Chapter 7: Hazardous Materials

A. INTRODUCTION

The project site is the Rockefeller University campus which includes three development sites—the proposed Laboratory Building Site and North Terrace Site at the easternmost edge of the campus, within the Rockefeller University air rights space above the Franklin Delano Roosevelt (FDR) Drive, and the proposed Fitness Center Site at the northwest corner of the campus near demapped East 68th Street and York Avenue. The new laboratory building and North Terrace would be constructed primarily on a platform with support columns requiring some limited ground disturbance (approximately 236 square feet [sf]) at the western edge of the East River Esplanade and along the west side of the FDR Drive, and disturbance of lower portions of certain existing campus buildings adjacent to the Laboratory Building Site. The proposed project would also involve the demolition of the existing one-story concrete canopy structure and paved parking area in the northwest portion of the project site to allow for the construction of the new one-story fitness center which would require subsurface disturbance. The new laboratories may utilize small amounts of potentially hazardous chemicals, biological materials, and radioactive materials, but the research activities would be similar in type and scale—and subject to the same strict regulatory requirements—as the existing Rockefeller University research activities in the university's existing laboratories.

This chapter addresses the two hazardous materials concerns related to the proposed project: the potential presence of subsurface hazardous materials (in soil and/or groundwater) and within structures that would be disturbed by the proposed project; and the future use of hazardous materials as part of the operations of the new facilities.

This assessment was based on a Phase I Environmental Site Assessment (ESA) prepared for the project site by AKRF, Inc., dated October 2012 (see **Appendix E**). A Phase I ESA evaluates the potential for contamination based on visual reconnaissance and other information sources, including federal and state regulatory databases and historical land use maps.

PRINCIPAL CONCLUSIONS

A Phase I ESA prepared in October 2012 in order to evaluate potential contamination on the project site identified potential sources of contamination, including filling of the eastern portion of the project site (Laboratory Building Site and North Terrace Site) with fill materials of unknown origin, and potential historical releases from hospital/laboratory research facilities at Rockefeller University and elsewhere in the neighborhood. Soil sampling on the Rockefeller University campus in 2007 identified only minor soil contamination typical of urban fill, with no evidence of a spill or release.

Between the Draft and Final Environmental Impact Statement (EIS), the institutional control (to ensure requirements with respect to hazardous materials would be implemented for Block 1480, Lot 10, i.e., the Fitness Center Site and the on-campus portion of the project site at the eastern edge of the campus) was changed from a Restrictive Declaration to an E Designation,

administered by the New York City Mayor's Office of Environmental Remediation (OER), consistent with City practice. Implementation of any hazardous materials requirements with respect to the areas that would be disturbed by construction of the column footings would be ensured through a Mapping Agreement that would be executed by the University and the City in connection with the proposed change to the City map to demap and convey those areas to the University. ~~A hazardous materials E Designation will be assigned to the project site.~~ Based on the findings of the Phase I ESA, to reduce the potential for human or environmental exposure to contamination during and following construction of the proposed project, the E designation would require a Subsurface (Phase II) Investigation ~~would be~~ conducted in accordance with an ~~New York City Mayor's Office of Environmental Remediation (OER)Department of Environmental Protection (DEP)~~ approved Work Plan to determine whether past or present, on-site or off-site activities have affected subsurface conditions. Following implementation of this Phase II investigation and based on its findings, a Remedial Action Plan (RAP) and associated Construction Health and Safety Plan (CHASP) would be prepared (and submitted to OER~~DEP~~ for review and approval) for implementation during proposed construction. The RAP would address requirements for items such as: soil stockpiling, soil disposal and transportation; dust control; quality assurance; and contingency measures should petroleum storage tanks or contamination be unexpectedly encountered. The CHASP would include measures for worker and community protection, including personal protective equipment, dust control and emergency response procedures. ~~The Phase II investigation and RAP and CHASP, as needed, would be undertaken in consultation with DEP, as established in the Restrictive Declaration.~~

Lead-based paint, asbestos-containing materials (ACM) and polychlorinated biphenyl (PCB)-containing electrical equipment may be present at the project site. During and following demolition and renovation associated with the proposed project, regulatory requirements pertaining to ACM, lead-based paint and PCBs and chemical use and storage would be followed.

As described below, with the implementation of the measures identified above to the satisfaction of the OER, as required by the E Designation ~~in the Restrictive Declaration~~, construction of the proposed project would not result in any significant adverse impacts related to hazardous materials.

B. EXISTING CONDITIONS

SUBSURFACE CONDITIONS

The Laboratory Building Site and North Terrace Site consist of an on-campus area (~~with an elevation of~~ approximately 38 to 53 feet above mean sea level [msl]) separated from the FDR Drive (~~which has an elevation of~~ approximately six feet ~~above mean sea level~~ msl) by a stone retaining wall. The Fitness Center Site ~~lies at an elevation of~~ is approximately 36 feet ~~above mean sea level~~ msl. Although the campus generally slopes upwards toward the east, based on U.S. Geological Survey maps, area topography ~~in the surrounding area~~ generally slopes down towards the East River. Various ~~underground~~ tunnels and a portion of ~~Rockefeller University's~~ a Boiler House are located beneath the on-campus portion of the Laboratory Building Site. The ~~on-campus~~ service and utility tunnels connect the campus building basement levels at elevations of 30 to 45 feet above mean sea level msl. ~~There is also one~~ a ~~underground tunnel located in~~ beneath ~~the FDR Drive under the Rockefeller Research Building south of the Laboratory Building Site.~~

Previous studies elsewhere on the campus identified the presence of fill materials of unknown origin ~~with~~ above the bedrock depth~~, ranging from~~ which is first encountered at approximately 2

to 23 feet ~~above mean sea level~~ msl. Bedrock is expected at approximately 15 to 38 feet ~~above mean sea level~~ msl below the eastern edge of the FDR Drive. The previous studies indicated that groundwater perched on shallow bedrock has been encountered. Groundwater beneath the FDR Drive is expected to be shallow due to its proximity to the East River. Groundwater most likely flows in an approximately easterly direction toward the East River but is likely may be tidally influenced. A~~a~~ctual groundwater flow can be affected by many factors, including past filling ~~activities~~, tunnels, utilities and other subsurface openings, ~~or obstructions such as~~ basements, bulkheads, ~~tunnels and underground parking garages~~, bedrock geology, tidal fluctuations, and other factors. Groundwater in Manhattan is not used as a source of potable water.

PHASE I ENVIRONMENTAL SITE ASSESSMENT

The Phase I ESA incorporated~~s~~ information from a variety of sources including: recent and historical Sanborn Fire Insurance maps; state and federal environmental regulatory databases; computerized New York City ~~Fire Department (FDNY)~~ records; and previous studies conducted in 2007 for an Environmental Assessment Statement (EAS) relating to renovation and new construction in other portions of the campus. The Phase I ESA also included~~s~~ information gathered from reconnaissance of the project site~~, focusing on the two development sites, and its surroundings~~. The Phase I ESA identified the following:

- The development sites historically included a swimming school, a stone yard with a machine shop, part of a hospital, and a portion of a street. The eastern edge of the Laboratory Building Site and North Terrace Site was filled with materials of unknown origin in the early 20th century. Also by the early 20th century, the Laboratory Building Site and North Terrace Site were occupied by portions of the Rockefeller University campus, including an animal house, a "horse yard" and vacant land in the on-campus portion of the Laboratory Building Site and North Terrace Site, and a recreation area at the Fitness Center Site. By 1928, part of the Rockefeller University Boiler House was shown on historic land use maps in an area beneath part of the Laboratory Building Site; the Boiler House is currently located below ~~campus~~ grade, ~~and~~ extend~~ings~~ beneath several adjacent buildings. By 1951, the FDR Drive was constructed adjacent to the campus's eastern ~~boundary (the site of the proposed laboratory building and North Terrace)~~. Historical land use maps show the "horse yard" at the Laboratory Building Site (adjacent to Flexner Hall) through 1988, and ~~show~~ the on-campus portion of the Laboratory Building Site and North Terrace Site as undeveloped through 2004. The land use maps show the Fitness Center Site as a parking lot with a parking shelter built in 1958.
- In the early 20th century, the surrounding area was mixed-use, with residential, educational, medical, and commercial uses, with development of ~~the Rockefeller University campus and~~ nearby large hospitals and research facilities ~~occurring~~ throughout the 20th century. The regulatory database identified Rockefeller University and other nearby hospitals and research facilities as generators of hazardous waste. Information provided by Rockefeller University representatives indicated that on-campus laboratories produce chemical, biological, and radioactive waste, whose disposal is managed by the University's Department of Laboratory Safety and Environmental Health in accordance with applicable regulations. Laboratories and/or maintenance facilities with chemical storage were reportedly located in some buildings which may be connected to the proposed new laboratory building.

- A Subsurface (Phase II) Investigation was conducted by AKRF on other portions of the Rockefeller University campus in 2007. The investigation was conducted in preparation for renovation and new construction ~~in other areas of the campus~~, and included the collection of soil samples for laboratory analysis for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, PCBs, and Target Analyte List (TAL) metals. ~~No samples were collected from the current project's two development sites; t~~The nearest sampling locations were ~~located~~ at the location of the Collaborative Research Center (CRC). Laboratory analytical results indicated only ~~minor~~ soil contaminant concentrations typical of urban fill ~~in this area~~, with no evidence of a spill or release.
- No evidence of petroleum storage tanks was noted on either development site. Regulatory listings and interviews indicated that nine petroleum aboveground storage tanks (ASTs) and one underground storage tank (UST) were present elsewhere on the Rockefeller University campus. Five ASTs were located in close proximity to the Laboratory Building Site and North Terrace Site but were noted to be in good condition with no evidence of a release. All previously reported spills were minor and had been given a closed status (i.e., cleaned up) to the satisfaction of the New York State Department of Environmental Conservation (NYSDEC). Based on these observations, regulatory listings and tank locations, the Rockefeller University tanks are unlikely to have affected subsurface conditions beneath the development sites
- Lead-based paint may be present on the Fitness Center Site. Some peeling paint was noted on the one-story canopy structure's ceiling. Lead-based paint may also be present in existing building areas that would be disturbed for connections to the proposed laboratory building. Painted surfaces in typical interior areas of buildings that may be connected to the laboratory building were observed to be in good condition.
- No suspect ACM were noted at any of the three development sites. However, suspect ACM (e.g., in electrical equipment components or pipe insulation) may be present in underground utilities beneath the development sites. Suspect ACM may also be present in existing building areas that would be disturbed for connections to the proposed laboratory building. Suspect ACM observed in the observed portions of the Hospital and Nurse Buildings and the Boiler House included thermal pipe insulation, 12-inch by 12-inch vinyl floor tiles and associated mastic, 24-inch by 24-inch suspended ceiling tiles, and window caulking and glazing in the Hospital Building. The observed suspect ACM were in good condition. Asbestos surveys and abatements have reportedly been conducted as part of renovation activities in Smith Hall/Smith Hall Annex and Flexner Hall.
- No suspect PCB-containing equipment was noted on the development sites. However, suspect PCB-containing electrical utilities (e.g., feeder lines) may be present beneath the development sites. In addition, suspect PCB-containing electrical equipment and/or fluorescent lighting fixtures may be present in existing building areas that would be disturbed for connections to the proposed laboratory building.

C. FUTURE NO ACTION SCENARIO

Absent the proposed actions, in the Future No Action scenario, no new development would occur within the Large Scale Community Facility Development (LSCFD). In this scenario, the air rights spanning the FDR would not be developed and the surface parking lot and canopy structure on the northwestern portion of the campus would remain. Certain areas of the Bronk Building, the Smith Hall Annex, and other campus buildings would be used for storage of University equipment and furniture, as needed, as part of the typical University operations. In

the Future No Action scenario, the temporary IT Pavilion, located south of the University's East 66th Street entrance near York Avenue, would be removed and this areae site will would becomee a landscaped area. These changes to the LSFCD would involve certain limited in-ground disturbance. Currently, there are no known significant health risks associated with the development sites. Likewise, there would be no significant health risks at the development sites in the future without the proposed project.

D. FUTURE WITH ACTION SCENARIO

The proposed project would involve the construction of a new laboratory building and Interactive Conference Center (ICC) primarily on a platform structure, including the North Terrace, that would span the FDR Drive in the easternmost portion of the project site. The proposed project would also require the demolition of the existing concrete canopy structure and paved parking area in the northwestern portion of the project site and construction of a new fitness center in its place. The proposed project would entail soil disturbance and limited disturbance of existing buildings for connections to the new laboratory building and North Terrace.

PROJECT CONSTRUCTION

Hazardous wastes generated at the Rockefeller University have long been managed by the Department of Laboratory Safety and Environmental Health in accordance with strict regulations. However, there is some potential for historical campus releases or releases at other nearby hospital/research or other facilities to have affected subsurface conditions beneath the development sites. Fill materials of unknown origin is also known to be present, although past testing in other portions of the campus identified no significant soil contamination associated with this fill materials. Known and suspect ACM, PCB-containing materials, and/or lead-based paint may be associated with subsurface utilities and existing buildings that would be disturbed by the proposed project.

Although the demolition and construction activities associated with the proposed project could increase pathways for human exposure, impacts would be avoided by performing site development activities in accordance with the following measures, which are to be identified in the Restrictive Declaration recorded against the property:.

An (E) designation would be assigned to ensure that soil testing and any necessary remedial activities would be undertaken prior to redevelopment. The (E) designation would ensure that appropriate procedures for any necessary subsurface disturbance would be followed prior to, during, and following construction. The (E) designation requirements related to hazardous materials would apply to Block 1480, part of Lot 10 (for the on-campus portion of the project site, i.e., the Fitness Center Site and eastern portion of the campus adjacent to the New River Building Site).

- The text for the (E) designations related to hazardous materials would be as follows:

  "Task 1-Sampling Protocol

  The applicant submits to OER, for review and approval, a Phase I of the site along with a soil, groundwater and soil vapor testing protocol, including a description of methods and a site map with all sampling locations clearly and precisely represented. If site sampling is necessary, no sampling should begin until written approval of a protocol is received from OER. The number and location of samples should be selected to adequately characterize the site, specific

sources of suspected contamination (i.e., petroleum based contamination and non-petroleum based contamination), and the remainder of the site's condition. The characterization should be complete enough to determine what remediation strategy (if any) is necessary after review of sampling data. Guidelines and criteria for selecting sampling locations and collecting samples are provided by OER upon request.

Task 2-Remediation Determination and Protocol

A written report with findings and a summary of the data must he submitted to OER after completion of the testing phase and laboratory analysis for review and approval. After receiving such results, a determination is made by OER if the results indicate that remediation is necessary. If OER determines that no remediation is necessary, written notice shall be given by OER.

If remediation is indicated from test results, a proposed remediation plan must be submitted to OER for review and approval. The applicant must complete such remediation as determined necessary by OER. The applicant should then provide proper documentation that the work has been satisfactorily completed.

A construction-related health and safety plan should be submitted to OER and would be implemented during excavation and construction activities to protect workers and the community from potentially significant adverse impacts associated with contaminated soil, groundwater and/or soil vapor. This plan would be submitted to OER prior to implementation."

- Implementation of any hazardous materials requirements with respect to the areas that would be disturbed by construction of the column footings would be ensured through the Mapping Agreement that will be executed by the University and the City in connection with the proposed change to the City map to demap and convey those areas to the University.
- The E Designation and Mapping Agreement cited above would require that a Remedial Action Plan (RAP) and Construction Health and Safety Plan (CHASP) be approved by OER in order to receive building permits prior to conducting soil disturbance. ~~A hazardous materials E Designation will be assigned to the project site. As required by the E Designation,~~ Based on the likely subsurface disturbance associated with the proposed project, a Subsurface (Phase II) Investigation Work Plan to determine whether past or present on-site or off-site activities have affected subsurface conditions would be prepared and submitted to ~~OER~~DEP for review and approval. Following implementation of this ~~OER-approved~~ Phase II investigation and based on its findings, a RAP and associated CHASP would be prepared (and submitted to ~~OER~~DEP for review and approval) for implementation ~~during proposed construction.~~ The RAP would address requirements for items such as: soil stockpiling, soil disposal and transportation; dust control; quality assurance; and contingency measures should petroleum storage tanks or contamination be unexpectedly encountered. The CHASP would include measures for worker and community protection, including personal protective equipment, dust control, and air monitoring.
- The E Designation would also require that a Notice of Satisfaction be obtained (subsequent to the applicant submitting a Closure Report to OER documenting proper performance of all required procedures) before seeking Certificates of Occupancy for newly constructed structures.

- If dewatering is necessary as part of the proposed construction activities, water would be discharged to sewers in accordance with New York City Department of Environmental Protection (DEP) requirements.
- Unless information exists that suspect ACM do not contain asbestos, prior to any activities with the potential to disturb suspect ACM, an asbestos survey of the areas to be disturbed would be conducted and any ACM that would be disturbed would be removed and disposed of in accordance with local, state, and federal requirements.
- Any activities with the potential to disturb lead-based paint would be performed in accordance with applicable requirements (including federal Occupational Safety and Health Administration [OSHA] regulation 29 CFR 1926.62—*Lead Exposure in Construction*).
- Unless there is labeling or test data indicating that suspect PCB-containing electrical equipment and fluorescent lighting fixtures do not contain PCBs, and that fluorescent lighting bulbs do not contain mercury, if disposal is required, it would be conducted in accordance with applicable federal, state and local requirements.
- Any chemicals, biological waste, and/or radioactive waste stored in portions of existing buildings that would be disturbed by the proposed project would be properly disposed of in accordance with applicable requirements.

With the implementation of the above measures, no significant adverse impacts related to hazardous materials would be expected during construction of the proposed project.

OPERATIONAL PHASE

As is the case at other facilities on campus, certain h~~H~~azardous chemicals would be used in the proposed new laboratory building. Their ~~future~~ use would be similar to current usage ~~at other facilities on the campus~~ in terms of type of chemicals and scale, i.e., ~~hazardous materials would be used~~ in small quantities under controlled conditions by trained professionals. Rockefeller University's Department of Laboratory Safety and Environmental Health establishes strict safety procedures and conducts regular safety training for staff and employees, and performs inspections to ensure regulatory compliance. The Laboratory Safety and Environmental Health Director is responsible for ensuring that University policies and procedures conform with all city, state, and federal requirements, including the following:

- Supplies of commonly used chemicals would be maintained in small quantities within the laboratories and the chemical storage rooms. The quantities of hazardous materials kept in any room are limited by New York City Fire Department (FDNY) regulations; the actual quantities used are usually smaller. Rockefeller University's Department of Laboratory Safety and Environmental Health would provide plans for cleanup of any spills. Personnel would be trained in proper spill response
- All research involving the use of biohazardous agents (e.g., infectious microorganisms) would follow the research guidelines established by the National Institutes of Health and the Centers for Disease Control. Biological safety cabinets are used for most microbiological work to prevent contamination. Biological safety cabinets are of various types depending on the degree of containment required. The most common type used in Rockefeller University laboratories are Class II Type A. These are designed with inward air flow to protect personnel, and high efficiency particulate air (HEPA) filtered exhaust for sample, personnel, and environmental protection. HEPA filters remove at least 99.97 percent of particulate matter, including microorganisms.

- Radioactive isotopes are used in biomedical research primarily as a means of labeling compounds to trace their biological activity or to assist in their separation and purification. Some of the radionuclides most commonly used in biomedical research—tritium and carbon-14—do not present a significant external exposure hazard because they emit only low-energy beta rays that can barely penetrate the outer layer of the skin. None of the dispersible radioactive materials used on campus are used in amounts that present significant external irradiation risks. Radioactive wastes with short half-lives (less than or equal to 90 days) would be stored until their radioactivity decays to acceptable levels. Solid materials with half-lives greater than 90 days would be properly labeled and containerized and transported for off-site disposal at a permitted radioactive waste disposal site. Liquid aqueous waste with half-lives greater than 90 days would be released to the sewer in accordance with local regulations and the requirements of Rockefeller University's radioactive materials license.
- Laboratories in which volatile hazardous chemicals would be used would be equipped with fume hoods (enclosures that are maintained under negative pressure and continuously vented to the outside). An assessment of the potential impacts from fume hood releases is presented in the Chemical Spill Analysis section of Chapter 8, "Air Quality."
- Hazardous wastes would be collected and disposed of through the campus's existing centralized system under the direction of the Department of Laboratory Safety and Environmental Health. Potentially hazardous chemical wastes would be properly containerized and labeled, collected from the laboratories, and held in a secure waste accumulation area. The wastes would be regularly removed by licensed contractors for disposal off-site. Rockefeller University is classified by the United States Environmental Protection Agency (EPA) as a large quantity generator of hazardous wastes.
- Regulated medical wastes would be containerized in accordance with all applicable regulations, labeled and taken to a central collection location to be picked up by a permitted hauler for incineration off-site. Aqueous biological waste would be chemically disinfected on-site and released to the sewer in accordance with applicable regulations. Solid waste from certain operations would be autoclaved before removal from the laboratory, but would still be shipped as regulated medical waste with a permitted hauler.

With the implementation of Rockefeller University's procedures and controls as described above, no significant adverse impacts related to hazardous materials would be expected during the operation of the proposed project. ✷