

A. INTRODUCTION

As an old industrial waterfront, the project area has the potential to host hazardous materials. These would include residual materials in the soils and groundwater, materials such as asbestos and lead paint in the sheds and old industrial buildings, as well as buried storage tanks. Since the development of the site would involve excavation and disturbance of the existing soil, construction activities may result in temporary increases in exposure pathways for construction workers and workers on nearby sites to the potential contamination in the soil. Moreover, the issue of public health needs to be assessed because the proposed park use would result in intense public visitation to the project area.

The environmental conditions identified at the project site during the current and previous environmental studies would be remediated prior to initiating operation of the proposed park and providing public access to the project area. Potential impacts during construction and development activities would be avoided by implementing a construction health and safety plan (CHASP). Such a plan would insure that the construction workers, the surrounding community, and the environment are not adversely affected by environmental conditions exposed by or encountered during the construction activities. With the proposed measures in place, the health and safety of construction workers and the visiting public can be protected from adverse environmental conditions identified in the project area.

B. EXISTING CONDITIONS

A Phase I Environmental Site Assessment (ESA) was conducted for the Brooklyn Bridge Park project area in accordance with customary principles and practices in the environmental consulting industry, and in conformance with the scope and limitations of ASTM Standard E1527-00, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice. The Phase I was conducted to identify potential contamination issues associated with the Brooklyn Bridge Park project area. The following prior studies were reviewed and included in the Phase I ESA:

1. New York State Department of Environmental Conservation (NYSDEC) background information on the Brooklyn Bridge Project, dated February 22, 2001;
2. SCS Engineers, P.C. Draft Phase I Environmental Assessment Report of Brooklyn Piers 1–5, dated August 26, 1993, Prepared for the NYS Urban Development Corporation;
3. The Port Authority of New York and New Jersey Brooklyn Piers 1–6 Report, entitled A Framework for Discussion dated February 1986;
4. Asbestos Management & Compliance Division–Treasury Department–Asbestos Investigation and Analysis Report, Volume I–New York Marine Terminals–Brooklyn Piers, dated December 14, 1990;

Brooklyn Bridge Park FEIS

5. ATC Associated, Inc. (ATC) Phase I Environmental Site Assessment report, dated February 13, 2004, Prepared for the Watchtower Bible and Tract Society;
6. ATC Site Investigation Report and Corrective Action Plan, dated March 9, 2004, Prepared for the Watchtower Bible and Tract Society;
7. A letter from NYSDEC to the Watchtower organization, dated May 17, 2004;
8. Subsurface Environmental Investigation report prepared for the 1-11 John Street property by Environmental Concepts, Inc. in 1997, Prepared for the Consolidated Edison Company; and
9. Soil Investigation Report – Brooklyn Bridge Park prepared by Tully Environmental, Inc., dated December 2003, Prepared for the New York State Department of Transportation.

As part of the Phase I study, a site reconnaissance was performed to assess the present site conditions, and determine whether there is evidence of potential site contamination or situations that may indicate the presence of such contamination. Additional information was obtained regarding the regulatory status of the project site and the surrounding area from databases maintained by the United States Environmental Protection Agency (USEPA) and NYSDEC. Such records are helpful in identifying the use, generation, storage, treatment and/or disposal of hazardous materials and chemicals, or releases of such materials that may affect the project site. Historical insurance maps of the subject properties were also reviewed for indications of industrial usage or other evidence suggesting the use or disposal of hazardous materials on or adjacent to the subject property. These included Sanborn Fire Insurance maps from 1886, 1887, 1904, 1915, 1922, 1928, 1939, 1950, 1969, 1979, 1980, 1988, and 1989.

The results of the Phase I study are presented below for each section of the site. Most of the park site has historically been used for shipping and warehousing, primarily of food products, with some manufacturing operations in the upland areas and on the adjacent blocks to the east. Potential sources of contaminated materials identified in the Phase I study included:

- Petroleum storage tanks. Numerous underground and aboveground tanks were located on and around the site. These tanks contained fuel oil and gasoline used for heating, for motor vehicle fuels, and for industrial operations. Leaks or spills from petroleum storage tanks are common sources of contamination by volatile and semivolatile organic compounds, including benzene, toluene, and naphthalene.
- Industrial operations. Although the site has historically been mostly occupied by shipping and warehousing operations, the Phase I study identified a number of industrial facilities on and adjacent to the site. These include a wet battery manufacturing facility near Pier 5, the Brooklyn White Lead Company in the interbridge area, and the Con Edison property, formerly used for coal storage, north of the Manhattan Bridge. These facilities may have generated wastes including lead and other heavy metals.
- Vehicle maintenance facilities. Shipping and warehousing operations on the site included a number of vehicle maintenance and repair facilities, including the maintenance garage near Pier 5 and the Stevedore's garage near Pier 1. Vehicle maintenance facilities can result in contamination of soil and groundwater by lubricants or solvents.
- Historic fill. Like many waterfront areas, the site has been filled to raise its grades and create more usable land. In the past, fill material often included wastes such as coal ash, incinerator ash, and demolition debris. These materials may contain heavy metals and polycyclic aromatic hydrocarbons (PAHs).

- Lead-based paint. Old structures, including the Brooklyn and Manhattan Bridges that cross over the site, were usually painted with lead-based paint. Surface soil on the site may have been contaminated by peeling or flaking paint.

Based on the results of the Phase I study, a Subsurface (Phase II) Investigation was performed for the subject property between August and October 2004. The investigation included the advancement of 63 soil borings, the collection of 110 soil samples for laboratory analysis, and the installation and sampling of 16 groundwater monitoring wells. The objective of this Phase II study was to assess the potential presence of contamination beneath the property and target the recognized environmental conditions identified by the Phase I assessment. To accomplish this, sampling locations were selected in areas where there was the greatest potential for contamination. Soil borings were sited within, or immediately downgradient of, each of the areas of concern to investigate contamination associated with former on-site operations and potential impacts from off-site sources. Soil borings were also located throughout the site to determine the quality and character of the urban fill material at the site. Since groundwater flow is generally westward, towards the river, monitoring wells were installed both on the eastern (upgradient) side of the site to detect any groundwater contaminants entering the site, and at the western (downgradient) side of the site to detect any contaminants from on-site sources.

Based on the environmental studies performed to date, a review of the existing conditions is presented in the sections below.

ATLANTIC AVENUE GATEWAY AND PIER 6

Pier 6 consists of a pile-mounted pier with a large warehouse space. At the time of the site inspection in August 2003, the warehouse was vacant. Upland from the pier, the area is constructed of fill which was brought to the site from an unknown source to extend the coastline. A small building and a gate house are also located on the upland area. The building was used as a vehicle maintenance and repair facility since the mid-1900s and has an underground gasoline storage tank. The underground gasoline storage tank was identified on the 1969, 1979, and 1989 Sanborn fire insurance maps and, according to facility personnel, is no longer being used. Historically, the pier was used as a warehouse to store food products and has also been occupied by the Fulton Grain and Milling Company. A 13-story building, located at 360 Furman, is also located on the upland area of Pier 6. This building was occupied by the Watchtower Bible and Tract Society as a shipping facility for Bibles and publications.

Based on the Phase I assessment, potential environmental concerns for this portion of the project site were determined to include subsurface petroleum from the gasoline tank, maintenance activities associated with the repair shop and milling company, and incidental oil spillage from parked vehicles on the property. It was further determined that subsurface contamination might also be present in the urban fill material imported to this area. Contaminants typical of urban fill include, but are not limited to, metals (such as lead, chromium, and arsenic), petroleum hydrocarbons, and ash. Based on the age of the truck repair building, potential asbestos-containing materials (ACMs) and lead-based paints might also be present. Asbestos could also be present in the pier construction materials.

The area surrounding the Atlantic Avenue Gateway and Pier 6 area has been industrial and commercial in nature since at least the late 1800s. Based on the geology and the hydrologic gradient of the area, groundwater in the vicinity of the site is expected to flow in a westerly direction towards the East River. Regulatory databases indicate the presence of many underground storage tanks on the adjacent properties, which are located in an upgradient area

with respect to the anticipated groundwater flow direction. Off-site petroleum and/or other industrially related contaminants from the surrounding areas have the potential to have migrated to the subject site via the groundwater.

The Phase II investigation revealed that soil samples from Pier 6 and Atlantic Avenue Gateway contained above-background levels of polycyclic aromatic hydrocarbons and metals typical of urban fill material encountered in industrial areas of New York City. Ethylbenzene, toluene and xylenes, contaminants consistent with gasoline impacts, were detected at trace levels in soil sampled in the area of the gasoline tank. Groundwater quality in samples collected downgradient from the Pier 6 upland area was not indicative of the presence of significant contamination, though trace levels of petroleum compounds detected may be indicative of some gasoline/petroleum impact from the underground gasoline storage tank at the maintenance garage.

360 FURMAN STREET

Several environmental documents related to the 360 Furman property in the project area were reviewed for this study. Included in the review were a Phase I Environmental Site Assessment report dated February 13, 2004 and a Site Investigation Report and Corrective Action Plan dated March 9, 2004 prepared by ATC. A letter from the New York State Department of Environmental Conservation to the Watchtower organization, the former owner of the property, dated May 17, 2004 regarding the environmental status of the 360 Furman Street property was also reviewed. The Phase I identified only one potential environmental problem, a possible spill from six old fuel oil tanks under the garage level. The tanks had been closed in the mid-1980s after Watchtower acquired the property. Subsequently, a site investigation was performed by ATC, which found oil-contaminated soil in a plenum space under the garage-level floor just west of the old tank vault. ATC proposed a Corrective Action Plan which included removal of the contaminated soil and monitoring of groundwater under the building. The May 17, 2004 letter from NYSDEC grants closure with respect to the spill number issued for the petroleum contamination identified in the groundwater at the site. The closure was based on documentation dated May 13, 2004 which presumably documents the implementation of the Corrective Action Plan.

PIERS 5, 4, 3, AND 2

The Piers 5, 4, 3, and 2 section of the project site encompasses approximately 45 acres of property. The pier portions were constructed on piles over the East River, though some sections of these piers may be on fill material. The piers themselves contain large warehouses, which have been used to store various types of foods, but mostly coffee. The upland areas have been developed with urban fill material from an unknown source and contain several parking areas and buildings, including the Trade Facilities Building near Pier 5 and an electrical substation located near Pier 3.

Historically, each of the piers was constructed by consolidating several older, smaller piers in the area. The current piers were used mostly for warehouse storage of foods. Former manufacturing facilities on the upland areas included a paper scrap and recycling facility, a wet battery manufacturer near Pier 5, and numerous coal storage bins throughout. Remnant rail lines are present in some areas.

Historic Sanborn Maps indicate the presence of many petroleum storage tanks throughout the Piers 5, 4, 3, and 2 areas dating back to the early 1900s. In particular, six abandoned 20,000-

gallon fuel oil and one active 5,000-gallon heating oil underground storage tank were identified for the Trade Facilities Building property. Petroleum storage tanks on these properties, including the six 20,000-gallon fuel oil tanks, date back to at least the early 1900s. Sanborn maps indicated the presence of three gasoline underground storage tanks (of unknown capacities) at the Pier 5 maintenance garage and one 2,000-gallon fuel oil tank at 290-296 Furman Street, though their status and exact locations were not given. The regulatory database search revealed two 550-gallon underground tanks (gasoline and diesel) in the Pier 4 upland area, though their status and location was not given. In addition, the Port Authority reported that a 5,000-gallon fuel oil underground storage tank was removed from the Old New York Docks Railway building in 1997. According to the Port Authority, post-excavation soil samples were not contaminated with petroleum, though these results were not provided.

Based on the Phase I study, potential environmental concerns for the upland areas were determined to include subsurface petroleum impacts from the petroleum storage tanks currently and formerly located throughout the subject areas as well as from former manufacturing and maintenance operations. Coal storage has the potential to contribute to hydrocarbon contamination in the ground. It was determined that subsurface contamination might also be present in the urban fill material imported to this area. As noted above, contaminants typical of urban fill include, but are not limited to, metals including lead, chrome and arsenic, petroleum hydrocarbons, and ash. Possible PCB-containing transformers in the substation and PCB-containing dielectric fluid used at the former wet battery manufacturing facility could also have impacted the subsurface if leaks or spills have occurred in the past. Lead contamination might also be associated with wet battery manufacturers.

It was further determined based on the age of the current buildings (ca. late 1950s) that potential ACMs and lead-based paints might be present at the site. Asbestos could also be present in pier construction materials. Creosote from the pier construction also has the potential to have impacted the subsurface.

The areas surrounding the piers have been in industrial and commercial use since at least the late 1800s. Regulatory databases indicate the presence of many underground storage tanks on the adjacent properties. As noted, groundwater in the vicinity of the site is expected to flow in a westerly direction towards the East River. Off site petroleum and/or other industrially related contamination from the surrounding areas has the potential to have migrated to the subject site via the groundwater.

Results of the Phase II investigation indicated above-background levels of polycyclic aromatic hydrocarbons found in the soil samples from the Pier 5, 4, 3, and 2 area that are typical of urban fill material encountered in industrial areas of New York City and were not indicative of contamination from the past use of this area for coal storage. Volatile compounds and semi-volatile organic compounds detected in some soil samples from this area indicated that pockets of petroleum-contaminated soil associated with past uses of the property may be present near the Pier 5 maintenance garage. Some metals were detected above established background levels including chromium, nickel, lead, and mercury. PCBs were also detected in the soil but at concentrations below recommended cleanup guidelines. The above-background metals concentrations and PCBs detected are most likely attributable to deposition of urban fill during past development activities and are not necessarily indicative of environmental contamination from the wet battery manufacturer or other former industrial on-site operations.

No significant levels of contaminants were detected in groundwater samples. Trace levels of compounds associated with chlorinated solvents were detected in the Pier 5 area. This may be

from the use of solvents associated with historic industrial operations on-site such as the wet battery manufacturer, though the detected levels were not necessarily indicative of a particular past industrial source.

PIER 1 AND FULTON FERRY LANDING

The Pier 1 and Fulton Ferry Landing areas encompass several pier and upland sections and include buildings and open warehouses. Pier 1 is constructed mostly on fill with a portion built on piles over the East River and contains a warehouse used for food products and paper. The present Pier 1 was constructed over former Piers 1 through 6 in the 1950s. The National Cold Storage buildings (formerly used for storing perishable food) and Stevedore's Garage buildings are the only structures upland from Pier 1. Further north, the subject site includes the Brooklyn Bridge and the Fulton Ferry Park and Recreation Pier. Several commercial and city-owned properties are also located in this area.

The Stevedore's Garage buildings historically stored lubricants, paints, hydraulic oils, and solvents, and are also known to have contained several petroleum underground storage tanks, which are likely still present, but have reportedly been closed by the Port Authority. No closure reports, requested from the Port Authority, were provided and no evidence of the tank closures was noted on site. Historic manufacturing operations in the Pier 1 area include a cod liver oil plant, a foundry, and several coal storage bins, which date back to at least 1915. Current and historic operations on the adjacent properties include many industrial and manufacturing facilities and petroleum storage sites.

Based on the Phase I investigations, environmental concerns at the Pier 1 and Fulton Ferry Landing area were determined to include potential subsurface impacts from on and off-site petroleum storage, coal storage, vehicle maintenance, and other industrial activities. The former presence of a foundry might also have impacted the subsurface with metals, as well as with petroleum, grease, and solvents used during facility operations. Subsurface contamination might also be present in the urban fill material (see above for a description of likely fill components) imported to this area. Chemicals used as part of the refrigeration process in the cold storage buildings might have migrated into the underlying fill at the site. Creosote from the pier construction might again have impacted the subsurface, and off site petroleum and/or other industrially related contaminants from the surrounding areas could have migrated to the subject site via the groundwater.

It was further determined based on the age of the current buildings (ca. early 1900s) that potential ACMs and lead-based paints may be present at the site. Asbestos could also be present in pier construction materials. Previous environmental reports from 1993 indicate known friable asbestos-containing materials present in deteriorating insulation at the National Cold Storage buildings.

Results of the Phase II investigation revealed above-background concentrations of polycyclic aromatic hydrocarbons and metals detected in the soil samples typical of urban fill material encountered in industrial areas of New York City. Levels of PCBs, below recommended cleanup guidelines, were determined to be typical of urban fill material. Concentrations of volatile organic compounds and semi-volatile organic compounds above recommended cleanup guidelines in soil samples from the area near the Stevedore's Garage indicated that pockets of petroleum-contaminated soil may be present as a result of former maintenance and fueling activities.

No significant levels of contaminants were detected in groundwater samples. However, trace levels of toluene, trichloroethene, and xylenes were detected south-adjacent to Stevedore's Garage. These levels may be related to petroleum or solvent contamination but the concentrations of the compounds are well below the Class GA groundwater standards (i.e., drinking water standards). Total lead was detected in the groundwater sample from monitoring well MW-6B, south-adjacent to Stevedore's Garage. Total lead was detected at 98.3 parts per million (ppm), above the New York State drinking water standard of 25 ppm. However, no dissolved lead was detected in the same groundwater sample. The elevated lead level is, therefore, likely due to suspended sediments in the collected sample and is not indicative of lead contamination from former on-site operations.

INTERBRIDGE AREA

The Interbridge Area consists of the properties between the Brooklyn and Manhattan Bridges. This area encompasses the existing Empire-Fulton Ferry State Park and Main Street Park. A building occupied by city offices is located under the Brooklyn Bridge. The adjacent properties are commercial and light industrial in nature. The regulatory database indicates the presence of petroleum storage tanks throughout this area.

Historically, this area has consisted of commercial and industrial properties including coal yards and food storage facilities dating back to the late 1800s and early 1900s, when several pile mounted piers were present over the East River. The piers have had several configurations since that time. A chemical warehouse and several parking areas were present on a Sanborn map from 1939. Since then, property usage has included the storage of concrete, sand, gravel, iron, and scrap metal. In addition, the Consolidated Edison Company is known to have owned, and may have operated on much of the property in this area. Off site areas have historically consisted of industrial and commercial facilities including many petroleum storage sites.

Potential environmental concerns at this site were determined to include impacts from current and former on- and off-site storage of petroleum and petroleum-related industrial activities as well as from incidental oil spillage from parked vehicles. On-site metal and coal storage yards could also have historically impacted the subsurface. Consolidated Edison operations on site might have adversely impacted the property with PCB-containing dielectric oils as well as with other petroleum-related products. Subsurface contamination could also be present in the urban fill material imported to this area. Based on the age of the current buildings (ca. early 1900s), potential ACMs and lead-based paints might be present at the site. Creosote and asbestos from pier construction also has the potential to have impacted the subsurface.

Since the Interbridge Area of Brooklyn Bridge Park was, for the most part, already developed as parkland, no subsurface sampling in this area was performed as part of AKRF's Phase II investigation. However, a Soil Investigation Report for the site prepared by Tully Environmental, Inc. (Tully) dated December 2003 was reviewed. According to the report, Tully performed a soil sampling investigation of the top two feet of soil at a property located under the Manhattan Bridge to characterize the soil quality. The target area encompassed the entire open lot located north of Plymouth Street, between Washington and Adams Streets (behind the DEP Water Meter Testing and Repair facility and the DOT paint shop and garage).

The results of the analyses indicated that total metals exceeded recommended cleanup guidelines at all sample locations and that hazardous levels of lead were detected in the soil sampled from four of the locations. The hazardous levels of lead in the soil detected by Tully are likely the result of deteriorating lead-based paints from the overlying Manhattan Bridge. Based on the

results of the total metals analyses, Tully concluded that the top two feet of soil at the site should be classified as contaminated and should not be reused for site development. In addition, soil sampled at four locations contained hazardous levels of lead and it was recommended that soil from the four locations at which hazardous lead levels were detected should be managed as hazardous waste.

NORTH OF THE MANHATTAN BRIDGE AND MANHATTAN BRIDGE GATEWAY

This area encompasses a vacant property (1-11 John Street) currently owned by Consolidated Edison. A New York City Department of Environmental Protection (DEP) water meter station and maintenance facility is located underneath the Manhattan Bridge. Based on information from the regulatory databases, the Consolidated Edison site (John Street Site) has been vacant since 1988. The surrounding area consists mainly of commercial and light industrial properties.

The site and surrounding areas have consisted of manufacturing and commercial properties dating back to the late 1800s. Historic property uses include coal yards, auto repair facilities, parking and auto refueling lots, and food storage warehouses. Previous investigation reports for the site indicate that five to six petroleum underground storage tanks were formerly present, which were used as part of the former Consolidated Edison vehicle maintenance and fueling operations. A portion of the property has been historically listed as a large quantity generator of hazardous waste and regulatory database searches indicate many petroleum spills reported for adjacent property areas.

Based on the Phase I study, it was determined that historic industrial and manufacturing operations at the site and in the surrounding areas may have impacted subsurface soil and groundwater. Contaminants could also be due to historic fill used to develop the property. Operations by Consolidated Edison on its portion of the property have the potential to have impacted the subsurface with PCB-containing dielectric oils. Depending upon the age of the DEP building, potential asbestos-containing materials and lead-based paints could also be present at the site.

A subsurface investigation was performed for the 1-11 John Street property by Environmental Concepts, Inc. (ECI) in 1997. Results of the investigation revealed the presence of petroleum compounds in the soil samples, which in some cases exceeded the New York State soil cleanup objectives. These compounds are commonly found in petroleum products. Elevated concentrations of lead were also found in the soil. Groundwater samples collected from monitoring wells installed at the site were found to contain elevated petroleum compounds and lead. Petroleum compounds detected at the site were assumed to be associated with several gasoline and diesel fuel underground storage tanks formerly located at the Con Edison/John Street property. The results of the investigation performed by ECI were submitted to the NYSDEC for review. In a memo dated January 28, 2002, NYSDEC requested that additional sampling be performed to characterize the contamination at the site prior to making a determination regarding remedial issues.

In accordance with NYSDEC's request, the Phase II investigation included the collection of shallow soil samples throughout the property and installation and sampling of an additional three groundwater monitoring wells. AKRF's resampling of surface soil confirmed ECI's finding that above-background levels of lead in excess of 1,000 parts per million were present. However, levels of leachable lead, as measured by the toxic characteristic leaching procedure (TCLP), were well below the regulatory standard for classification of the soil as a hazardous waste. Predominantly, concentrations of semi-volatile organic compounds detected by AKRF's and

ECI's investigations indicated that petroleum compounds and metals were mostly not detected or were detected at concentrations typical of urban fill material encountered in industrial areas of New York City. In AKRF's investigation, no significant levels of volatile organic compounds were detected in the surface soil at the John Street Site (Consolidated Edison site). There were only a few samples collected by ECI below the top two feet in which levels of volatile organic compounds exceeded NYSDEC recommended soil cleanup objectives, and these are limited to an area in the northeastern corner of the site.

Neither the earlier nor the recent groundwater analyses revealed any evidence that the petroleum compound concentrations previously detected by ECI in the soils had impacted the groundwater. Thus, petroleum impact to groundwater from the former underground tanks at the property is not evident. Total lead levels above the most stringent regulatory standards (drinking water) were detected in two groundwater samples collected by ECI. However, lead was detected in only one of the groundwater samples collected by AKRF at a concentration below its respective drinking water standard.

C. THE FUTURE WITHOUT THE PROPOSED PROJECT

Absent the proposed actions, the project site would not be redeveloped with a mix of new parkland or other uses. The site would remain underutilized and subsurface conditions would be largely the same as they are now. There would be a low potential for disturbance of hazardous materials but, unlike conditions in the future with the proposed project, there would be no remediation of hazardous materials.

D. THE FUTURE WITH THE PROPOSED PROJECT

Development of the Brooklyn Bridge Park would involve excavation and disturbance of the existing on-site soil as part of construction activities. These activities would temporarily increase in exposure pathways for construction workers and workers on nearby sites to recognized and potential contaminants in the soil. In addition, known environmental conditions identified during the current and previous environmental studies performed at the site would require remediation prior to initiating operation of the proposed park and providing public access to the project area. To avoid the potential for significant adverse impacts from the proposed project, environmental conditions would be remediated as part of the construction and development of the proposed park, as described below.

Known petroleum underground storage tanks were identified for the maintenance garages at the project site (at Piers 6, 5, and 1) and for the 1-11 John Street property north of the Manhattan Bridge. As part of the park development, all known underground storage tanks at the site, including those tanks previously closed-in-place, would be removed in accordance with all applicable federal, state and local regulations. If soil contamination associated with the tanks is encountered during the tank removal activities, NYSDEC would be notified of a spill, and the contaminated soil would be delineated, excavated and transported off-site for disposal as petroleum-contaminated material in accordance with regulatory protocols. If associated groundwater contamination is discovered, additional remedial measures may be implemented as required by NYSDEC to close such spills.

Most of the soil throughout the site was found to contain above-background concentrations of polycyclic aromatic hydrocarbons, and in some cases concentrations of metals and PCBs, that are associated with the importation of poor quality urban fill material containing ash or other

wastes for past grading and site development activities. Such soil, if excavated for site development, would need to be managed and disposed of in accordance with all applicable federal, state and local regulations. Existing fill remaining on-site would be either covered with two feet of certified clean fill or capped with concrete or asphalt pavement, buildings or other permanent structures to prevent potential exposure to the public.

Soil sampling performed by Tully in December 2003 for a portion of the project site located under the Manhattan Bridge revealed elevated levels of metals. Specifically, concentrations of metals exceeded recommended cleanup guidelines at all sample locations and hazardous levels of lead were detected in the soil sampled from four of the locations. To mitigate the detected contamination, the top two feet of soil in this area of the proposed park would be transported off-site for disposal and replaced with two feet of clean fill. Soil from the four locations at which hazardous lead levels were detected would be managed as hazardous waste. These remedial actions would prevent public contact with contaminated soils as this area of the subject park is developed and used.

Soil exhibiting elevated concentrations of petroleum-related contaminants above recommended cleanup guidelines was found at the 1-11 John Street property north of the Manhattan Bridge. Soil testing near the maintenance garages on Piers 6, 5 and 1 detected elevated concentrations of volatile organic compounds and semi-volatile organic compounds that may also be indicative of similar petroleum contamination from petroleum underground storage tanks and former vehicle maintenance and repair activities. These localized areas of petroleum-contaminated soil would be delineated, excavated, and properly disposed of off-site as part of site development. Identified spills would be reported to the NYSDEC and remedial measures would be implemented as required to close such spills. All soil excavated as part of soil remedial activities would be managed and disposed of in accordance with all applicable federal, state and local regulations.

The analyses of the groundwater samples collected did not reveal the presence of significant wide-spread contamination. However, trace levels of petroleum-related contaminants were identified in localized areas near underground storage tanks or former maintenance facilities where the use of petroleum and/or solvents was common. Groundwater at the site was encountered at a depth of approximately eight to 10 feet below surface grade. Construction and development activities at the park that extends below the water table may expose localized areas of contaminated groundwater. In these cases, corrective action in accordance with regulatory protocols would be followed, including notification of the proper regulatory agencies and clean-up under regulatory guidance. Similarly, dewatering activities for construction of the new park, if necessary, may require treatment of the groundwater prior to discharge to the municipal sewer or the East River. Prior to any dewatering activities, sampling would be performed to insure that any discharged groundwater meets the DEP limitations for effluent to municipal sewers, should this be the designated course of action.

Based on the industrial history of the project site, unknown underground storage tanks may be encountered during site development activities involving soil disturbance. Localized areas of soil contamination from former on-site operations not identified by the subsurface investigations already conducted at the site may also be discovered. To prevent impacts to workers and nearby residents, all excavation and construction work involving soil disturbance would be performed under a CHASP to assure that the construction workers, the surrounding community, and the environment are not adversely affected by the construction activities. The plan would specify the appropriate testing and/or monitoring by field personnel during construction and excavation activities and detail appropriate measures in the event that underground storage tanks, soil and

groundwater contamination, or other unforeseen environmental conditions are encountered, including notification of the proper regulatory agencies as necessary and clean-up under regulatory guidance. The handling, storage, and disposal of contaminated or hazardous materials encountered at the project site would be done in accordance with all applicable regulatory requirements.

All of the subject buildings on the property were constructed prior to 1981, at which time many ACMs were utilized. Previous environmental reports for the study area indicate the known and potential presence of ACMs. Prior to any renovation or demolition activities at the property, a licensed asbestos inspector would perform the necessary inspections to ensure that the project would not disturb ACMs or that the ACMs are abated prior to any construction activities. ACMs at the subject property that may be disturbed by renovation/demolition activities would be abated following proper regulatory protocols prior to commencing such activities. Any identified ACMs remaining at the property would be regularly inspected and maintained under a site-specific Operation and Maintenance (O&M) Plan to prevent deterioration.

Based on the ages of the buildings at the study site, potential lead-based paint may also be present. Layers of old paint beneath newly painted surfaces may also include materials that are lead-based. Renovation/demolition activities would adhere to OSHA regulations governing lead-based paint.

PCB-containing light ballasts and electrical equipment may be present at the subject property. If disposal of any of these items is required, it would be in accordance with applicable federal, state, and local regulations and guidelines, unless there is labeling or test data to indicate they are not PCB-containing.

To prevent the potential off-site transport of dust that may contain above-background levels of contaminants, dust control measures would be implemented during all soil-disturbing operations. Water would be available (and used) on-site for sprinkling/wetting to suppress dust in dry weather or as necessary. All haul trucks would have tarp covers and gravel pads would be placed at access points to prevent site soils from being tracked onto roads in the community. A particulate air monitor would be used to measure concentration of total particulate matter during any excavation in contaminated areas. Air monitoring for organic vapors during sampling and excavation work would be conducted in areas where volatile organic compounds have been detected. The purpose of the air monitoring program is to avoid or minimize exposure of the field personnel and the public to potential environmental hazards in the soil and groundwater. Results of the air monitoring would be used to determine the appropriate response action, if needed.

The implementation of these remedial actions would remove all environmental conditions that could affect the health and safety of the visiting public once the park is in operation. With these measures, no significant adverse impacts related to hazardous materials would be expected to occur as a result of the construction activities of the proposed project and subsequent public use of the park. *