

The screening methodology in the *CEQR Technical Manual* was used for the proposed size of the residential and commercial areas in square feet. It is anticipated that each of the five main buildings would have its own HVAC systems. For buildings B, C, and D, it was determined that there would not be any significant stationary source air quality impacts because at the nearest distances to buildings of a similar or greater height, these proposed developments would be below the maximum permitted sizes shown in Figure 3Q-9 and Figure 3Q-10 of the *CEQR Technical Manual*. For building A, the nearest building of a similar or greater height would be proposed building B. To ensure no significant air quality impacts would occur, the HVAC stack for building A would need to be at least 181 feet high or at least 99 feet away from any operable windows or air intakes on proposed building B based on Figure 3Q-9 of the *CEQR Technical Manual*. For building E, the nearest building of a similar or greater height would be proposed building C. To ensure no significant air quality impacts would occur, the HVAC stack would need to be at least 50 feet away from any operable windows or air intakes on proposed building C based on Figure 3Q-10 of *CEQR Technical Manual*.

At the roof of the plaza level connecting the tower buildings, retail tenants would have individual heating and cooling systems vented at various locations. Using Figure 3Q-10 of the *CEQR Technical Manual* and a minimum distance of 30 feet to the nearest receptor, no significant adverse impact would result for proposed retail developments up to approximately 40,000 square feet. Since this is larger than the largest planned individual retail space (approximately 30,000 square feet), no significant adverse impact would occur from the proposed project's HVAC emissions with this restriction.

Therefore, to preclude the potential for significant adverse air quality impacts from HVAC emissions, an E-designation would be incorporated for the proposed action. The text of the E-designations is as follows:

Block 4978, Lot 25

Any new development on this property must ensure that the heating, ventilating and air conditioning stack(s) utilize natural gas, to avoid any potential significant air quality impacts.

For the proposed development located adjacent to the lot lines facing 37th Avenue and 138th Street, the heating, ventilating and air conditioning stack(s) must be a minimum of 181 feet in height above local grade, or should be located no more than 202 feet from the lot line facing 138th Street, to avoid any potential significant air quality impacts.

For the proposed development located adjacent to the lot lines facing 39th Avenue and 138th Street, the heating, ventilating and air conditioning stack(s) should be located no more than 233 feet from the lot line facing 138th Street to avoid any potential significant air quality impacts.

Fossil fuel-fired heating, ventilating and air conditioning stack(s) associated with retail developments should be located no less than 30 feet from any operable windows or air intakes of an equal or greater height to avoid any significant adverse air quality impacts.

MACEDONIA PLAZA

Block 4978, Lot 46 and portion of Lot 25

The primary stationary source of air pollutants associated with the proposed Macedonia Plaza building would be emissions from the combustion of natural gas and fuel oil by HVAC

equipment. The primary pollutant of concern when burning natural gas is NO₂, and when burning fuel oil, SO₂.

For the proposed Macedonia Plaza building, the nearest building of a similar or greater height was determined to be the proposed building B on the same block. To avoid any significant impacts, HVAC exhaust stack(s) would need to be placed at least 98 feet from any operable windows or air intakes on building B when firing fuel oil (No. 2 or No. 4 oil), and at least 59 feet when firing natural gas. These restrictions are considered feasible based on the building configuration.

To avoid potential significant adverse impacts from the HVAC systems associated with the proposed residential building, the LDA between HPD and with parties as determined by HPD, would include the following requirements for the proposed project:

Block 4978, Lot 46 and portion of Lot 25

For the proposed development located adjacent to the lot lines facing 37th Avenue and Union Street, the heating, ventilating and air conditioning stack(s) should be located no more than 86 feet from the lot line facing Union Street when burning fuel oil, and no more than 125 feet from the lot line facing Union Street when burning natural gas, to avoid any potential significant air quality impacts.

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**Table 17-9
2013 Build Noise Levels (in dBA)**

Site	Day	Time	2013 No Build Leq(1)	2013 Build Leq(1)	Change
1	Weekday	AM	63.3	61.1	-2.2
	Weekday	PM	63.1	61.4	-1.7
	Weekend	MD	64.0	62.0	-2.0
2	Weekday	AM	72.8	72.5	-0.3
	Weekday	PM	72.1	72.0	-0.1
	Weekend	MD	70.0	69.7	-0.3
3	Weekday	AM	62.2	62.8	0.6
	Weekday	PM	65.7	66.7	1.0
	Weekend	MD	63.9	65.5	1.6
4	Weekday	AM	69.4	69.1	-0.3
	Weekday	PM	69.7	69.0	-0.7
	Weekend	MD	66.8	65.7	-1.1
5	Weekday	AM	69.5	69.2	-0.3
	Weekday	PM	69.4	69.4	0.0
	Weekend	MD	67.6	67.8	0.2
6	Weekday	AM	66.8	67.3	0.5
	Weekday	PM	70.1	72.8	2.7
	Weekend	MD	65.9	68.3	2.4

ATTENUATION REQUIREMENTS

As shown in Table 17-6, the *CEQR Technical Manual* has set noise attenuation requirements for buildings based on exterior $L_{10(1)}$ noise levels. Recommended noise attenuation values for buildings are designed to maintain interior noise levels of 45 dBA or lower for residential use and 50 dBA or lower for commercial use.

Table 17-10 shows the highest calculated $L_{10(1)}$ noise levels (for the three analysis time periods) for noise receptors within the project site and rezoning area and the building attenuation that would be required to achieve acceptable interior noise levels at each location. The provision for providing sufficient building attenuation for the Flushing Commons project site would be mandated by placing an E-designation on the Flushing Commons project site and rezoning area—Block 4978, p/o Lot 25. The text of the E-designation is as follows:

In order to ensure an acceptable interior noise environment, any future residential, community facility, and/or commercial uses must be designed to provide a closed window condition of at least 30 dBA of window/wall attenuation on the west and south facades, and at least 25 dBA of window/wall attenuation on the north façade in order to maintain an interior ($L_{10(1)}$) noise level of 45 dBA. In order to maintain a closed-window attenuation, an alternate means of ventilation must also be provided. Alternate means of ventilation include, but are not limited to, central air conditioning or air conditioning sleeves containing air conditioners or fans approved by the United States Department of Housing and Urban Development (HUD).

Table 17-10
Minimum Building Attenuation to Comply with CEQR Requirements

Site	Maximum Build $L_{10(1)}$ (dBA)	Required Building Attenuation (dBA)
2	75.6	35
3	67.9	25
4	71.0	30
6	75.1	30

Notes: The required attenuation figures assume a residential use. Required attenuation would be 5 dBA less for commercial uses.

The design of these buildings would include the use of well-sealed, double-glazed windows and central air conditioning (i.e., an alternate means of ventilation). With these measures, the window/wall attenuation would provide at least 35 dBA for all façades of each building, which would provide sufficient attenuation to achieve the CEQR requirements.

The provision for providing sufficient building attenuation for the Macedonia Plaza project site, Block 4978, p/o Lot 25, would be incorporated into the Land Disposition Agreement (LDA) between HPD and a developer/sponsor selected by HPD to redevelop the site. Noise receptor location 2 was used to determine the window-wall attenuation for the Macedonia Plaza site. In order to ensure an acceptable interior noise environment, any future residential or community facility development must be designed to provide a closed window condition of at least 31 dBA window/wall attenuation in order to maintain an interior ($L_{10(1)}$) noise level of 45 dBA. In order to maintain a closed-window attenuation, an alternate means of ventilation must also be provided. Alternate means of ventilation include, but are not limited to, central air conditioning or air conditioning sleeves containing air conditioners. Commercial developments would be required to provide 5dBA less than residential and community facility developments.

With these measures, the window/wall attenuation would provide at least 31 dBA for all façades of each building, which would provide sufficient attenuation to achieve the CEQR requirements.

This analysis was examined in considerations of the traffic analysis of the Modified Two-Way configuration (see Appendix D) and the new proposal would not change the conclusion of no significant adverse noise impacts or result in changes to the building attenuation requirements. *