	7071	8,9	77.2	35
2 (South)	7071	9,10	66.9	25
3	7064	3,4	79.9	35
4	7063	4,8	77.2	35
5	7062	7,8	77.2	35
6	7061	7,8	77.2	35
7	7060	7,8	77.2	35
8	7063	5	72.0	30
9	7061	5	72.0	30
10	7060	5	72.0	30
11	7074	11	77.0	35
12 (East)	8696	1,11	77.0	35
12 (West)	8696	1,11	77.0	35
13	7074	11	77.0	35
14	8695	11	77.0	35
15	8696	11	77.0	35
16 & 17	7266	1	73.6	30
18-20	7268	1	73.6	30
A (North)	7073	8,9	77.2	35
A (South)	7073	9,10	66.9	25
B	7064	3	79.9	35
C	7064	5	72.0	30
D & E	7063	5	72.0	30
F	7061	5	72.0	30
G	7074	1,11	77.0	35
H	8694	1,11	77.0	35
I	8696	11	77.0	35
J & K	7268	1	73.6	30

Note: Attenuation values shown assume a residential use; commercial uses would require 5 dBA less attenuation.

In general, to achieve 20-25 dBA of building attenuation, double-glazed windows with good sealing properties as well as an alternate means of ventilation, such as well-sealed window air conditioning, would be necessary; to achieve 30 dBA of building attenuation, double-glazed windows with good sealing properties as well as alternate means of ventilation, such as well-sealed through-the-wall air conditioning, would be necessary; and, to achieve 35 dBA of building attenuation, double-glazed windows with good sealing properties as well as alternate ventilation, such as central air conditioning, would be necessary.

In order to satisfy CEQR attenuation requirements and ensure an acceptable interior noise environment, the RWCDS buildings (residential uses and hotel uses) would provide a closed window condition with a minimum of 25-35 dBA window/wall attenuation on all façades in

order to maintain an interior L_{10} noise level of 45 dBA. In order to maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation include, but are not limited to, central air conditioning. With these measures, interior levels within these buildings would satisfy CEQR requirements. These measures are conservative and will be further refined between the Draft and Final EIS.

To ensure that these building attenuation requirements are met, a combination of E-designations, Land Disposition Agreements, and Memorandums of Understanding would be placed on the projected and potential development sites. E-designations would be placed on the following privately owned development sites—Projected Development Sites 1, 3, 4, 5, 8, 9, 16, 17, 18, 19, and 20; and Potential Development Sites B, C, D, E, F, J, and K. Land Disposition Agreements would be entered into between the New York City Department of Housing Preservation and Development (HPD) and DEP for Projected Development Sites 6, 7, and 10 that would be disposed of by HPD to a private developer. Memorandums of Understanding would be placed on the following development sites that would either be disposed of or to the New York City Economic Development Corporation—Projected Development Sites 2, 11, 12, 13, 14, and 15; and Potential Development Sites A, G, H, and I. Restrictive Declarations would subsequently be placed on these lots at the time of their disposition by the City, in accordance with the Memoranda of Understanding that would be entered into between NYCEDC and DEP.

J. MECHANICAL SYSTEMS

Mechanical equipment of the RWCDS buildings, such as heating, ventilation, and air conditioning (HVAC), and elevator motors would be designed to incorporate sufficient noise reduction devices to comply with applicable noise regulations and standards (including the standards contained in the revised New York City Noise Control Code), and to ensure that this equipment does not result in any significant increases in noise levels by itself or cumulatively with other project noise sources.

K. CONCLUSIONS

The proposed actions would result in a significant adverse noise impact at sensitive noise receptors at two locations—at receptor site 6 outside of the rezoning area on West 17th Street between Neptune Avenue and Mermaid Avenue, and at receptor site 11 within the Coney East subdistrict on Stillwell Avenue between Surf Avenue and the Boardwalk. While these impacts are now identified as unmitigated, between the Draft and Final EIS, additional studies will be performed to examine whether there are any feasible and practicable mitigation measures that could be implemented to reduce or eliminate these impacts. At receptor 6, both traffic and façade treatment (i.e., storm windows and air conditioners for alternative ventilation) mitigation options will be explored. At receptor 11, traffic mitigation measures and noise attenuation measures for the proposed amusement uses will be evaluated. Identified feasible and practicable mitigation will be described in the FEIS and with such mitigation in place there would be no adverse noise impacts around the two receptor sites. However, absent the implementation of such measures the proposed actions would result in significant unmitigated noise impacts at these locations. ✷