

Chapter 8: Rockefeller University 14D0019M Air Quality

A. INTRODUCTION

The potential for air quality impacts from the proposed project is examined in this chapter. Air quality impacts can be either direct or indirect. Direct impacts result from emissions generated by stationary sources (e.g., from on-site fuel combustion for heat and hot water systems). The proposed project would include potential chemical spill ventilation, which was analyzed as a direct source. The heat, hot water, and steam needs of the proposed project would be met by Rockefeller University's existing energy system, operating within the currently approved air permit limitations. As an existing permitted source, no significant adverse air quality impacts would occur from the increased use of the existing system, and no analysis is required. Indirect impacts are impacts that are caused by the effect of a project on non-project sources (e.g., the effect of proposed projects on roadway traffic and/or emissions). Although the proposed project would not generate additional vehicle trips, the proposed new laboratory building and North Terrace spanning the Franklin Delano Roosevelt (FDR) Drive would change the dispersion of pollutants from the roadway and was also analyzed.

As discussed below, the maximum predicted pollutant concentrations and concentration increments with the proposed project would be below the corresponding guidance thresholds and ambient air quality standards. Thus, the proposed project would have no significant adverse impact on air quality.

PRINCIPAL CONCLUSIONS

The proposed project would not add any new sources of air pollutants. A quantitative analysis was performed to assess the potential effects of an accidental chemical spill in any of the proposed laboratory fume hoods and the ensuing emissions from the ventilation system on air quality in the laboratory building (near air intakes) and in the surrounding area. The exhaust stream from the fume hoods would be handled via a dedicated system (separate from the building ventilation). The fume hood exhaust stream from the south side of the laboratory building would be vented via a stack at least 10 feet above the adjacent to the Hospital building at a height of 181 feet from datum. The fume hood exhaust stream from the north side of the laboratory building would be vented via a stack at least 10 feet above the adjacent to the Flexner Hall Extension at a height of 145 feet from datum. (Both stack heights would be at least 10 feet above the respective buildings.) (Figure 5-10 in Chapter 5, "Historic and Cultural Resources shows the stack locations). The system would be designed to maintain a minimum operating exhaust velocity of 3,000 feet per minute, with the exhaust flow rate of 33,333 and 37,500 cubic feet per minute for the south and north exhaust systems, respectively (based on current design parameters).

Between the DEIS and FEIS, the institutional control to ensure requirements with respect to air quality was changed from a Restrictive Declaration to an (E) designation, administered by the Office of Environmental Remediation (OER), consistent with City practice. An (E) designation would be assigned to ensure that no significant adverse impacts related to air quality would

result from the proposed project. The (E) designation requirements related to air quality would apply to the Block 1480, Lot 10 (Laboratory Building Site).

Commitments regarding the exhaust parameters would be included in the Restrictive Declaration and may be developed further between the Draft and Final Environmental Impact Statement (EIS).

- The text for the (E) designation related to air quality would be as follows:

The proposed Laboratory Building will contain separate Laboratory Exhaust and Fume Exhaust systems. Each separate system will be divided into two sub-components.

Two Fume Exhaust systems will be established for the proposed Laboratory Building — the first Fume Exhaust system would be located at the northern section of the Laboratory Building Site, adjacent to the existing Flexner Hall Extension Building at a stack height of 154 feet. The second Fume Exhaust system would be located at the southern section of the Laboratory Building Site, adjacent to the existing Hospital Building at a stack height of 178 feet. (Figure 5-10 in Chapter 5, “Historic and Cultural Resources” shows the stack locations).

Both Fume Exhaust systems would be required to discharge at a height of 10 feet above their respective roofs. The two exhaust fans associated with the two fume hood exhaust systems must have a minimum velocity of 3,000 feet per minute, and an exhaust flow rate of 37,500 (for the northern exhaust system) and 33,333 cubic feet per minute (for the south exhaust systems).

A detailed analysis was also prepared to assess the potential effect of constructing a deck structure over the FDR Drive on the dispersion of pollutants from the roadway in nearby publicly accessible areas. In addition, a screening analysis was undertaken to assess the potential effect of existing nearby large pollutant sources on air quality within the proposed project.

The analysis concludes that no significant adverse impact on air quality would occur as a result of the operation of the proposed project.

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 (nitric oxide, NO, and nitrogen dioxide, NO₂, 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 (SO₂) are associated mainly with stationary sources, and some other sources utilizing high-sulfur non-road diesel such as large international marine engines. On-road diesel vehicles currently contribute very little to SO₂ 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. Ambient concentrations of CO, PM, NO₂, SO₂, and lead are regulated by the U.S. Environmental Protection Agency (EPA) under the Clean Air Act (CAA), and are referred to as “criteria pollutants,” emissions of VOCs, NO_x, and other precursors to criteria pollutants are also regulated by EPA.

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 area site will ~~would become 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 be 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 hHazardous 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.