

**A. INTRODUCTION**

Typically, to assess potential noise impacts from a project both stationary and mobile noise sources need to be considered. Stationary sources include rooftop equipment such as emergency generators, cooling towers and other mechanical equipment; mobile sources include traffic generated by the proposed project. With respect to stationary sources, the rooftop mechanical equipment for the proposed project would be designed to meet all applicable noise regulations, and to avoid producing levels that would result in any significant adverse noise impacts. With respect to mobile sources, the proposed project would not generate enough traffic to result in a doubling of passenger car equivalents (PCEs) on any streets affected by the project, and would therefore not increase ambient noise levels by 3 dBA or more.

**PRINCIPAL CONCLUSIONS**

The proposed project would not result in any significant adverse stationary or mobile source noise impacts. In addition, noise levels in the proposed project’s new publicly-accessible open space areas, principally from vehicular traffic on the adjacent streets, would not result in a significant noise impact.

**B. NOISE STANDARDS AND CRITERIA**

**NEW YORK CEQR NOISE STANDARDS**

As shown in Table 19-1, the *New York City Environmental Quality Review (CEQR) Technical Manual* defines attenuation requirements for buildings based on exterior noise levels. Recommended noise attenuation values for buildings are designed to maintain interior noise levels of 45 dBA or lower for residential uses, and are determined based on exterior  $L_{10(1)}$  noise levels.

**Table 19-1**  
**Required Attenuation Values to Achieve Acceptable Interior Noise Levels**

	<b>Marginally Acceptable</b>	<b>Marginally Unacceptable</b>		<b>Clearly Unacceptable</b>		
Noise Level With Proposed Action	$65 < L_{10} \leq 70$	$70 < L_{10} \leq 75$	$75 < L_{10} \leq 80$	$80 < L_{10} \leq 85$	$85 < L_{10} \leq 90$	$90 < L_{10} \leq 95$
Attenuation*	25 dB(A)	(I) 30 dB(A)	(II) 35 dB(A)	(I) 40 dB(A)	(II) 45 dB(A)	(III) 50 dB(A)
<b>Note:</b>	* 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.					
<b>Source:</b>	New York City Department of Environmental Protection					

As shown in Table 19-2, the *New York City CEQR Technical Manual* recommends outdoor noise levels for open space areas that would be created on-site as part of the proposed project. Recommended noise levels for open space areas requiring serenity and quiet are 55 dBA  $L_{10(1)}$ .

**Table 19-2  
Noise Exposure Guidelines For Use in City Environmental Impact Review<sup>1</sup>**

Receptor Type	Time Period	Acceptable General External Exposure	Airport <sup>3</sup> Exposure	Marginally Acceptable General External Exposure	Airport <sup>3</sup> Exposure	Marginally Unacceptable General External Exposure	Airport <sup>3</sup> Exposure	Clearly Unacceptable General External Exposure	Airport <sup>3</sup> Exposure
Outdoor area requiring serenity and quiet <sup>2</sup>		$L_{10} \leq 55$ dBA	----- $L_{dn} \leq 60$ dBA -----	NA	NA	NA	NA	NA	NA
Hospital, nursing home		$L_{10} \leq 55$ dBA		$55 < L_{10} \leq 65$ dBA	----- $60 < L_{dn} \leq 65$ dBA -----	$65 < L_{10} \leq 80$ dBA	(i) $65 < L_{dn} \leq 70$ dBA, (ii) $70 \leq L_{dn}$	$L_{10} > 80$ dBA	----- $L_{dn} \leq 75$ 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 <sup>4</sup>	Note 4	Note 4	Note 4	Note 4		Note 4			

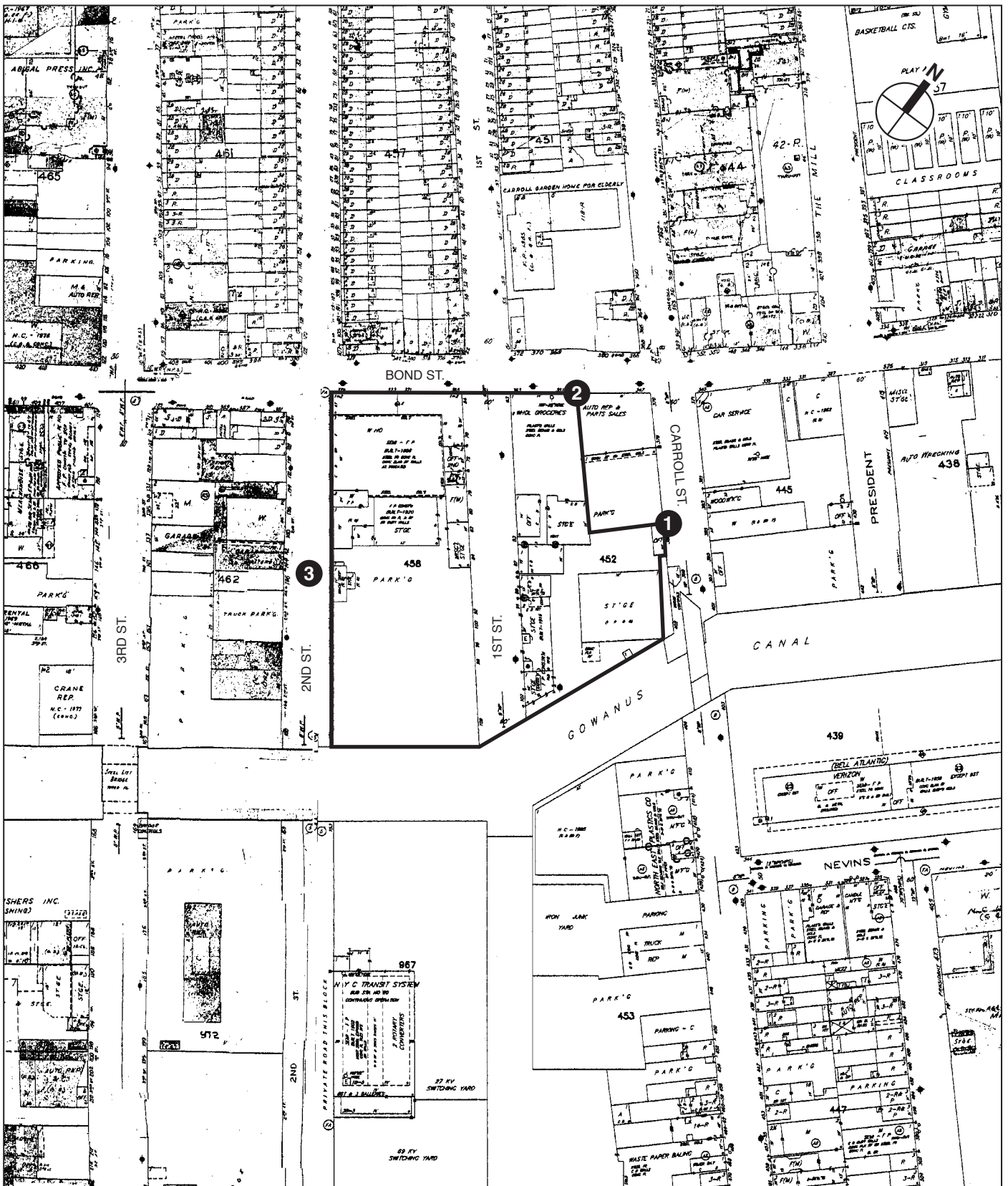
**Notes:**  
 (i) In addition, any new activity shall not increase the ambient noise level by 3 dBA or more; (ii) *CEQR Technical Manual* noise criteria for train noise are similar to the above aircraft noise standards: the noise category for train noise is found by taking the  $L_{dn}$  value for such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

**Table Notes:**  
<sup>1</sup> Measurements and projections of noise exposures are to be made at appropriate heights above site boundaries as given by American National Standards Institute (ANSI) Standards; all values are for the worst hour in the time period.  
<sup>2</sup> Tracts of land where serenity and quiet are extraordinarily important and serve an important public need, and where the preservation of these qualities is essential for the area to serve its intended purpose. Such areas could include amphitheatres, 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.  
<sup>3</sup> 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.  
<sup>4</sup> External Noise Exposure standards for industrial areas of sounds produced by industrial operations other than operating motor vehicles or other transportation facilities are spelled out in the New York City Zoning Resolution, Sections 42-20 and 42-21. The referenced standards apply to M1, M2, and M3 manufacturing districts and to adjoining residence districts (performance standards are octave band standards).

**Source:** New York City Department of Environmental Protection (adopted policy 1983).

### C. EXISTING NOISE LEVELS

Existing noise levels were measured at three receptors sites located adjacent to the project site, as shown in Figure 19-1. The measurements were conducted on May 10 and 11, 2006, for 20-minute periods during the three weekday peak periods: AM (7:30–9:00 AM), midday (MD) (12:00–2:00 PM), and PM (4:30–6:00 PM). Receptor Site 1 was located on Carroll Street between Bond Street and the Gowanus Canal, Receptor Site 2 was located on Bond Street between 1st and Carroll Streets, and Receptor Site 3 was located on 2nd Street between Bond Street and the Gowanus Canal. The monitoring results are shown in Table 19-3.



Project Site Boundary

1 Noise Receptor Site



**Table 19-3**  
**Existing Noise Levels at Receptor Sites 1, 2, and 3 (in dBA)**

Receptor Site	Measurement Location	Time	L <sub>eq(1)</sub>	L <sub>1</sub>	L <sub>10</sub>	L <sub>50</sub>	L <sub>90</sub>
1	Carroll Street between Bond Street and the Gowanus Canal	AM	61.5	69.4	65.0	58.8	54.4
		MD	60.0	68.6	62.0	58.0	56.2
		PM	59.2	69.6	63.4	53.8	51.2
2	Bond Street between 1st Street and Carroll Street	AM	68.0	78.8	71.0	62.2	52.8
		MD	65.7	78.6	67.2	57.6	51.6
		PM	64.1	74.4	68.0	58.2	53.0
3	2nd Street between Bond Street and the Gowanus Canal	AM	59.2	69.4	61.0	53.6	51.2
		MD	60.0	72.4	61.8	52.2	49.4
		PM	58.2	65.4	61.0	53.2	50.0

**Note:** Field measurements were performed by AKRF, Inc. on May 10th and May 11th, 2006.

The instrumentation used for the 20-minute noise measurements was a Brüel & Kjær Type 4189 ½-inch microphone connected to a Brüel & Kjær Model 2260 Type 1 (according to ANSI Standard S1.4-1983) sound level meter. This assembly was mounted at a height of 5 feet above the ground surface on a tripod and at least 6 feet away from any large sound-reflecting surface to avoid major interference with sound propagation. The meter was calibrated before and after readings with a Brüel & Kjær Type 4231 sound-level calibrator using the appropriate adaptor. Measurements at each location were made on the A-scale (dBA). The data were digitally recorded by the sound level meter and displayed at the end of the measurement period in units of dBA. Measured quantities included L<sub>eq</sub>, L<sub>1</sub>, L<sub>10</sub>, L<sub>50</sub>, and L<sub>90</sub>. A windscreen was used during all sound measurements except for calibration. All measurement procedures conformed with the requirements of ANSI Standard S1.13-2005.

At all monitoring sites, traffic noise was the dominant noise source. Measured noise levels are moderate and reflect the level of vehicular activity on the adjacent streets. In terms of the CEQR criteria, the existing noise levels at Receptor Site 2 are in the “marginally unacceptable” category, and the existing noise levels at Receptor Sites 1 and 3 are in the “acceptable” category.

## D. NOISE ATTENUATION MEASURES

As shown in Table 19-1, the *New York City CEQR Technical Manual* has set noise attenuation quantities for buildings, based on exterior L<sub>10(1)</sub> noise levels, and in order to maintain interior noise levels of 45 dBA or lower for residential uses. Based on the field measurements of existing noise levels shown in Table 19-3, 26 dBA of window/wall would be required to maintain an interior noise level of 45 dBA. The proposed project’s building design includes the use of air conditioning (i.e., alternate means of ventilation) and well sealed double-glazed windows. These measures would provide the required window/wall attenuation for all facades of the building.

In addition, the building mechanical system (i.e., heating, ventilation, and air conditioning systems) would be designed to meet all applicable noise regulations and to avoid producing levels that would result in any significant increase in ambient noise levels.

## **E. NOISE LEVELS IN THE PROPOSED PROJECT NEWLY CREATED PUBLICLY-ACCESSIBLE OPEN SPACES**

Based on the monitoring results presented in Table 19-3, noise levels within the proposed publicly-accessible open space areas would be above the *CEQR Technical Manual* recommended noise exposure guideline of 55 dBA  $L_{10(1)}$  (see Table 19-2). One-hour  $L_{10}$  noise levels at open space areas adjacent to Carroll Street would be in the mid to low 60 dBA range, and one-hour  $L_{10}$  noise levels at open space areas adjacent to 2nd Street would be in the low 60 dBA range. These moderate noise levels would result principally from the noise generated by vehicular traffic on the adjacent streets. One-hour  $L_{10}$  noise levels at the open spaces would decrease as the distance from adjacent roadways increases.

Although noise levels would be above the 55 dBA  $L_{10(1)}$  guideline noise level, these noise levels would be comparable to noise levels in a number of New York City open space areas that are also located adjacent to roadways, including Hudson River Park, Riverside Park, Bryant Park, Fort Greene Park, and other urban open space areas. The 55 dBA  $L_{10(1)}$  guideline is a worthwhile goal for outdoor areas. However, due to the level of activity in most New York City open spaces and parks (except for areas far away from traffic and other typical urban activities), this relatively low noise level is often not achieved. There are no additional practical and feasible measures that could be implemented to reduce noise levels to below the 55 dBA  $L_{10(1)}$  guideline within the new open space areas that would be created on-site as part of the proposed actions. Noise levels in the proposed projects' new publicly-accessible open space areas, while exceeding the 55 dBA  $L_{10(1)}$  CEQR guideline value, would not result in a significant noise impact. \*