Fulton Avenue Superfund Site
Village of Garden City Park, Nassau County, New York

July 2025

EPA ANNOUNCES PROPOSED PLAN

This Proposed Plan describes the remedial alternatives considered for selecting the remedial action for a portion of the Fulton Avenue Superfund Site (Site), herein identified as operable unit (OU) 2, and identifies the U.S. Environmental Protection Agency's (EPA's) preferred remedial alternative for OU2. In addition, this Proposed Plan documents that the interim remedy selected in 2015 amending a prior remedy for the first operable unit (OU1) is an appropriate final remedy for OU1 of the Site. That amended OU1 remedy consisted of long-term groundwater monitoring (LTGM) and institutional controls (ICs) for OU1, with continued operation and maintenance as well as monitoring of the air stripping treatment systems on Village of Garden City public supply wells #13 and #14. The preferred remedial action described in this Proposed Plan addresses human and environmental risks associated with contaminants identified in portions of the groundwater at the Site that are primarily contaminated with trichloroethylene (TCE) and tetrachloroethylene (PCE).

This Proposed Plan was developed by EPA, the lead agency for the Site, in consultation with the New York State Department of Environmental Conservation (NYSDEC). EPA is issuing this Proposed Plan as part of its public participation responsibilities under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Sections 300.430(f) and 300.435(c) of the National Contingency Plan, or NCP, 40 C.F.R. §§ 300.430(f) and 300.435(c).

The purpose of this Proposed Plan is to inform the public of EPA's preferred remedial alternative and to solicit public comments on all of the remedial alternatives evaluated, including the preferred alternative.

The nature and extent of the contamination at the Site and the remedial alternatives summarized in this Proposed Plan are described in more detail in the OU2 Remedial Investigation (RI) and Feasibility Study (FS) reports, the OU1 Interim Remedy Effectiveness Evaluation, as well as other documents contained in the Administrative Record for this decision. EPA encourages the public to review these documents to gain a more comprehensive understanding of the Site and the Superfund activities that have been conducted.

Changes to the preferred alternative, or a change from the preferred alternative to another remedial alternative, may be made if public comments or additional information indicate that such a change will result in a more appropriate remedial action. The final decision regarding the selection of a remedy will be made after EPA has taken into consideration all public comments. EPA is soliciting public comment on all of the alternatives considered in the Proposed Plan and in the detailed analysis of alternatives section of the FS Report, because EPA, in consultation with NYSDEC, may select a remedy other than the preferred alternative.

MARK YOUR CALENDARS

PUBLIC COMMENT PERIOD:

July 18, 2025 to August 18, 2025
EPA will accept written comments on the Proposed Plan during the public comment period.

PUBLIC MEETING TO DISCUSS THE PROPOSED PLAN

Public Meeting: **Thursday, July 24, 2025** at 6:30 p.m.

EPA will hold a public meeting to explain the Proposed Plan. The meeting will be held at the **Garden City Public Library, 60 7th Street, Garden City, New York**.

EPA's website for the Fulton Avenue Superfund site, which includes the Administrative Record:
www.epa.gov/superfund/fulton-avenue

Written comments on the Proposed Plan should be addressed to:

Josiah Johnson
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COMMUNITY ROLE IN SELECTION PROCESS

EPA relies on public input to ensure that the concerns of the community are considered in selecting an effective remedy at Superfund sites. To this end, the RI and FS reports and this Proposed Plan have been made available to the public during a public comment period which begins on July 18, 2025, and concludes on August 18, 2025.

A public meeting will be held during the public comment period on July 24, 2025, at 6:30 p.m. to present the

conclusions of the RI/FS, to elaborate further on the reasons for recommending the preferred alternative, and to receive public comments. Comments will be documented in a Responsiveness Summary section of a Record of Decision (ROD), the document that memorializes the selection of the remedy.

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SCOPE AND ROLE OF ACTION

Site remediation activities are sometimes separated into discrete sections, or operable units (OUs), so that remediation of different environmental media or geographic areas of a site can proceed separately and more efficiently in order to clean up the site. The Site is being addressed through two OUs (see **Figure 1**). OU1 addresses the PCE-dominant contaminant plume emanating from the 150 Fulton Avenue property (the Fulton Property). In September 2007, EPA issued the Record of Decision (ROD) for the Site and selected an active pump and treat remedy for OU1. As mentioned above, in a subsequent 2015 ROD Amendment to the 2007 remedy, EPA selected an interim remedy of LTGM and ICs for OU1, with continued operation and maintenance, as well as monitoring of the air stripping treatment systems on Village of Garden City public supply wells #13 and #14. The amended remedy also included the investigation and remediation, if necessary, of vapor intrusion into structures within the vicinity of 150 Fulton Avenue, as appropriate. OU2 is defined as the TCE-dominant contaminant plume, which is comingling with the OU1 PCE plume at a downgradient location. The TCE contamination was discovered during the OU1 RI/FS. The OU2 TCE-dominant plume emanates from a separate, unidentified source or sources.

EPA noted in the 2007 ROD (and 2015 ROD Amendment) that the OU1 PCE-dominant plume would be restored to its beneficial use only when the TCE-dominant contamination was addressed in OU2. At that time, the nature and extent of the contamination present in the OU1 and OU2 plumes, including sources of the TCE, had not yet been fully characterized. EPA did not have sufficient information at the time to determine whether the aquifer contaminated by the PCE-dominant plume emanating from 150 Fulton Avenue could be fully restored. Accordingly, aquifer restoration was not an objective of the amended OU1 interim remedy. EPA noted in the 2015 ROD Amendment that it would conduct additional investigations as part of OU2 and that groundwater restoration would be one of EPA's goals for the final Site remedy. This Proposed Plan details the preferred alternative for OU2 and proposes to make the 2015 interim remedy the final remedy for OU1. Together, these remedies for OU1 and OU2 will constitute the final remedy to be selected for the Site.

SITE BACKGROUND

Site Description

The Site is located on the west-central portion of the Garden City Industrial Park, at 150 Fulton Avenue, in the Town of North Hempstead, Nassau County, New York. 150 Fulton Avenue (Fulton Property) is owned by Gordon Atlantic Corporation. A fabric-cutting mill operated at the Fulton Property from approximately January 1, 1965, through December 31, 1974, and involved dry-cleaning of fabrics using PCE. Currently, the Fulton Property is occupied by a digital imaging/business support company. EPA has concluded that a significant portion of the PCE groundwater contamination at the Site (OU1) was caused by the disposal of PCE into a drywell on the Fulton Property.

Site Geology/Hydrogeology

The Site is situated in the outwash plain on Long Island, New York. Approximately 500 feet of interbedded sands and limited clay lenses overlay Precambrian bedrock. There are three aquifers that exist beneath the Site, two of which are impacted by the contamination. The Upper Glacial aquifer is the surficial unit which overlies the Magothy aquifer. The Magothy aquifer is the primary source for public water in the area. No substantive clay lenses have been observed to date within the areas studied between the Upper Glacial and Magothy aquifers.

Site History

Beginning in 1986, numerous investigations were conducted by the Nassau County Departments of Health and Public Works to identify the source(s) of volatile organic compounds (VOCs) impacting numerous public supply wells in Nassau County. These wells are located downgradient of the Garden City Park Industrial Area (GCPIA). Based on the results of these investigations, NYSDEC placed the Fulton Property on the Registry of Inactive Hazardous Waste Disposal Sites.

On March 6, 1998, EPA placed the Site on the National Priorities List (NPL) of sites established under CERCLA. At that time, NYSDEC was the lead regulatory agency overseeing the implementation of an RI/FS and an interim remedial measure (IRM) under State law, as described below.

Genesco, a party notified by NYSDEC of its potential liability related to the Fulton Property, conducted the IRM from August 1998 to December 2001 to remove

contaminants from a drywell on the Fulton Property in order to prevent further VOC contaminant migration into the groundwater and associated soil vapors into the indoor air at the facility. During the IRM, contaminated soils were excavated, after which a soil vapor extraction system was installed to address residual soil contamination from the bottom of the drywell. The system operated until soil cleanup levels were achieved. Over 10,000 pounds of PCE were removed from the source area during the operation of that system.

Following this action, Genesco installed a sub-slab depressurization system (SSDS) under the facility building at the Fulton Property to protect occupants from exposure to VOC vapors that may enter indoor air from beneath the building. The SSDS remains in operation to protect indoor air quality.

In 1999, under an administrative order with NYSDEC, Genesco retained an environmental consulting firm, Environmental Resources Management (ERM), to conduct an RI/FS for OU1. Between March 2000 and May 2003, 20 monitoring wells were installed and sampled as part of the RI/FS study. The RI Report was approved by NYSDEC in November 2005. An FS Report was approved by NYSDEC on February 15, 2007. EPA prepared an addendum to the FS Report in February 2007 to satisfy federal regulations, and it became the lead agency for the Site at the conclusion of this process.

The Proposed Plan for OU1 at the Site was released by EPA for public comment on February 23, 2007, and the public comment period ran through March 31, 2007.

EPA selected an OU1 interim remedy in the 2007 ROD, which included the following:

- In-Situ Chemical Oxidation (ISCO) treatment of source contamination at and near the Fulton Property;
- Construction and operation of a groundwater extraction and treatment system midway along the spine of the PCE-dominant portion of the contaminant plume;
- Evaluation of Village of Garden City's 2007 upgrade to treatment systems on supply wells #13 and #14 to determine whether the upgrade is fully protective;
- Investigation and remediation, if necessary, of vapor intrusion into structures within the vicinity of the Fulton Property; and
- ICs to restrict future use of groundwater at the Site.

Genesco agreed to implement the remedy selected in the 2007 ROD in an agreement with EPA in September 2009.

Based upon review of the post-2007 ROD data and discussions with the Village of Garden City and Genesco, EPA concluded that eliminating the separate groundwater extraction and treatment system from the OU1 remedy would be appropriate because PCE levels in groundwater reaching the intakes of the Garden City public supply wells #13 and #14, which had been increasing at the time of the selection of the 2007 remedy, instead had declined since the summer of 2007. The lower PCE levels in groundwater suggested that the extraction well system contemplated in the 2007 remedy was not needed in order to help prevent more highly elevated levels of contamination from reaching Garden City wells #13 and #14. The existing treatment systems at these supply wells were expected to continue to effectively provide a safe drinking water supply. The decreases in the PCE levels in the PCE-dominant portion of the groundwater plume indicated that the source of the PCE in the plume may have been attenuating and that the highest levels of contamination may have already passed through the well head treatment systems at Garden City's supply wells #13 and #14. As a result, in September 2015, EPA amended the 2007 remedy to an interim remedy that included the following:

- Continued operation and maintenance of the air stripper treatment systems on Village water supply wells #13 and #14;
- A long-term groundwater monitoring plan;
- ICs to restrict future use of groundwater at the Site;
- Further vapor intrusion investigation at the Fulton Property; and
- Vapor intrusion investigation and mitigation (as appropriate) of other structures potentially affected by the OU1 plume.

The additional groundwater extraction and treatment system and the ISCO injections were removed from the selected remedy.

In August 2016, the Village and Genesco entered into a separate agreement. Also, in August 2016, EPA and Genesco entered into a consent judgment, under which Genesco agreed to implement the amended remedy selected in the 2015 ROD Amendment.

EVALUATION OF THE OU1 INTERIM REMEDY

The components of the interim remedy are currently being implemented, and the 2015 amended remedy's remedial action objectives (RAOs) of minimizing and/or eliminating the potential for future human exposure to Site contaminants and reducing migration of contaminated groundwater are being achieved, as demonstrated by the LTGM program.

Long-term groundwater monitoring is being conducted upgradient of, at, and downgradient of Garden City wells #13 and #14 (**Figure 2**). Well #13 has historically served as the primary source of public water for the Village of Garden City, whereas well #14 has been pumped seasonally to supplement during months with greater demand. According to a technical memorandum prepared by Genesco's consultant in July 2024, concentrations of PCE and TCE in well #13 have reduced significantly since their peak in 2007, down 52 percent and 64 percent, respectively. Similarly, concentrations of PCE and TCE in well #14 are down 17 percent and 28 percent, respectively, since peaking in 2007. A conservative estimate for PCE and TCE levels to be reduced to 5 micrograms per liter (µg/l) in pretreated water at Garden City well #13 ranges from 96 to 258 years for PCE and 15 to 35 years for TCE. These time range estimates were calculated using data from 2007 through 2024 and the following two methods:

1. A simple regression analysis to extrapolate PCE and TCE concentrations within a 95% confidence interval; and
2. Development of first-order attenuation rate constant calculations used in monitored natural attenuation (MNA) studies using the concentration versus time method set forth in an EPA Ground Water paper entitled, "Calculation and Use of First-Order Rate Constants for Monitored Natural Attenuation Studies."

Garden City routinely monitors water quality in wells #13 and #14, which are outfitted with treatment systems to remove VOCs from drinking water prior to public distribution. Local residents receive drinking water that meets state and federal standards. Low detections of PCE, TCE, and 1,2-DCE in OU1 long-term monitoring wells MW-26A through H, MW-27A through H, and MW-28A through H downgradient of Garden City wells #13 and #14 demonstrate that the two wells and associated air strippers are capturing the OU1 PCE-dominant plume. MWs 26A and 26C have never had detections of PCE, TCE, and 1,2-DCE above 1 µg/L.

Since 2019, detected concentrations of PCE, TCE, and 1,2-DCE in groundwater samples collected from wells MWs 26B through 26H have generally been less than 10 µg/L, if not below the 5 µg/L maximum contaminant level (MCL). PCE, TCE, and 1,2-DCE have never been detected in analytical results from the groundwater samples collected from wells MW 27A through 27F. PCE, TCE, and 1,2-DCE have been detected in analytical results from the groundwater samples collected from wells MW 27G and 27H, all below 10 µg/L with the exception of a few concentrations of PCE at MW-27G no greater than 30 µg/L. PCE, TCE, and 1,2-DCE in analytical results from groundwater samples collected from wells MW 28A through 28H have never exceeded the 5 µg/L MCL.

Franklin Square Municipal Water District data demonstrate that Franklin Square wells #1 and # 2, which are downgradient of the Site, are not seeing significant PCE impacts and further confirm that the treatment at Garden City wells #13 and #14 is effectively capturing and treating the OU1 PCE dominant plume.

Subsequent to the 2015 amendment and interim remedy, per- and polyfluoroalkyl substances (PFAS) and 1,4-dioxane were detected in groundwater downgradient of the Fulton Property. In 2024, EPA requested that Gordon Atlantic Corporation and Genesco perform limited sampling for PFAS and 1,4-dioxane within the OU1 study area. Analysis of the results led EPA to conclude that the presence of these contaminants in the aquifer is not Site-related.

As called for in the 2015 ROD Amendment, EPA initiated an investigation of subsurface vapor intrusion into indoor air at structures within the vicinity of the Fulton Property in March 2016. As a result, the SSDS at the Fulton Property, initially installed as a passive system, was upgraded to an active system with the addition of a continuously operating electrically powered fan in 2018. Indoor air data collected post-upgrade indicate detectable levels of TCE and PCE remain at similar concentrations to pre-upgrade conditions. Results of EPA's vapor intrusion sampling collected beneath the Fulton Property in 2019 indicate that elevated sub-slab levels of TCE and PCE still exist. Indoor air detections of both constituents were also noted, although none exceeded their respective risk-based noncancer Vapor Intrusion Screening Levels (VISL) values set at a hazard quotient of 1.

In addition to sampling at the Fulton Property, approximately 14 other nearby commercial/industrial buildings located immediately downgradient from the Fulton Property have also been sampled. Further, in February 2018, the soil gas beneath the foundation of two residential properties, located further downgradient from the source area, were investigated. Results of this sampling found non-detect to low levels (concentrations not exceeding 3.5 µg/m^3) of TCE and PCE underneath the slab of the residential structures. Based on these results, EPA concluded that further sampling or investigation at these two properties was not necessary. Additional vapor intrusion sampling at and around the Fulton Property was conducted as part of the OU2 remedial investigation. In October 2019, 10 sub-slab soil vapor samples were collected at seven commercial properties in the vicinity of and including 150 Fulton Avenue. During March 2020, 20 sub-slab, 15 indoor air, and four outdoor air soil vapor samples were collected at eight commercial properties in the vicinity of and including 150 Fulton Avenue. The results of the sampling indicated that vapor mitigation was not warranted at these locations. The vapor intrusion sampling called for in the 2015 interim ROD is ongoing.

Because the OU1 interim remedy has been and is expected to continue to meet the RAOs identified for OU1, EPA is proposing that it constitute the final remedy for OU1. As discussed below, the final OU1 remedy will feature the additional RAOs of restoring the aquifer and mitigating potential current and future unacceptable risks from subsurface vapor intrusion into indoor air within buildings found in the OU1 study area.

SUMMARY OF OU2 REMEDIAL INVESTIGATION

During the remedial investigation for OU1 conducted between 2000 and 2005, groundwater sampling results implied the existence of a TCE-dominant groundwater plume due west of and comingling with the OU1 PCE contaminant plume. After further investigation, EPA concluded 150 Fulton Avenue could not be the source of TCE contamination in this TCE-dominant plume (OU2). Because of the comingling nature of this plume with the PCE-dominant plume migrating from 150 Fulton Avenue, EPA concluded that if aquifer restoration were to be identified as a goal for the OU1 remedy, the chances of achieving that goal would be diminished if TCE was not addressed. Therefore, EPA designated the TCE-dominant contaminant plume as OU2 of the Site and initiated a separate RI/FS to determine the source of the TCE and devise an appropriate remedial action. In 2009, EPA and its contractor began the OU2 RI/FS which, after considerable investigation, concluded in 2024.

EPA collected field samples of environmental media in OU2 in five distinct phases from 2011 to 2020. These samples informed the OU2 remedial investigation and enabled EPA to draw conclusions concerning the behavior and potential sources of the OU2 TCE-dominant groundwater plume. Phase 1 field sampling ran from May 2011 to November 2011 and involved one round of groundwater sampling. Samples were taken from 19 monitoring wells in Phase 1. Phase 2 ran from June 2012 to November 2013 and included the collection of 115 groundwater screening samples via direct push drilling and the collection of groundwater samples from 13 monitoring wells and 10 public supply wells. Phase 3 ran from February 2014 to August 2015 and consisted of groundwater sampling at nine groundwater monitoring wells and 17 public supply wells, five soil samples, and five air samples. Phase 4 ran from September 2015 to September 2016 and saw the collection of 58 soil samples, two groundwater samples at public supply wells, two groundwater samples at one monitoring well, and two water samples from a nearby hydrant. Phase 5 sampling extended from July 2019 to March 2020 and entailed two rounds of groundwater sampling from 29 monitoring wells and 19 public supply wells, as well as two rounds of soil gas sampling.

The OU2 TCE-dominant groundwater plume extends roughly 5,400 feet from Nassau Terminal Road in the north to Fairmount Boulevard in the south and roughly 2,500 feet from Adam Street in the west to Tanners Pond Road in the east. The depth of the plume varies from approximately 250 feet at the northernmost edge to over 500 feet at the southernmost boundary. Groundwater monitoring well data suggest the plume is migrating southwardly in the direction of groundwater flow and downward to depths of between 300 and 500 feet below ground surface.

Seven wells were identified as within the core of the OU2 TCE-dominant groundwater plume (**Figure 3**). Of these seven wells, six are long term groundwater monitoring wells (MW-20C, MW-23C, MW-25A, MW-26F, MW-26G, and N-11171) and one is a municipal water supply well, Garden City well 9. Numerous groundwater samples have been collected at these wells from 2001 to 2019. Concentrations of TCE and PCE were plotted against time to show concentration trends over the 18-year period. Of the seven wells, four display decreasing trends in TCE concentrations over time (MW-23C, MW-25A, MW-26G, and N-11171), two display slightly increasing trends in TCE concentrations over time (MW-20C, Garden City Well #9), and one displays a more definitive increasing trend in TCE over time (MW-26F). The average TCE concentration for these seven wells based on the September 2019 sampling event was 24.6 µg/L. The average TCE concentration of the same seven wells for the December 2019 sampling event was 16.5 µg/L. This data demonstrates that the OU2 TCE-dominant groundwater plume is a relatively low concentration plume. More recent data from the 2021 and 2023 OU1 LTGM for wells MW-20C and MW-23C further corroborate that the OU2 TCE-dominant plume is a diffuse, relatively low concentration plume. Garden City well #9, and nearby Franklin Square wells #1 and #2 are outfitted with air strippers to remove VOCs. Both water districts monitor water quality regularly and local residents receive safe drinking water that meets state and federal standards.

Attempting to track the OU2 TCE-dominant plume back to its source comprised a major component of the OU2 RI. Nearby known hazardous waste sites were considered as potential sources. These sites are:

- Garden City Park Industrial Area
- Zoe Chemical
- 40 & 50 Roselle
- Albertson
- Jackson Steel
- Manfred Schulte

The RI did not reveal any evidence that these sites were likely sources of the OU2 TCE-dominant plume. Details of this evaluation can be found in the complete RI report, available in the Administrative Record for the Site.

Additionally, in an attempt to identify the source of the TCE, EPA performed a compound specific isotope analysis. Compound specific isotope analysis is a diagnostic tool that identifies “chemical signatures” in a contaminant plume that can be compared to those of contaminants from potential source areas, a match implying that a plume originated from a release at a specific source area. EPA’s Environmental Response Team performed the compound specific isotope analysis using some of the previously referenced groundwater samples from 2013-2020. The compound specific isotope analysis performed on these rounds of sampling were not reproducible. As a result, no conclusions regarding the source of the TCE-dominant plume could be drawn.

PRINCIPAL THREAT WASTE

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes an expectation that EPA will use treatment to address the principal threats posed by a site wherever practicable (NCP Section 300.430(a)(1)(iii)(A)). The "principal threat" concept is applied to the characterization of "source materials" at a Superfund site. A source material is material that includes or contains hazardous substances, pollutants or contaminants that act as a reservoir for migration of contamination to ground water, surface water or air, or acts as a source for direct exposure. Contaminated groundwater generally is not considered to be a source material; however, non-aqueous phase liquids in ground water may be viewed as source material. Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained or would present a significant risk to human health or the environment should exposure occur. The decision to treat these wastes is made on a site-specific basis through a detailed analysis of the alternatives using the nine remedy selection criteria. This analysis provides a basis for making a statutory finding that the remedy employs treatment as a principal element. There is no principal threat waste in OU1 or OU2.

SUMMARY OF SITE RISKS

As part of the RI/FS for the Site, a baseline risk assessment was conducted to estimate current and future effects of contaminants on human health and the environment. A baseline risk assessment is an analysis of the potential adverse human health and ecological effects of releases of hazardous substances from a site if no actions to mitigate such releases are taken under current and future land and groundwater uses. Typically, a baseline risk assessment includes a human health risk assessment (HHRA) and an ecological risk assessment.

In 2005, as part of the RI/FS for OU1, a HHRA was completed for the Site. Because toxicity information for the risk-driving chemicals, TCE and PCE, along with several exposure parameters were updated since the original HHRA was finalized. In 2015, in support of the ROD Amendment, EPA completed a supplemental risk evaluation for OU1. Results of the supplemental risk evaluation were documented in a memorandum dated August 27, 2015. The 2015 supplemental risk evaluation was used to help demonstrate that despite these changes, the conclusions of the original 2005 HHRA remained unchanged and the need to take an action remain valid. Finally, in 2024, an HHRA was completed for the OU2 portion of the Site in support of this decision document. The conclusions of OU1 and OU2 human health risk assessment documents are discussed in more detail below. All OU1 and OU2 risk documents, with full details of all receptor populations, exposure pathways, and resultant risk and hazard calculations, can be found in the Administrative Records for the Site.

Human Health Risk Assessments

A four-step HHRA process was used for assessing site-related cancer risks and noncancer health hazards in the various OU1 and OU2 HHRA documents. The four-step process is comprised of: Hazard Identification of COPCs, Exposure Assessment, Toxicity Assessment, and Risk Characterization (see the box on the next page “What is Risk and How is it Calculated”).

The Fulton Property is currently zoned industrial while the land use around it is a mix of residential, commercial, and industrial. Land use at and near the Fulton Property is expected to remain the same in the foreseeable future. Groundwater beneath the Site was the media of concern evaluated in the HHRAs and is classified by New York State (NYS) as Class GA, which means it is suitable as a source of drinking water. As such, the following receptor populations and exposure pathways were quantitatively evaluated in the 2005 OU1 HHRA:

- Current/Future Residential (adult and child)- Ingestion of groundwater as drinking water, dermal contact with groundwater while bathing or showering, and inhalation of VOCs released during bathing or showering; and indoor air inhalation exposures from potential subsurface vapor intrusion.
- Current/Future Off-site Commercial Worker (adult)- Ingestion of groundwater as drinking water; and indoor air inhalation exposures from potential subsurface vapor intrusion.

WHAT IS RISK AND HOW IS IT CALCULATED?

A Superfund baseline human health risk assessment is an analysis of the potential adverse health effects caused by hazardous substance releases from a site in the absence of any actions to control or mitigate these under current- and future-land uses. A four-step process is utilized for assessing site-related human health risks for reasonable maximum exposure scenarios.

Hazard Identification: In this step, the chemicals of potential concern (COPCs) at the site in various media (*i.e.*, soil, groundwater, surface water, and air) are identified based on such factors as toxicity, frequency of occurrence, fate and transport of the contaminants in the environment, concentrations of the contaminants in specific media, mobility, persistence, and bioaccumulation.

Exposure Assessment: In this step, the different exposure pathways through which people might be exposed to the contaminants identified in the previous step are evaluated. Examples of exposure pathways include incidental ingestion of and dermal contact with contaminated soil and ingestion of and dermal contact with contaminated groundwater. Factors relating to the exposure assessment include, but are not limited to, the concentrations in specific media that people might be exposed to and the frequency and duration of that exposure. Using these factors, a "reasonable maximum exposure" scenario, which portrays the highest level of human exposure that could reasonably be expected to occur, is calculated.

Toxicity Assessment: In this step, the types of adverse health effects associated with chemical exposures, and the relationship between magnitude of exposure and severity of adverse effects are determined. Potential health effects are chemical-specific and may include the risk of developing cancer over a lifetime or other noncancer health hazards, such as changes in the normal functions of organs within the body (*e.g.,* changes in the effectiveness of the immune system). Some chemicals are capable of causing both cancer and noncancer health hazards.

Risk Characterization: This step summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site risks for all COPCs. Exposures are evaluated based on the potential risk of developing cancer and the potential for noncancer health hazards. The likelihood of an individual developing cancer is expressed as a probability. For example, a 10^{-4} cancer risk means a "one in ten thousand excess cancer risk;" or one additional cancer may be seen in a population of 10,000 people as a result of exposure to site contaminants under the conditions identified in the Exposure Assessment. Current Superfund regulations for exposures identify the range for determining whether remedial action is necessary as an individual excess lifetime cancer risk of 10^{-4} to 10^{-6}, corresponding to a one in ten thousand to a one in a million excess cancer risk. For noncancer health effects, a "hazard index" (HI) is calculated. The key concept for a noncancer HI is that a "threshold" (measured as an HI of less than or equal to 1) exists below which noncancer health hazards are not expected to occur. The goal of protection is 10^{-6} for cancer risk and an HI of 1 for a noncancer health hazard. Chemicals that exceed a 10^{-4} cancer risk or an HI of 1 are typically those that will require remedial action at the site.

- Current/Future On-site Commercial Worker (adult)- indoor air inhalation exposures from potential subsurface vapor intrusion.
- Future Off-site Landscaper (adult)- inhalation exposures from volatilization from water.

As noted earlier, risk and hazards for the child and adult resident, the most sensitive receptor evaluated in the 2005 OU1 HHRA, were recalculated in 2015 using updated toxicity and exposure information for TCE and PCE. The resultant risks and hazards are further discussed in the following results section.

As part of the OU2 RI/FS, the 2024 HHRA evaluated the following receptor populations and pathways:

- Future Resident (child and adult)- Ingestion of groundwater as drinking water, dermal contact with groundwater while bathing or showering, and inhalation of VOCs released during bathing or showering.
- Future Commercial/Industrial Worker (adult)- Ingestion of groundwater as drinking water, and dermal contact with groundwater during handwashing.

Potential for indoor air inhalation exposures from subsurface vapor intrusion was not considered to be a completed exposure pathway in the OU2 HHRA, since the depth to groundwater in this portion of the site is greater than 100 feet.

Summary of HHRA Results for OU1 (2005 and 2015)

This section provides a summary of the conclusions of the HHRA documents separated by OUs. All OU1 and OU2 risk documents, with full details of all evaluated receptor populations, exposure pathways and calculations, can be found in the Administrative Records for the Site.

Two types of toxic effects were evaluated for each receptor in the risk assessments: noncarcinogenic and carcinogenic effects. Calculated risk estimates for each receptor were compared to EPA's target threshold values for carcinogenic risk of 1E-6 (one-in-one million) to 1E-4 (one-in-ten thousand) and calculated hazard index (HI) to a target value of 1. The bolded values in **Tables 1 and 2** below highlight the cancer risk and noncancer hazard estimates that exceeded EPA's threshold criteria for Site-related constituents.

Results of the original 2005 HHRA evaluation as supplemented by the 2015 memorandum are summarized below in **Table 1**. Cancer risk and noncancer hazard were recalculated for the most conservative receptors, the adult and child resident, using updated toxicity and exposure information available in 2015; these results are provided below.

Table 1: 2005 OU1 HHRA & 2015 Supplemental Risk Evaluation Conclusions		
Receptor	Noncancer Hazard Index	Cancer Risk
Child Resident	**35**	**2.E-04**
Adult Resident	**30**	
Commercial/Industrial Worker[1]	**2**	**7.E-04**
[1] Commercial/industrial worker risks and hazard shown are from the original 2005 HHRA		

The noncancer hazard estimates for the child resident, adult resident and commercial/industrial worker were 35, 30, and 2 respectively. These estimates exceeded EPA's target threshold value of 1. Cancer risk estimates for the adult/child resident and the adult commercial/industrial worker also exceeded benchmarks with risk estimates equaling 2E-4 and 7E-4, respectively. PCE and TCE were identified as the risk-driving chemicals in groundwater.

Summary of HHRA Results for OU2 (2024)

Results of the 2024 HHRA for OU2 of the site are tabulated below in **Table 2**.

Table 2: 2024 OU2 HHRA Conclusions		
Receptor	Noncancer Hazard Index	Cancer Risk
Child Resident	**22**	3.E-05
Adult Resident	**18**	
Commercial/Industrial Worker	**3**	4.E-06

Although the cancer risk estimates for the adult/child resident of 3E-5 and commercial/industrial worker of 4E-6 were within EPA's risk range of 1E-6 to 1E-4, the noncancer hazard indexes for each receptor exceeded the threshold of 1. Estimated noncancer hazards were 22, 18, and 3 for the child resident, adult resident, and commercial/industrial worker respectively. The noncancer risk driving chemicals included iron in groundwater for the adult commercial/industrial worker, and iron, manganese, and TCE in groundwater for the child and adult residents. As documented in the FS for the Site, the metals iron and manganese are not thought to be site-related constituents. As such, TCE was retained as the sole risk-driving chemical for OU2.

In summary, results of the HHRA documents showed that exposure to TCE and PCE in OU1 groundwater was associated with risk and hazard exceedances for the resident and commercial/industrial worker. Additionally, TCE in groundwater of OU2 was associated with noncancer hazard exceedances for the residential receptor.

Ecological Risk Assessment

The potential risk to ecological receptors was also evaluated. For there to be an exposure, there must be a pathway through which a receptor (*e.g.*, person, animal) comes into contact with one or more of the COPCs. Without a complete pathway or receptor, there is no exposure and, hence, no risk.

Based on a review of existing data, there are no potential exposure pathways for ecological receptors at the Site. As noted above, the Fulton Property itself is less than one acre in size and is located in the GCPIA within a highly developed area. The entire Fulton Property is paved or covered with buildings. The depth to groundwater (the medium of concern) is approximately 50 feet and is unlikely to affect any surface water bodies.

Conclusions

It is EPA's judgment that the preferred alternative summarized in this Proposed Plan is necessary to protect human health or the environment from actual or threatened release of hazardous substances into the environment.

REMEDIAL ACTION OBJECTIVES

Remedial action objectives (RAOs) are specific goals to protect human health and the environment. These objectives are based on available information and standards, such as Applicable or Relevant and Appropriate Requirements (ARARs) for drinking water and groundwater, Site-specific risk-based levels, and the reasonably anticipated future land use for the Site (e.g., commercial/industrial or residential).

The following RAOs were established for OU1 in the 2007 ROD:

- Reduce contaminant levels in the drinking water aquifer to ARARs.
- Prevent further migration of contaminated groundwater.

The RAOs for OU1 in the 2015 interim remedy were:

- Minimize and/or eliminate the potential for future human exposure to Site contaminants via contact with contaminated drinking water.
- Help reduce migration of contaminated groundwater.

The RAOs established for the OU2 TCE-dominant groundwater plume remedy are:

- Prevent or minimize future human exposure (via ingestion, dermal contact, and inhalation) to Site-related contaminants in groundwater at concentrations greater than state and federal standards.

- Minimize the potential for further migration of groundwater containing Site-related contaminants at concentrations greater than state and federal standards.

- Restore the impacted aquifer to its most beneficial use as a source of drinking water by reducing Site-related contaminant levels to the state and federal standards.

The RAOs for the OU1 final remedy are:

- Prevent or minimize future human exposure (via ingestion, dermal contact, and inhalation) to Site-related contaminants in groundwater at concentrations greater than state and federal standards.

- Minimize the potential for further migration of groundwater containing Site-related contaminants at concentrations greater than state and federal standards.

- Restore the impacted aquifer to its most beneficial use as a source of drinking water by reducing Site-related contaminant levels to the state and federal standards.

- Mitigate potential current and future unacceptable risks from subsurface vapor intrusion into indoor air within buildings found in the OU1 study area.

These RAOs replace those in the 2007 ROD and 2015 interim ROD.

To achieve the RAOs, EPA has identified the state and federal MCLs for the contaminants of concern (COCs), which are PCE and TCE, of 5 µg/L as the preliminary remediation goals (PRGs) for OUs 1 and 2.

SUMMARY OF REMEDIAL ALTERNATIVES

CERCLA Section 121(b)(1), 42 U.S.C. 9621(b)(1), mandates that remedial actions must be protective of human health and the environment, cost-effective, comply with ARARs, and utilize permanent solutions and alternative treatment technologies and resource recovery alternatives to the maximum extent practicable. Section 121(b)(1) also establishes a preference for remedial actions which employ, as a principal element, treatment to permanently and significantly reduce the volume, toxicity, or mobility of the hazardous substances, pollutants and contaminants at a site. Section 121(d) of CERCLA further specifies that a remedial action must attain a level or standard of control of the hazardous substances, pollutants, and contaminants, which at least attains ARARs under state and federal laws, unless a waiver can be justified pursuant to Section 121(d)(4) of CERCLA.

Detailed descriptions of the remedial alternatives that were considered to address the contamination associated with the Site can be found in the FS Report. The FS Report presents three alternatives, including a “no further action” alternative.

A number of remedial technologies were considered which, for various reasons, were not ultimately retained as potential alternatives for the remedial action at the Site. For example, the following technologies were not retained as potential alternatives: enhanced bioremediation, in-situ chemical oxidation/reduction, in-situ adsorption, passive/reactive treatment barriers, ex-situ adsorption, ex-situ advanced oxidation processes, ex-situ air stripping, and discharge/disposal. Detailed rationale explaining why these technologies were not retained as potential alternatives for the remedial action can be found in the complete OU2 FS Report in the Administrative Record for the Site.

As noted in the 2007 remedy and the 2015 amendment, EPA has concluded that the OU1 PCE-dominant plume will be restored to its beneficial use only after the TCE-dominant contamination in OU2 is addressed. As discussed above, the OU1 interim remedy has been and is expected to continue to meet the remedial action objectives identified for OU1. Therefore, a common element of the alternatives evaluated for OU2 is that the OU1 interim remedy would be made the final remedy for OU1. The OU1 and OU2 remedies are complementary and together constitute a final remedy for the contamination emanating from the Fulton Property. Additionally, vapor intrusion mitigation measures (*e.g.*, SSDSs) would be installed, as needed, as a result of ongoing sampling.

A review of the OU2 remedial action, as required pursuant to CERCLA Section 121(c), 42 U.S.C. § 9621(c), will be conducted each five years after the completion of the remedial action to ensure that the remedy continues to provide adequate protection to human health and the environment, because this OU2 remedy will result in hazardous substances remaining on-site above health-based levels that would otherwise allow for unlimited use and unrestricted exposure, if attained. The first Five-Year Review Report for the OU1 interim remedy was completed in 2022.

EVALUATION CRITERIA FOR SUPERFUND REMEDIAL ALTERNATIVES

Overall Protectiveness of Human Health and the Environment evaluates whether and how an alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, or treatment.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) evaluates whether the alternative meets federal and state environmental statutes, regulations, and other requirements that pertain to the site, or whether a waiver is justified.

Long-term Effectiveness and Permanence considers the ability of an alternative to maintain protection of human health and the environment over time.

Reduction of Toxicity, Mobility, or Volume (TMV) of Contaminants through Treatment evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present.

Short-term Effectiveness considers the length of time needed to implement an alternative and the risks the alternative poses to workers, the community, and the environment during implementation.

Implementability considers the technical and administrative feasibility of implementing the alternative, including factors such as the relative availability of goods and services.

Cost includes estimated capital and annual operations and maintenance costs, as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent.

State/Support Agency Acceptance considers whether the State agrees with the EPA's analyses and recommendations, as described in the RI/FS and Proposed Plan.

Community Acceptance considers whether the local community agrees with EPA's analyses and preferred alternative. Comments received on the Proposed Plan are an important indicator of community acceptance.

The construction duration for each alternative reflects only the time required to construct or implement the remedy and does not include the time required to design the remedy, procure contracts for design and construction, or operate a system to achieve remediation of the contamination at the Site.

Alternative 1: No Further Action

Capital Cost:	$0
Total O&M Costs:	$0
Present-Worth Cost:	$0
Construction Time	N/A

No remedial action, beyond what is already occuring in OU1, would be implemented under this alternative. The No Further Action alternative is considered in accordance with the NCP to serve as a baseline for comparison with the other alternatives. Under this alternative, no action, beyond what is already being undertaken for OU1, would be taken to remediate the contaminated groundwater or to monitor contaminant concentrations associated with risks to human health and/or the environment.

Alternative 2: Institutional Controls with Long-Term Groundwater Monitoring

Capital Cost:	$816,000
Total O&M Costs Present Value:	$1,952,000
Periodic Costs Present Value:	$432,000
Total Present Value Cost	$3,200,000
Construction Time	NA
Estimated time to reach RAOs	30 years

Under this alternative, ICs would restrict groundwater use and other activities that could result in direct contact with contaminated groundwater outside of the area addressed by the OU1 remedy. It should be noted that some ICs are already in place in the form of the Nassau County Sanitary Code. Specifically, the Nassau County Sanitary Code regulates installation of private potable water supply wells in Nassau County. LTGM would be employed to ensure the ICs remain in place and appropriate, to provide a process for coordination with the local water districts regarding changes in conditions of municipal water supply well activities including pumping, or cessation of pumping, and to assess how much of the plume is dissipating via natural processes. A pre-design investigation (PDI) would be completed to determine the appropriate locations for two additional monitoring wells (see **Figure 3** for tentative, proposed locations) to aid in the LTGM, including the potential for these wells to act as sentinel wells for the local water districts. Based on the sampling results for these monitoring wells, additional monitoring wells may be needed. Based on the analysis completed in the remedial investigation, this alternative would meet preliminary remediation goals (PRGs) in approximately 30 years, and RAOs would be met sometime thereafter. The timeframe for this alternative was calculated using first-order decay rates for the OU2 wells derived from data collected during the OU2 RI and historical data. TCE concentrations in well MW-20C are already below the PRG. Those decay rates indicate that wells MW-23C and MW-25A will reach PRGs in fewer than 30 years. Wells MW-26F, MW-26G, and N-11171 are monitoring wells located in the portion of OU2 where commingling with the OU1 plume has been observed. Non-decreasing TCE trends in these wells may potentially be the result of commingling of PCE via degradation from OU1. Well N-03881 is a public water supply well that is, because of its pumping rate, also drawing in contamination from the OU1 plume. Based on the interference posed by commingling, those wells were not used in the estimation of this alternative's duration.

Alternative 3: Core of the Plume Groundwater Remediation and Discharge of Treated Water to Groundwater, ICs, and LTGM

Capital Cost:	$12,766,000
Total O&M Costs Present Value:	$24,731,000
Periodic Costs Present Value:	$1,127,000
Total Present Value Cost	$38,624,000
Construction Time	1 year
Estimated time to reach RAOs	30 years

Alternative 3 calls for the installation of one extraction well, from which contaminated groundwater would be pumped and treated (P&T) utilizing air strippers, granular activated carbon, and advanced oxidation processes. The treated water would then be discharged back to groundwater via a recharge basin. This alternative also includes the use of ICs and LTGM. The specifications for this alternative would be determined during the design.

Based on currently available information, the estimated location of the extraction well is at the intersection of Garfield Street and Stewart Avenue and the estimated depth is 450 feet below ground surface. The location of the extraction well will be based on availability of open space in this densely developed area. The estimated pumping rate of the extraction well is 500 gallons per minute. The estimated location for the treatment plant and recharge basin is at the intersection of Colonial Avenue and Tanners Pond Road. The area treated is estimated to reach PRGs in 25 years, and the downgradient area not captured by the P&T system would concurrently attain PRGs in 30 years. These timeframes are based on the first-order decay analysis described in Alternative 2. The total remediation time is estimated to be 30 years.

COMPARATIVE ANALYSIS OF ALTERNATIVES

During the detailed evaluation of remedial alternatives, each alternative is assessed against nine evaluation criteria set forth in the NCP, namely overall protection of human health and the environment, compliance with ARARs, long-term effectiveness and permanence, reduction of toxicity, mobility, or volume through treatment, short-term effectiveness, implementability, cost, and state and community acceptance.

The first two criteria are *threshold* criteria that must be met. The next five criteria are *primary balancing* criteria that are to be balanced in considering the alternatives, and the last two are *modifying* criteria that are to be considered.

This section of the Proposed Plan profiles the relative performance of each alternative against the nine criteria, noting how each compares to the other options under consideration. A more detailed analysis of the alternatives can be found in the FS Report contained in the Administrative Record for these remedial decisions.

Overall Protection of Human Health and the Environment

A threshold requirement of CERCLA is that the selected remedial action be protective of human health and the environment. An alternative is protective if it reduces current and potential future risk associated with each exposure pathway at a site to acceptable levels.

Alternative 1 (No Further Action) provides for no control of exposure to contaminants and no reduction in risk to human health and the environment.

Alternatives 2 and 3 would provide equal protection of human health because the exposure pathways to human receptors would be eliminated by restrictions placed on the use of groundwater within the area of groundwater contamination. Additionally, under Alternative 2, a PDI would be completed to determine the appropriate locations for two additional monitoring wells to aid in the LTGM, including the potential for these wells to act as sentinel wells for the local water districts. Based on the sampling results for these monitoring wells, additional monitoring wells may be needed.

Compliance with ARARs

The risk-based groundwater PRGs for OU1 and OU2 are 5 µg/L for PCE and 5 µg/L for TCE, which are the MCLs set under state and federal ARARs.

As there are no promulgated chemical-specific ARARs for vapor intrusion, PRGs were not specifically developed for vapor intrusion. However, applicable criteria to be considered include EPA VISLs and New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York. The most current EPA VISLs and NYSDOH criteria will be used in the evaluation of the vapor intrusion pathway at the Site.

Alternative 1 would not comply with ARARs because no further action would be taken and chemical-specific ARARs would continue to be exceeded in OU2.

Alternatives 2 and 3 would comply with federal MCLs, NYS MCLs, and NYS Ambient Water Quality Standards equally as the exposure pathways to human receptors would be eliminated by restrictions placed on the use of groundwater within the area of groundwater contamination. Alternative 2 would comply with ARARs over a period of approximately 30 years as natural processes attenuate the plume. Alternative 3 would also comply with ARARs over a period of 30 years from active groundwater extraction, treatment, and discharge.

Long-Term Effectiveness and Permanence

Long-Term Effectiveness and Permanence is the first criteria among the five Primary Balancing criteria. No long-term management or controls for exposure are included in Alternative 1. Long-term potential risks would remain unchanged under this alternative.

Alternatives 2 and 3 would have similar long-term effectiveness and permanence as both alternatives would reduce the contaminant concentrations to below PRGs in a similar timeframe (30 years). The reduction of contaminant concentrations through natural processes is considered an effective technology. Groundwater extraction and ex-situ treatment under Alternative 3 is also effective.

he adequacy and reliability of the ICs under Alternatives 2 and 3 are high and rely on implementation and enforcement through the state and municipalities which have proven to be successful. The LTGM program that would be established for these alternatives would yield a reliable indication of the contaminant concentrations in groundwater.

Alternative 3 relies on commonly used treatment technologies to permanently destroy the contaminants once withdrawn from the aquifer. Following air stripping, any remaining contaminants trapped on the granular activated carbon adsorption media would be destroyed during regeneration.

Reduction of Toxicity, Mobility, or Volume through Treatment

Alternative 1 would provide no reduction in toxicity, mobility, or volume of the contaminated groundwater.

Alternative 3 would reduce the toxicity, mobility, and volume of contaminants through treatment in the aquifer by using extraction wells to remove contaminated groundwater and by providing treatment through air stripping. A reduction in toxicity, mobility, or volume of contaminants is expected to occur under Alternatives 1 and 2, although not through active treatment, but incidentally, because of the Village of Garden City wells #13 and #14 operating under the terms agreed upon in the 2016 settlement agreement. Alternative 3 would remove the largest quantity of VOCs and would have the largest reduction in toxicity, mobility, and volume in the shortest period of time because it would target the portions of the plume with the highest contaminant concentrations.

Short -Term Effectiveness

Alternative 1, the “no further action” alternative, would not result in any disruption of the OU2 area, and, therefore, no additional risks would be posed to the community, workers, or the environment based on remedial actions occuring.

Alternatives 2 and 3 would be effective in the short-term at removing or reducing contaminant mass from the aquifer. Alternatives 1 and 2 would result in the least number of short-term impacts because no physical construction would occur, as compared to the active Alternative 3. Alternative 3 would have short-term impacts to the local communities related to the drilling of the extraction well, installation of underground conveyance piping, construction of the treatment plant, and development of discharge/recharge locations. These disruptions could be minimized through noise and traffic control plans, as well as community air monitoring programs during construction, to minimize and address any potential impacts to the community, remediation workers, and the environment. The groundwater extraction system would induce a hydraulic gradient capturing contaminants within days or weeks of system startup. It should be noted that, given the relatively low concentrations of VOCs in the groundwater, an extraction well would be pulling in large amounts of clean water.

Implementability

Alternatives 1 and 2 would be the easiest alternative to implement since there would be no physical construction of a remedial system. Alternative 3 would be the most difficult to implement since it would involve installation of an extraction well and associated piping. It would also require access to land owned by Nassau County at the intersection of Colonial Avenue and Tanners Pond Road. This alternative would also cause disruptions to traffic within several areas to install underground conveyance piping between the extraction wells and the centralized treatment plant.

Although Alternative 3 would be somewhat difficult to implement at the Site in what is a heavily developed area, the proposed extraction well could be constructed with well-established technologies, equipment, and services. The equipment and services needed to sample groundwater monitoring wells are commercially available. The treatment technologies proposed under Alternative 3 are commercially available technologies and are typically easy to install and to operate. Additional pre-design investigation, pilot testing, and property evaluation would be necessary to determine optimal extraction well placement, flow rates, and any required pretreatment. One factor that is important in assessing the implementability of Alternative 3 is the prevalence of municipal water supply pumping in the area and the likelihood that an EPA extraction well would interfere with said pumping from the Magothy Aquifer, the sole source of public drinking water in the area.

Cost

Because Alternative 1 is a no further action alternative, the capital, O&M, and net present worth costs are estimated to be $0.

Alternative 2 would have the lowest cost of the remaining alternatives using ICs with LTGM ($3,200,000). Alternative 3 would be the highest cost ($38,624,000) with the active remediation components including groundwater remediation with an extraction well, centralized treatment, and discharge of treated water to groundwater.

State Acceptance

NYSDEC is currently evaluating EPA's preferred alternative as stated in this Proposed Plan.

Community Acceptance

Community acceptance of the Preferred Alternative will be evaluated after the public comment period ends and all comments are evaluated. EPA will respond to any substantive comments in a Responsiveness Summary, which will be part of the ROD for the Site. The ROD is the document that formalizes the selection of the remedy for an OU or an entire site.

PREFERRED ALTERNATIVE

Based upon an evaluation of the remedial alternatives, EPA, in consultation with NYSDEC, proposes Alternative 2, ICs with long term monitoring, and adopting the OU1 interim remedy as the final OU1 remedy, as the preferred alternative for the Site.

The total estimated present-worth cost for the preferred alternative is $3,200,000. This is an engineering cost estimate that is expected to be within the range of plus 50 percent to minus 30 percent of the actual project cost. Further details on the cost are presented in the FS Report.

Basis for the Remedy Preference

Based on information currently available, EPA believes the Preferred Alternative for OU2 meets the threshold criteria and provides the best balance of tradeoffs among the other alternatives with respect to the balancing and modifying criteria. EPA expects the Preferred Alternative for OU2 to satisfy the following statutory requirements of CERCLA 121(b): (1) to be protective of human health and the environment; (2) to comply with ARARs; and (3) to be cost-effective. EPA expects the Preferred Alternative for OU2 to partially satisfy the following statutory requirements of CERCLA 121(b): (4) utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and (5) to satisfy the preference for treatment as a principal element. As discussed earlier, in-situ treatment alternatives were screened out in the FS based on a variety of technical and implementation challenges. Statutory requirements (4) and (5), above, are considered partially satisfied because OU1 meets the statutory preference for treatment and the OU1 and OU2 remedies are complementary. For OU1, the Village of Garden City and Genesco entered into an agreement whereby the Village agreed to operate wells #13 and #14 at appropriate levels of pumping for 30 years and not to take any action that would reduce the volume, level of treatment, or hydraulic control at existing wells #13 and #14, except with the consent of EPA. As noted above, the Village of Garden City Public Water Supply Wells are effectively capturing and treating the contaminated groundwater. The 2007 OU1 remedy and the 2015 amendment to it included that the OU1 PCE-dominant plume would be restored to its beneficial use only when the TCE-dominant contamination had been addressed in OU2. The Preferred Alternative for OU2 will include a LTGM that will be closely coordinated with NYSDEC and the local water districts. The LTGM will be developed to provide additional data to confirm that the OU1 PCE-dominant plume is being fully contained and treated and that the aquifer is progressing toward restoration. In addition, the LTGM is expected to provide information on potential contamination that might be inhibiting restoration of the OU1 PCE-dominant plume and ensure that the assumptions made about the OU2 plume dynamics, including pumping, or cessation of pumping, are correct. The remedies for OU1 and OU2, together, constitute a final remedy for the contamination emanating from the Fulton Property. Alternative 2 would restore the aquifer in a similar timeframe as Alternative 3, with fewer implementability challenges and at a lower cost.

EPA is proposing that the 2015 OU1 interim remedy be selected as the OU1 final remedy because the RAOs of minimizing and/or eliminating the potential for future human exposure to Site contaminants and reducing migration of contaminated groundwater are being achieved. The ongoing interim OU1 remedy supports the full containment and treatment of the groundwater plume and demonstrates that the aquifer is progressing toward restoration. The Preferred OU1 Remedy satisfies the following statutory requirements of CERCLA 121(b): (1) to be protective of human health and the environment; (2) to comply with ARARs; (3) to be cost-effective; (4) to utilize permanent solutions and alterative treatment technologies or resource recovery technologies to the maximum extent practicable; and (5) to satisfy the preference for treatment as a principal element.

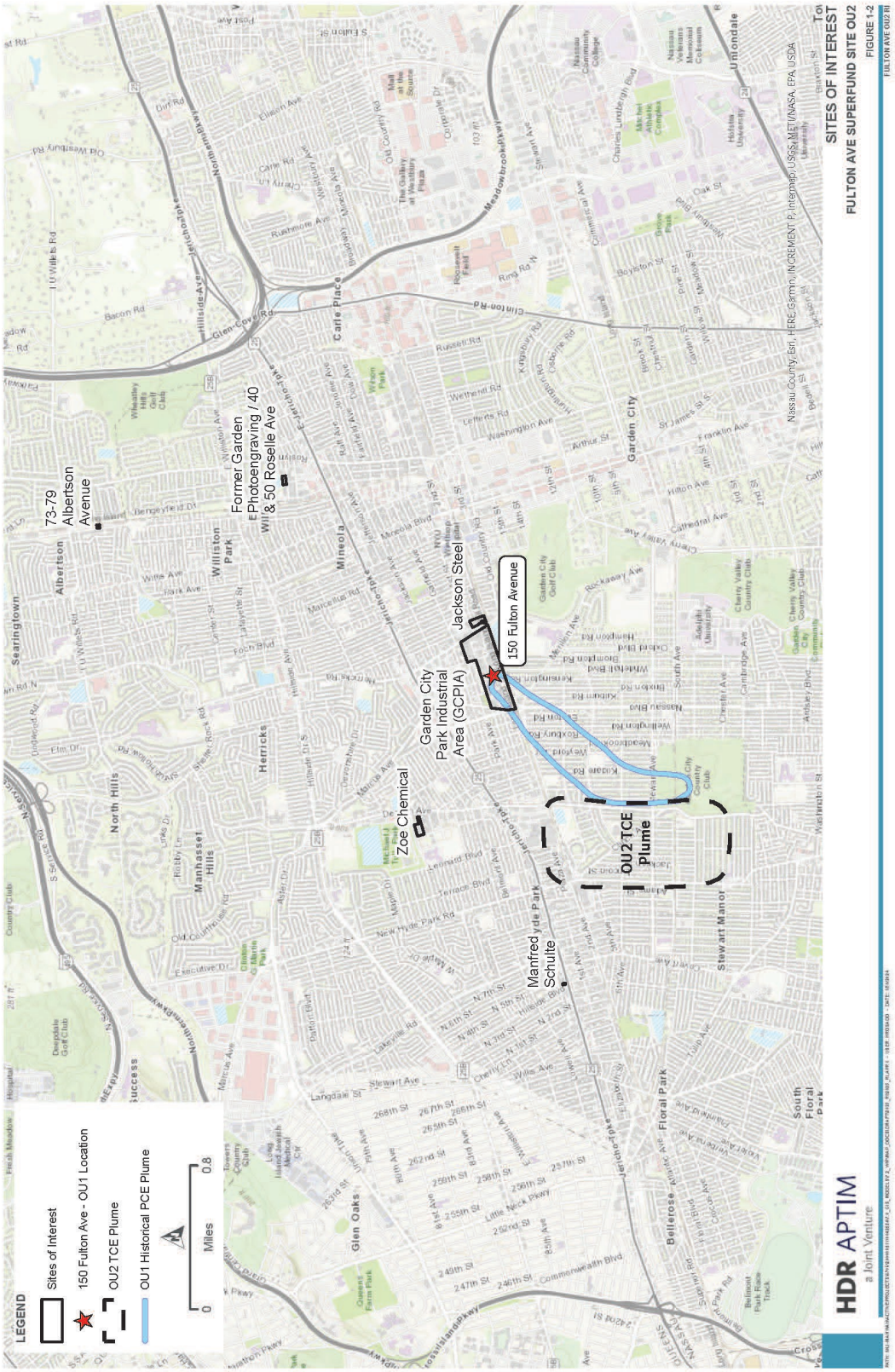

Figure 1: OU1 and OU2 Site Boundaries.

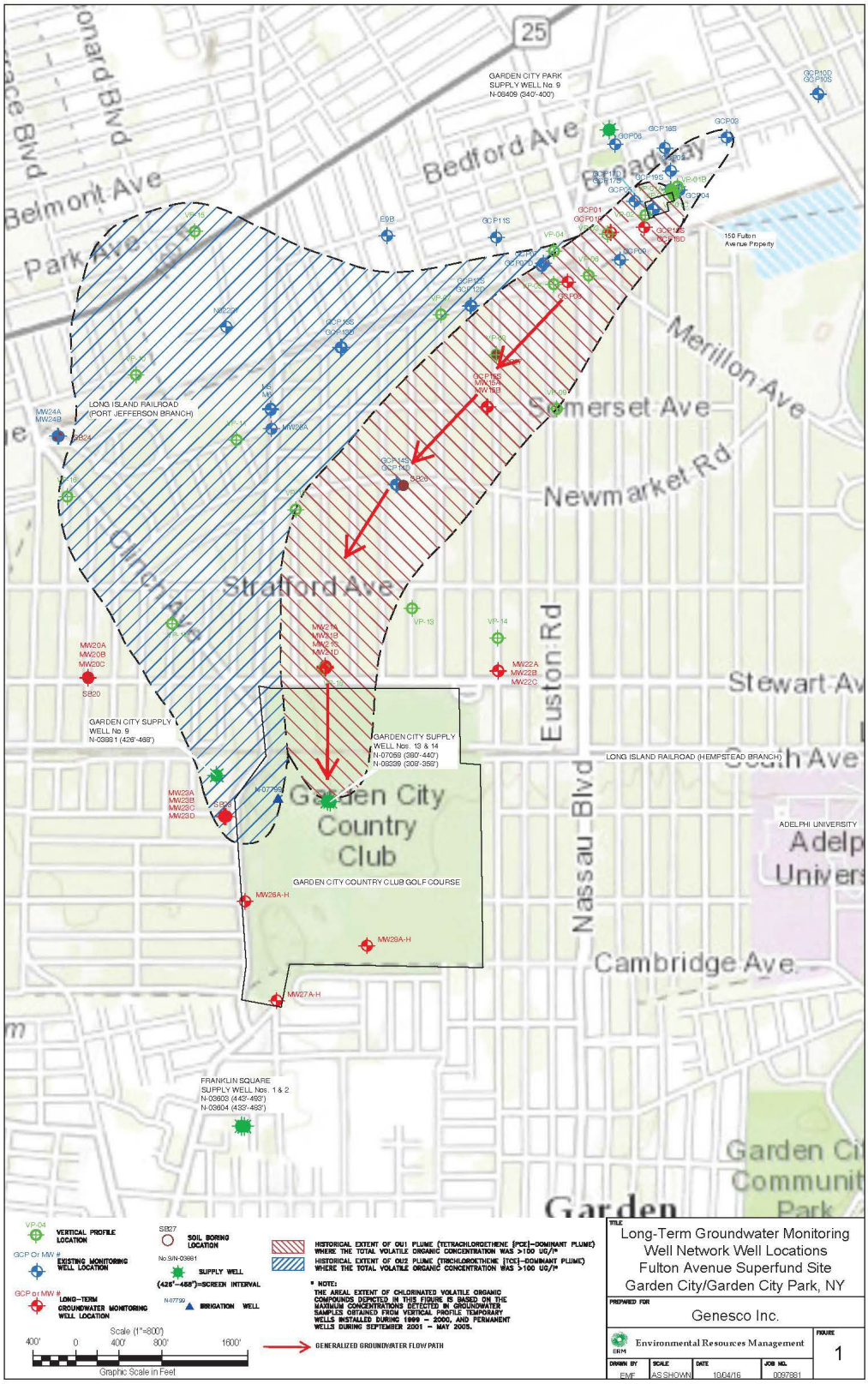

Figure 2: OU1 Long-Term Groundwater Monitoring Program Wells.

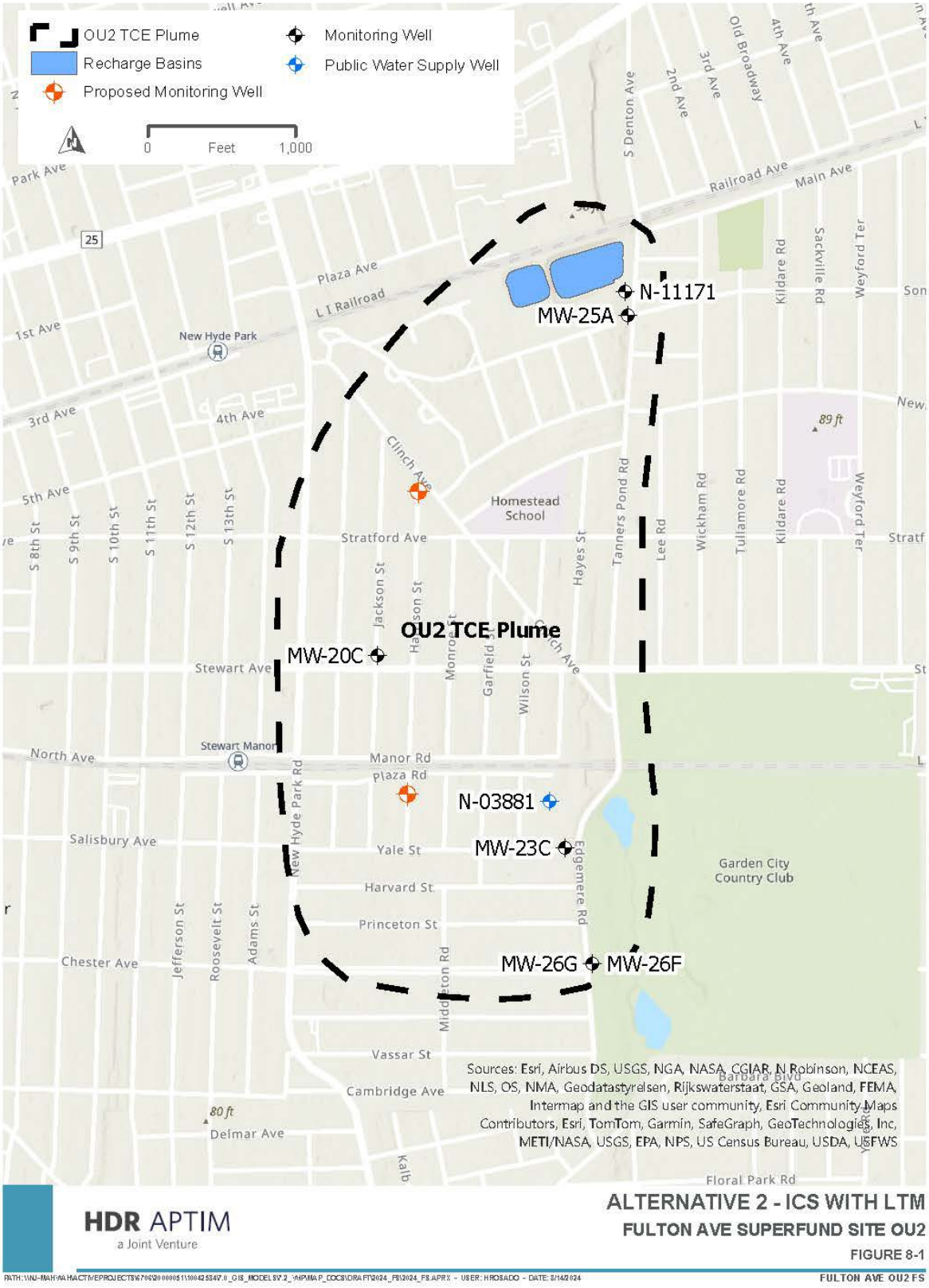

Figure 3: OU2 Core of the Plume Wells and Proposed Locations of Preferred Remedy Monitoring Wells.