

A. INTRODUCTION

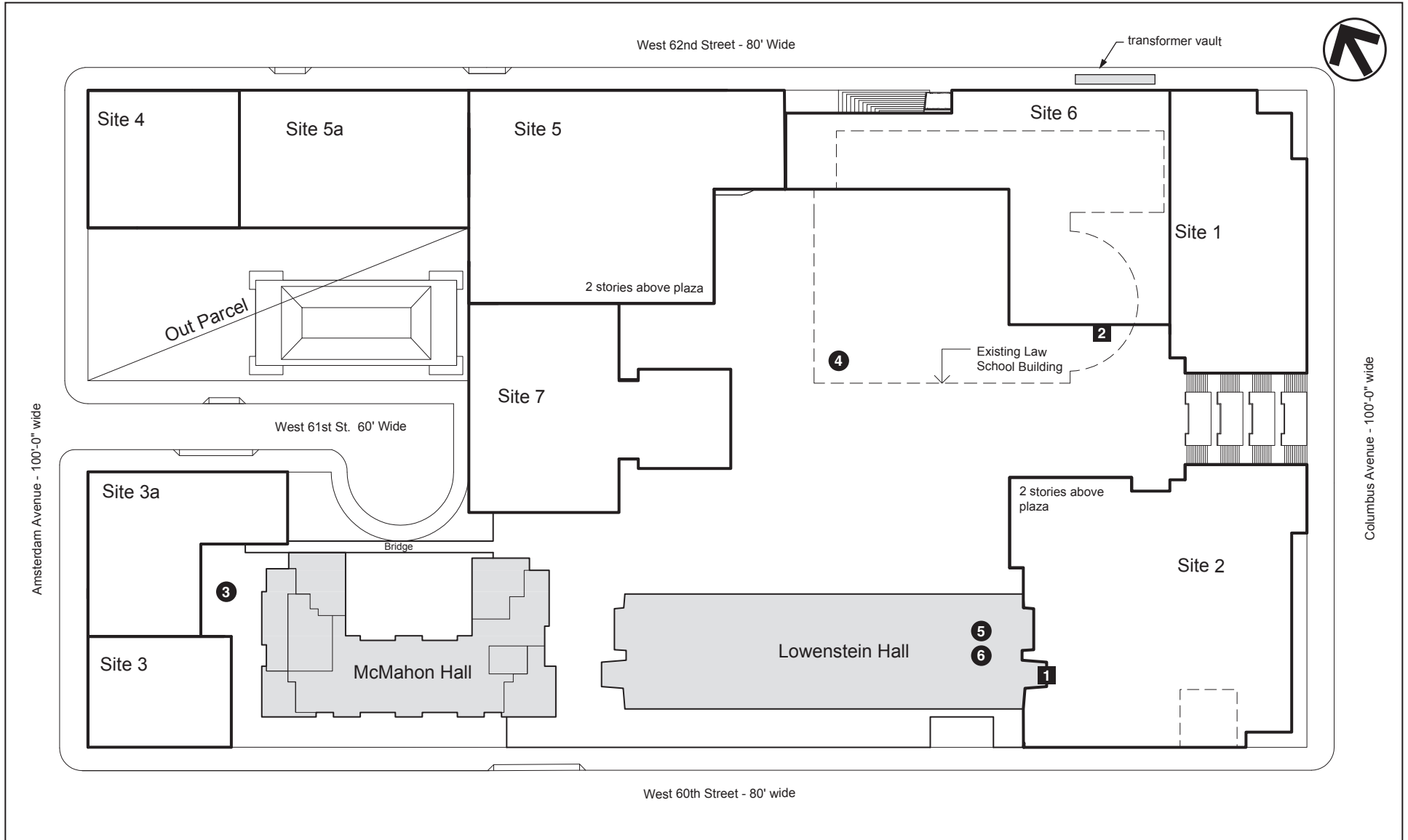
This chapter presents the findings of the hazardous materials assessment and identifies potential issues of concern that could pose a hazard to workers, the community and/or the environment associated with the proposed action. The project site, as shown on Figure 11-1, comprises most of the superblock on which it is located. Phase I of development of the proposed Master Plan would involve the construction of new buildings on Sites 3, 3a, 4, 5, and 5a (Lots 20 and 35) and an interim street-level plaza along Columbus Avenue (Lot 1), but no significant disturbance to existing buildings. Phase II would involve the demolition of the Law School building, all or a portion of a one-story glass enclosure on the second floor of the Lowenstein Center at the elevated Robert Moses Plaza and the interim access to the interim plaza; removal of the interim plaza; and the construction of buildings on Sites 1, 2, 6, and 7 (Lots 1 and 20).

Environmental conditions resulting from previous and existing uses, both onsite and in the surrounding area, were assessed and documented in the *Phase I Environmental Site Assessment (ESA) Report, Fordham University—Lincoln Center* (AKRF, Inc., August 2007) and the *Proposed Law School Building Site Phase II Site Investigation Report* (ENSR/AECOM, April 2008) pertaining to Sites 4, 5 and 5a. The Remedial Action Plan and Construction Health and Safety Plan (RAP/CHASP) developed for Sites 4, 5, and 5a by AECOM in October 2008 were also reviewed. The above reports have been submitted to the New York City Department of Environmental Protection (DEP) for review. In addition, the Phase II Site Investigation report is included as Appendix D of this EIS.

CONCLUSIONS

The Phase I ESA identified potential historical and present sources of contamination on- and off-site involving sites to be developed in both phases of construction:

- On-site sources included spills from hydraulic oil tanks near Site 2 and on or near Site 6, potential historical fuel oil tanks throughout the project site, a print shop on or near Site 6, and an Armory Drill Room on Sites 1 and 6. These three sites would be developed in the second phase of construction.
- Off-site (on Lots 30 and 7501 of the same block) sources included a hospital and a laboratory in the area now occupied by, respectively, an underground parking garage and The Alfred. The hospital and laboratory were near Sites 4, 5, 5a, and 7. There was also a transformer vault in the central portion of the West 62nd Street sidewalk north-adjacent to Site 6. Sites 4, 5, and 5a would be developed in the first phase of construction, while Sites 6 and 7 would be developed in the second.
- Off-site (and not on the same block) sources included a hospital with two laboratories to the south of Site 3 and McMahon Hall across West 60th Street, an auto repair shop and garages with buried gasoline tanks to the east of the site across Columbus Avenue opposite Site 1



- Proposed Construction Site Boundary
- 1, 2** Hydraulic Elevator

- 3** 2,000-gal Above Ground Storage Tank
- 4** 220-gal Above Ground Storage Tank

- 5** 275-gal Above Ground Storage Tank
- 6** Closed in Place Underground Storage Tank

ILLUSTRATIVE PLAN

Figure 11-1
Existing Petroleum Tanks and Hydraulic Elevators

(between West 61st and West 62nd Streets), and a filling station also to the east of the site across Columbus Avenue opposite Site 1 (at the northeastern corner of Columbus Avenue and West 61st Street). Site 3 would be developed in the first phase of construction while Sites 1 and 2 would be developed in the second phase of construction.

The Phase II Site Investigation of Sites 4, 5, and 5a included the collection and analysis of soil samples. Elevated concentrations of some semi-volatile organic compounds (SVOCs) and metals typical of urban fill were detected in the soil. None of the four composite soil samples collected to characterize the soil for disposal purposes were identified as hazardous waste.

To avoid adverse impacts, remedial measures would be undertaken during excavation required for the first phase of construction and during excavation and demolition required for the second phase of construction.

For proposed soil disturbance areas where a Phase II Subsurface Investigation has not been conducted, a Phase II (including the collection of soil and groundwater samples) would be conducted prior to any soil disturbance to determine whether contamination is present. Where applicable, the scope of the Phase II would be biased toward potential sources of contamination, such as tanks or historical uses of concern. Further, the scope would be reviewed and approved by DEP prior to its implementation.

All subsurface soil disturbances would be performed in accordance with a RAP/CHASP. The RAP would provide for the appropriate handling, stockpiling, testing, transportation and disposal of these materials in accordance with all applicable federal, state and local regulations. The CHASP would ensure that all such work is done in a manner protective of both human health and the environment. The RAP/CHASP for Sites 4, 5 and 5a has been submitted to DEP for review and approval. Similarly, RAPs/CHASPs for other areas to be disturbed would be submitted to DEP for review and approval prior to commencing subsurface disturbance. These measures would be implemented in accordance with a DEP-approved Restrictive Declaration, which is a type of legal agreement and institutional control, for the project site.

With these measures in place, significant adverse impacts related to hazardous materials would be avoided during and post construction.

B. EXISTING CONDITIONS

SUBSURFACE CONDITIONS

The project site is located approximately 80 feet above mean sea level. Bedrock extends to the ground surface in portions of the site, but based on U.S. Geological Survey reports and a previous study on Lot 35 may be as deep as 60 feet below grade in other areas of the site. Groundwater is estimated to be flowing north-northwest, but depth (which was 3 to 10 feet on Lot 35) and flow direction are likely influenced by past filling activities, underground utilities, and other subsurface openings or obstructions such as basements, rail tunnels west and east of the site, underground parking garages, bedrock geology and other factors beyond the scope of this study. Groundwater in Manhattan is not used as a source of drinking water.

HAZARDOUS MATERIALS ASSESSMENT

A variety of information sources were reviewed including: Sanborn™ Fire Insurance maps; environmental regulatory agency databases identifying state and/or federally listed sites; and

City databases and records (including electronic New York City Department of Buildings [DOB] and Fire Department [FDNY] records). In addition, reconnaissance of the site and surrounding neighborhood was performed. The research indicated that the site was developed prior to 1907 with four- to six-story dwellings with basements (many with boiler rooms, and possibly fuel oil tanks), as well as a basement printing shop and an Armory Drill Room.

In the 1950s, the two blocks bounded by Columbus and Amsterdam Avenues and West 60th and 62nd Streets were joined into a superblock. The Fordham Law School was built in 1961, Lowenstein Center was built in 1968, and McMahon Dormitory was built in 1993. Four aboveground diesel storage tanks (2,000-, 275-, 220-, and 50-gallon capacity) were used for backup generators in the buildings. An underground fuel oil storage tank was closed in-place beneath Lowenstein in 2001. Two hydraulic elevators with associated 75-gallon tanks operate in Lowenstein Center and the Law School. Regulatory databases listed a closed-status spill from a leaking pipe leading to the Lowenstein Center hydraulic elevator tank (on the east side of the building), and on-site interviews and previous studies indicated that most contaminated soil was removed, although some contamination remains, but more than six feet below grade. The computerized DOB database listed a cured 2003 violation involving oil buildup in the Law School hydraulic elevator pit (in the southeastern portion of the building), and on-site interviews indicated that the oil had been cleaned up. The locations of on-site petroleum and hydraulic tanks are shown on Figure 11-1.

An Environmental Investigation of (vacant) Lot 35 (Sites 4 and 5a) was performed by Stearns and Wheler, LLC in May-June 2005 in connection with an off-site reported petroleum spill (New York State Department of Environmental Conservation [NYSDEC] SPILL #9611310) in an underground parking garage at north-adjacent Lincoln Center for the Performing Arts, since NYSDEC considered Lot 35 to be the potential source. The investigation showed only low levels of contamination in groundwater at Lot 35, and NYSDEC determined that Lot 35 was not the source. However, soil samples at this lot showed levels of volatile organic compounds (VOCs) and SVOCs in excess of NYSDEC Spills Technology and Remediation Series (STARS) Guidance Values for groundwater protection; the SVOC concentrations also exceeded STARS guidelines for human health protection. It should be noted that the human health protection values represent conservative guidelines for exposed soils where there is unrestricted long-term site use and the levels found do not indicate that the property currently requires cleanup. Notwithstanding the lack of need for cleanup, should these soils require off-site disposal as part of future development, they would require disposal in accordance with applicable regulations, potentially as (non-hazardous waste) contaminated soil. The Stearns & Wheler report is included in the April 2008 ENSR Phase II Site Investigation report (see Appendix D).

In summary, the Phase I ESA identified potential historical and present sources of contamination on- and off-site, including:

- On-site sources included spills from hydraulic oil tanks near Site 2 and on or near Site 6, potential historical fuel oil tanks throughout the project site, a print shop on or near Site 6, and an Armory Drill Room on Sites 1 and 6.
- Off-site (on Lots 30 and 7501 of the same block) sources included a hospital and a laboratory in the area now occupied by, respectively, an underground parking garage and The Alfred. They were near Sites 4, 5, 5a, and 7. There was also a transformer vault in the central portion of the West 62nd Street sidewalk north-adjacent to Site 6.
- Off-site (and not on the same block) sources included a hospital with two laboratories to the south of Site 3 and McMahon Hall across West 60th Street, an auto repair shop and garages

with buried gasoline tanks to the east of the site across Columbus Avenue opposite Site 1 (between West 61st and West 62nd Streets), and a filling station also to the east of the site across Columbus Avenue opposite Site 1 (at the northeastern corner of Columbus Avenue and West 61st Street).

The Phase II Site Investigation of Sites 4, 5, and 5a included 12 soil borings, which were advanced to a maximum depth of 12 feet below grade due to refusal on shallow bedrock. Five individual and four composite soil samples were collected and analyzed. Groundwater was not encountered. The individual soil samples were analyzed for SVOCs and metals. Two of the individual samples were also analyzed for VOCs, polychlorinated biphenyls (PCBs), pesticides and total cyanide. Laboratory analysis indicated elevated concentrations of some SVOCs and metals, which are typical of urban fill. The composite soil samples were tested for RCRA hazardous waste characteristics (toxicity, corrosivity, etc.), and none of these samples were identified as hazardous waste. A copy of the Phase II report is included in Appendix D.

A RAP/CHASP for Sites 4, 5, and 5a was produced by AECOM in October 2008 and revised in December 2008. The RAP/CHASP included measures for site remediation and for protection of workers and the community during and after construction activities. These measures included specifications for personal protective equipment, work zone and community air monitoring, dewatering, soil handling and disposal, erosion and sediment control, etc.

C. THE FUTURE WITHOUT THE PROPOSED ACTION—2014 AND 2032

This analysis assumes that without the proposed action, three residential buildings would be constructed on Sites 3, 3a, 4, 5, and 5a (Lot 35 and part of Lot 20). This construction would involve soil disturbance, potentially increasing the pathways for human exposure to any subsurface hazardous materials present on those lots. Although none of these sites has a known significant presence of hazardous materials, soil disturbance would not be required to be conducted in accordance with the procedures (e.g., for conducting testing before commencing excavation) described in the following section. However, legal requirements (including NYSDEC regulations) would need to be followed should petroleum tanks and/or spills be identified and for off-site disposal of soil/fill. Without the proposed actions, the amount of soil disturbance would be less than anticipated with full development of the Master Plan, but potentially the controls on its performance would not be as stringent as under the proposed action, as described below.

D. PROBABLE IMPACTS OF THE PROPOSED ACTION—2014

There is a potential for adverse impacts associated with excavation for new construction (resulting from the potential presence of subsurface contamination) and with demolition (related to materials within buildings). Although these activities could increase pathways for human exposure, impacts would be avoided by performing construction activities in accordance with the measures identified below.

As noted above, Phase I construction (Sites 3, 3a, 4, 5, and 5a) is not expected to involve any demolition of existing buildings. Therefore, the focus of Phase I remediation measures would focus on excavation or soil disturbance. Excavation for Phase I building construction would be in the vicinity of the following potential sources of contamination:

- Excavation for Sites 3 and 3a would occur near the enclosure containing the 2,000-gallon aboveground diesel storage tank for the McMahon Hall backup generator, and the historical hospital and laboratories on the block to the south.
- Excavation for Site 4 would be at the location of known contamination on Lot 35 and near the hospital and laboratory historically located at the current below grade garage and The Alfred.
- Excavation for Sites 5 and 5a would occur partially at the location of known contamination on Lot 35 and near the hospital and laboratory historically located at the current below grade garage and The Alfred.
- Potential historical fuel oil tanks associated with historical on-site buildings may be found in various locations beneath the site.

The construction of the interim plaza on a current parking lot between the Lowenstein Center and Columbus Avenue would result in only shallow excavation for bench installation and plantings, and although this construction would occur in the vicinity of a past hydraulic oil spill, the Phase I ESA indicated that soil contaminated by this spill had been removed to below the anticipated depth of excavation.

SOIL DISTURBANCE

- The revised RAP/CHASP for Sites 4, 5 and 5a will be submitted to the DEP for approval, and future soil disturbance at these sites will be conducted in accordance with the RAP/CHASP as approved by the DEP.
- For proposed soil disturbance areas where a Phase II Subsurface Investigation has not been conducted, a Phase II (including the collection of soil and groundwater samples) would be conducted prior to any soil disturbance to determine whether contamination is present. Where applicable, the scope of the Phase II would be biased toward potential sources of contamination, such as tanks or historical uses of concern. Further, the scope would be reviewed and approved by the DEP prior to its implementation.
- All activities involving disturbance of existing soil would be conducted in accordance with a RAP and CHASP which will be reviewed by DEP. The RAP and CHASP would detail measures to reduce the potential for exposure (e.g., dust control) and measures to identify and manage known contamination (e.g., petroleum storage tanks or contaminated soil) and unexpectedly encountered contamination. Any underground storage tanks in areas to be disturbed would be properly registered, if required, with NYSDEC and FDNY, and would be properly assessed, closed and removed in accordance with federal, state, and local regulations prior to, or as part of initial construction activities for the project.
- Since VOCs were detected in soil and groundwater beneath Sites 4 and 5a during the May–June 2005 Stearns & Wheler investigation, vapor barriers would be placed beneath the foundations of the proposed buildings on these sites and adjacent Site 5 to prevent the potential of vapor intrusion. If future subsurface investigations identify concentrations of VOCs at other proposed construction locations, the buildings proposed at these locations would include vapor barriers below the foundations.
- All material that needs to be disposed of (e.g., both contaminated soil and excess fill, including demolition debris) would be properly handled and disposed of off-site in accordance with all applicable federal, state, and local regulations. If excavated soils need to

be temporarily stockpiled on-site, the stockpiles would be staged on and covered with polyethylene sheeting while disposal options are determined.

- All landscaped portions of the proposed construction sites not capped with concrete or asphalt would be covered with two feet of clean fill/top soil. The fill/topsoil would be imported from a DEP-approved facility, and would be segregated at this facility and sampled by a qualified environmental professional at a frequency of one sample per 250 cubic yards. The samples would be analyzed for Target Compound List (TCL) VOCs, SVOCs, pesticides, polychlorinated biphenyls (PCBs) and Target Analyte List (TAL) metals and the results would be compared to NYSDEC TAGM Recommended Soil Cleanup Objectives. The clean fill/topsoil would not contain construction and demolition debris, and would receive written DEP approval prior to importation to the site.

The above measures would be implemented in accordance with a DEP-approved Restrictive Declaration for the project site. With these measures in place, significant adverse impacts related to hazardous materials would be avoided during and post construction.

E. PROBABLE IMPACTS OF THE PROPOSED ACTION—2032

The second phase of development (Sites 1, 2, 6, and 7) would entail demolition of the Law School Building, which contains a 220-gallon, diesel aboveground storage tank (AST) and an approximately 75-gallon hydraulic tank, and was (prior to construction of the Law School) the location of the historical Armory Drill Room. Demolition would be followed by excavation preceding new construction. These potential sources of contamination as well as potential contamination from off-site sources would be a focus of concern. Prior to undertaking the measures listed above for soil disturbance, the measures described below relating to demolition would be undertaken to avoid adverse impacts.

The second phase of construction would also involve demolition of all or a portion of a one-story glass enclosure on the second floor of the Lowenstein Center at the upper level of Robert Moses Plaza, as well as the interim access to the interim plaza. These portions of the Lowenstein Center do not contain any of the facilities identified in the Phase I ESA as potential sources of hazardous materials.

The second phase of construction would be in the vicinity of the following potential sources of contamination as described below:

- Excavation for Site 1 would be at the location of the historical Armory Drill Room and near historical garages with buried gasoline tanks and a filling station on the blocks to the east.
- Excavation for Site 2 would be near the location of a 275-gallon diesel AST in Lowenstein Hall, an on-site hydraulic fluid spill, and historical garages with buried gasoline tanks and a filling station on the blocks to the east.
- Excavation for Site 6 would be partially at the location of the historical Armory Drill Room, near the location of an on-site hydraulic fluid spill, and near a 220-gallon AST in the existing Law School building.
- Excavation for Site 7 would be near a 220-gallon AST in the existing Law School building and the hospital and laboratory formerly located off-site on the project block.
- Potential historical fuel oil tanks associated with historical on-site buildings may be located in various locations beneath the site.

DEMOLITION

- Prior to demolition, any aboveground storage tanks in the Law School Building would be removed from service, and all such tanks would be properly assessed, closed and removed in accordance with federal, state, and local regulations.
- Any remaining chemicals or cleaning/maintenance supplies would be removed and disposed of in accordance with all applicable regulations.
- Prior to demolition, unless there is labeling or test data which indicates that fluorescent lights are not mercury- and/or PCB-containing, disposal would be performed in accordance with applicable federal, state and local requirements.
- Prior to any disturbance of on-site buildings, unless the areas to be disturbed are known not to contain asbestos, such areas would be surveyed for asbestos prior to demolition. All asbestos-containing materials (ACMs) in such areas would be properly removed and disposed of in accordance with applicable federal, state and local regulations prior to demolition.
- Lead-based paint would be managed in accordance with applicable federal, state, and local requirements.
- All demolition debris would be properly handled and disposed of in accordance with all applicable federal, state, and local regulations.
- Prior to the commencement of the second phase of construction activities, the measures described above for soil disturbance would be undertaken to avoid adverse impacts.

The above measures would be implemented in accordance with a DEP-approved Restrictive Declaration for the project site. With the implementation of these measures, no significant adverse impacts related to hazardous materials would result from construction activities. Following construction, there would be no potential for the proposed project to have significant adverse impacts. *