17 NOISE

17.1 Introduction

This chapter assesses the potential noise effects associated with the Proposed Actions. Noise is defined as unwanted sound. High levels of noise can be hazardous and cause hearing loss, while low levels of noise not considered hazardous can also cause stress-related illnesses, sleep disruption, and interrupt concentration during activities. "Receptors" are generally the subject of most noise impact analyses. A receptor is an area where human activity could be adversely affected due to noise level exceedances. Receptors can either be existing or introduced by a proposed project. Per the *2021 CEQR Technical Manual*, the three types of noise sources that could have an effect on receptors are mobile, stationary, and construction sources. This chapter addresses the noise generated by mobile and stationary sources during the project's operational phase (see Chapter 20 of this Environmental Impact Statement (EIS), "Construction" for an assessment of noise generated during the project's construction phase).

Mobile sources can include noise generated from vehicular traffic, aircrafts, or trains. Each mobile source produces a distinct noise. Vehicular noise generally fluctuates and can include spikes in noise levels due to heavy vehicles nearby. Aircraft noise generally consists of a series of single events over time. Depending on nearby ambient noise levels, aircraft noise can be easily distinguishable from background noise. Similar to aircraft noise, noise produced from trains or freight cars is generally comprised of a series of events over time and can be easily distinguishable over ambient noise levels.

Stationary sources for noise are usually associated with the mechanical equipment used for manufacturing or the mechanical systems of a building. Other sources can also include crowd noise – usually attributed to playgrounds, spectator events, or noise-amplifying systems. Unlike mobile sources for noise, this noise is generally uniform.

The Proposed Actions would allow for the development of the Proposed Facility, containing approximately 561,320 gross square feet (gsf) of gaming and food and beverage space, a 500-key hotel with a spa and meeting space, a 2,000-person event center, approximately 6,100 gsf of retail, and garage parking for approximately 4,660 vehicles. As part of the Proposed Development an approximately 40,160 gsf replacement

golf clubhouse would be developed north of the Proposed Facility. As part of the Proposed Actions, the area generally around the Development Site would be rezoned to a C8-4 commercial district.

In connection with the Proposed Facility, the uninterrupted circular roadway within Ferry Point Park (the "Park") that connects the southbound and northbound Hutchinson River Expressway service roads (the "Ring Road") would be widened and improved in coordination with the New York City Department of Transportation (NYCDOT).

The Proposed Actions would introduce new noise-sensitive receptors to the Development Site, consisting of hotel rooms, public meeting facilities (event center and conference space), a replacement golf clubhouse, and pedestrian connections to Ferry Point Park. Per the *CEQR Technical Manual*, the purpose of a CEQR noise assessment is to determine:

1. A proposed project's potential effects on sensitive noise receptors, including the effects on the level of noise inside residential, commercial, and institutional facilities (if applicable), and at open spaces; and
2. The effects of ambient noise levels on new sensitive uses introduced by a proposed project. If significant adverse impacts are identified, CEQR requires such impacts to be mitigated or avoided to the greatest extent practicable.

This noise analysis, which includes mobile and stationary sources analyses, was conducted to identify the effects on and from the proposed gaming facility, and of project-generated noise levels on the Park and the replacement golf clubhouse.

17.2 Principal Conclusions

The Proposed Actions would generate sufficient traffic to result in the potential for a significant adverse noise impact to the Park.~~,~~ Therefore, additional noise modeling was conducted between the Draft and Final EIS and an increase in With-Action noise levels of up to 5.6 dB(A) was projected at location 4. As this noise increase exceeds the CEQR noise impact criteria of 3 dB(A), it constitutes a significant adverse noise impact due to mobile sources. This significant adverse mobile source noise impact would occur ~~an open space resource containing both active and passive uses,~~ in the area that is west of the Hutchinson River Expressway and ~~immediate to the exterior~~ within approximately 100 feet exterior (west) to~~of~~ Ring Road (the noise-sensitive area represented by measurement location 4). In these locations, detailed modeling undertaken between Draft and Final EIS indicate that the PM peak-hour With-Action L_{eq} noise levels could increase ~~to 68.6 - 72.5~~ up to 68.4 dB(A) depending on the peak hour, resulting in peak hour L_{eq} increases ~~between 3.9 to 9.6~~ of up to 5.6 dB(A) over the projected No-Action Condition during the same peak period. Accordingly, the Proposed Actions have the potential to result in a significant adverse mobile source noise impact at measurement location 4 because the L_{eq} noise increase would be more than 3 dB(A). However, as described in Chapter 5, "Open Space," users of the Park principally participate in passive recreational activities in areas west of the comfort station. The projected maximum noise L_{eq} increase at the comfort station would be approximately 1.6 dB(A), and the noise increase further west of the comfort station – near the waterfront – would be less. Measures to mitigate this significant adverse impact at the Park are discussed in Chapter 22 of this EIS, "Mitigation."

The Proposed Actions would not result in a significant adverse stationary source noise impact from project-generated building mechanical equipment. Project-generated mechanical systems would be designed to meet all applicable noise regulations (e.g., Subchapter 5, §24-227 of the New York City Noise Control Code and the New York City

Department of Buildings Mechanical Code) and would avoid producing noise that would result in a significant increase in ambient noise levels. ~~Therefore, the Proposed Actions would not result in significant adverse noise impacts from project-generated building mechanical equipment (stationary sources).~~

Existing topography east of Ring Road limits ~~the~~ potential effects from project-generated traffic noise increases along Ring Road ~~from increasing noise levels~~ on the Golf Course. Therefore, only ~~on-site~~ vehicular traffic on the Development Site has the potential to significantly increase traffic-generated noise at the Golf Course. The Golf Course would be shielded from on-site vehicular traffic, in part, by intervening structures such as the proposed replacement golf clubhouse, safety barriers, retaining walls, and existing topography.

In the With-Action Condition, Golf Course users would primarily park their vehicles within the lower levels of the north parking garage. Because the capacity of the Golf Course would not be increased with the Proposed Actions, traffic associated with Golf Course users that have direct sightlines to holes of the Golf Course would not double and therefore, would not exceed the applicable impact criteria of the *CEQR Technical Manual*.

The golf clubhouse is an existing use that would be replaced on-site. Therefore, the relocation of the golf clubhouse would not introduce new noise-sensitive uses but would change the location of an existing noise-sensitive use on the Development Site. L_{eq} noise levels at the replacement golf clubhouse are not projected to increase by more than 3 dB(A) over No-Action noise levels projected at the existing golf clubhouse. Thus, attenuation is not required at the replacement golf clubhouse.

An E-Designation (E-824) will be placed on the Development Site (Block 5622, Lot 1) with the following requirements:

To ensure interior L_{10} noise levels of 45 dB(A) or lower for the proposed hotel (under a closed-window condition), a window/wall attenuation with the following minimum performance will be required:

- **35 dB(A) for facades that have a line of sight and are within 150 feet of the Hutchinson River Expressway.**
- **33 dB(A) for facades that have a line of sight and are beyond 150 feet of the Hutchinson River Expressway.**

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 proposed building facades would be designed to provide an OITC rating that is greater than or equal to those outlined in the proposed E-Designation. The New York City Mayor's Office of Environmental Remediation (OER) would provide oversight to ensure the implementation of the E-Designation. By designing and constructing the buildings to provide a composite OITC rating greater than or equal to the E-Designation's requirements, sufficient attenuation would be provided to achieve the CEQR-recommended interior noise level for hotel uses.

17.3 Methodology

The assessment has been conducted in accordance with the guidelines set forth in the *CEQR Technical Manual*. An initial impact screening assessment considers whether a proposed project would:

1. Generate any mobile or stationary sources of noise; or
2. Introduce a noise sensitive receptor located in an area with existing high ambient noise levels.

The basic measure of sound is the sound pressure level, which is expressed in decibels (dB). The A-weighted network is the most commonly used and sound levels measured using this weighting are noted as dB(A). The letter "A" indicates that the sound has been filtered to reduce the strength of very low and very high frequency sounds, much as the human ear does. Accordingly, dB(A) are typically used for CEQR assessments.

The L_{10} is a statistical descriptor of the sound level exceeded for 10 percent of the time. It can be obtained using short-term measurements. Similarly, L_{50} and L_{90} are the sound levels that are exceeded 50 and 90 percent of the time. Day-night average sound level (L_{dn}) describes a receiver's cumulative noise exposure from all events over a full 24 hours, with a 10-dB penalty applied to nighttime hours (between 10pm and 7am).

Stationary noise sources do not move in relation to a noise-sensitive receptor. Typical stationary noise sources of concern include machinery or mechanical equipment, such as those associated with a building's heating, ventilating, and air-conditioning (HVAC) system. The Proposed Development would introduce new stationary sources such as mechanical equipment; therefore, an assessment of stationary noise sources was warranted.

Mobile noise sources are those that move in relation to receptors. The mobile source screening assessment addresses potential noise impacts associated with vehicular and rail traffic.

Per the *CEQR Technical Manual*, if existing passenger car equivalent (PCE) values are increased by 100 percent or more due to a proposed action, a detailed analysis is generally performed.

CEQR Interior Noise Standards

Per the *CEQR Technical Manual*, the acceptable interior L_{10} noise level is 45 dB(A) or lower for residential or community facility uses, and 50 dB(A) or lower for commercial office uses. The acceptable criteria for residential is used for hotel guestrooms. Noise survey locations were selected by examining the Development Site's location relative to the dominant sources of ambient noise. Existing noise levels were determined at each location through field measurements and noise calculations. The measured and calculated noise levels were used to determine minimum window/wall attenuation requirements needed to satisfy CEQR interior noise level criteria.

Noise-Sensitive Uses

The noise-sensitive uses at the Proposed Facility include hotel guestrooms.

The golf clubhouse is an existing use that would be replaced on-site. Therefore, the relocation of the golf clubhouse would not introduce new noise-sensitive uses but would change the location of an existing noise-sensitive use on the Development Site. The CEQR impact criteria for the replacement clubhouse would therefore be determined based on

whether the projected L_{eq} noise level at the golf clubhouse would increase by more than 3 to 5 dB(A) over the No-Action noise levels.[1]

Ambient Noise Measurements

Measurements were performed using Larson Davis Model 831C, NTi XL2 and Bruel & Kjaer 2250 sound level meters (SLM). The SLMs are a Type 1 instrument according to ANSI Standard S1.4-1983 (R2006). For each measurement, the microphone was mounted on a tripod at a height of five feet above the ground or roof level and at least approximately five feet away from any large reflecting surfaces. The SLM's calibration was field checked before and after readings. Measurements at each location were made on the A-scale (dB(A)). The data were digitally recorded by the SLMs and displayed at the end of the measurement period in units of dB(A). Measured quantities included L_{eq}, L_1, L_{10}, L_{50}, L_{90}, at 1/3 octave band levels. A windscreen was used during all sound measurements except for calibration. Noise levels were measured on June 4, 2024, at one monitoring location over 20-minute periods during the weekday AM (7:30am – 9:30am) Midday (11:30am – 1:30pm) and PM (4:00pm – 6:00pm) peak traffic periods. The 24-hour measurements were captured over a full one-week period beginning on June 4, 2024, and ending on June 11, 2024. Saturday midday (11:30am – 1:30pm) measurements were captured on June 8, 2024.

Survey Locations

The Development Site is bound by Hutchinson River Expressway to the west and otherwise bound by the Park. The measurement locations were selected to account for the representative worst-case noise conditions of the surrounding area and to capture ambient noise generated by existing traffic volumes. The survey locations selected are described in Table 17-1, and measurement and analysis locations are shown in Figure 17-1.

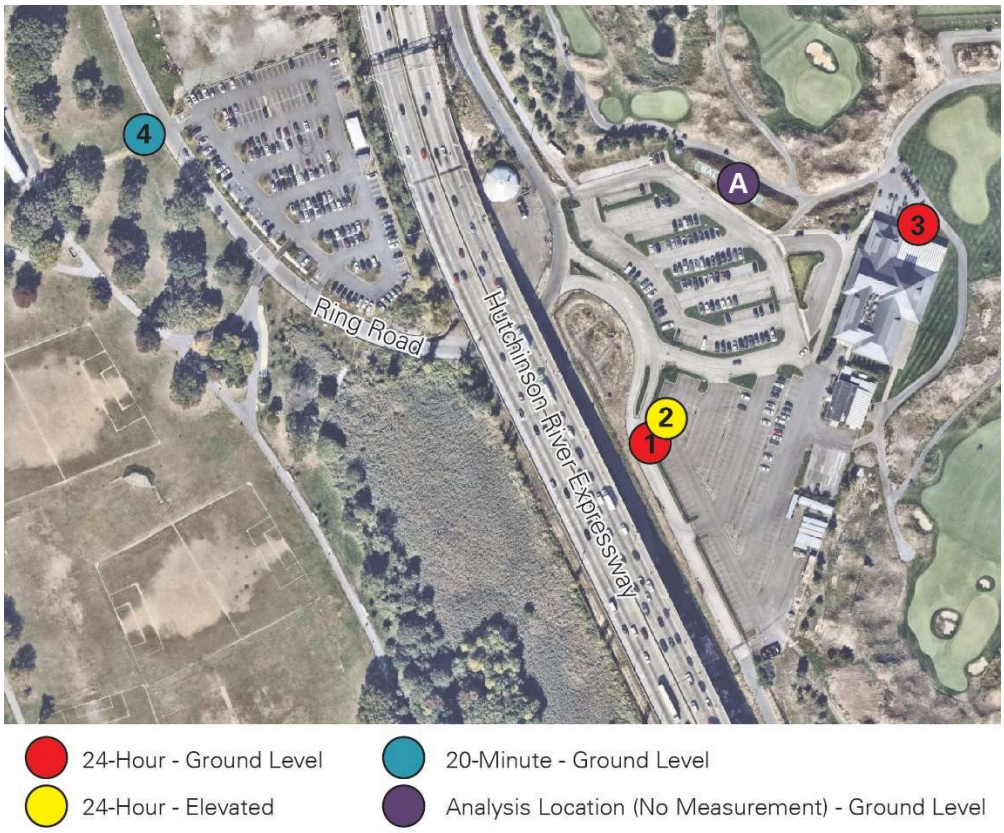
Table 17-1: Noise Measurement and Analysis Locations

Reading	Duration	Location Description
1	24-hr	Ground level on Development Site's west boundary, with line-of-sight to the Hutchinson River Expressway Parapet.
2	24-hr	Elevated on Development Site's west boundary, with line-of-sight to Hutchinson River Expressway roadbed.
3	24-hr	Ground Level on Development Site's north-east boundary, with line-of-sight obscured to Hutchinson River Expressway.
4	20-min	Ground level set back from Ring Road between future access road and Ferry Point Park with line-of-sight to Hutchinson River Expressway Parapet and Ring Road
A	N/A*	Ground level at the replacement golf clubhouse and on the Golf Course

*Location A is an analysis location only, and no measurements were obtained at this location.

[1] Chapter 19 of the *CEQR Technical Manual* details noise impact thresholds based on the No-Action levels. If the No-Action noise level is 60 dB(A) L_{eq} or less, a 5 dB(A) L_{eq} or greater increase would be considered significant. If the No-Action noise level is 61 dB(A) Leq(1), the maximum incremental increase would be 4 dB(A), since an increase higher than this would result in a noise level higher than the 65 dB(A) L_{eq} threshold and is considered significant. Similarly, if the No-Action noise level is 62 dB(A) L_{eq} or more, a 3 dB(A) L_{eq} or greater change is considered significant.

Figure 17-1: Site Location Map and Noise Measurement/Analysis Locations



Note: This graphic was updated for the Final EIS.

Mobile Source Screening and Analysis

Over existing conditions, the Proposed Actions would introduce more vehicles during peak-hours for Ring Road yet fewer heavy vehicles in the midday and evening times for Ring Road. The expected increase in traffic to Ring Road warranted a mobile source analysis, which was completed by comparing traffic and heavy vehicle volumes between the existing, No-Action, and With-Action conditions.

The preliminary assessment included proportional modeling, which ~~Proportional modeling~~ was initially used to determine locations with the potential for having significant noise impacts. Proportional modeling is a technique 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 and With-Action noise levels. Vehicular traffic volumes are converted into 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:

$$F\ NL - E\ NL = 10 * log10\ (F\ PCE / E\ PCE)$$

where:

F NL = Future Noise Level; E NL = Existing Noise Level; F PCE = Future PCEs; and E PCE = Existing 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 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~~dB(A). 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 dB(A).

Detailed (CadnaA) Noise Modeling Analysis

Since noise levels predicted by proportional modeling suggested a potential exceedance of CEQR impact criteria, detailed modeling using a CadnaA noise model developed for noise prediction and assessment was required. The CadnaA model is based on the acoustic propagation standards promulgated in International Standard ISO 9613-2. This standard is currently under review for adoption by the American National Standards Institute (ANSI) as an American Standard. The CadnaA model is a state-of-the-art tool for noise analysis and is approved for noise level prediction by the *CEQR Technical Manual*.

The CadnaA model includes algorithms that incorporate the Federal Highway Administration's traffic noise model for vehicular noise calculations. Noise levels taken from a measurement location are added to the model to develop a baseline condition, which can be used to project the additional noise from a proposed project. Contrary to proportional modeling, the CadnaA model considers the spatial relationship of noise sources and takes into consideration the area's topography and vehicular speeds, thereby providing additional, more refined information to project future noise levels.

The following steps were used to analyze the potential noise increases from the Proposed Development to the surrounding receivers:

- Both the existing noise levels and the projected No-Action noise levels are highest during the AM peak hour. The highway is the controlling noise source and the traffic along the highway was highest during the AM peak hour. Therefore, the noise model was calibrated to the AM peak hour based on the measured noise and traffic data.
- Preliminary evaluations indicated that the PM peak hour had the highest potential increment of traffic volumes between the No-Action and With-Action conditions. Thus, the PM peak traffic volumes were added to the model to represent the With-Action PM peak hour noise levels at surrounding receptors.
- The peak output noise levels were then compared to the PM peak period ambient (existing) noise levels, to provide a comparison between the PM ambient and With-Action noise levels. This method represents the greatest potential for noise increases.

Noise Standards and Criteria

The *CEQR Technical Manual* provides attenuation requirements for buildings to achieve certain interior noise environments based on exterior noise levels, as shown in Table 17-2.

Table 17-2: Required Attenuation Values to Achieve Acceptable Interior Noise Levels

	Marginally Acceptable	Marginally Unacceptable				Clearly Unacceptable
Vehicular Traffic	$65 < L_{10} \leq 70$	$70 < L_{10} \leq 73$	$73 < L_{10} \leq 76$	$76 < L_{10} \leq 78$	$78 < L_{10} \leq 80$	$80 < L_{10}$
Aircraft [A]	DNL ≤ 65	65 < DNL ≤ 68	68 < DNL ≤ 71	71 < DNL ≤ 73	73 < DNL ≤ 75	75 < DNL
Train	$L_{dn} \leq 65$	$65 < L_{dn} \leq 68$	$68 < L_{dn} \leq 71$	$71 < L_{dn} \leq 73$	$73 < L_{dn} \leq 75$	$75 < L_{dn}$
Attenuation [B]	N/A	(I) 28 dB(A)	(II) 31 dB(A)	(III) 33 dB(A)	(IV) 35 dB(A)	See Note C

[A] DNL descriptor based on average values of L_{dn} over a year period.
[B] The composite window-wall attenuation values are for residential dwellings and community facility development. 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.
[C] The required attenuation value is the difference between L_{build} and $L_{interior}$, using the appropriate noise descriptor
Where:
L_{build} is the projected noise level under the build condition rounded up to the whole number
$L_{interior}$ is the designed interior noise level (45 dB(A) for vehicular noise, 40 dB(A) for aircraft and train noise)
Source: New York City Department of Environmental Protection.

Exterior noise levels that fall in or above the "marginally unacceptable" category warrant window-wall attenuation to achieve the CEQR-recommended interior noise environment. The attenuation requirements for residential and community facility uses were used for hotel guestrooms.

17.4 Existing Noise Levels

The results of the existing noise level measurements are presented in Table 17-3, with the noisiest peak period at each reading location noted in the highlighted cells.

Table 17-3: Measured Existing Noise Levels

Location	Measurement Location	Controlling Noise Source	Time	Leq	L1	L10	L50	L90
1	Ground level on the Development Site's west boundary, with line-of-sight to the Hutchinson River Expressway Parapet.	Vehicular traffic along Hutchinson River Expressway	24hr[A]	62.9	67.7	64.6	62.5	59.7
			AM	62.0	65.2	63.9	61.9	58.9
			MD	62.6	66.4	63.3	62.5	61.2
			PM	62.1	64.0	62.8	62.0	61.3
			SAT	66.2	70.1	67.5	65.9	63.6
2	Elevated on the Development Site's west boundary, with line-of-sight to Hutchinson River Expressway roadbed.	Vehicular traffic along Hutchinson River Expressway	24hr[A]	76.0	79.6	77.8	75.8	72.4
			AM	73.5	76.7	76.4	72.8	69.1
			MD	76.2	78.0	77.3	76.0	74.9
			PM	75.8	77.1	76.7	75.8	74.7
			SAT	77.6	80.3	78.4	77.7	75.8
3	Ground Level on the Development Site's north-east boundary, with line-of-sight obscured to Hutchinson River Expressway.	Vehicular traffic along Hutchinson River Expressway	24hr[A]	59.0	68.2	61.3	56.4	53.1
			AM	61.2	70.7	63.6	59.3	54.3
			MD	61.0	69.9	63.7	58.5	53.4
			PM	61.0	71.7	63.4	56.9	52.5
			SAT	60.8	70.4	61.4	59.0	56.7
4	Ground level set back from Ring Road between future access road and Ferry Point Park with line-of-sight to Hutchinson River Expressway Parapet and Ring Road.	Vehicular traffic along Hutchinson River Expressway	AM	66.7	73.6	68.1	63.2	60.8
			MD	62.6	71.3	65.0	60.6	58.5
			PM	62.8	73.2	65.3	58.0	54.3
			SAT	60.5	64.7	63.1	59.5	58.1

[A] 24-hour statistics based on peak hourly values over full measurement period.

At all measurement locations, the ambient noise environment was controlled by vehicular traffic on the Hutchinson River Expressway.

Per *CEQR Technical Manual* guidelines, the existing noise levels at location 2 is in the "marginally unacceptable" category. Existing noise levels at locations 1, 3 and 4 are in the "marginally acceptable" category.

17.5 No-Action Condition

In the No-Action Condition, existing conditions on the Development Site and Ring Road would remain. The one-story, approximately 25,265-gsf golf clubhouse, accessory parking lot, a portion of the practice area, and other landscaped areas would remain as existing conditions. No new public infrastructure – such as roadway or park improvements – would be developed. The existing uses on the Development Site are considered allowable uses on parkland and are in place pursuant to a concession between Bally's and NYC Department of Parks and Recreation. The noise levels at the Development Site would continue to be "marginally unacceptable" for existing uses per CEQR standards, however, no residential or community facility uses would exist in the No-Action Condition. An E-Designation would not be placed on the Development Site.

Based on the traffic data provided in Chapter 14 of this EIS "Transportation", the No-Action noise levels are projected to increase by 0.0 to 0.1 dB(A) from the existing noise levels due to background growth. The results of the No-Action noise level predictions are presented in Table 17-4. Location 3 was not evaluated as it is shielded from vehicular traffic.

Table 17-4: No-Action Noise Levels

			Leq (db(A))			No-Action
Location	**Measurement Location**	**Time**	**Existing**	**No-Action**	**Change**	**L10**
1	Ground level on the Development Site's west boundary, with line-of-sight to the Hutchinson River Expressway Parapet.	WKDY AM	62.0	62.1	0.1	64.0
		WKDY MD	62.6	62.7	0.1	63.4
		WKDY PM	62.1	62.2	0.1	62.9
		SAT	66.2	66.2	0.0	67.6
2	Elevated on the Development Site's west boundary, with line-of-sight to Hutchinson River Expressway roadbed.	WKDY AM	73.5	73.6	0.1	76.4
		WKDY MD	76.2	76.2	0.0	77.3
		WKDY PM	75.8	75.9	0.1	76.8
		SAT	77.6	77.7	0.1	78.5
4	Ground level set back from Ring Road between future access road and Ferry Point Park with line-of-sight to Hutchinson River Expressway Parapet and Ring Road.	WKDY AM	66.7	66.8	0.1	68.2
		WKDY MD	62.6	62.7	0.1	65.1
		WKDY PM	62.8	62.9	0.1	65.4
		SAT	60.5	60.6	0.1	63.2

WKDY = Weekday

Per *CEQR Technical Manual* guidelines, the No-Action noise at location 2 remain in the "marginally unacceptable" category. No-Action noise levels at locations 1 and 4 remain in the "marginally acceptable" category.

17.6 With-Action Condition

Project-Generated Noise Sources and Receptors

The golf clubhouse is an existing use that would be replaced on-site. Therefore, the relocation of the golf clubhouse would not be considered a new receptor that introduces new noise-sensitive uses but would change the location of an existing noise-sensitive use on the Development Site.

Based on the traffic data provided in Chapter 14 of ~~this~~ the Draft EIS "Transportation", the With-Action Condition noise levels in ~~Ferry Point Park in~~ the area of the Park that is west of the Hutchinson River Expressway and immediate to the exterior of existing Ring Road

(measurement location 4) ~~are~~were initially projected to increase by ~~3.9~~up to ~~9.6~~9.5 dB(A)[2] from the No-Action ~~noise levels. At measurement location 4, the worst-case noise increase during the peak traffic period would be 9.6 dB(A).[3]~~ Condition based on a proportional modeling analysis. This increase in noise ~~would exceed the CEQR impact criteria, and thus would result in a significant adverse noise impact to the area of Ferry Point Park that is west of the Hutchinson River Expressway and immediate to the exterior of Ring Road.~~ warranted a detailed mobile source analysis to understand project-generated traffic noise.

Based on the traffic data provided in Chapter 14 of this EIS, "Transportation," traffic from the Hutchinson River Expressway is not expected to double and therefore would not cause a noticeable increase in noise levels at the Golf Course. Further, existing topography east of Ring Road limits ~~the~~ potential effects ~~for~~ from project-generated traffic noise increases along Ring Road on the Golf Course~~or the Hutchinson River Expressway from increasing noise levels~~. Therefore, only ~~on-site~~ vehicular traffic on the Development Site has the potential to significantly increase traffic-generated noise at the Golf Course.

~~The~~ However, the Golf Course would be shielded from on-site vehicular traffic, in part, by intervening structures such as the proposed replacement clubhouse, retaining walls, and existing topography. Sightlines between the Golf Course and on-site vehicular circulation areas would be limited to the ramps/accessways to the north parking garage. For the ramp to levels five through eleven of the proposed north parking garage, the parapet of the safety barriers on the entrance ramp would exceed the engine height of typical passenger vehicles, shielding the Golf Course from on-site traffic-generated noise associated with the ramps to the north parking garage. Thus, noise ~~-~~generated by traffic entering or exiting levels five through eleven of the north parking garage would not significantly alter noise levels on the Golf Course.

Parking in the basement of the north parking garage would be ~~targeted~~ designated for ~~to~~ Golf Course users. Because the capacity of the Golf Course would not be increased with the Proposed Actions, traffic along on-site driveways that have direct sightlines to holes of the Golf Course would not double (noise-PCEs would not double) and therefore, would not exceed the applicable impact criteria of the *CEQR Technical Manual*.

The results of the With-Action Condition noise level predictions based on the proportional noise analysis are presented in Table 17-5.

[2] Location 3 was not evaluated as it is shielded from vehicular traffic.

[3] ~~Location 3 was not evaluated as it is shielded from vehicular traffic.~~

Table 17-5: With-Action Condition Noise Levels – Preliminary (Proportional) Assessment

Location	Measurement Location	Time	Leq (dB(A)) No-Action	Leq (dB(A)) With-Action	Leq (dB(A)) Change	With-Action L10
1	Roadway traffic noise at street level set back from the southwest property line at the closest point to Hutchinson River Expressway.	WKDY AM	62.1	63.5	*	65.4
		WKDY MD	62.7	65.8	*	66.5
		WKDY PM	62.2	69.2	*	69.9
		SAT	66.2	70.0	*	71.3
2	Roadway traffic noise, elevated, along the southwest property line at the closest point to Hutchinson River Expressway	WKDY AM	73.6	73.8	0.2	76.7
		WKDY MD	76.2	76.8	0.6	77.9
		WKDY PM	75.9	76.4	0.5	77.3
		SAT	77.7	78.1	0.5	78.9
4	Roadway traffic noise at street level set back from Hutchinson River Expressway between future access road and Ferry Point Park.	WKDY AM	66.8	70.4	*3.6*[A]	71.8
		WKDY MD	62.7	68.2	*5.6*[A]	70.6
		WKDY PM	62.9	72.4	*9.5*[A]	74.9
		SAT	60.6	68.8	*8.2*[A]	71.4

WKDY = Weekday
*Leq change not applicable, location 1 was analyzed for façade attenuation only.
[A] Leq change from initial proportional modeling analysis. Additional computerized CadnaA analysis was also performed. See Detailed Analysis at Location 4.

In accordance with *CEQR Technical Manual* guidelines, the With-Action Condition noise levels at measurement locations 1, 2, and 4 are in the "marginally unacceptable" category.

Detailed analysis for location A, a sensitive receptor that represents worst-case conditions on the Golf Course and golf clubhouse, was not performed. Location A, representative of the Golf Course, would be shielded from on-site vehicular traffic, in part, by intervening structures and existing topography, as noted above. Thus, location A, representative of the Golf Course, is partially shielded from highway noise and With-Action noise levels at location A would be similar to existing noise levels. A PCE calculation was also performed for location A for the replacement golf clubhouse in relation to on-site traffic ~~traveling within the Development Site~~. Conservatively, incremental increases in noise exposure for the golf clubhouse due to incremental onsite traffic circulation would result in a maximum increase of 0.8 dB(A).

Detailed Analysis at Location 4

As noted above, the proportional noise analysis presented in the Draft EIS for project-generated traffic had the potential to result in increases up to 9.5 dB(A) at location 4, which is located at the western (exterior) edge of existing Ring Road. However, this analysis did not take factors such as the relative geometries of, and proximity to, the highway, into account. In addition, as a result of the proposed widening of Ring Road, location 4 would be the western edge of Ring Road (see Figure 17-2 below).

The Proposed Actions would generate sufficient traffic to result in the potential for a significant adverse noise impact to the Park. Therefore, additional noise modeling was conducted between the Draft and Final EIS and an increase in With-Action noise levels of up to 5.6 dB(A) was projected at location 4. As this noise increase exceeds the CEQR noise impact criteria of 3 dB(A), it constitutes a significant adverse noise impact due to mobile sources. This significant adverse mobile source noise impact would occur in the area that is west of the Hutchinson River Expressway and within approximately 100 feet exterior (west) to Ring Road (the noise-sensitive area represented by measurement location 4).

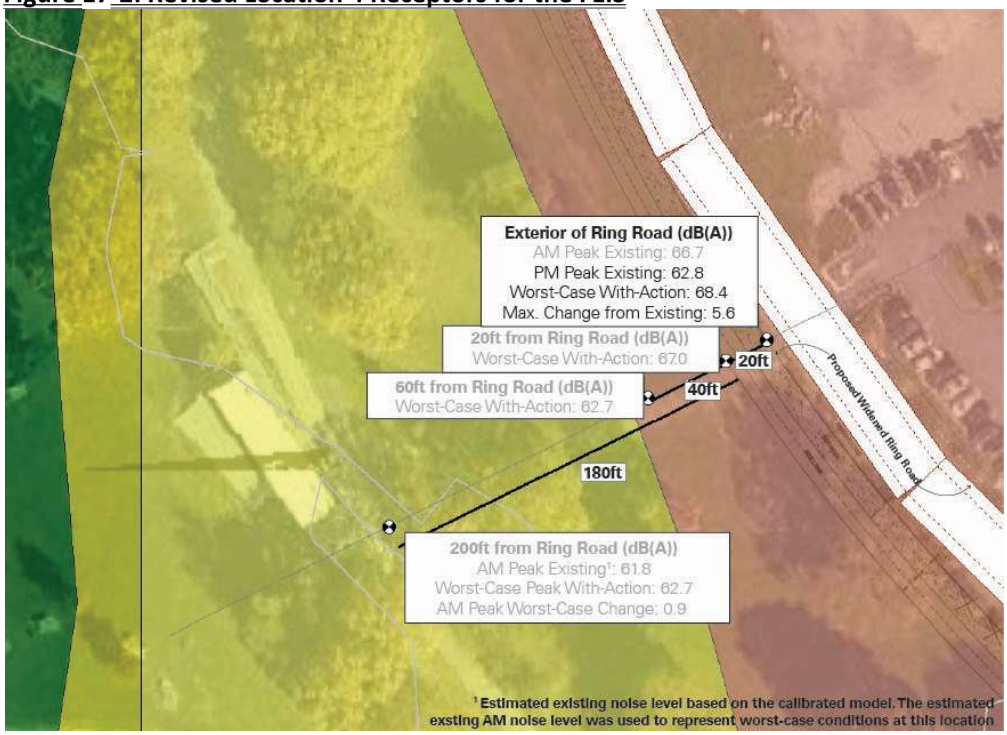
Based on the CadnaA modeling, noise levels at location 4 are projected to be up to 68.4 dB(A), which represents an increase of up to 5.6 dB(A) over the 62.8 dB(A) weekday PM peak hour in the existing condition. Based on this analysis, the increment over the No-Action Condition will be no more than 5.6 dB(A). As this noise increase exceeds the CEQR

noise impact criteria of 3 dB(A), it constitutes a significant adverse noise impact due to mobile sources.

Traffic volumes and noise are projected to increase between the existing and No-Action conditions across all peak hours because of background growth. Therefore, the difference between No-Action and With-Action Condition noise levels cannot exceed 5.6 dB(A). Thus, the project-generated noise along Ring Road would have the potential to exceed the 3 dB(A) impact threshold.

However, at a distance of approximately 100 feet from Ring Road, noise levels at the Park are projected to increase by less than 3 dB(A). This is further analyzed in Section 17.7 below.

Figure 17-2: Revised Location 4 Receptors for the FEIS



1.Note that the AM hours in grey do not represent the worst-case weekday PM scenario.
Note: This graphic was added for the FEIS.

17.7 Assessment

Attenuation Requirements

As shown in Table 17-2, the *CEQR Technical Manual* has set noise attenuation values for building facades based on exterior L_{10} and L_{dn} noise levels that depend on the controlling noise source. These recommended noise attenuation values are designed to maintain interior L_{10} noise levels of 45 dB(A) for residential, community facilities, and hotel guestrooms, and 50 dB(A) for commercial office uses.

The controlling noise source in all locations was vehicular traffic and therefore the applicable noise descriptor was the L_{10} noise level.

Table 17-6 lists the attenuation values needed at each new building façade within the Development Site (i.e., facades of the Proposed Facility) to achieve the CEQR-

recommended interior noise levels. The attenuation of a composite structure is a function of the attenuation provided by each of its component parts. Normally, a building façade consists of a wall, glazing, and any vents or louvers associated with the building mechanical systems in various ratios of area. ~~A~~The proposed building will be designed to include acoustically-rated windows and an alternate means of ventilation (i.e., air conditioning) that does not degrade the acoustical performance of the façade.

Table 17-6: CEQR Building Attenuation Analysis Summary

Building Façade	Associated Location[2]	Maximum With-Action -L_{10} (dB(A))	Attenuation Requirement (dB(A))
West	1 and 2	78.9	35 dB(A)[1]
East	3	63.6	None
North	1 and 2	78.9	35 dB(A)[1]
South	1 and 2	78.9	35 dB(A)[1]

[1] Attenuation requirement of 35 dB(A) within 150-feet of Hutchinson River Expressway and 33 dB(A) for the remaining façades

[2] Location 4 is not associated with the requirement for any of the facades because it is located in the western portion of the Park.

~~As noted above, the~~The golf clubhouse is an existing use that would be replaced on-site. Therefore, the relocation of the golf clubhouse would not introduce new noise-sensitive uses but would change the location of an existing noise-sensitive use on the Development Site. L_{eq} noise levels at the replacement golf clubhouse are not projected to increase by more than 3 dB(A) over No-Action noise levels at the existing golf clubhouse. Thus, attenuation is not required at the replacement golf clubhouse.

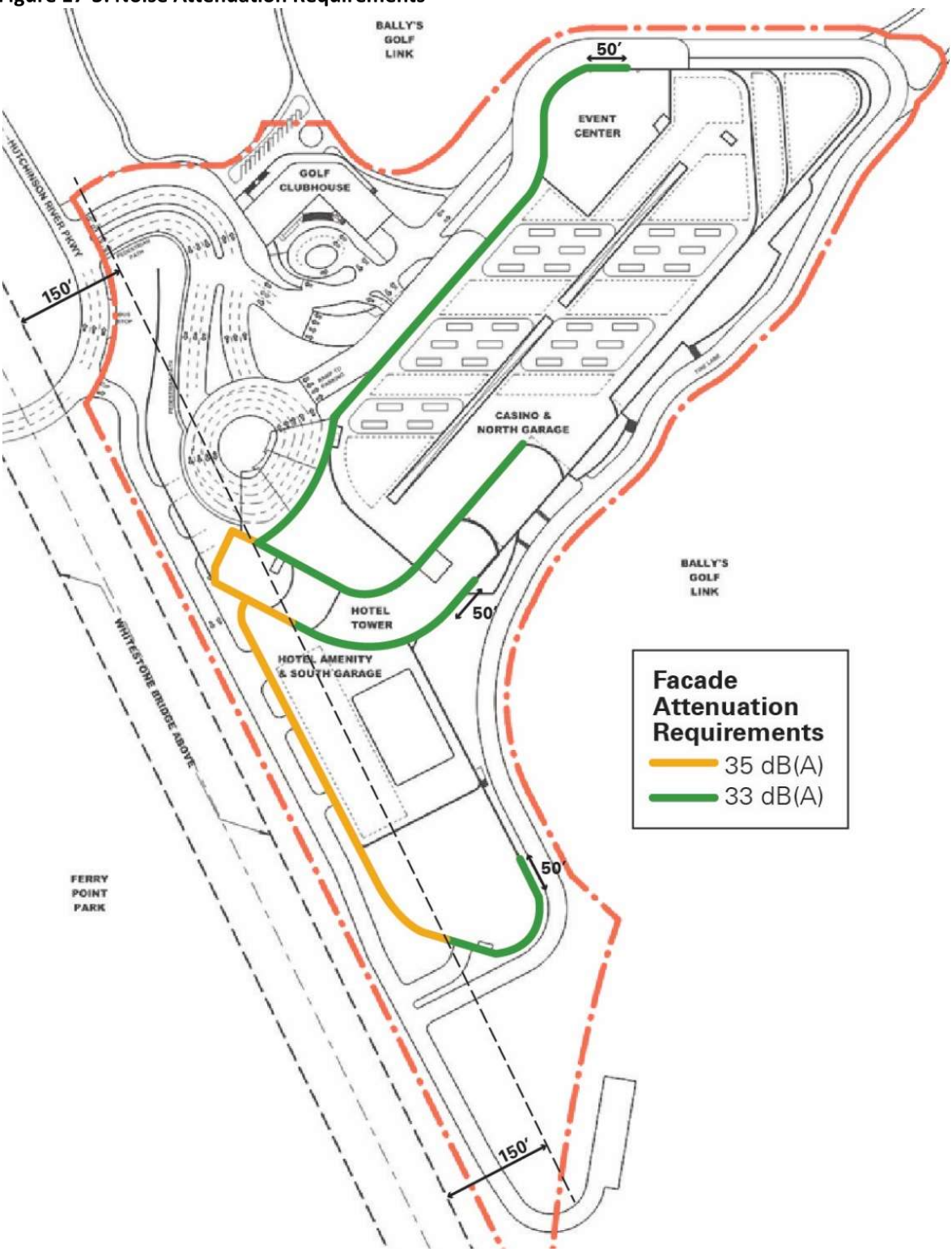
Given the proximity of the Proposed Facility to the Hutchinson River Expressway, noise monitoring locations 1, 2, and 3 represent the maximum With-Action L_{10} noise level of 78.9 dB(A) for the north, west, and south façades.

Based on Equation 19-3 from the *CEQR Technical Manual*, the sound level at a reference distance can be projected to a receptor's distance. The maximum With-Action L_{10} of 78.9 dB(A) is assessed at 100 feet from the Hutchinson River Expressway. At a distance of 150 from the Expressway, the predicted noise level decreases to 76.4 dB(A), which requires 33 dB(A) of attenuation.

Based on the projected noise levels, a 35 dB(A) window/wall attenuation would be required for façade portions with a direct line of sight that are located within 150 feet of the Hutchinson River Expressway and a 33 dB(A) window/wall attenuation would be required for façade portions with a direct line of sight that are located beyond 150 feet of the Hutchinson River Expressway.

Figure 17-3~~Figure 17-2~~ shows the location of required attenuation.

Figure 17-3: Noise Attenuation Requirements



Notes:
Attenuation values are for residential, community facility, or hotel ~~uses~~. Commercial ~~uses~~use would require ~~an~~ attenuation ~~of~~ 5 ~~dBA~~dB(A) less.
On facades where no attenuation is required but adjoin a façade that has an attenuation requirement, the attenuation is wrapped around for the first 50 feet of façade that does not warrant attenuation.

For the Proposed Facility, east-facing façades, or façades that are shielded from the Hutchinson River Expressway, will have no requirement since measurement location 3, which was shielded, is projected to have a maximum With-Action L_{10} value of 63.6 dB(A), a noise level that is within the *marginally acceptable* category per CEQR. For east-facing facades or facades that are shielded from the Hutchinson River Expressway, standard building materials would be adequate to meet the *CEQR Technical Manual*-recommended interior L_{eq} noise levels of 45 dB(A) or lower for residential uses, and 50 dB(A) or lower for commercial office uses.

An E-Designation **(E-824)** will be placed on the Development Site (Block 5622, Lot 1) with the following requirements:

To ensure interior L_{10} noise levels of 45 dB(A) or lower for the proposed hotel (under a closed-window condition), a window/wall attenuation with the following minimum performance will be required:

- **35 dB(A) for facades that have a line of sight and are within 150 feet of the Hutchinson River Expressway.**
- **33 dB(A) for facades that have a line of sight and are beyond 150 feet of the Hutchinson River Expressway.**

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 proposed building facades would be designed to provide an OITC rating that is greater than or equal to those outlined in the proposed E-Designation. The New York City Mayor's Office of Environmental Remediation (OER) would provide oversight to ensure the implementation of the E-Designation. By designing and constructing the buildings to provide a composite OITC rating greater than or equal to the E-Designation's requirements, sufficient attenuation would be provided to achieve the CEQR-recommended interior noise level for hotel uses. The Proposed Actions would ensure the specific attenuation requirements for noise-sensitive uses through the E-Designation, thereby providing appropriate noise protections under the With-Action Condition. With this E-Designation in place, no significant adverse noise impacts would occur on the Proposed Development.

Project-Generated Noise Affecting Ferry Point Park

The projected With-Action Condition noise levels will increase the maximum L_{eq} noise level at the Park (in the noise-sensitive area represented by measurement location 4) from 68.2~~6~~ to 72.4~~5~~ dB(A) depending on the peak hour, as shown in Table 17-5. During daytime hours, nuisance levels for noise are generally considered to be more than 70 to 75 dB(A) outdoors, per the *CEQR Technical Manual*. The With-Action Condition noise levels would not exceed the upper range of CEQR nuisance levels.

In the area of the Park that is west of the Hutchinson River Expressway and immediate to the exterior of Ring Road, the preliminary (proportional) modeling projected project-generated traffic would result in peak hour increases between 3.6~~3.9~~ and ~~9.6~~9.5 dB(A) over the projected No-Action Condition during the same peak period (the weekday PM peak period). Accordingly, ~~the Proposed Actions have the potential to result in a significant adverse mobile source noise impact at locations represented by measurement~~a detailed analysis utilizing~~,~~ the CadnaA modeling program was warranted to more accurately model potential noise at location 4, which represents the area of the Park that is west of the Hutchinson River Expressway and immediate to Ring Road.

~~This significant adverse noise impact may be mitigated by one or more potential mitigation measures discussed in Chapter 22 of this EIS, "Mitigation."~~

As noted above, the CadnaA model – which accounts for nearby noise sources, traffic speeds, and the spatial relationship between receptors and receivers – projects noise levels at the Park of up to 68.4 dB(A), which represents an increase of up to 5.6 dB(A) over the 62.8 dB(A) weekday PM peak hour in the existing condition. Based on this analysis, the increment over the No-Action Condition will be no more than 5.6 dB(A). Traffic volumes and noise are projected to increase between the existing and No-Action conditions across all peak hours because of background growth. Therefore, the difference between No-Action and With-Action condition noise levels cannot exceed 4.1 dB(A). Thus, the project-generated noise along Ring Road would have the potential to marginally exceed the 3 dB(A) impact threshold for the weekday PM peak hour. Accordingly, the Proposed Actions has the potential to result in a significant adverse mobile source noise impact at measurement location 4 because the L_{eq} noise increase would be more than 3 dB(A). However, the projected PM peak noise level of 68.4 dB(A) is within 3 dB(A) of the existing maximum noise condition measured at the Park (66.8 dB(A) during the AM peak).

The CadnaA model showed that at a distance of approximately 100 feet from the proposed widened Ring Road, noise increases would be less than 3 dB(A). Based on field visits to the Park, users were observed to passively recreate more than approximately 100 feet to the west from the proposed western edge of Ring Road and generally in the designated picnic area west of the comfort station where there are public grills and picnic tables (refer to Figure 17-2). The western edge of the proposed widened Ring Road (analysis location 4) is about 180 feet from the Park's comfort station and about 265 feet from the nearest picnic area within the west side of the Park.

The total area within approximately 100 feet of Ring Road represents approximately one percent of the 413.8-acre Park. As described in Chapter 5 of this EIS, "Open Space," users in the limited area that are projected to experience a greater than 3 dB(A) increase would continue to have access to other areas of the Park for both passive and active recreation where noise levels would not exceed a 3 dB(A) increase. However, the maximum projected noise level (68.4 dB(A) PM peak) is not projected to increase by more than 3 dB(A) over the maximum existing condition (66.8 dB(A) during the AM peak).

Mechanical Systems

Building mechanical systems, such as heating, ventilation, and air conditioning (HVAC), would be designed and constructed to meet all applicable noise regulations (e.g., Subchapter 5, §24-227 of the New York City Noise Control Code and the New York City Department of Buildings Mechanical Code). By adhering to the requirements of these noise regulations, mechanical equipment introduced by the Proposed Development would not result in a significant increase in ambient noise levels.