## A. INTRODUCTION

The potential for air quality impacts from the proposed 53 West 53rd Street project is examined in this chapter. Air quality impacts can be either direct or indirect. Direct impacts are impacts that result from emissions generated by stationary sources at a development site, such as emissions from on-site fuel combustion for heat and hot water systems. Indirect impacts are impacts that are caused by emissions from on-road vehicle trips generated by a project or other changes to future traffic conditions due to a project. Indirect impacts can also consist of impacts on a proposed project caused by emissions from nearby existing stationary sources.

The proposed project's heat and hot water needs would be met through a connection to central steam, while cooling would be provided by electric chillers. Therefore, there would be no direct emissions from the proposed project, and there is no potential for direct impacts.

The proposed project is not expected to significantly alter traffic conditions. The maximum hourly incremental traffic from the proposed project would not exceed the *City Environmental Quality Review* (*CEQR) Technical Manual* air quality screening threshold of 75 peak hour trips at nearby intersections. Projects that generate fewer than 75 peak hour trips do not have the potential to result in significant adverse mobile source impacts. Therefore, a quantified assessment of on-street mobile source emissions is not warranted

The potential impacts on the proposed project from fossil-fuel fired heat and hot water systems servicing large existing buildings in the study area were assessed. Based on this assessment, there would be no impacts on the proposed project from existing buildings in the study area.

## B. POLLUTANTS FOR ANALYSIS

Ambient air quality is affected by air pollutants produced by both motor vehicles and stationary sources. Emissions from motor vehicles are referred to as mobile source emissions, while emissions from fixed facilities are referred to as stationary source emissions. Ambient concentrations of carbon monoxide (CO) are predominantly influenced by mobile source emissions. Particulate matter (PM), volatile organic compounds (VOCs), and nitrogen oxides (NO and $NO_2$, collectively referred to as $NO_x$) are emitted from both mobile and stationary sources. Fine PM is also formed when emissions of $NO_x$, sulfur oxides ($SO_x$), ammonia, organic compounds, and other gases react or condense in the atmosphere. Emissions of sulfur dioxide ($SO_2$) are associated mainly with stationary sources, and sources utilizing non-road diesel fuel, such as diesel trains, marine engines, and non-road vehicles (e.g., construction engines). On-road diesel vehicles currently contribute very little to $SO_2$ emissions since the sulfur content of on-road diesel fuel, which is federally regulated, is extremely low. Ozone is formed in the atmosphere by complex photochemical processes that include $NO_x$ and VOCs.

## CARBON MONOXIDE

CO, a colorless and odorless gas, is produced in the urban environment primarily by the incomplete combustion of gasoline and other fossil fuels. In urban areas, approximately 80 to 90 percent of CO emissions are from motor vehicles. Since CO is a reactive gas that does not persist in the atmosphere, CO concentrations can vary greatly over relatively short distances; elevated concentrations are usually limited to locations near crowded intersections, heavily traveled and congested roadways, parking lots, and garages. Consequently, CO concentrations must be predicted on a local, or microscale, basis.

The proposed project is not expected to significantly alter traffic conditions. Since the proposed project would result in fewer new peak hour vehicle trips than the *CEQR Technical Manual* screening threshold of 75 trips at nearby intersections in the study area, a quantified assessment of on-street CO emissions is not warranted.

## NITROGEN OXIDES, VOCS, AND OZONE

$NO_x$ are of principal concern because of their role, together with VOCs, as precursors in the formation of ozone. Ozone is formed through a series of reactions that take place in the atmosphere in the presence of sunlight. Because the reactions are slow, and occur as the pollutants are advected downwind, elevated ozone levels are often found many miles from sources of the precursor pollutants. The effects of $NO_x$ and VOC emissions from all sources are therefore generally examined on a regional basis. The contribution of any action or project to regional emissions of these pollutants would include any added stationary or mobile source emissions; the change in regional mobile source emissions of these pollutants would be related to the total vehicle miles traveled added or subtracted on various roadway types throughout the New York metropolitan area, which is designated as a moderate non-attainment area for ozone by the U.S. Environmental Protection Agency (EPA).

The proposed project would not have a significant effect on the overall volume of vehicular travel in the metropolitan area; therefore, no measurable impact on regional $NO_x$ emissions or on ozone levels is predicted. An analysis of project-related emissions of these pollutants from mobile sources is therefore not warranted.

In addition to being a precursor to the formation of ozone, $NO_2$ (one component of $NO_x$) is also a regulated pollutant. Since $NO_2$ is mostly formed from the transformation of NO in the atmosphere, it is mostly of concern farther downwind from large stationary point sources and is not a local concern from mobile sources. ($NO_x$ emissions from fuel combustion consist of approximately 90 percent NO and 10 percent $NO_2$ at the source.) The proposed project would not involve the addition of any new significant sources of $NO_2$ emissions. Therefore, an analysis of potential local impacts on $NO_2$ concentrations is not warranted.

## LEAD

Airborne lead emissions are principally associated with industrial sources and motor vehicles that use gasoline containing lead additives. Most U.S. vehicles produced since 1975, and all produced after 1980, are designed to use unleaded fuel. As these newer vehicles have replaced older ones, motor vehicle related lead emissions have decreased. As a result, ambient concentrations of lead have declined significantly. Nationally, the average measured atmospheric lead level in 1985 was only about one-quarter the level in 1975.

In 1985, EPA announced new rules that drastically reduced the amount of lead permitted in leaded gasoline. The maximum allowable lead level in leaded gasoline was reduced from the previous limit of 1.1 to 0.5 grams per gallon effective July 1, 1985, and to 0.1 grams per gallon effective January 1, 1986. Monitoring results indicate that this action has been effective in significantly reducing atmospheric lead concentrations. Effective January 1, 1996, the Clean Air Act (CAA) banned the sale of the small amount of leaded fuel that was still available in some parts of the country for use in on-road vehicles, concluding the 25-year effort to phase out lead in gasoline. Even at locations in the New York City area where traffic volumes are very high, atmospheric lead concentrations are far below the 3-month average national standard of 1.5 micrograms per cubic meter ($\mu g/m^3$), and are likely to be lower than the proposed monthly standard of 0.1 to 0.3 $\mu g/m^3$.

No significant sources of lead are associated with the proposed project and, therefore, an analysis of the potential impacts from lead is not warranted.

## RESPIRABLE PARTICULATE MATTER—$PM_{10}$ AND $PM_{2.5}$

PM is a broad class of air pollutants that includes discrete particles of a wide range of sizes and chemical compositions, as either liquid droplets (aerosols) or solids suspended in the atmosphere. The constituents of PM are both numerous and varied, and they are emitted from a wide variety of sources (both natural and anthropogenic). Natural sources include the condensed and reacted forms of naturally occurring VOCs; salt particles resulting from the evaporation of sea spray; wind-borne pollen, fungi, molds, algae, yeasts, rusts, bacteria, and material from live and decaying plant and animal life; particles eroded from beaches, soil, and rock; and particles emitted from volcanic and geothermal eruptions and from forest fires. Naturally occurring PM is generally greater than 2.5 micrometers in diameter. Major anthropogenic sources include the combustion of fossil fuels (e.g., vehicular exhaust, power generation, boilers, engines, and home heating), chemical and manufacturing processes, all types of construction, agricultural activities, as well as wood-burning stoves and fireplaces. PM also acts as a substrate for the adsorption of other pollutants, often toxic and some likely carcinogenic compounds.

As described below, PM is regulated in two size categories: particles with an aerodynamic diameter of less than or equal to 2.5 micrometers ($PM_{2.5}$) and particles with an aerodynamic diameter of less than or equal to 10 micrometers ($PM_{10}$, which includes $PM_{2.5}$). $PM_{2.5}$ has the ability to reach the lower regions of the respiratory tract, delivering with it other compounds that adsorb to the surfaces of the particles, and is also extremely persistent in the atmosphere. $PM_{2.5}$ is mainly derived from combustion material that has volatilized and then condensed to form primary PM (often soon after the release from an exhaust pipe or stack) or from precursor gases reacting in the atmosphere to form secondary PM.

Diesel-powered vehicles, especially heavy duty trucks and buses, are a significant source of respirable PM, most of which is $PM_{2.5}$; PM concentrations may, consequently, be locally elevated near roadways with high volumes of heavy diesel powered vehicles. Emissions of PM may also occur from the burning of fossil fuels in HVAC systems. The proposed project would not result in any significant increases in truck traffic near the development site or in the region, nor would it use fossil fuels in its HVAC system. Therefore, an analysis of potential impacts from PM is not warranted.

### SULFUR DIOXIDE

$SO_2$ emissions are primarily associated with the combustion of sulfur-containing fuels (oil and coal). Monitored $SO_2$ concentrations in New York City are lower than the national standards. Due to the federal restrictions on the sulfur content in diesel fuel for on-road vehicles, no significant quantities are emitted from vehicular sources. Vehicular sources of $SO_2$ are not significant, and, therefore, an analysis of $SO_2$ from mobile sources is not warranted. The proposed project would not involve the addition of any new stationary sources of $SO_2$ emissions. Therefore, an analysis of potential increases in $SO_2$ emissions is not warranted.

## C. AIR QUALITY REGULATIONS, STANDARDS, AND BENCHMARKS

### NATIONAL AND STATE AIR QUALITY STANDARDS

As required by the CAA, primary and secondary National Ambient Air Quality Standards (NAAQS) have been established for six major air pollutants: CO, $NO_2$, ozone, respirable PM (both $PM_{2.5}$ and $PM_{10}$), $SO_2$, and lead. The primary standards represent levels that are requisite to protect the public health, allowing an adequate margin of safety. The secondary standards are intended to protect the nation's welfare and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the environment. The primary and secondary standards are the same for $NO_2$, ozone, lead, and PM, and there is no secondary standard for CO. The NAAQS are presented in **Table 16-1**. The NAAQS for CO, $NO_2$, and $SO_2$ have also been adopted as the ambient air quality standards for New York State, but are defined on a running 12-month basis rather than for calendar years only. New York State also has standards for total suspended particulate matter (TSP), settleable particles, non-methane hydrocarbons (NMHC), and ozone that correspond to federal standards that have since been revoked or replaced, and for beryllium, fluoride, and hydrogen sulfide ($H_2S$).

EPA has revised the NAAQS for PM, effective December 18, 2006. The revision included lowering the level of the 24-hour $PM_{2.5}$ standard from 65 $\mu g/m^3$ to 35 $\mu g/m^3$ and retaining the level of the annual standard at 15 $\mu g/m^3$. The $PM_{10}$ 24-hour average standard was retained and the annual average $PM_{10}$ standard was revoked. EPA has also revised the 8-hour ozone standard, lowering it from 0.08 to 0.075 parts per million (ppm), effective in May 2008.

### NAAQS ATTAINMENT STATUS AND STATE IMPLEMENTATION PLANS

The CAA, as amended in 1990, defines non-attainment areas (NAAs) as geographic regions that have been designated as not meeting one or more of the NAAQS. When an area is designated as non-attainment by EPA, the state is required to develop and implement a State Implementation Plan (SIP), which delineates how a state plans to achieve air quality that meets the NAAQS under the deadlines established by the CAA.

In 2002, EPA re-designated New York City as in attainment for CO. The CAA requires that a maintenance plan ensure continued compliance with the CO NAAQS for former non-attainment areas. New York City is also committed to implementing site-specific control measures throughout the city to reduce CO levels, should unanticipated localized growth result in elevated CO levels during the maintenance period.

**Table 16-1**
**National Ambient Air Quality Standards (NAAQS)**

| Pollutant | Primary | | Secondary | |
|---|---|---|---|---|
| | ppm | µg/m$^3$ | ppm | µg/m$^3$ |
| **Carbon Monoxide (CO)** | | | | |
| 8-Hour Average [1] | 9 | 10,000 | None | |
| 1-Hour Average [1] | 35 | 40,000 | | |
| **Lead** | | | | |
| 3-Month Average [5] | NA | 1.5 | NA | 1.5 |
| **Nitrogen Dioxide ($NO_2$)** | | | | |
| Annual Average | 0.053 | 100 | 0.053 | 100 |
| **Ozone ($O_3$)** | | | | |
| 8-Hour Average [2] | 0.075 | 150 | 0.075 | 150 |
| **Respirable Particulate Matter ($PM_{10}$)** | | | | |
| 24-Hour Average [1] | NA | 150 | NA | 150 |
| **Fine Respirable Particulate Matter ($PM_{2.5}$)** | | | | |
| Average of 3 Annual Means | NA | 15 | NA | 15 |
| 24-Hour Average [3,4] | NA | 35 | NA | 35 |
| **Sulfur Dioxide ($SO_2$)** | | | | |
| Annual Arithmetic Mean | 0.03 | 80 | NA | NA |
| Maximum 24-Hour Average [1] | 0.14 | 365 | NA | NA |
| Maximum 3-Hour Average [1] | NA | NA | 0.50 | 1,300 |

**Notes:**
ppm – parts per million
µg/m$^3$ – micrograms per cubic meter
NA – not applicable
All annual periods refer to calendar year.
PM concentrations (including lead) are in µg/m$^3$ since ppm is a measure for gas concentrations.
Concentrations of all gaseous pollutants are defined in ppm and approximately equivalent concentrations in µg/m$^3$ are presented.

[1] Not to be exceeded more than once a year.
[2] 3-year average of the annual fourth highest daily maximum 8-hr average concentration. EPA has reduced these standards down from 0.08 ppm, effective May 27, 2008.
[3] Not to be exceeded by the annual 98th percentile when averaged over 3 years.
[4] EPA has reduced these standards down from 65 µg/m$^3$, effective December 18, 2006.
[5] EPA has proposed to lower these standards to a range of 0.1 – 0.3 µg/m$^3$, which is expected to be finalized by September 15, 2008.

**Source:** 40 CFR Part 50: National Primary and Secondary Ambient Air Quality Standards.

Manhattan has been designated as a moderate NAA for $PM_{10}$. On December 17, 2004, EPA took final action designating the five New York City counties and Nassau, Suffolk, Rockland, Westchester, and Orange counties as a $PM_{2.5}$ non-attainment area under the CAA due to exceedance of the annual average standard. New York State has submitted a draft SIP to EPA, dated April 2008, designed to meet the annual average standard by April 8, 2010, which will be finalized after public review.

As described above, EPA has revised the 24-hour average $PM_{2.5}$ standard. In December 2008 EPA designated the New York City Metropolitan Area as nonattainment with the 2006 24-hour $PM_{2.5}$ NAAQS, effective in April 2009. The nonattainment area includes the same 10-county area EPA designated as nonattainment with the 1997 annual $PM_{2.5}$ NAAQS. By April 2012 New York will be required to submit a SIP demonstrating attainment with the 2006 24-hour standard by 2014 (EPA may grant attainment date extensions for up to five additional years).

Nassau, Rockland, Suffolk, Westchester, Lower Orange County Metropolitan Area (LOCMA), and the five New York City counties had been designated as a severe non-attainment area for ozone 1-hour standard. In November 1998, New York State submitted its *Phase II Alternative Attainment Demonstration for Ozone*, which was finalized and approved by EPA effective March 6, 2002, addressing attainment of the 1-hour ozone NAAQS by 2007. These SIP revisions included additional emission reductions that EPA requested to demonstrate attainment of the standard, and an update of the SIP estimates using the latest versions of the mobile source emissions model, MOBILE6.2, and the nonroad emissions model, NONROAD—which have been updated to reflect current knowledge of engine emissions and the latest mobile and nonroad engine emissions regulations.

On April 15, 2004, EPA designated these same counties as moderate non-attainment for the 8-hour ozone standard, which became effective as of June 15, 2004 (LOCMA was moved to the Poughkeepsie moderate non-attainment area for 8-hour ozone). EPA revoked the 1-hour standard on June 15, 2005; however, the specific control measures for the 1-hour standard included in the SIP are required to stay in place until the 8-hour standard is attained. The discretionary emissions reductions in the SIP would also remain but could be revised or dropped based on modeling. On February 8, 2008, the New York State Department of Environmental Conservation (DEC) submitted final revisions to a new SIP for ozone to EPA. DEC has determined that achieving attainment for ozone before 2012 is unlikely, and has therefore made a request for a voluntary reclassification of the New York nonattainment area as "serious."

In March 2008, EPA strengthened the 8-hour ozone standards. SIPs will be due three years after the final designations are made. On March 12, 2009, NYSDEC recommended that the counties of Suffolk, Nassau, Bronx, Kings, New York, Queens, Richmond, Rockland, and Westchester be designated as a non-attainment area for the 2008 ozone NAAQS (the NYMA MSA nonattainment area). NYSDEC also recommended that the Dutchess, Orange, Ulster, and Putnam counties be designated as a nonattainment area for the 2008 ozone NAAQS (the Poughkeepsie, NY nonattainment area). EPA expects designations to take effect no later than March 2010.

## DETERMINING THE SIGNIFICANCE OF AIR QUALITY IMPACTS

The State Environmental Quality Review Act (SEQRA) regulations and the *CEQR Technical* Manual state that the significance of a likely consequence (i.e., whether it is material, substantial, large, or important) should be assessed in connection with its setting (e.g., urban or rural), its probability of occurrence, its duration, its irreversibility, its geographic scope, its magnitude, and the number of people affected.[1] In terms of the magnitude of air quality impacts, any action predicted to increase the concentration of a criteria air pollutant to a level that would exceed the concentrations defined by the NAAQS (see **Table 16-1**) would be deemed to have a

[1] *CEQR Technical Manual*, section 222, 2001; and State Environmental Quality Review Act § 617.7

potential significant adverse impact. In addition, in order to maintain concentrations lower than the NAAQS in attainment areas, or to ensure that concentrations will not be significantly increased in non-attainment areas, threshold levels have been defined for certain pollutants. Any action predicted to increase the concentrations of these pollutants above the thresholds would be deemed to have a potential significant adverse impact, even in cases where violations of the NAAQS are not predicted.

*DE MINIMIS CRITERIA REGARDING CO IMPACTS*

New York City has developed *de minimis* criteria to assess the significance of the increase in CO concentrations that would result from the impact of proposed projects or actions on mobile sources, as set forth in the *CEQR Technical Manual*. These criteria set the minimum change in CO concentration that defines a significant environmental impact. Significant increases of CO concentrations in New York City are defined as: (1) an increase of 0.5 ppm or more in the maximum 8-hour average CO concentration at a location where the predicted No Action 8-hour concentration is equal to or between 8 and 9 ppm; or (2) an increase of more than half the difference between baseline (i.e., No Action) concentrations and the 8-hour standard, when No Action concentrations are below 8.0 ppm.

*INTERIM GUIDANCE CRITERIA REGARDING $PM_{2.5}$ IMPACTS*

DEC has published a policy to provide interim direction for evaluating $PM_{2.5}$ impacts[1]. This policy would apply only to facilities applying for permits or major permit modifications under SEQRA that emit 15 tons of $PM_{10}$ or more annually. The policy states that such a project will be deemed to have a potentially significant adverse impact if the project's maximum impacts are predicted to increase $PM_{2.5}$ concentrations by more than 0.3 $\mu g/m^3$ averaged annually or more than 5 $\mu g/m^3$ on a 24-hour basis. Projects that exceed either the annual or 24-hour threshold will be required to prepare an Environmental Impact Statement (EIS) to assess the severity of the impacts, to evaluate alternatives, and to employ reasonable and necessary mitigation measures to minimize the $PM_{2.5}$ impacts of the source to the maximum extent practicable.

In addition, the New York City Department of Environmental Protection (DEP) is currently recommending interim guidance criteria for evaluating the potential $PM_{2.5}$ impacts for projects subject to CEQR. The interim guidance criteria currently employed by DEP for determination of potential significant adverse $PM_{2.5}$ impacts under CEQR are as follows:

- 24-hour average $PM_{2.5}$ concentration increments predicted to be greater than 5 $\mu g/m^3$ at a discrete receptor location would be considered a significant adverse impact on air quality under operational conditions (i.e., a permanent condition predicted to exist for many years regardless of the frequency of occurrence);
- 24-hour average $PM_{2.5}$ concentration increments predicted to be greater than 2 $\mu g/m^3$ but no greater than 5 $\mu g/m^3$ would be considered a significant adverse impact on air quality based on the magnitude, frequency, duration, location, and size of the area of the predicted concentrations;
- Annual average $PM_{2.5}$ concentration increments predicted to be greater than 0.1 $\mu g/m^3$ at ground level on a neighborhood scale (i.e., the annual increase in concentration representing the average over an area of approximately 1 square kilometer, centered on the location

[1] CP33/Assessing and Mitigating Impacts of Fine Particulate Emissions, NYSDEC 12/29/2003.

where the maximum ground-level impact is predicted for stationary sources; or at a distance from a roadway corridor similar to the minimum distance defined for locating neighborhood scale monitoring stations); or

- Annual average $PM_{2.5}$ concentration increments predicted to be greater than 0.3 $\mu g/m^3$ at a discrete receptor location (elevated or ground level).

Actions under CEQR predicted to increase $PM_{2.5}$ concentrations by more than the DEP or DEC interim guidance criteria above will be considered to have a potential significant adverse impact. DEP recommends that its actions subject to CEQR that fail the interim guidance criteria prepare an EIS and examine potential measures to reduce or eliminate such potential significant adverse impacts.

The proposed project's annual emissions of $PM_{10}$ are estimated to be well below the 15-ton-per-year threshold under DEC's $PM_{2.5}$ policy guidance. The above DEP and DEC interim guidance criteria have been used to evaluate the significance of predicted impacts of the proposed project on $PM_{2.5}$ concentrations and determine the need to minimize particulate matter emissions from the proposed project.

## D. METHODOLOGY FOR PREDICTING POLLUTANT CONCENTRATIONS

As discussed above, the proposed project would use central steam for hot water and heating and would use electric chillers for cooling. The proposed project would also include an emergency generator on a mechanical building floor. As with emergency generators in most buildings in New York City, the proposed generator would be tested at regular intervals to ensure its availability and reliability in the event of an actual emergency. The proposed generator would not be operated continuously and would not constitute a significant long-term source of air pollution. Therefore, no emission sources at the development site would have the potential for significant adverse impact on air quality, and an assessment of project-generated stationary sources is not warranted.

As discussed previously, traffic from the proposed project would not exceed the CEQR threshold for an analysis of mobile sources. Projects that generate fewer than 75 peak hour trips do not have the potential to result in significant adverse mobile source impacts. Therefore, an analysis of mobile sources is not warranted.

The *CEQR Technical Manual* requires an assessment of any actions that could result in the location of sensitive uses within 400 feet of commercial, institutional, or large-scale residential developments where the proposed structure would be of a height similar to or greater than the height of an existing emission stack.

A screening analysis was performed to assess air quality impacts associated with emissions from heating, ventilation, and air conditioning (HVAC) systems associated with existing developments on the proposed project. The methodology described in the *CEQR Technical Manual* was used for the analysis of existing permitted boilers found using the Department of Buildings and DEP databases. The *CEQR* methodology determines the threshold of development size below which there is no potential for significant adverse impact. The screening procedures use information regarding the type of fuel used, the development size, and the boiler exhaust stack height to evaluate whether a significant adverse impact is likely. Based on the distance from the development to the receptor of similar or greater height, if the maximum existing development size is greater than the threshold size in the *CEQR Technical Manual,* there is the

potential for significant air quality impacts, and a refined dispersion modeling analysis would be required. Otherwise, the source passes the screening analysis and no further analysis is required.

## E. EXISTING CONDITIONS

Ambient concentrations of $SO_2$, $NO_2$, CO, ozone, lead, $PM_{10}$, and $PM_{2.5}$ measured at monitoring stations closest to the proposed project are shown in **Table 16-2**. These values represent the maximum concentrations recorded during 2007 at the specified representative monitoring stations. Except for $PM_{2.5}$ and ozone, pollutants for which New York is in non-attainment, there are no violations of NAAQS at these monitoring sites.

**Table 16-2**
**Maximum Criteria Pollutant Concentrations Recorded at Representative Monitoring Stations in 2007**

| Pollutant | Monitoring Station | Units | Averaging Period | Concentration | NAAQS |
|---|---|---|---|---|---|
| CO | P.S. 59<br>228 E 57th Street<br>Manhattan | ppm | 8-hour | 1.5 | 9 |
| | | | 1-hour | 2.5 | 35 |
| $SO_2$ | P.S. 59<br>228 E 57th Street<br>Manhattan | µg/m$^3$ | Annual | 26 | 80 |
| | | | 24-hour | 79 | 365 |
| | | | 3-hour | 152 | 1300 |
| $PM_{10}$ [1] | P.S. 59<br>228 E 57th Street<br>Manhattan | µg/m$^3$ | 24-hour | 57 | 150 |
| $PM_{2.5}$ [2] | P.S. 59<br>228 E 57th Street<br>Manhattan | µg/m$^3$ | Annual | 16.1 | 15 |
| | | | 24-hour[3] | 36.8 | 35 |
| $NO_2$ | P.S. 59<br>228 E 57th Street<br>Manhattan | µg/m$^3$ | Annual | 64 | 100 |
| Lead | J.H.S. 126<br>424 Leonard Street<br>Brooklyn | µg/m$^3$ | 3-month | 0.02 | 1.5 |
| Ozone [3] | CCNY<br>160 Convent Avenue<br>Manhattan | ppm | 8-hour | 0.083 | 0.075 |
| | | | 1-hour | 0.112 | 0.12 |

**Notes:**
The concentrations shown correspond to the most recent levels reported and are not directly used as background concentrations, which are based on DEC reports for 3-5 years.
[1] The annual $PM_{10}$ standard was revoked by EPA.
[2] EPA has reduced these standards down from 65 µg/m$^3$, effective December 18, 2006.
[3] The reported concentration represents the 98th percentile concentration for 2007.
[3] The 1-hour ozone NAAQS has been replaced with the 8-hour standard; however, the maximum monitored concentration is provided for informational purposes. EPA has reduced the 8-hour standard down from 0.08 ppm, effective May, 2008.
**Source**: DEC, 2007 New York State Ambient Air Quality Data.

## F. THE FUTURE WITHOUT THE PROPOSED PROJECT

In the future without the proposed project, the development site will be developed with one of two scenarios: the Previously Approved Project or the Expanded Development Scenario (see Chapter 1, "Project Description," for details on the development plans for the two scenarios).

The Previously Approved Project building will be 285 feet tall while the Expanded Development Scenario will result in the construction of a building 1,089 feet in height. Either building will likely use steam for its HVAC systems.

## G. PROBABLE IMPACTS OF THE PROPOSED PROJECT

The proposed building would rise to a height of approximately 1,250 feet and would be the tallest building within 400 feet.

As described previously, the proposed project would not have the potential for significant adverse impacts on air quality from stationary sources, since the proposed project would use central steam and electric chillers for HVAC. The proposed project's emergency generator would also not result in the potential for significant adverse impacts. As with emergency generators in most buildings in New York City, the proposed generator would be tested at regular intervals to ensure its availability and reliability in the event of an actual emergency. The proposed generator would not be operated continuously and would not constitute a significant long-term source of air pollution. Therefore, no emission sources at the development site would have the potential for significant adverse impact on air quality.

As discussed previously, the proposed project would not have the potential to result in significant adverse impacts on air quality because of mobile sources as the proposed project would not exceed the CEQR threshold of 75 peak hour trips at any intersection.

An assessment of the potential impacts on the proposed project from heat and hot water systems serving large existing buildings in the study area was undertaken since the proposed project would be taller than other buildings with a 400-foot radius. Buildings within this study area were evaluated for their potential for air quality impacts on the development site, based on their floor area, height, and proximity to the development site. In addition, only buildings having active boiler permits or certificates to operate from DEP were included in the analysis. Other buildings that were considered but found to have no DEP permit or certificate to operate for heating or hot water systems were excluded from the analysis based on the availability of Con Edison steam in the area. **Table 16-3** presents a summary of the buildings that were included the HVAC analysis.

**Table 16-3**
**Existing Buildings Analyzed in the HVAC Assessment**

| Building | Address | Floor Area (gsf) | Distance to Development Site (feet) |
|---|---|---|---|
| 1 | 1301 Sixth Avenue | 1,482,208 | 270 |
| 2 | 15 W 53rd Street | 505,282 | 200 |
| **Sources:** | New York City Map: http://gis.nyc.gov/doitt/cm/CityMap.htm; New York City Buildings Information System: http://www.nyc.gov/html/dob/html/bis/bis.shtml | | |

For 1301 Sixth Avenue, it was assumed that No. 4 oil is used. This is a reasonable worst-case assumption for a non-industrial use in Midtown. Based on the building's distance to the development site, the total gross floor area for this building is below the maximum development size shown in Figure 3Q-5 of the *CEQR Technical Manual*. Therefore, this building does not have the potential to adversely affect the development site.

15 West 53rd Street uses natural gas and electricity for its HVAC systems. Therefore, the screening analysis was performed assuming natural gas. Based on its distance to the development site, the total gross floor area for this building is below the maximum development

size shown in Figure 3Q-9 of the *CEQR Technical Manual*. Therefore, this building also does not have the potential to adversely affect the development site.

In sum, there would be no potential for significant adverse air quality impacts associated with the emissions from HVAC systems from existing buildings on the proposed project. ✷