

DECISION DOCUMENT

389 Manhattan Avenue
Brownfield Cleanup Program
Buffalo, Erie County
Site No. C915369
April 2026



**Department of
Environmental
Conservation**

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

DECLARATION STATEMENT - DECISION DOCUMENT

389 Manhattan Avenue
Brownfield Cleanup Program
Buffalo, Erie County
Site No. C915369
April 2026

Statement of Purpose and Basis

This document presents the remedy for the 389 Manhattan Avenue site a 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 (NYSDEC) for the 389 Manhattan Avenue site and the public's input to the proposed remedy presented by NYSDEC.

Description of Selected Remedy

The alternatives developed for the site and the evaluation of the remedial criteria are presented in the Remedial Investigation/Alternatives Analysis Report, dated February 2024 and revised September 2024.

The selected remedy is referred to as the Soil/Fill Excavation, EC/ICs and Groundwater Treatment remedy.

The elements of the 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;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- 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(TM) (available in the Sustainable Remediation Forum [SURF] library) or similar NYSDEC 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 restricted-residential soil cleanup objectives (SCOs), as defined by 6 NYCRR Part 375-6.8 to the depth of bedrock. If a Track 2 restricted residential cleanup is achieved, a Cover System will not be a required element of the remedy. Collection and analysis of confirmation and documentation samples at the remedial excavation depths will be used to verify that SCOs for the site have been achieved. If confirmation/documentation sampling indicates that SCOs were not achieved at the stated remedial depth, the Applicant must notify DEC, submit the sample results and, in consultation with DEC, determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate that SCOs for the site have been achieved.

Approximately 6,300 cubic yards of contaminated soil will be removed from the site. The area of excavation will extend to the site boundaries and to the top of bedrock. Sitewide the top of bedrock ranges from approximately 1 to 7 feet below ground surface (fbgs), with an average of about 2.5 fbgs

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. Groundwater Remediation

In-situ enhanced biodegradation will be employed to treat chlorinated volatile organic compounds (CVOCs) in groundwater onsite in an area to be determined during the remedial design. The biological breakdown of contaminants through a biological amendment such as zero valent iron. The method and depth of injection will be determined during the remedial design.

Monitoring will be required within and down-gradient of the treatment zone.

5. Vapor Intrusion Evaluation

As part of the Track 2 Residential use 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.

6. Institutional Controls

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 County DOH; 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 in Paragraph 6 above.

Engineering Controls: Groundwater monitoring well network to monitor groundwater remedy effectiveness.

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/or 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, if identified;
- provisions for the management and inspection of the identified engineering controls;
- 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.

4/21/2026

Date

Michael J Cruden

Michael Cruden, Director
Remedial Bureau E

DECISION DOCUMENT

389 Manhattan Avenue
Buffalo, Erie County
Site No. C915369
April 2026

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (NYSDEC), 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.

NYSDEC 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

NYSDEC 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 NYSDEC in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repository:

DECInfo Locator - Web Application
<https://gisservices.dec.ny.gov/gis/dil/index.html?rs=C915369>

Buffalo & Erie County Public Library
Attn: North Park Branch Director
975 Hertel Avenue
Buffalo, NY 14216
Phone:

Receive Site Citizen Participation Information By Email

Please note that NYSDEC'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 389 Manhattan Avenue site is an approximately 1.56-acre site, located in a highly developed commercial/residential area, comprised of a portion of the parcel addressed as 389 Manhattan Avenue in the City of Buffalo, Erie County. The site is bordered by Manhattan Avenue and Bennett High School to the west, a vacant residential land to the south, 389 Manhattan Avenue to the east, and a parking lot area associated with 2915 Main Street to the north. Two previously remediated sites are located adjacent to and to the northwest of the site. The Main and Hertel BCP site (ID number C915318) is located at 2929-2939 Main Street. The off-site portion of the Main and Hertel BCP site is site number C915318A.

Site Features:

The current zoning for the site and the adjacent properties is Mixed-Use. The site is currently vacant and there are no buildings present. The surface of the site consists of gravel and visible urban fill such as broken brick and concrete. The north, western and eastern portions of the site are covered in light vegetation. The planned redevelopment is multi-family affordable housing, consistent with the zoning.

Past Use of the Site:

The site was owned by Buffalo Meter Company, Inc., a water meter manufacturer, from approximately 1915 through 1971, when it was purchased by the University at Buffalo to house their Department of Art and Architecture. It was purchased in 2006 by Bethune Hall, LLC. Historic records indicate that there were rail spurs adjacent to the site along the northeast boundary which were associated with adjacent properties along Main Street.

Site Geology and Hydrogeology:

Site soils consist of gravel with 1.5 to 7 feet of urban fill to bedrock. Native soil was not encountered at the site. Bedrock was encountered between 1.5 to 7 feet below ground surface (fbgs) and is sloping to the south and southwest.

Overburden groundwater is not present at the site due to the shallow nature of bedrock underlying the site. Depth to groundwater in the bedrock ranged from 10.6 fbgs to 14.9 fbgs and groundwater was determined to be generally moving to the northwest.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

NYSDEC 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, alternatives (or an alternative) that restrict(s) the use of the site to as described in Part 375-1.8(g) were/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(s) under the Brownfield Cleanup Agreement is a/are Volunteer(s). The Applicant(s) does/do not have an obligation to address off-site contamination. However, NYSDEC 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. NYSDEC 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:

arsenic	cis-1,2-dichloroethene
lead	1,2,4-trichlorobenzene
copper	trichloroethene (TCE)
benzo(a)anthracene	vinyl chloride
benzo(b)fluoranthene	cyclohexane
chrysene	hexane
dibenz[a,h]anthracene	

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.

The RI was conducted between June and July of 2023 and included sampling of surface soil, subsurface soil, groundwater and soil vapor. The data collected during the RI identified metals and semi-volatile organic compounds (SVOCs) above Restricted-Residential use soil clean up objectives (RSCOs) in soils and volatile organic compounds (VOCs), metals and emerging contaminants above NYS Groundwater Quality Standards (GWQS) in groundwater as follows.

Surface Soil:

Three (3) surface soil samples were collected from 0-2 inches bgs and analyzed for metals, SVOCs, polychlorinated biphenyls (PCBs), herbicides/pesticides and emerging contaminants. Surface soil analytical results indicated no exceedances of the site SCOs for PCBs, pesticides, herbicides or emerging contaminants.

The metal copper was detected in surface soils at a concentration of 721 parts per million (ppm) (RSCO 280 ppm).

SVOCs detected in surface soils include benzo(a)anthracene at a concentration of 3.2 ppm (RSCO 1 ppm), benzo(a)pyrene at a concentration of 2.9 ppm (RSCO 1.4 ppm), benzo(b)fluoranthene at a concentration of 4.3 ppm (RSCO 1.4 ppm), dibenzo(a,h)anthracene at a concentration of 0.39 ppm (RSCO 0.33 ppm), and indeno(1,2,3-cd)pyrene at a concentration of 1.8 ppm (RSCO 1.4 ppm).

Subsurface Soil:

Seven (7) test pits were completed to the top of bedrock and subsurface soil samples were collected and analyzed for metals, VOCs, SVOCs, PCBs, herbicides/pesticides and emerging contaminants. Three (3) subsurface soil samples were collected during geotechnical borings performed on-site and those samples were analyzed for VOCs. Subsurface soil analytical results indicated no exceedances of the site SCOs for VOCs, PCBs, pesticides, herbicides or emerging contaminants. Eleven (11) subsurface soil samples were analyzed for metals. Metals detected above their respective SCOs include arsenic detected at concentrations of up to 108 ppm (RSCO 16 ppm), copper at concentrations up to 736 ppm (RSCO 280 ppm) and lead at concentrations up to 689 ppm (RSCO 400 ppm).

Eleven (11) subsurface soil samples were analyzed for SVOCs. SVOCs detected above their respective SCOs include benzo(a)anthracene at concentrations up to 9.8 ppm (RSCO 1.4 ppm), benzo(a)pyrene at concentrations up to 7.8 ppm (RSCO 1 ppm), benzo(b)fluoranthene at concentrations up to 12 ppm (RSCO 1.4 ppm), chrysene at concentrations up to 10 ppm (RSCO 4.9 ppm), dibenzo(a,h)anthracene at concentrations up to 1.2 ppm (RSCO 0.33 ppm) and indeno(1,2,3-dc)pyrene at concentrations up to 4.2 ppm (RSCO 1.4 ppm). Based on the investigations completed to date, soil contamination is present across the site. Off-site migration of contaminants in subsurface soil has not been observed.

Groundwater:

Four (4) groundwater monitoring wells were installed to target depths between 10.65 and 14.9 fbs in bedrock groundwater. Groundwater samples were analyzed for VOCs, SVOCs, metals,

pesticides/herbicides, PCBs and emerging contaminants. Samples were evaluated against the NYS GWQS. No exceedances of GWQS for SVOCs, PCBs, herbicides or pesticides were identified. VOCs detected in groundwater include 1,2,4-trimethylbenzene at concentrations up to 9.9 parts per billion (ppb) (GWQS 5 ppb), cis-1,2-dichloroethene at concentrations up to 100 ppb (GWQS 5 ppb), trichloroethene at concentrations up to 26 ppb (GWQS 5 ppb) and vinyl chloride at concentrations up to 34 ppb (GWQS 2 ppb).

Metals detected in groundwater include cobalt at concentrations up to 16.7 ppb (GWQS 5 ppb), iron at concentrations up to 14,000 ppb (GWQS 300 ppb), magnesium at concentrations up to 54,000 ppb (GWQS 35,000 ppb), manganese at concentrations up to 1280 ppb (GWQS 300 ppb) and sodium at concentrations up to 586,000 ppb (GWQS 20,000 ppb).

The emergent contaminant perfluorooctanoic acid (PFOA) was detected in groundwater at concentrations up to 14.4 parts per trillion (ppt) (GWQS 6.7 ppt). Due to the absence of PFAS in soils onsite and the PFAS concentrations in groundwater onsite indicate that PFAS in groundwater onsite is likely from an upgradient source.

There is no evidence that contaminated groundwater is moving offsite.

Soil Vapor:

Three (3) soil vapor samples were collected from within the footprint of the building to be constructed on the site. One outdoor air sample was collected at the same time.

Trichloroethene was detected at concentrations up to 15.3 micrograms per cubic meter (ug/m³), Cis-1,2-dichloroethene was detected at concentrations up to 1.17 ug/m³, tetrachloroethene at concentrations up to 2.62 ug/m³, methylene chloride at concentrations up to 2.28 ug/m³, benzene at concentrations up to 664 ug/m³, ethylbenzene at concentrations up to 42.8 ug/m³, cyclohexane at concentrations up to 3090 ug/m³, 1,2,4-trimethylbenzene at concentrations up to 3.8 ug/m³, 1,3,5-trimethylbenzene at concentrations up to 2.71 ug/m³, o-xylene at concentrations up to 40.2 ug/m³, m,p-xylene at concentrations up to 110 ug/m³, heptane at concentrations up to 1920 ug/m³, hexane at concentrations up to 2150 ug/m³ and toluene at concentrations up to 392 ug/m³.

There is no evidence that soil vapor impacts are moving offsite.

A SVI investigation will be required after building construction to determine if there is an indoor air issue that requires mitigation.

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*.

Information submitted with the BCP application regarding the conditions at the site are currently under review and will be revised as additional information becomes available.

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.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

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 Remedial Investigation/Alternatives Analysis Report, dated February 2024 and revised September 2024. 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 Track 2: Restricted use with generic soil cleanup objectives remedy.

The selected remedy is referred to as the Soil/Fill Excavation, EC/ICs and Groundwater Treatment remedy.

The elements of the 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;
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- 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;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- 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(TM) (available in the Sustainable Remediation Forum [SURF] library) or similar NYSDEC 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 restricted-residential SCOs, as defined by 6 NYCRR Part 375-6.8 to bedrock. If a Track 2 restricted residential cleanup is achieved, a Cover System will not be a required element of the remedy. Collection and analysis of confirmation and documentation samples at the remedial excavation depths will be used to verify that SCOs for the site have been achieved. If confirmation/documentation sampling indicates that SCOs were not achieved at the stated remedial depth, the Applicant must notify DEC, submit the sample results and, in consultation with DEC, determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate that SCOs for the site have been achieved.

Approximately 6,300 cubic yards of contaminated soil will be removed from the site. The area of excavation will extend to the site boundaries and to the top of bedrock. Sitewide the top of bedrock ranges from approximately 1 to 7 fbs, with an average of about 2.5 fbs

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. Groundwater Remediation

In-situ enhanced biodegradation will be employed to treat CVOCs in groundwater onsite in an area to be determined during the remedial design. The biological breakdown of contaminants through a biological amendment such as zero valent iron. The method and depth of injection will be determined during the remedial design.

Monitoring will be required within and down-gradient of the treatment zone.

5. Vapor Intrusion Evaluation

As part of the Track 2 Residential use 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.

6. Institutional Controls

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 County DOH; 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 in Paragraph 6 above.

Engineering Controls: Groundwater monitoring well network to monitor groundwater remedy effectiveness.

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/or 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, if identified;
- provisions for the management and inspection of the identified engineering controls;
- 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.

Figure 1

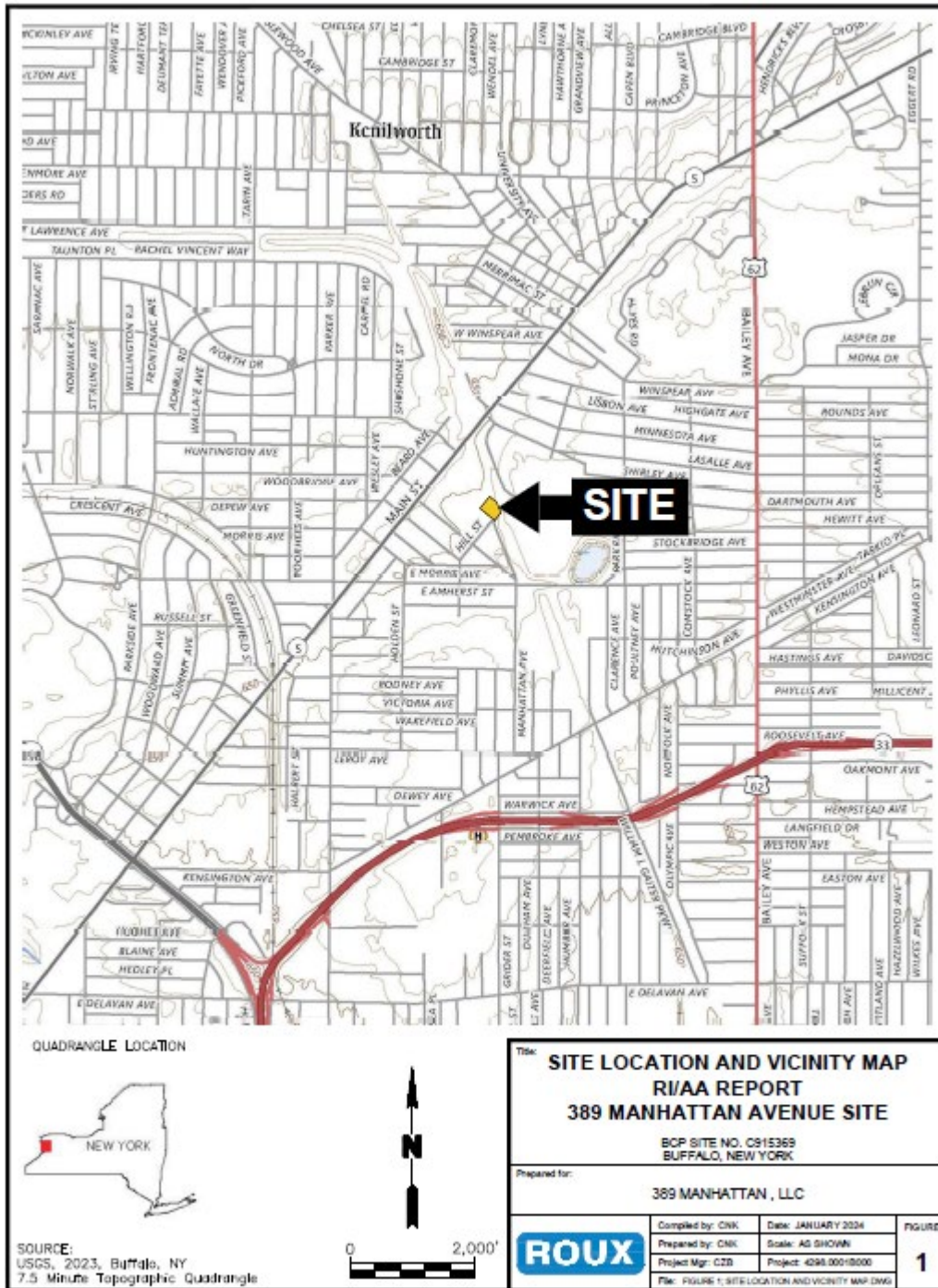


Figure 2

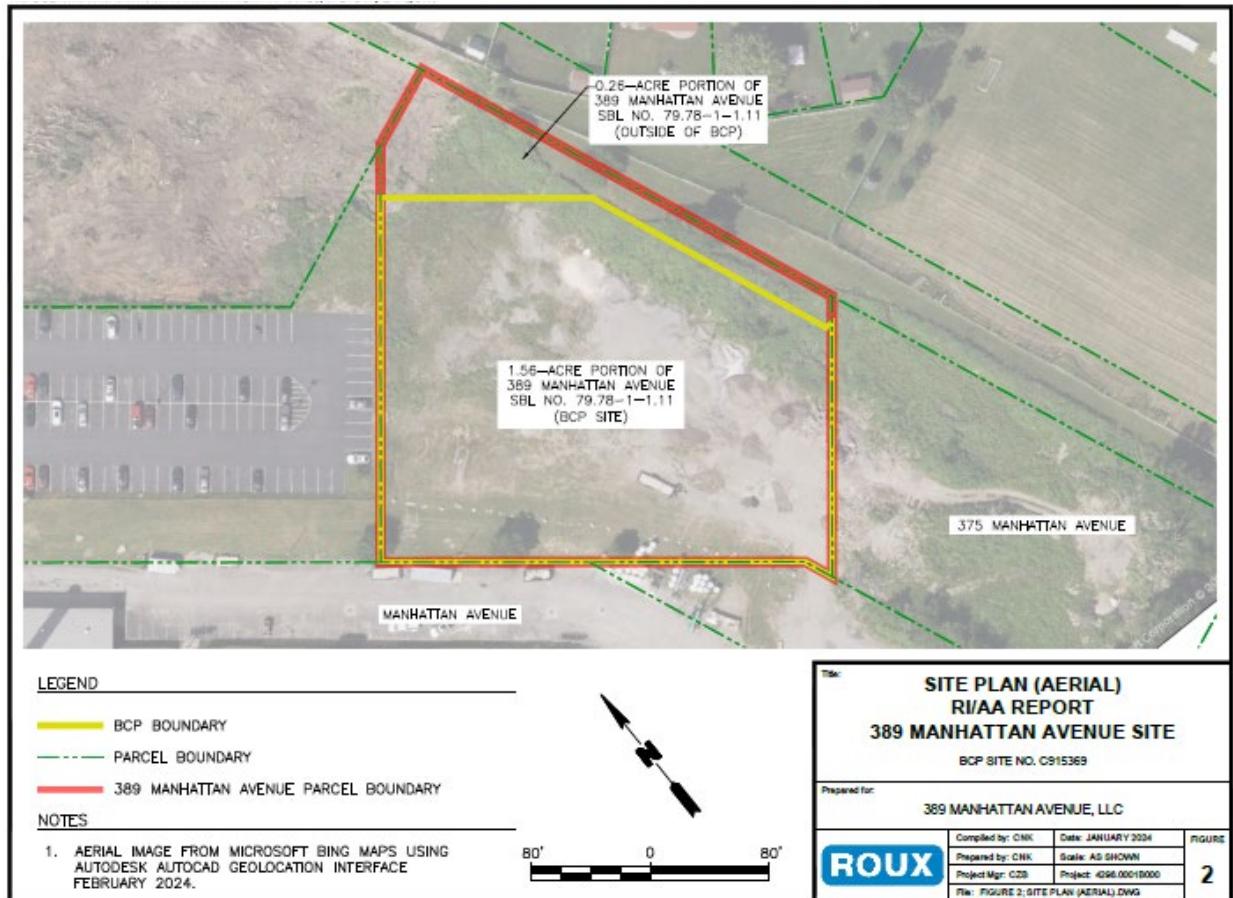


Figure 3

