

A. INTRODUCTION

Under the 2012 *City Environmental Quality Review (CEQR) Technical Manual* guidelines, a hazardous materials analysis presents the findings of the hazardous materials assessment and identifies potential issues of concern with respect to workers, the community, and/or the environment during construction and after implementation of the proposed project. The potential for hazardous materials was evaluated based on a June 2012 *Phase I Environmental Site Assessment (ESA)* prepared by AKRF, Inc.

The USTA Billie Jean King National Tennis Center (NTC) Strategic Vision (the proposed project) would result in a series of improvements on the project site, as described in Chapter 1, “Project Description.” The proposed project would entail soil disturbance associated with improvements and expansion of NTC facilities, including demolition of existing structures, construction of new structures, and roadway construction and improvements. This chapter provides an assessment of existing and future conditions with and without the proposed project for the project site, which is described in detail below.

B. PRINCIPAL CONCLUSIONS

The Phase I ESA identified potential sources of contamination, including: historical on-site marshland potentially associated with methane emissions; filling of the project site and nearby land with a mixture of ash, refuse, street sweepings, and soil and rock removed during subway construction in Brooklyn; and a historical on-site underground storage tank (UST). Soil and groundwater testing on and in the vicinity of the project site in 1991-1992 identified somewhat elevated concentrations of certain semivolatile organic compounds (SVOCs), metals and total petroleum hydrocarbons (TPH) in soil samples, which are typical for fill materials containing ash. The detected volatile organic compound (VOC) concentrations met or were only slightly above New York State Department of Environmental Conservation (NYSDEC) Part 375 Soil Cleanup Objectives for Unrestricted Use (USCOs) for soils and met NYSDEC Class GA Standards (drinking water standards) for groundwater, and also appeared to be attributable to fill materials rather than a spill.

Based on the above findings, to reduce the potential for human or environmental exposure to contamination during and following construction of the proposed project, a Subsurface (Phase II) Investigation Work Plan was prepared to determine whether past or present, on or off-site activities have affected subsurface conditions. The Work Plan has been approved by ~~prepared and submitted to~~ the New York City Department of Environmental Protection (NYCDEP) ~~for review and approval~~. The Phase II investigation would target areas where soil disturbance is proposed. Following implementation of this Phase II investigation, based on its findings, a Remedial Action Plan (RAP) and associated Construction Health and Safety Plan (CHASP), to be implemented during project construction, would be prepared and submitted to NYCDEP for review and approval. 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 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, dust control, air monitoring, and emergency response procedures).

Lead-based paint, asbestos-containing materials (ACM) and PCB-containing electrical equipment, hydraulic equipment and fluorescent lighting fixtures may be present (primarily within the older structures) at the project site. During and following demolition and renovation associated with the proposed project, regulatory requirements pertaining to ACM, lead-based paint and Polychlorinated Biphenyls (PCBs) and chemical use and storage would be followed.

With these above-described measures, the proposed project would not result in any significant adverse impacts related to hazardous materials.

C. EXISTING CONDITIONS

SUBSURFACE CONDITIONS

The project site lies at an elevation of approximately 10 to 20 feet above mean sea level, with surface topography sloping down toward the project site from the southeast and southwest. Bedrock depth is expected to be more than 250 feet below grade. Previous geotechnical studies indicated that urban fill materials containing ash/cinders and building debris are present beneath the surface with a thickness of approximately 15 to 30 feet. The foundations of historical World's Fair buildings also remain beneath portions of the project site.

The geotechnical studies indicated that groundwater is first encountered at approximately 5 to 15 feet below grade and appears to be flowing in a northeasterly direction, i.e., either toward the Flushing River approximately 1,100 feet to the east, or toward Flushing Bay approximately 3,200 feet to the north. Groundwater in this part of Queens is not used as a source of potable water (the municipal water supply uses upstate reservoirs).

HAZARDOUS MATERIALS ASSESSMENT

A Phase I Environmental Site Assessment (ESA) was prepared for the project site. The scope of the Phase I ESA included a reconnaissance of the project site and surrounding area, review of a variety of information sources, including historical Sanborn fire insurance maps, environmental regulatory agency databases identifying state and federally listed sites, and review of previous studies. The Phase I ESA identified the following:

- The project site was historically a tidal marsh, which was filled in the early 20th century with some mixture of ash, refuse, street sweepings, and soil and rock removed during subway construction in Brooklyn. The fill layer is approximately 15 to 30 feet thick based on prior geotechnical information. In 1939, the project site was occupied by the World's Fair. The fair buildings were subsequently demolished and the project site became part of a park. In 1964, the project site was again occupied by the World's Fair. All buildings on the project site were subsequently demolished, except for Louis Armstrong Stadium (Stadium 2) and a historical building (since demolished) in the northwestern corner of the project site. In 1993, a fuel oil UST was associated with this historical building. It is not known whether this UST has been removed or remains beneath the project site. Regulatory databases identified hazardous waste generator listings for the project site: PCB waste, PCB-containing

transformers, silver and lead waste, benzene, and ignitable solid waste. The transformer-related listings, reported in 1994 and 1995, were likely associated with removal of historical transformers during the expansion of the NTC.

- Soil gas screening in 1991-1992 in the vicinity of the project site identified detectable concentrations of methane, which can be associated with former marshlands. Soil and groundwater testing conducted in the vicinity of the project site in 1991-1992 identified somewhat elevated concentrations of certain semivolatile organic compounds (SVOCs), metals and total petroleum hydrocarbons (TPH) in soil samples, which are typical for fill materials containing ash, cinders etc. The detected volatile organic compound (VOC) concentrations met or were only slightly above NYSDEC Part 375 Soil Cleanup Objectives for Unrestricted Use (USCOs) for soils and met NYSDEC Class GA Standards (drinking water standards) for groundwater, and also appeared to be attributable to fill materials rather than a spill. In 1992, soil and groundwater testing was conducted at three locations on the project site. Laboratory analysis indicated findings generally similar to those for soil and groundwater in the vicinity of the project site.
- One, approximately 600-gallon diesel aboveground storage tank (AST) for an emergency generator was observed in Arthur Ashe Stadium (Stadium 1). Slight staining was noted on the concrete floor beneath the tank; however, this surface staining is not likely to have affected subsurface conditions.
- Chemical storage on the project site included paints and cleaning and maintenance chemicals in containers up to five gallons in size, one-gallon containers of gasoline for lawn mowers, and a 55-gallon drum of propylene glycol for a chiller plant. These chemicals were generally neatly stored and labeled, with no odors or staining noted. Green liquid was noted in a sump in the Arthur Ashe Stadium chiller room where the 55-gallon ethylene glycol drum was stored, possibly due to a propylene glycol release or algae. NTC representatives indicated that this sump was cleaned following the Phase I ESA reconnaissance.
- Based on the buildings' ages, asbestos-containing materials (ACM) may be present in the Louis Armstrong/Grandstand building, but are less likely to be present in other project site structures, which were built at a time when few ACM were utilized in construction. Asbestos abatement was reportedly conducted in the Louis Armstrong/Grandstand building in 1998. Suspect ACM observed during the reconnaissance included roofing materials, 12-inch by 12-inch vinyl floor tiles, vinyl floor cover, suspended 24-inch by 48-inch ceiling tiles, thermal pipe insulation, and sheetrock walls. The suspect ACM appeared to be in good condition.
- Based on the buildings' ages, lead-based paint may be present on interior surfaces in the Louis Armstrong/Grandstand building and on outdoor surfaces, but is not expected to be present in the other buildings' interiors. Painted surfaces throughout the project site were observed to be in good condition.
- Based on the buildings' ages, fluorescent lighting fixtures, electrical equipment and hydraulic equipment in the Louis Armstrong/Grandstand building may contain PCBs. Fluorescent lights may also contain mercury. Electrical transformers in this building appeared to be dry-type (i.e., not utilizing potentially PCB-containing transformer oil). Mr. Jettmar indicated that some PCB-containing lighting fixture ballasts were removed from this building in the past. No leaks or stains from potentially PCB-containing equipment were

noted. If installed prior to 1979, electrical manholes on the Property may also utilize PCB-containing equipment. No PCBs are expected to be present in other project site structures.

- The surrounding area was sparsely developed with dwellings and a Long Island Rail Road (LIRR) rail line running north of the project site in the early 20th century. A train repair facility was constructed north of the rail line (i.e., downgradient/cross-gradient of the project site) by 1931, and expanded into a rail yard with train and bus maintenance by 1950. An ash removal facility located east of the project site in 1931 was likely associated with historical on-site dumping. The area surrounding the project site to the south, east and west was occupied by two World's Fairs in the 20th century before becoming the Flushing Meadows Corona Park.

D. FUTURE WITHOUT THE PROPOSED PROJECT

In the future without the proposed project (the No-Action condition), the project site would continue in its current uses. Legal requirements, including requirements for petroleum storage tank maintenance and handling and disposal of ACM, lead-based paint and PCBs, would continue to be followed.

E. FUTURE WITH THE PROPOSED PROJECT

The future with the proposed project (the With Action condition) would involve subsurface disturbance for the proposed NTC improvements and expansion, as well as demolition of or alterations to some existing structures. Soil that would be disturbed by the proposed project includes historical fill materials known to contain ash, which have somewhat elevated concentrations of certain metals and SVOCs. As noted above, on-site structures may contain hazardous materials such as ACM, PCBs and/or lead-based paint. The proposed project could disturb these hazardous materials and potentially increase pathways for human or environmental exposure. Impacts would be avoided by implementing the following measures:

- A Subsurface (Phase II) Investigation Work Plan was prepared to determine whether past or present, on or off-site activities have affected subsurface conditions. The Work Plan has been approved by, ~~would be prepared and submitted to NYCDEP for review and approval.~~ The Phase II investigation would target areas where soil disturbance is proposed. Following implementation of this Phase II investigation, based on its findings, a NYCDEP-approved Remedial Action Plan (RAP) and associated Construction Health and Safety Plan (CHASP) would be prepared for implementation during subsurface disturbance associated with project 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 RAP would include the requirement for any future enclosed construction to include appropriate vapor control (e.g., vapor barriers) to prevent the migration of methane or VOCs into enclosed areas. The RAP would also include the requirements for a cap of clean imported soil to be placed in areas not covered by buildings or paving. 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, and emergency response procedures).
- During subsurface disturbance, excavated soil would be handled and disposed of in accordance with applicable regulatory requirements. This would include characterization of

all fill material sent for off-site disposal in accordance with the requirements of the receiving facility.

- If dewatering is required during construction activities, it would be performed in accordance with NYCDEP requirements.
- If the emergency generator AST would be disturbed by the proposed project, or if any petroleum storage tanks are unexpectedly encountered during construction, such tanks would be properly closed and removed along with any associated contaminated soil. Any evidence of a petroleum spill would be reported to NYSDEC and addressed in accordance with applicable requirements.
- Prior to any activities (such as demolition or renovation) with the potential to disturb suspect ACM, an asbestos survey of the areas to be disturbed would be completed and all ACM would be removed and disposed of in accordance with local, state and federal requirements.
- All renovation/demolition activities with the potential to disturb lead-based paint would be performed in accordance with the applicable Occupational Safety and Health Administration regulation (OSHA 29 CFR 1926.62—Lead Exposure in Construction).
- Unless there is labeling or test data indicating that suspect PCB-containing lighting fixtures, electrical equipment (including equipment in electrical manholes) and hydraulic equipment do not contain PCBs, if disposal is required, it should be performed in accordance with applicable federal, state and local requirements.

With these measures, the proposed project would not result in any significant adverse impacts related to hazardous materials. *