

A. INTRODUCTION

This chapter presents the findings of the hazardous materials assessment for the proposed Vanderbilt Corridor zoning text amendment and the proposed One Vanderbilt development including the proposed public place. It identifies potential issues of concern with respect to workers, the community, and/or the environment during construction and after implementation. This chapter presents an analysis of the One Vanderbilt site. Further development expected to occur by 2033 in the Vanderbilt Corridor (beyond the One Vanderbilt site), is considered in Chapter 19, “Conceptual Analysis.”

PRINCIPAL CONCLUSIONS

ONE VANDERBILT SITE

The One Vanderbilt site is approximately 61 feet above the National Atlantic Vertical Datum (NAVD) of 1988, an approximation of mean sea level. All existing buildings on the One Vanderbilt site will be demolished. This will be followed by construction, entailing subsurface disturbance to approximately 45 feet below street grade, for the new building basements, foundations, subsurface utilities and transit connections, and more limited disturbance for the new public place. The assessment found a potential for subsurface contamination related to on-site petroleum storage, historical railroad usage of the site, and nearby off-site uses. Given the age of the buildings, asbestos-containing materials (ACMs), lead-based paint (LBP), and polychlorinated biphenyls (PCBs) may be present in the existing structures.

As discussed in this chapter, to reduce the potential for human or environmental exposure to known or unexpectedly encountered contamination during and following construction, an (E) Designation for hazardous materials (E-357) will be assigned to the One Vanderbilt site that will be administered by the New York City Mayor’s Office of Environmental Remediation (OER). Limited subsurface sampling was conducted in the summer of 2014, and additional sampling will be conducted prior to the completion of the Final Environmental Impact Statement (FEIS) in accordance with the requirements of a New York City Department of Environmental Protection (DEP) letter dated August 8, 2014 (see **Appendix D** for the DEP letter). Based on the findings of the existing sampling, it is anticipated a Remedial Action Plan (RAP) and associated Construction Health and Safety Plan (CHASP) would be prepared for implementation during construction. The RAP and CHASP would be subject to approval by DEP or OER. The RAP would address requirements for items such as soil stockpiling, soil disposal, and transportation; dust control; dewatering procedures; quality assurance; procedures for the closure and removal of the known petroleum storage tanks; and contingency measures, should other petroleum storage tanks or contamination be unexpectedly encountered. The CHASP would identify potential hazards that may be encountered during construction and specify appropriate health and safety measures to be undertaken to ensure that subsurface disturbance is performed in a manner protective of workers, the community, and the environment (such as personal protective equipment, air monitoring including community air monitoring, and emergency response

procedures). In addition, during and following demolition for the proposed One Vanderbilt development, regulatory requirements pertaining to ACMs, LBP, and PCBs would be followed. As described in more detail in this chapter, with these measures, the proposed One Vanderbilt development would not result in any significant adverse impacts related to hazardous materials.

OTHER VANDERBILT CORRIDOR SITES

Based on data gathered for the 2013 *East Midtown Rezoning and Related Actions FEIS*, environmental concerns exist at the other Vanderbilt Corridor sites based on the sites' historical railroad usage, petroleum storage/spills or hazardous materials usage/waste generation at certain sites, nearby off-site uses, and for all except Block 1282 (which is a relatively new building) possible ACMs, LBP, and PCBs in the existing structures.

B. EXISTING CONDITIONS

ONE VANDERBILT DEVELOPMENT SITE

The potential for hazardous materials was evaluated based on Phase I Environmental Site Assessment (ESA) reports, all prepared by WCD Group in January 2014, in accordance with ASTM E1527-13 for the following lots that comprise the One Vanderbilt site:

- 317 Madison Avenue—Tax Block 1277, Lot 20;
- 51 East 42nd Street—Tax Block 1277, Lot 27;
- 48 East 43rd Street—Tax Block 1277, Lot 46; and
- 331 Madison Avenue—Tax Block 1277, Lot 52.

The *East Midtown Rezoning and Related Actions FEIS* and the Phase I ESAs prepared in 2007 were also reviewed for pertinent information about the One Vanderbilt site. The Phase I ESA for Lot 52 included a summary of limited subsurface testing performed in 2007. In addition, a Subsurface (Phase II) Investigation was performed by WCD Group in the summer of 2014 (report dated September 2014). The Phase I ESAs and Phase II report are included in **Appendix D**.

The scope of the Phase I ESAs included a reconnaissance of the One Vanderbilt site's buildings and surrounding area and a review of a variety of information sources, including recent and historical Sanborn fire insurance maps, and environmental regulatory agency databases identifying state and federally listed sites. The Phase I ESAs identified the following:

- Lot 20 includes a 23-story office/retail building with a basement and sub-basement constructed around 1920. A petroleum spill was reported to the New York State Department of Environmental Conservation (DEC) on September 6, 2013 when approximately six inches of No. 2 fuel oil spilled from the 7,500-gallon aboveground storage tank in the northern portion of the sub-basement. The spill was reportedly contained to the tank room and reportedly did not result in an environmental release. The DEC assigned spill number 1305985, which is still listed with an "open" status.
- Lot 27 includes an 18-story office/retail building with a basement constructed around 1913. Lot 46 includes a 7-story office/retail building with a basement and sub-basement constructed around 1922. Lot 52 includes a 15-story office/retail building with a basement and sub-basement constructed around 1923. Other than the potential for migration from the adjacent petroleum spill (on Lot 20) and the concerns common to all buildings (bullets below), no specific concerns were identified for these three Lots.

- Although it was suspected that Lot 52 might once have contained an aboveground petroleum storage tank, limited subsurface testing in 2007 performed by the Ambient Group from the sub-basement found no evidence of petroleum contamination in the approximately one foot of soil present above the bedrock.

COMMON TO ALL LOTS

- Based on the regulatory database review, off-site spills or other historical uses are not anticipated to have affected the site's subsurface conditions.
- Based on the age of all of the buildings, fluorescent lighting components, electrical equipment and caulking may contain PCBs. Fluorescent lights may contain mercury.
- Based on the age of all of the buildings, ACMs may be present.
- Based on the age of all of the buildings, LBP may be present.

The *East Midtown Rezoning and Related Actions FEIS* concluded that (E) designations for hazardous materials should be placed on all four lots that make up the One Vanderbilt site, because the site history included on-site petroleum tanks/spills and the potential for hazardous material migration from nearby uses (including Grand Central Depot, and other properties that stored petroleum or generated hazardous wastes).

PHASE II ENVIRONMENTAL ASSESSMENT

During the summer of 2014 soil and groundwater samples were collected by WCD Group for laboratory analysis. A Work Plan for this investigation (WCD Group, July 2014) was submitted to DEP for review and DEP, in a letter dated August 8, 2014, requested that the scope be modified to include soil gas sampling and the collection of two grab soil samples per boring. Since the Work Plan was implemented as originally proposed, the additional sampling requested by DEP will be completed prior to the completion of the FEIS.

Fourteen borings were advanced throughout the One Vanderbilt site, with one grab soil sample and one composite soil sample collected from approximately 10-foot intervals below the foundation slab in each of six borings for laboratory analysis (including waste characterization parameters). No samples were collected from the remaining borings due to insufficient soil recovery. The grab samples were analyzed for volatile organic compounds (VOCs), Extractable Petroleum Hydrocarbons (EPH), and Total Petroleum Hydrocarbons (TPH). The composite samples (collected from an approximately ten-foot interval) were analyzed for semi-volatile organic compounds (SVOCs), pesticides, herbicides, PCBs, Target Analyte List (TAL) metals, cyanide, hexavalent chromium, ignitability, reactivity, and corrosivity. One sample was also analyzed for metals using the Toxicity Characteristic Leaching Procedure (TCLP).

Three groundwater samples were collected from monitoring wells installed during the investigation for laboratory analysis for VOCs, SVOCs, pesticides, PCBs, TAL metals (total and dissolved), cyanide, and hexavalent chromium. One groundwater sample was also analyzed for DEP sewer discharge criteria.

The subsurface investigation showed the following:

- Field screening indicated no evidence of contamination (e.g., odors, staining, sheen, or elevated photoionization detector [PID] readings) in the recovered soil and groundwater. Soil encountered beneath the existing basements/sub-basements consisted of fill materials (sand, silt, gravel, brick, concrete, ash, and/or decomposed rock). Groundwater was encountered approximately 29.5 to 34 feet below street grade. Bedrock was approximately

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20 to 40 feet below street grade, corresponding to depths of approximately 1 to 24 feet below the existing basement/sub-basement floors (which are at various elevations).

- No VOCs, SVOCs, pesticides, or PCBs exceeded DEC Part 375-6.4 Soil Cleanup Objectives for Unrestricted Use (USCOs). Five metals (copper, lead, mercury, nickel, and hexavalent chromium) exceeded USCOs in one to two samples each. None of the detected metal concentrations exceeded Part 375-6.4 Soil Cleanup Objectives for Restricted – Commercial Use (CSCO). The TCLP analysis identified composite sample LB-3 (1-10') as hazardous waste due to a TCLP lead concentration of 8.2 milligrams per liter (mg/L), in exceedance of the US Environmental Protection Agency (USEPA) limit of 5 mg/L.
- No pesticides or PCBs were detected in the groundwater samples in exceedance of New York State drinking water standards. Groundwater sample LB-12, collected at the southwestern corner of the site, contained the VOC toluene at a concentration of 7 parts per billion (ppb), slightly exceeding its New York State drinking water standard of 5 ppb. No elevated VOC or SVOC concentrations were detected in the remaining two groundwater samples, collected from the central and north-central portions of the site (i.e., closer to the location of spill No. 1305985). Thus, the slightly elevated VOC concentration is likely due to an off-site source rather than the on-site spill. Sample LB-12 also contained the SVOC bis(2-ethylhexyl)phthalate at a concentration of 6.4 ppb, slightly exceeding its State drinking water standard of 5 ppb. This SVOC is a common component of plastics, and is likely to be a field or laboratory artifact. Three naturally occurring metals (iron, manganese, and sodium) exceeded State drinking water standards in the groundwater samples. No exceedances of DEP sewer discharge criteria were identified.

Overall, the detected concentrations appeared to be attributable to fill materials beneath the One Vanderbilt site and/or off-site sources, and were not indicative of an on-site spill or release. No petroleum contamination associated with the on-site open spill was identified.

OTHER VANDERBILT COORIDOR SITES

Based on data gathered for the *East Midtown Rezoning and Related Actions FEIS*, the environmental concerns on the other Vanderbilt Corridor sites were:

- Block 1278. The Bank of America Plaza building was originally built in 1913 as a hotel, but was thoroughly renovated, reclad, and converted into an office building in 1981–1983. In the past, railroad tracks were beneath the site. There was hazardous waste generation on the site, which is adjacent to the earlier Grand Central Depot building and near petroleum storage/spills and hazardous waste generators. Given the age of the building, although much may have been removed during the renovation, it is possible that ACMs, LBP, and PCBs are still present.
- Block 1279. The block contains five commercial buildings (constructed between 1916 and 1926) and a ventilation building for the Metropolitan Transportation Authority (MTA)'s under-construction East Side Access project. Historically railroad tracks were beneath the site, it is adjacent to the historical Grand Central Depot, and nearby petroleum storage/spills and hazardous waste generators. Given then age of the buildings, ACMs, LBP, and PCBs may be present.
- Block 1281. The Roosevelt Hotel was built in 1922–1924. On-site in the past, there was railroad car storage, petroleum storage, a reported petroleum spill and hazardous waste generation; the site is adjacent to the earlier Grand Central Depot building and near

petroleum storage/spills and hazardous waste generators. Given the age of the buildings, ACMs, LBP, and PCBs may be present.

- Block 1282. The 383 Madison Avenue building opened in 2002 replacing an earlier 1924 building. The building has two in-service, diesel aboveground tanks associated with emergency generators. Prior to the building's construction, in 1999, spent solvents were generated, and disposed of off-site. There were in the past railroad tracks on site, and the site is adjacent to the earlier Grand Central Depot building and near petroleum storage/spills and hazardous waste generators. Given the age of the buildings, ACMs, LBP, and PCBs are not likely present in any significant quantities.

C. THE FUTURE WITHOUT THE PROPOSED ACTIONS

ONE VANDERBILT SITE

In the No-Action condition, the existing buildings will be demolished and a new building constructed, requiring a similar degree of subsurface disturbance on the site itself, but less elsewhere as the transit connections and public space will not be constructed. DEC regulations relating to petroleum spill closure along with removal of any associated contaminated soil will need to be followed; no evidence of petroleum contamination has been identified by the September 2014 subsurface investigation. Other applicable legal requirements will need to be followed, including but not limited to: soil disposal (including disposal of soil exceeding hazardous waste criteria); disposal of any remaining chemicals or wastes; regulations relating to pre-demolition removal of ACMs; and regulations relating to the proper disposal, during or prior to demolition, of building materials or components with LBP or PCBs. Specifically:

- Unless information exists to indicate that suspect ACMs do not contain asbestos, prior to demolition activities, an asbestos survey will be completed and all ACMs that will be disturbed by these activities will be removed and disposed of in accordance with applicable regulatory requirements.
- Any renovation/demolition activities with the potential to disturb LBP will be performed in accordance with the applicable Occupational Safety and Health Administration regulation (OSHA 29 CFR 1926.62—Lead Exposure in Construction).
- Unless labeling or laboratory testing data indicates that suspect PCB-containing electrical equipment (including underground transformers) and fluorescent lighting fixtures do not contain PCBs, and that fluorescent lights do not contain mercury, disposal will be performed in accordance with applicable regulatory requirements.

OTHER VANDERBILT CORRIDOR SITES

In the No-Action condition, it is assumed that the MTA-owned portion of Block 1279 and Block 1281 will each be demolished and redeveloped with new smaller commercial buildings, requiring relatively similar degrees of subsurface disturbance (albeit over a smaller area on Block 1279). As with the One Vanderbilt site, in the future without the proposed actions, applicable legal requirements relating to hazardous materials will need to be followed as discussed in the preceding section, but subsurface testing and a RAP/CHASP will not be required.

D. THE FUTURE WITH THE PROPOSED ACTIONS

ONE VANDERBILT SITE

With approval of the proposed actions, demolition of the existing buildings followed by soil disturbance for the construction of new building, the transit improvements, and the proposed public place would occur. As noted above, the existing buildings may contain ACMs, LBP, and PCBs. Demolition activities would be subject to the same regulatory controls as in the No-Action condition.

Soil that would be disturbed by the proposed development potentially includes petroleum contamination (no evidence of such contamination has been identified by the September 2014 subsurface investigation), and includes urban fill materials with somewhat elevated concentrations of certain metals. In addition, some portion of the soil will require disposal as hazardous waste due to elevated TCLP lead levels. Excavation activities could disturb these hazardous materials and potentially increase pathways for human exposure. To reduce the potential for human or environmental exposure to known or unexpectedly encountered contamination during and following construction, an “E” Designation for hazardous materials (E-357), administered by the OER, will be assigned to the One Vanderbilt site. As discussed above, DEP requested that the scope for the subsurface investigation be modified to include soil gas sampling and the collection of two grab soil samples per boring. Since the Work Plan was implemented as originally proposed, additional subsurface sampling will be conducted prior to the FEIS as required by DEP. Based on the results of the testing already conducted, a RAP, and associated CHASP, would be prepared (and submitted for review and approval by DEP or OER) prior to implementation during project construction.

The RAP would address requirements for items such as: installation of two feet of clean fill as a “site cap” in landscaped (or other unpaved areas); soil stockpiling, soil disposal, and transportation; dust control; dewatering procedures; quality assurance; procedures for the closure and removal of the known petroleum storage tank; and contingency measures should additional petroleum storage tanks or contamination be unexpectedly encountered. The CHASP would identify potential hazards that may be encountered during construction and specify appropriate health and safety measures to be undertaken to ensure that subsurface disturbance is performed in a manner protective of workers and the community (such as personal protective equipment, air monitoring requirements including community air monitoring, and emergency response procedures).

With these above-described measures, the proposed One Vanderbilt development is not expected to result in any significant adverse impacts related to hazardous materials.

OTHER VANDERBILT CORRIDOR SITES

As noted above, potential impacts of potential development on other Vanderbilt Corridor sites are considered in Chapter 19, “Conceptual Analysis.” *

Table 11-12
Maximum Modeled Pollutant Concentrations ($\mu\text{g}/\text{m}^3$)

Pollutant	Averaging Period	Maximum Modeled Impact	Background	Total Concentration	NAAQS / De Minimis
NO ₂	1-hour	0.7	114	114.7	188
PM _{2.5}	24-hour	0.12	26	N/A	4.5 ²
	Annual	0.01	N/A	N/A	0.1/0.3 ³

Notes:
 For the 1-hour NO₂ averaging period, the 3-year average of the annual 98th percentile daily maximum 1-hour average concentration was taken from DEC's *New York State Ambient Air Quality Report for 2013*.
<http://www.dec.ny.gov/chemical/8536.html>
¹ The NO₂ background data was taken from Queens College 2 monitoring station.
² PM_{2.5} *de minimis* criteria — 24-hour average, not to exceed more than half the difference between the background concentration and the 24-hour standard of 35 $\mu\text{g}/\text{m}^3$.
³ PM_{2.5} *de minimis* criteria—annual (discrete receptor), 0.3 $\mu\text{g}/\text{m}^3$ and (neighborhood scale), 0.1 $\mu\text{g}/\text{m}^3$.

As shown in **Table 11-12**, the maximum predicted concentration does not exceed the 1-hour NO₂ NAAQS standard or PM_{2.5} *de minimis* criteria. Therefore, there would be no potential for a significant adverse impact on air quality from the proposed One Vanderbilt development's boilers and microturbine cogeneration systems.

To ensure that there are no significant adverse impacts from the proposed One Vanderbilt development's boiler and microturbine system emissions, a restriction would be required regarding fuel type and NO_x emissions. The text of the (E) designations (E-357) would be as follows:

- Any new residential and/or commercial development on Block 1277, Lots 20, 27, 46, and 52 pursuant to Section 81-62 of the Zoning Resolution must ensure that fossil fuel-fired boilers and/or turbines be fitted with low-NO_x emission burners firing natural gas, to avoid any potential significant impacts.

Note that between the Draft and Final EIS, further analysis may be performed to confirm whether the proposed air quality (E) designation is necessary.

ADDITIONAL SOURCES

Potential stationary source impacts on the One Vanderbilt site from the existing source were determined using the AERMOD model. The maximum calculated concentrations from the modeling were added to the background concentrations to estimate total air quality concentrations on the proposed One Vanderbilt development. The results of the AERMOD model analysis for NO₂, SO₂ and PM₁₀ are presented in **Table 11-13**. As shown in the table, the maximum predicted pollutant concentrations for all of the pollutant time averaging periods shown are below their respective standards.

The air quality modeling analysis also determined the highest predicted increase in PM_{2.5} concentrations. The maximum predicted 24-hour and localized annual average incremental PM_{2.5} increments are presented in **Table 11-14**. As presented in **Table 11-14**, the maximum 24-hour PM_{2.5} incremental concentration from the existing source was predicted to be 1.04 $\mu\text{g}/\text{m}^3$. On an annual basis, the maximum projected PM_{2.5} increments would be below the applicable PM_{2.5} *de minimis* criterion of 0.3 $\mu\text{g}/\text{m}^3$ for local impacts.

BUILDING ATTENUATION IMPLEMENTATION

The attenuation of a composite structure is a function of the attenuation provided by each of its component parts and how much of the area is made up of each part. Normally, a building façade consists of wall, glazing, and any vents or louvers associated with the building mechanical systems in various ratios of area. Currently, the proposed design for the building includes acoustically rated windows and air conditioning as an alternate means of ventilation. The proposed building's façades, including these elements, would be designed to provide a composite Outdoor-Indoor Transmission Class (OITC) rating¹ greater than or equal to those listed in above in **Tables 13-8 and 13-9**, along with an alternative means of ventilation. By adhering to these design specifications, the proposed building will thus provide sufficient attenuation to achieve the CEQR interior noise level guideline of 50 dBA or lower for commercial uses, which would be considered acceptable according to CEQR interior noise level guidelines.

Table 13-9
Required Attenuation for Proposed One Vanderbilt Development

Façade(s)	Representative Receptor Site	Elevation (in feet)	Calculated L ₁₀₍₁₎ Noise Levels	CEQR Minimum Required Attenuation (in dBA) ¹
North	4	0 to 100	74.2	26
		101 to 200	71.2	23
		201 to top	68.2	N/A ²
East	1, A	0 to 100	74.5	26
		101 to 200	71.5	23
		201 to top	68.5	N/A ²
South	2	0 to 100	78.3	30
		101 to 200	75.3	26
		201 to 400	72.3	23
		401 to top	69.3	N/A ²
West	3	0 to 100	82.7	34
		101 to 200	79.7	30
		201 to 400	76.7	28
		401 to 800	73.7	26
		801 to top	70.7	23

Note:

¹Attenuation values are shown for commercial uses; residential or community facility uses would require 5 dBA more.

²"N/A" indicates that the maximum measured L₁₀ is below 70 dBA. The *CEQR Technical Manual* does not address noise levels this low, therefore there is no minimum attenuation guidance.

The required CEQR building attenuation levels would be mandated by (E) designations specifying the appropriate amount of window/wall attenuation. The text of the (E) designation (E-357) for the One Vanderbilt building (located on Block 1277, Lots 20, 27, 46, and 52) would be as follows:

¹ The OITC classification is defined by ASTM International (ASTM E1332) and provides a single-number rating that is used for designing a building façade including walls, doors, glazing, and combinations thereof. The OITC rating is designed to evaluate building elements by their ability to reduce the overall loudness of ground and air transportation noise.

“In order to ensure an acceptable interior noise environment, future commercial uses must provide up to 34 dB(A) of window/wall attenuation with windows closed, in order to achieve interior noise levels of 50 dB(A). The minimum required window/wall attenuation for future residential uses would be 5 dB(A) more than that for commercial uses. To maintain a closed window condition, an alternate means of ventilation that brings outside air into the building without degrading the acoustical performance of the building façade(s) must also be provided. The specific attenuation requirements to be implemented throughout the project’s building façades are provided in the *Vanderbilt Corridor and One Vanderbilt EIS*, **Table 13-9.**”

NOISE LEVELS AT THE PUBLIC PLACE ON VANDERBILT AVENUE

Based on the predicted noise levels at receptor site 2, noise levels within the public place on Vanderbilt Avenue created by the proposed actions and improved as part of the One Vanderbilt development are expected to be above 55 dB(A) $L_{10(1)}$. This exceeds the recommended noise level for outdoor areas requiring serenity and quiet contained in the *CEQR Technical Manual* noise exposure guidelines (see **Table 13-2**). In the With-Action condition, $L_{10(1)}$ values at the proposed open space would be in the low 70s dB(A). Because the dominant noise at the development site would be from traffic noise, there are no practical and feasible mitigation measures that could be implemented to reduce noise levels to below the CEQR 55 dB(A) $L_{10(1)}$ guidelines within the proposed public space. Although noise levels in this area would be above the guideline noise levels, they would be comparable to noise levels in a number of existing open space areas that are located adjacent to roadways, including Bryant Park, Hudson River Park, Riverside Park, Fort Greene Park, and other urban open space areas. The guidelines are a worthwhile goal for outdoor areas requiring serenity and quiet. However, due to the level of activity present at most New York City open space areas and parks, a relatively low noise level is often not achieved. Therefore, the future projected noise levels would not constitute a significant adverse noise impact to the proposed public place on Vanderbilt Avenue.

MECHANICAL EQUIPMENT

It is assumed that the building’s mechanical systems (i.e., HVAC systems) would be designed to meet all applicable noise regulations (i.e., Subchapter 5, §24-227 of the New York City Noise Control Code, the New York City Department of Buildings [DOB] Code) and to avoid producing levels that would result in any significant increase in ambient noise levels. Therefore, the proposed development would not result in any significant adverse noise impacts related to building mechanical equipment. *