DECISION DOCUMENT

828 Metropolitan Avenue
Brownfield Cleanup Program
Brooklyn, Kings County
Site No. C224369
August 2023

Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

DECLARATION STATEMENT - DECISION DOCUMENT

828 Metropolitan Avenue
Brownfield Cleanup Program
Brooklyn, Kings County
Site No. C224369
August 2023

Statement of Purpose and Basis

This document presents the remedy for the 828 Metropolitan Avenue brownfield cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the 828 Metropolitan Avenue site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic, and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings shall be

constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) to improve energy efficiency as an element of construction.

As part of the remedial design program, to evaluate the remedy with respect to green and sustainable remediation principles, an environmental footprint analysis will be completed. The environmental footprint analysis will be completed using an accepted environmental footprint analysis calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWise™ (available in the Sustainable Remediation Forum [SURF] library) or similar Department accepted tool. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial design program, as appropriate. The project design specifications will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial design program.

Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

2. Excavation

Excavation and off-site disposal of all on-site soils which exceed unrestricted use soil cleanup objectives (SCOs), as defined by 6 NYCRR Part 375-6.8, including excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping, or other structures associated with a source of contamination. Based on the remedial investigation, the average depths of excavation will vary from 2 feet below ground surface (bgs), in the northwest corner of the site, increasing in depth to approximately 16 feet bgs to the south and west. Approximately 10,000 cubic yards of contaminated soil will be removed from the site.

If a Track 1 cleanup is achieved, a Cover System will not be a required element of the remedy. Screening soils for indications of contamination (by visual means, odor, and photoionization monitoring) will determine the depths of excavation.

Collection and analysis of confirmation samples at the remedial excavation depth will be used to verify that SCOs for the site have been achieved. If confirmation sampling indicates that SCOs were not achieved at the stated remedial depth, the Applicant must notify the Department, submit the sample results and, in consultation with the Department, determine if further remedial excavation is necessary. Where bedrock is encountered, a bedrock photograph will be taken instead of a confirmation soil sample. Further excavation for development will proceed after

confirmation samples demonstrate that SCOs for the site have been achieved.

To ensure proper handling and disposal of excavated material, waste characterization sampling will be completed for all identified contaminated site material. Waste characterization sampling will be performed exclusively for the purposes of off-site disposal in a manner suitable to receiving facilities and in conformance with applicable federal, state, and local laws, rules, regulations, and facility-specific permits.

3. Backfill
Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site.

4. Soil Vapor Intrusion Evaluation
As part of the Track 1 remedy, a soil vapor intrusion evaluation will be completed. The evaluation will include a provision for implementing actions recommended to address exposures related to soil vapor intrusion.

5. Local Institutional Controls
If no Environmental Easement (EE) or Site Management Plan (SMP) is needed to achieve soil, groundwater, or soil vapor remedial action objectives, then the following local use restriction will be relied upon to prevent ingestion of groundwater: Article 141 of the NYCDOH code, which prohibits potable use of groundwater without prior approval.

Conditional Track 1

The intent of the remedy is to achieve a Track 1 unrestricted use, therefore, no EE or SMP is anticipated. If the soil vapor intrusion (SVI) evaluation is not completed prior to completion of the Final Engineering Report, then a SMP and EE will be required to address the SVI evaluation and implement actions as needed. If a mitigation or monitoring action is needed, a Track 1 cleanup can only be achieved if the mitigation system or other required action is no longer needed within 5 years of the date of the Certificate of Completion.

In the event that Track 1 unrestricted use is not achieved, the following contingent remedial elements will be required, and the remedy will achieve a Track 2 restricted residential cleanup.

6. Institutional Controls
Imposition of an institutional control in the form of an environmental easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 2 restricted residential cleanup at a minimum.

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allow the use and development of the controlled property for restricted residential use as

defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or NYCDOHMH; and
- require compliance with the Department approved Site Management Plan.

7. Site Management Plan

A Site Management Plan is required, which includes the following:

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

-- Institutional Controls: The Environmental Easement discussed above.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of groundwater to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department;
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

Declaration

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration Department guidance, as appropriate. The remedy is protective of public health and the environment.

August 31, 2023

Date

Jane H. O'Connell
Regional Remediation Engineer, Region 2

DECISION DOCUMENT

828 Metropolitan Avenue
Brooklyn, Kings County
Site No. C224369
August 2023

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, where a contaminant is present at levels exceeding the soil cleanup objectives or other health-based or environmental standards, criteria or guidance, based on the reasonably anticipated use of the property.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repositories:

DECInfo Locator - Web Application
https://gisservices.dec.ny.gov/gis/dil/index.html?rs=C224369

Brooklyn Public Library Leonard Branch
81 Devoe Street
Brooklyn, NY 11211
Phone: (718) 486-6006

Brooklyn Community Board 1
435 Graham Avenue
Brooklyn, NY 11211
Phone: (718) 389-0009

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Location:
The 828 Metropolitan Avenue site is addressed at 808-834 Metropolitan Avenue, Brooklyn, NY 11211. The site is located in Kings County, New York and is identified as Brooklyn Block 2916, Lot 14. A lot merger was filed with the Department of Finance in June 2022 which consolidated Lots 8, 14, 16 and 17 into a new Lot 14. The site is approximately 22,625-square-feet (0.52 acres) in size. The site is bounded to the north by Metropolitan Avenue, to the west by Bushwick Avenue, to the south by multi-family residential developments, and to the east by a four-story residential building. The site is located within an urban area of East Williamsburg characterized predominately by multi-story commercial and residential buildings. The Metropolitan Transit Authority (MTA) subway L line is located to the west under Bushwick Avenue.

Site Features:
Along with the recently occupied Speedway gasoline filling station consisting of a one-story retail kiosk under a kiosk and a separate rectangular shed on the western portion of the site (former Lot 8), the site included a parking lot (former Lot 14), and multi-family residential buildings (former Lots 16 and 17). The residential buildings were demolished in April 2022.

Current Zoning and Land Use:
The site is located within a residential and commercial zoning district (R7A and R6-B with a Commercial C2-4 overlay). The applicant is proposing to build a new 9-story building with a full cellar level. The building will be used for mixed residential (including affordable housing) and commercial purposes. The proposed gross square footage of the new development is 127,355.45 sq ft. The cellar is anticipated to encompass the approximately 20,420-sq-ft Site footprint and extend to a depth of 15 to 16 feet below ground surface (ft bgs). About 136 dwelling units are proposed, of which about 32 units will be designated as affordable housing.

Past Land Use:
The site was formerly improved with several multi-story commercial and residential buildings as

early as 1910 through the mid-1960s. In the mid-1960s, the former structures on the western half of the site were razed and redeveloped with a single-story commercial building utilized for used car sales with parking. Residential buildings were constructed as early as 1910 on the eastern half of the site. By the late 1970s, various tax lots in the western portion of the site were consolidated into one tax lot (former Lot 8) and occupied by a gasoline filling station, developed with a single-story shed and an overhead canopy with a single-story kiosk. The petroleum filling station on the western portion of the site was active from the late 1970s until April 2022. The remainder of the subject site remained unchanged until April 2022 when the residential buildings on former Lot 16 were demolished.

Site Geology and Hydrogeology:
The site is underlain by fill material predominantly consisting of brown to dark brown coarse to fine sand with varying amounts of gravel, concrete, brick, asphalt, and silt. Fill was observed to extend to depths of 5 feet below ground surface (ft bgs). Below the fill is a layer of various graded sands with intermittent clay lenses that extends to at least as deep as 35 ft bgs.

Groundwater was encountered at approximately 23 ft bgs and flows from east to west.

A site location map is attached as Figure 1, and a site map is attached as Figure 2.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, an alternative that restricts the use of the site to restricted-residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the Remedial Investigation (RI) to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the RI Report.

SECTION 5: ENFORCEMENT STATUS

The Applicant under the Brownfield Cleanup Agreement is a Volunteer. The Applicant does not have an obligation to address off-site contamination. However, the Department has determined that this site does not pose a significant threat to public health or the environment; accordingly, no enforcement actions are necessary.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;

- determine the nature of the contamination; and
- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site, or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- groundwater
- soil
- soil vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized below. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

benzo(a)anthracene
benzo(b)fluoranthene
benzene
chrysene
lead
mercury
Perfluorooctanoic acid (PFOA)
Perfluorooctanesulfonic acid (PFOS)

The contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Decision Document.

There were no IRMs performed at this site during the RI.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

Nature and Extent of Contamination
Soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), pesticides, and per- and polyfluoroalkyl substances (PFAS). Soil was also sampled for 1,4-dioxane. Soil vapor was analyzed for VOCs. Based upon investigations conducted to date, the primary contaminants of concern are SVOCs and metals in soil and VOCs, SVOCs, and PFOA/PFOS in groundwater.

Soil – One VOC was detected at a concentration exceeding the unrestricted use soil cleanup objectives (UUSCOs)- acetone at a maximum concentration of 0.66 parts per million, or ppm (UUSCO is 0.05 ppm). Multiple SVOCs were detected at concentrations exceeding the UUSCOs including benzo(a)anthracene at 2.7 ppm (UUSCO is 1.0 ppm), benzo(b)fluoranthene at 3.4 ppm (UUSCO is 1.0 ppm), and chrysene at 2.6 ppm (UUSCO is 1.0 ppm). Metals detected at concentrations exceeding the UUSCOs include lead at a maximum concentration of 967 ppm (UUSCO is 63 ppm) and mercury at 7.22 ppm (UUSCO is 0.18 ppm).

Total PCBs were detected at a maximum concentration of 0.106 mg/kg (UUSCOs is 0.1 ppm). Pesticides detected at concentrations exceeding the UUSCOs include dieldrin at a maximum concentration of 0.0079 ppm (UUSCO is 0.005 ppm), 4,4-DDD at 0.18 ppm (UUSCO is 0.0033 ppm), 4,4-DDE at 0.518 ppm (UUSCO is 0.0033 ppm), and 4,4-DDT at 1.32 ppm (UUSCO 0.0033 ppm).

Perfluorooctanoic acid (PFOA) was detected at a maximum concentration of 1.09 parts per trillion (ppt) compared to the unrestricted use guidance value of 0.66 ppt, and perfluorooctanesulfonic acid (PFOS) was detected at a maximum concentration of 1.64 ppt

compared to the unrestricted use guidance value of 0.88 ppt. 1,4-Dioxane was not detected above the unrestricted use guidance value of 0.88 ppt in any soil sample.

Data does not indicate any off-site impacts related to the site.

Groundwater – VOCs were detected at concentrations exceeding the ambient water quality standards and guidance values (AWQSGVs), including benzene at a maximum concentration of 33 ppb (AWQSGV 1.0 ppb) and methyl tert-butyl ether at 42 ppb (AWQSGV 5 ppb).

Multiple SVOCs were detected at concentrations exceeding AWQSGVs including benzo(a)anthracene at 0.07 ppb (AWQGV 0.002 ppb), benzo(b)fluoranthene at 0.06 ppb (AWQGV 0.002 ppb), and chrysene at 0.04 ppb (AWQSGV 0.002 ppb).

No metals or pesticides were detected at concentrations exceeding AWQSGVs.

PCBs were detected at a maximum concentration of 0.107 ppb (AWQGV 0.09 ppb).

PFOA was detected at a maximum concentration of 475 parts per trillion (ppt) compared to the AWQSGV of 6.7 ppt, and PFOS was detected at a maximum concentration of 11.2 ppt compared to the AWQSGV of 2.7 ppt. 1,4-Dioxane was not detected above the reporting limit in any of the groundwater samples.

Data does not indicate any off-site impacts in groundwater related to the site.

Soil Vapor - Several VOCs were detected in soil vapor samples including tetrachloroethene at a maximum concentration of 1.55 µg/m3, and trichloromethane (or chloroform) at a maximum concentration of 12,600 µg/m3.

Data does not indicate any off-site impacts in soil vapor related to the site.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure.*

Access is restricted by a fence. However, people who enter may come into contact with contaminants in soil by walking on the site, digging, otherwise disturbing the soil. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in soil vapor (air spaces within the soil) may move into structures and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of structures, is referred to as soil vapor intrusion. Because the site is vacant, the inhalation of site-related contaminants due to soil vapor intrusion does not represent a current concern, however it may represent a potential concern for future buildings on-site. Environmental sampling indicates that soil vapor intrusion is not a concern for off-site buildings.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

The alternatives developed for the site and the evaluation of the remedial criteria are presented in the Alternative Analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation and 6 NYCRR Part 375.

The selected remedy is a Conditional Track 1 remedy.

The elements of the selected remedy, as shown in Figure 3, are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;

- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic, and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings shall be constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) to improve energy efficiency as an element of construction.

As part of the remedial design program, to evaluate the remedy with respect to green and sustainable remediation principles, an environmental footprint analysis will be completed. The environmental footprint analysis will be completed using an accepted environmental footprint analysis calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWiseTM (available in the Sustainable Remediation Forum [SURF] library) or similar Department accepted tool. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial design program, as appropriate. The project design specifications will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial design program.

Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

2. Excavation

Excavation and off-site disposal of all on-site soils which exceed unrestricted use soil cleanup objectives (SCOs), as defined by 6 NYCRR Part 375-6.8, including excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping, or other structures associated with a source of contamination. Based on the remedial investigation, the average depths of excavation will vary from 2 feet below ground surface (bgs), in the northwest corner of the site, increasing in depth to approximately 16 feet bgs to the south and west. Approximately 10,000 cubic yards of contaminated soil will be removed from the site.

If a Track 1 cleanup is achieved, a Cover System will not be a required element of the remedy. Screening soils for indications of contamination (by visual means, odor, and photoionization monitoring) will determine the depths of excavation.

Collection and analysis of confirmation samples at the remedial excavation depth will be used to verify that SCOs for the site have been achieved. If confirmation sampling indicates that SCOs were not achieved at the stated remedial depth, the Applicant must notify the Department, submit the sample results and, in consultation with the Department, determine if further remedial excavation is necessary. Where bedrock is encountered, a bedrock photograph will be taken instead of a confirmation soil sample. Further excavation for development will proceed after confirmation samples demonstrate that SCOs for the site have been achieved.

To ensure proper handling and disposal of excavated material, waste characterization sampling will be completed for all identified contaminated site material. Waste characterization sampling will be performed exclusively for the purposes of off-site disposal in a manner suitable to receiving facilities and in conformance with applicable federal, state, and local laws, rules, regulations, and facility-specific permits.

3. Backfill
Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site.

4. Soil Vapor Intrusion Evaluation
As part of the Track 1 remedy, a soil vapor intrusion evaluation will be completed. The evaluation will include a provision for implementing actions recommended to address exposures related to soil vapor intrusion.

5. Local Institutional Controls
If no Environmental Easement (EE) or Site Management Plan (SMP) is needed to achieve soil, groundwater, or soil vapor remedial action objectives, then the following local use restriction will be relied upon to prevent ingestion of groundwater: Article 141 of the NYCDOH code, which prohibits potable use of groundwater without prior approval.

Conditional Track 1

The intent of the remedy is to achieve a Track 1 unrestricted use, therefore, no EE or SMP is anticipated. If the soil vapor intrusion (SVI) evaluation is not completed prior to completion of the Final Engineering Report, then a SMP and EE will be required to address the SVI evaluation and implement actions as needed. If a mitigation or monitoring action is needed, a Track 1 cleanup can only be achieved if the mitigation system or other required action is no longer needed within 5 years of the date of the Certificate of Completion.

In the event that Track 1 unrestricted use is not achieved, the following contingent remedial elements will be required, and the remedy will achieve a Track 2 restricted residential cleanup.

6. Institutional Controls

Imposition of an institutional control in the form of an environmental easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 2 restricted residential cleanup at a minimum.

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or NYCDOHMH; and
- require compliance with the Department approved Site Management Plan.

7. Site Management Plan

A Site Management Plan is required, which includes the following:

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

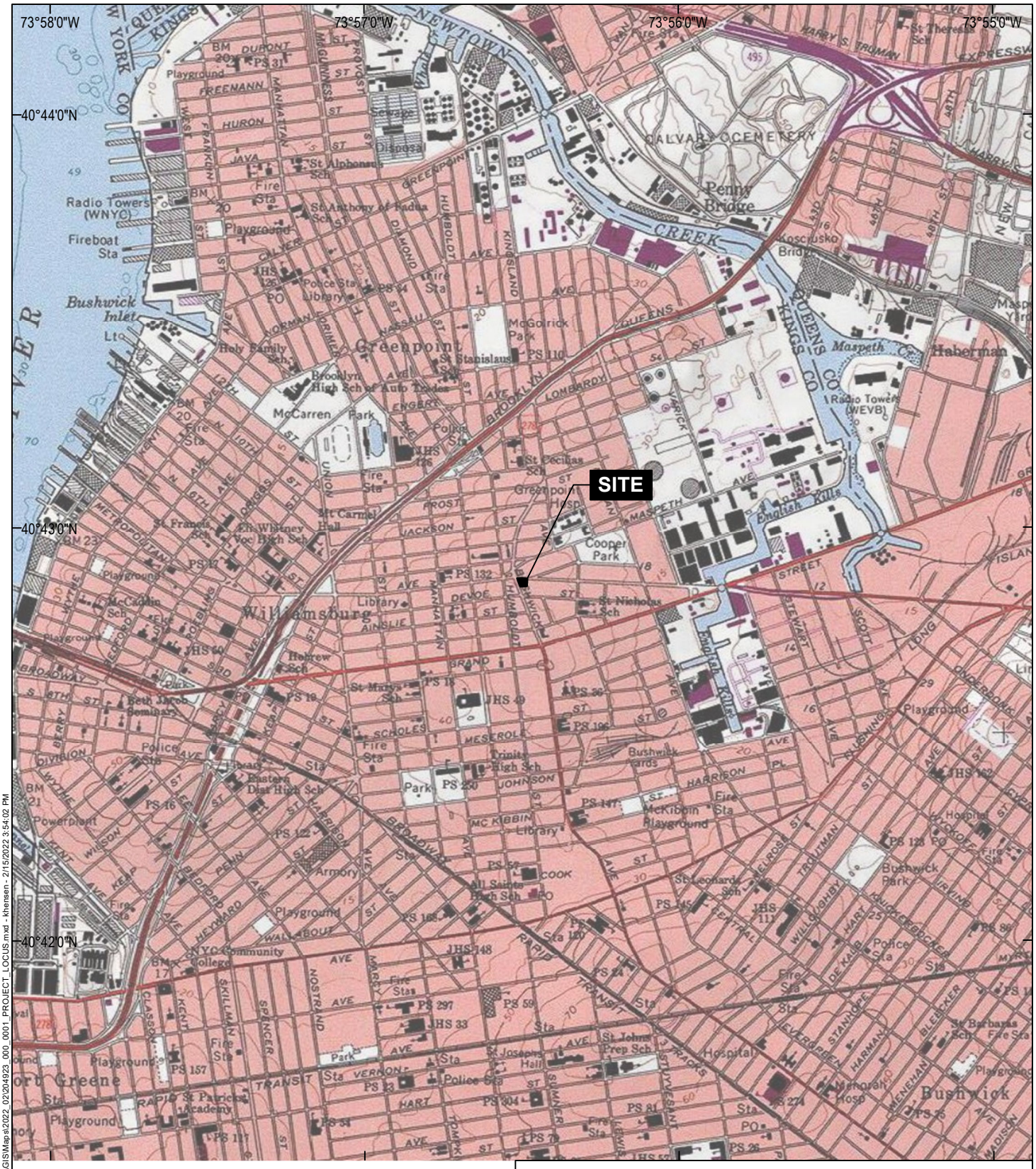
-- Institutional Controls: The Environmental Easement discussed above.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of groundwater to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department;
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.



NY

N

MAP SOURCE: USGS
SITE COORDINATES: 40°42'52"N, 73°56'29"W

HALEY ALDRICH

REMEDIAL INVESTIGATION WORK PLAN
808-834 METROPOLITAN AVENUE
BROOKLYN, NEW YORK

Site Location Map

APPROXIMATE SCALE: 1 IN = 2000 FT
JUNE 2023

FIGURE 1

GIS: \\haleyaldrich.com\share\CF\Projects\0204923\GISMaps\2022_02\204923_000_0001_PROJECT_LOCUS.mxd - khensen - 2/15/2022 3:54:02 PM

LEGEND

SITE BOUNDARY

PARCEL BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. ASSESSOR PARCEL DATA SOURCE: KINGS COUNTY
3. AERIAL IMAGERY SOURCE: NEARMAP, 27 SEPTEMBER 2022

N

0 40 80

SCALE IN FEET

HALEY ALDRICH

METROPOLITAN AVE RIR
808 METROPOLITAN AVENUE
BROOKLYN, NEW YORK

Site Map

JUNE 2023

FIGURE 2

GIS: \\haleyaldrich.com\share\CF\Projects\0205563\GIS\Maps\2023_03_RIR\205563_001_0002_SITE_MAP.mxd - khensen - 3/16/2023 12:49:00 PM

LEGEND

- UNDEGROUND STORAGE TANK (UST), REMOVAL AND EXCAVATION AREA
- PROPOSED REMEDIATION EXCAVATION AREA OF SOILS THAT EXCEED THE UNRESTRICTED USE SOIL CLEANUP OBJECTIVES (UUSCOs)
- SITE BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. ALTERNATIVE I WILL ACHIEVE UUSCOs.
3. ASSESSOR PARCEL DATA SOURCE: KINGS COUNTY
4. AERIAL IMAGERY SOURCE: NEARMAP, 27 SEPTEMBER 2022

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0 40 80

SCALE IN FEET

HALEY ALDRICH

METROPOLITAN AVE RAWP
808 METROPOLITAN AVENUE
BROOKLYN, NEW YORK

Selected Remedy

JUNE 2023

FIGURE 3

GIS: \\haleyaldrich.com\share\CF\Projects\0205563\GIS\Maps\2023_06_RAWP\205563_001_0010_ALT1_EXCAVATION_PLAN.mxd - khensen - 6/13/2023 9:15:45 AM