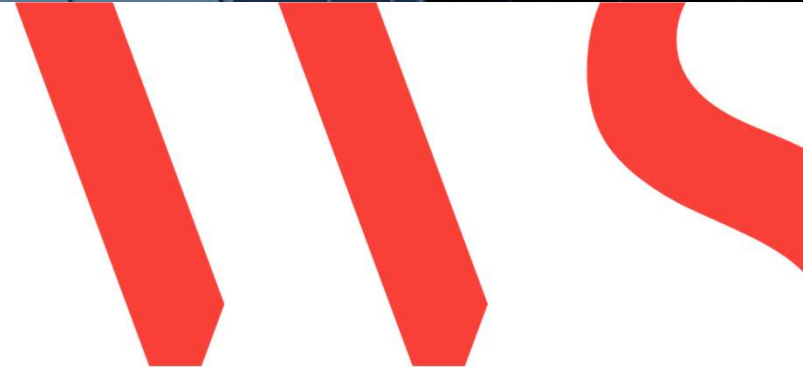




Project Update and Request for Comments

80-90 Bridge Street Site, Newton, MA
Meeting Date: November 29, 2022



Agenda and Purpose of Presentation

- 1. Provide background information to those unfamiliar with the Site**
- 2. Present draft documents available for public comment:**
 1. Supplemental Phase II – Comprehensive Site Assessment Report
 2. Partial Permanent Solution Statement No. 2
- 3. Answer questions from the public**

Background

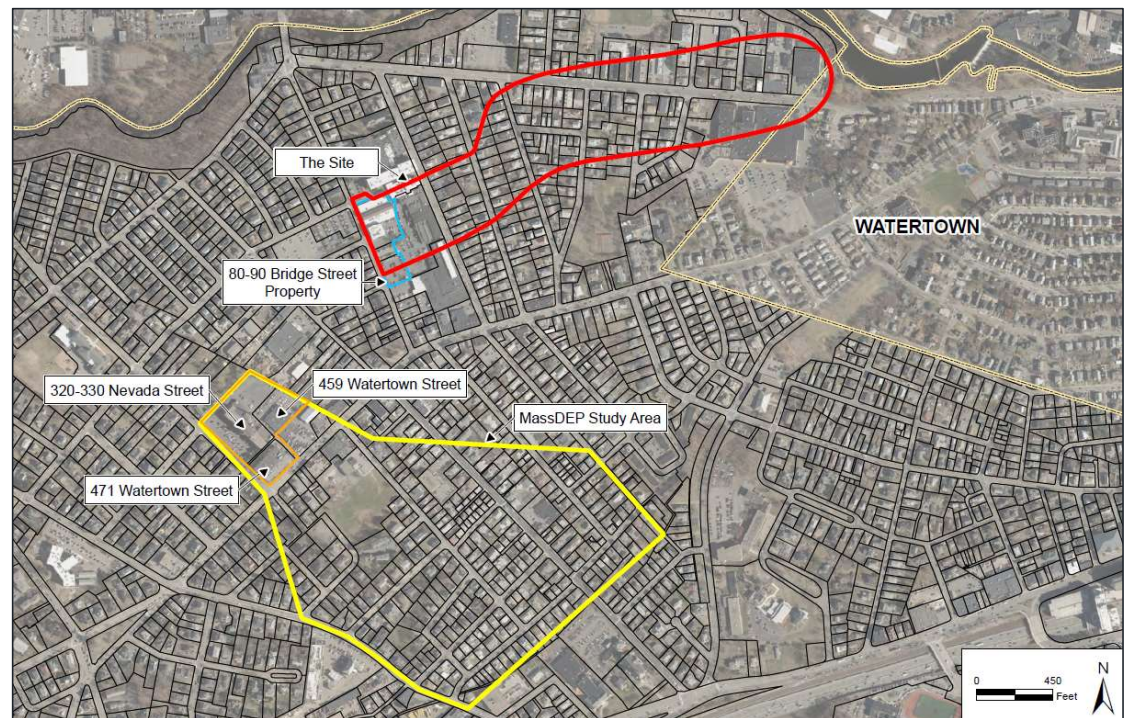


Key Parties Involved

- **Chapelbridge Park Associates (Chapelbridge)** – current owner of the 80-90 Bridge Street property
- **WSP Environment & Infrastructure Inc. (WSP, formerly Wood)** – environmental engineering and consulting firm
- **Matt Grove, Ph.D., LSP** – Licensed Site Professional (LSP) directing assessment and cleanup activities
- **MassDEP** – environmental regulatory agency

Site Location

- 80-90 Bridge Street, former 102 Bridge Street, 59-85 Chapel Street, and a portion of the neighborhood east of Chapel Street
- Contamination from industrial activities that ended decades ago
 - Chlorinated solvents trichloroethene (TCE) and tetrachloroethene (PCE)
 - Metals and cyanide
- Not related to the 459-471 Watertown and 320-330 Nevada Street Site

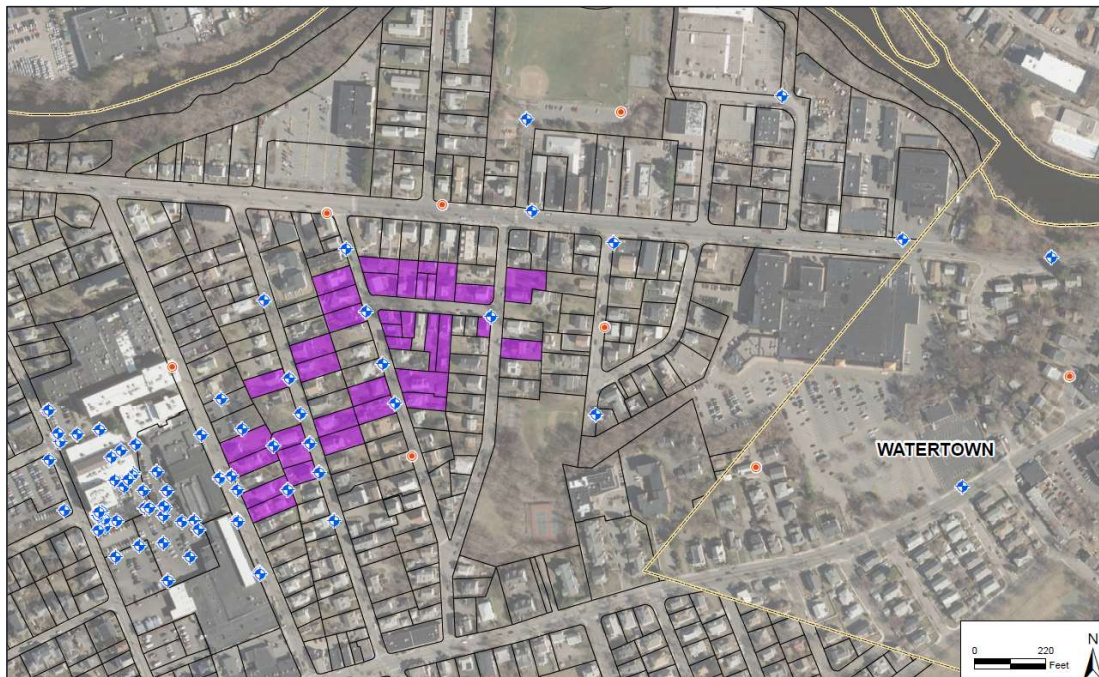


Location of 80-90 Bridge Street Site relative to the 459-471 Watertown and 320-330 Nevada Street Site

80-90 Bridge Street History of Use

- Textile manufacturing from 1850s to 1930s
- Raytheon Corporation occupied the property from the 1940s to 1965
 - High technology manufacturing and research & development (R&D) facility
 - Included a laboratory and chemical storage
- Ferrotec Inc. manufactured electronic components from 1965 to 1972
- General Connector Corporation manufactured electrical connectors from 1972 to 1986
- Commercial office space and R&D use since 1986

Current Status



Monitoring wells (blue symbols), Geoprobe soil borings (red symbols), and residential properties investigated for vapor intrusion (purple shading)

Sources of contamination were removed in the 1980s.

The limits of soil and groundwater contaminants have been determined.

Indoor air sampling has found no significant risk to health in 73 of 75 residences where vapor intrusion assessments have been completed.

SSDs were installed in two residences to eliminate vapor intrusion where risks were identified.

A Permanent Solution has been achieved for the source area and the immediate downgradient properties.

Documents Available for Public Comment



Context of the Documents

Supplemental Phase II Report

- Describes vapor intrusion assessments completed after September 2020
- Provides results of a site-specific risk assessment
- Establishes a boundary within the GW-2 plume beyond which the vapor intrusion pathway is not likely to be of concern

Partial Permanent Solution No. 2

- Applies to much of the remainder of the Site within the groundwater plume
- Summarizes the evidence for why a Permanent Solution exists at each property

Documents for Comment

Supplemental Phase II – Comprehensive Site Assessment Report

Supplemental Phase II - Comprehensive Site Assessment

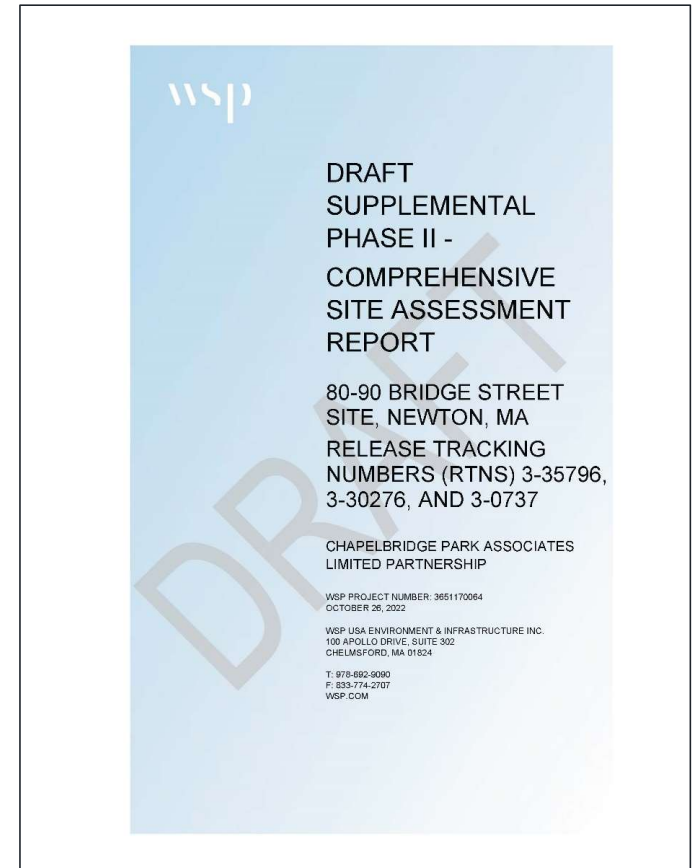
Purpose: Document recent progress in assessing vapor intrusion for subset of properties located east of Chapel Street that are within the Site boundary

Objective of Phase II:

- Characterize the source, nature, and extent and migration pathways of contamination.
- Evaluate exposure pathways and potential risk to health and the environment.

Document Includes:

1. Results from vapor intrusion assessments at 48 residences
2. Site-specific (Method 3) risk assessment
3. Summary tables and figures of data



Supplemental Investigation Work Performed

- Conducted six rounds of seasonal residential vapor intrusion sampling since September 2020
- Completed vapor intrusion assessments at 48 additional residences (75 total to date)
- Established two boundaries within the groundwater plume
 - A boundary beyond which no adverse impacts to human health are expected (i.e., a condition of No Significant Risk exists).
 - A boundary beyond which the vapor intrusion pathway is not likely to be of concern (i.e., Site-related indoor air concentrations are below MassDEP Threshold Values), and therefore no additional vapor intrusion assessment is necessary in accordance with MassDEP guidance.

What is Vapor Intrusion?

- Vapor intrusion is gas (vapor) entering a building from the subsurface.
- The most well-known example of vapor intrusion is radon.
- At the 80-90 Bridge Street Site, vapors are coming from contaminated groundwater.
- Note that groundwater in Newton is NOT used for drinking water!

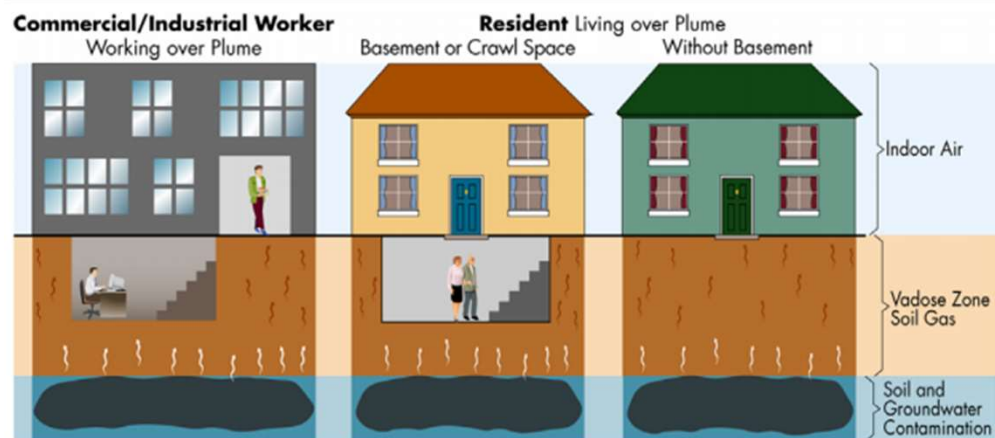
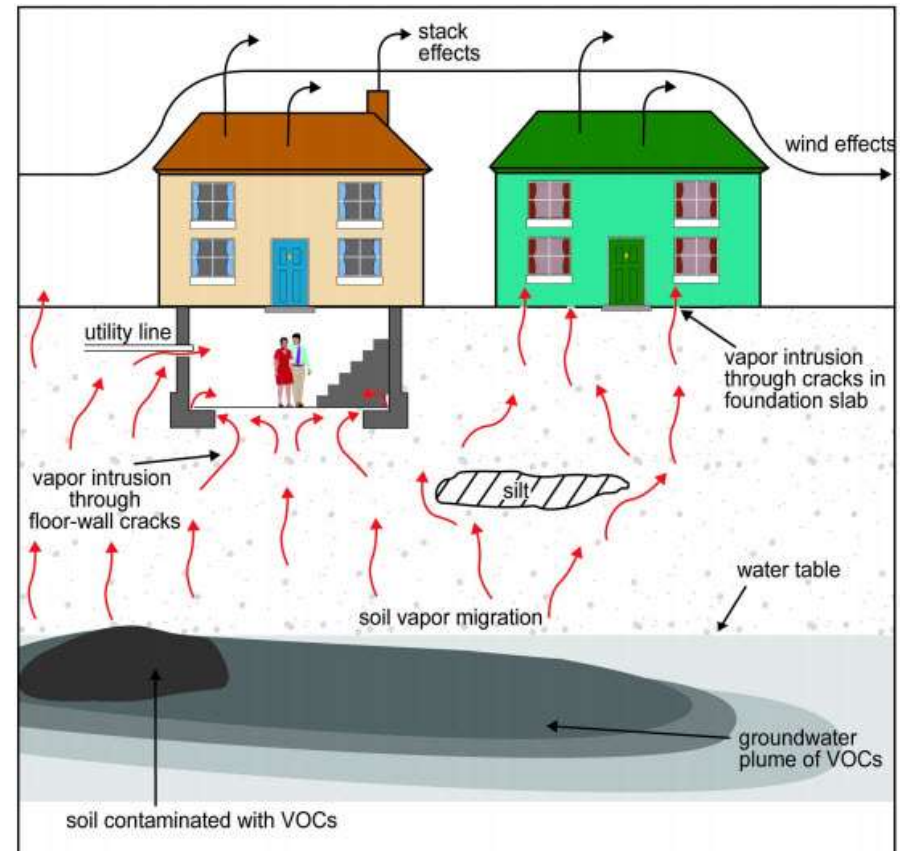


Figure 1-1. Typical conceptual model of vapor intrusion.

From "Vapor Intrusion Pathway: A Practical Guideline" prepared by the Interstate Technology Regulatory Council (ITRC)

What Factors Affect Vapor Intrusion?

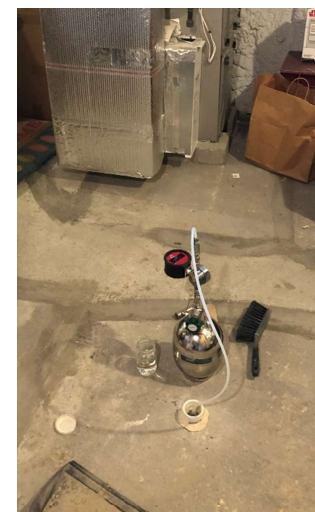
- The concentration of the contaminant in groundwater.
- The depth of groundwater beneath the building.
- The construction of the building.
 - Does the building have a basement?
 - Are there cracks or gaps in the slab or basement walls?



From the United States Environmental Protection Agency Vapor Intrusion website
(<https://www.epa.gov/vaporintrusion/what-vapor-intrusion>)

Vapor Intrusion Assessment

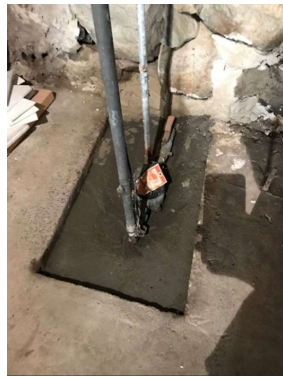
- Goal of investigation is to determine if the vapor intrusion pathway is:
 - complete (vapors are entering the building) and
 - likely to be of concern (concentrations above risk levels)
- Collect samples of sub-slab soil gas and indoor air in areas of higher groundwater concentrations (generally above MassDEP GW-2 standards).
- Compare results to:
 - Residential Sub-Slab Soil Gas Screening Values
 - Residential Indoor Air Threshold Values
- If indoor air concentrations are above MassDEP's Threshold Values in living or working space, then a Critical Exposure Pathway (CEP) exists
- Complete preliminary risk calculations to evaluate short-term exposure risks (Imminent Hazards) and long-term exposure risks



Installation and sampling of a sub-slab soil gas point (above)
Canister for sampling indoor air (below)



Vapor Intrusion Mitigation Measures



Sealing cracks and gaps and an air purifying unit (APU) (above)
Sub-slab depressurization system (SSDS) extraction pipe, pressure gauge, and fan (below)

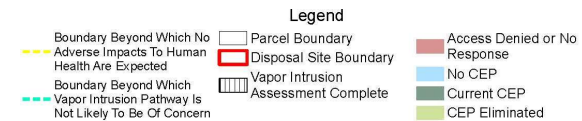
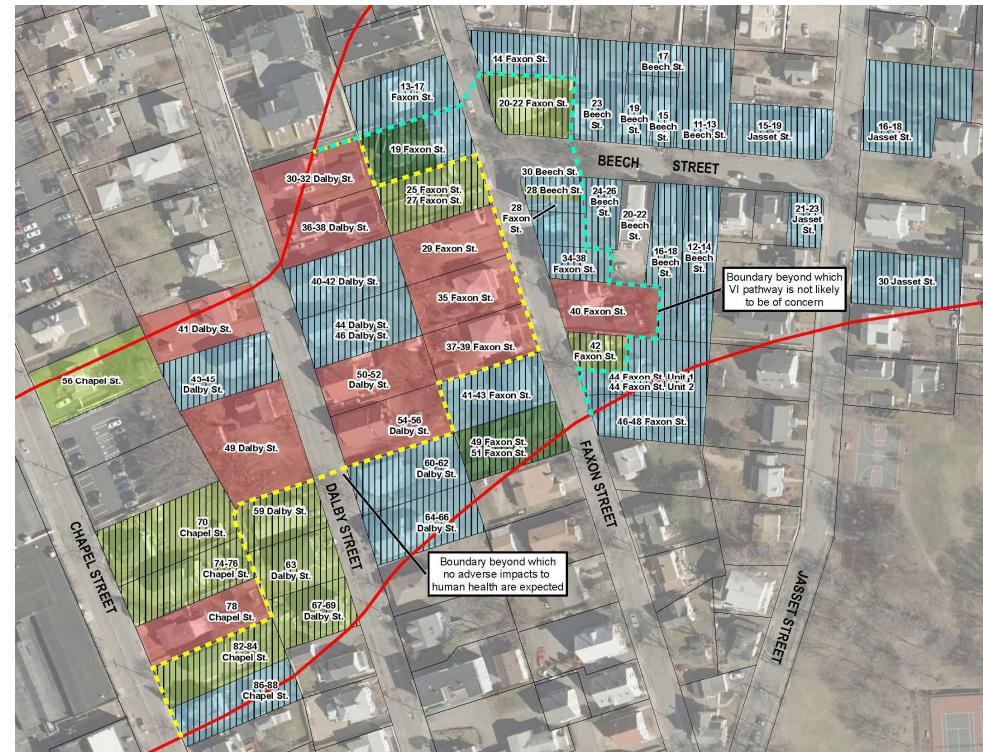


If a CEP is determined to exist, then follow-up actions may include one or all of the following:

- Sealing of accessible gaps or cracks in the basement floor or walls
- Installation of air purifying units (APUs) as a temporary measure
- Installation of an SSDS as permanent measure
- Sampling to confirm the effectiveness of the implemented measures

Findings and Conclusions of Vapor Intrusion Assessment

- Sampling results demonstrate that the vapor intrusion pathway is not complete for 40 of the 48 residences
 - Indoor air concentrations below MassDEP Residential Threshold Values in 23 residences
 - Indoor sources identified in 17 residences
- In the eight residences where the VI pathway was complete, actions were taken to eliminate or mitigate the Critical Exposure Pathway (CEP) to the extent feasible.
- None of the eight residences with CEPs had indoor air concentrations that posed a short-term or long-term health risk.
- Access needed at additional properties to continue the vapor intrusion assessment.



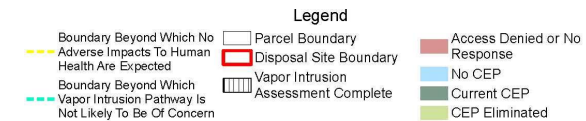
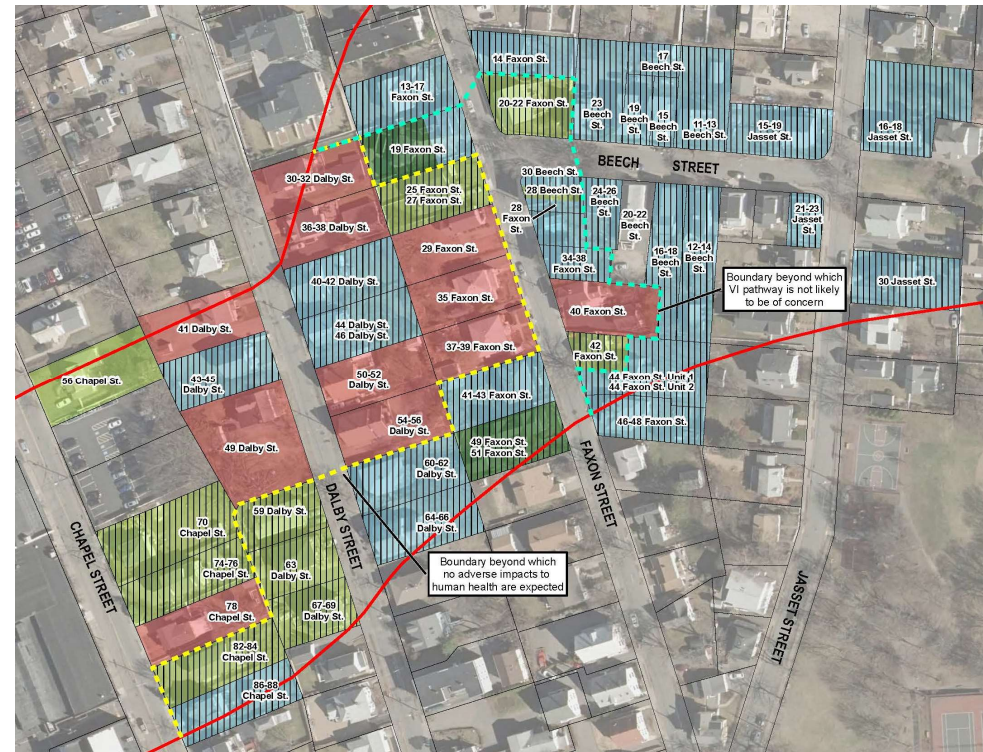
CEP = Critical Exposure Pathway

Vapor Intrusion Boundaries

Data from the Interim and Supplemental Phase II investigations have been used to establish two boundaries:

- Boundary beyond which no adverse impacts to human health are expected
- Boundary beyond which the vapor intrusion pathway is not likely to be of concern

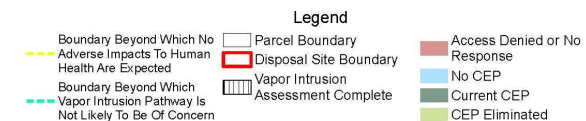
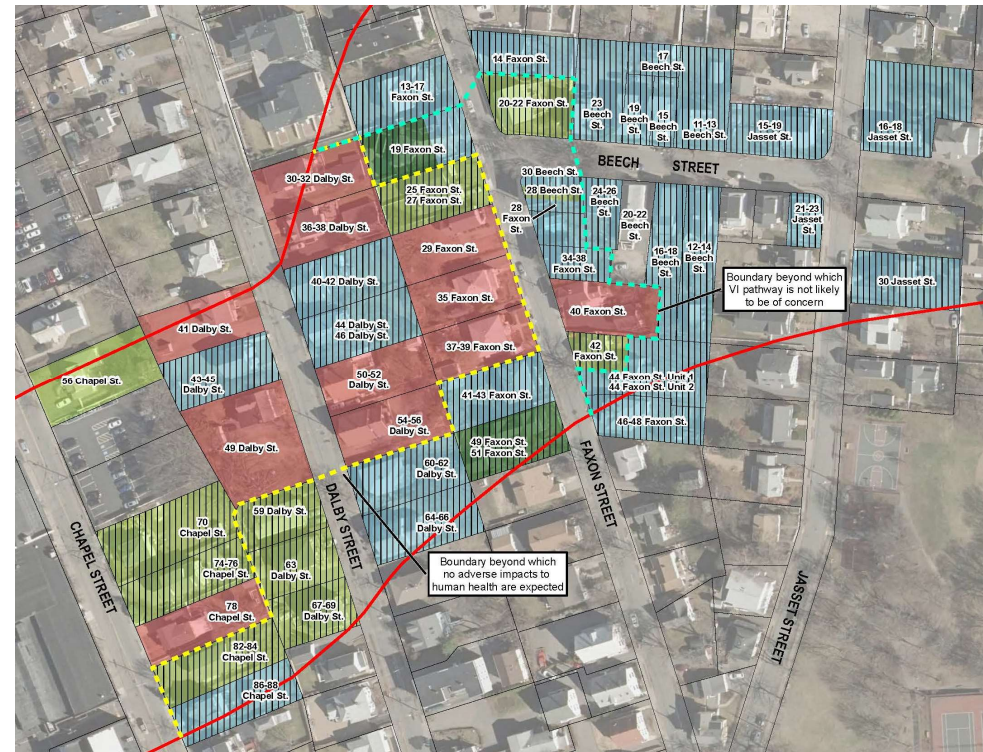
Additional vapor intrusion assessment is not required beyond the boundary where the vapor intrusion pathway is not likely to be of concern in accordance with MassDEP guidance



CEP = Critical Exposure Pathway

Verification of Vapor Intrusion Boundaries

- Locations of the boundaries have been verified by extensive sampling
 - 62 residences sampled beyond the boundary for no adverse impacts to human health
 - 31 residences sampled beyond the boundary for which the VI pathway is not likely to be of concern



CEP = Critical Exposure Pathway

Site-Specific (Method 3) Risk Characterization Process

- 1. Identify nature and location of contamination**
 - What is the nature of the contamination? (e.g., volatile chemicals, metals)
 - Which media? (e.g., soil, groundwater, indoor air)
- 2. Identify who could be exposed, where they would be exposed, and to how much they would be exposed**
 - Identify people or environmental receptors (e.g., a resident or worker, or birds/fish)
 - Identify locations (e.g., a home or a commercial property)
 - Calculate concentrations of chemicals at each location
- 3. Evaluate the potential effects of the chemicals on people and environmental receptors**
- 4. Calculate cancer and non-cancer risks**

Findings and Conclusions of Method 3 Risk Characterization

- 1. No current or future risk to human health for**
 - 48 residences where vapor intrusion assessments were recently completed
 - about 75 properties located beyond the boundary where the vapor intrusion pathway is not likely to be of concern
- 2. No current or future risk to public welfare, the environment, and safety for the entire Site**

Documents for Comment

Partial Permanent Solution No. 2

Partial Permanent Solution No. 2

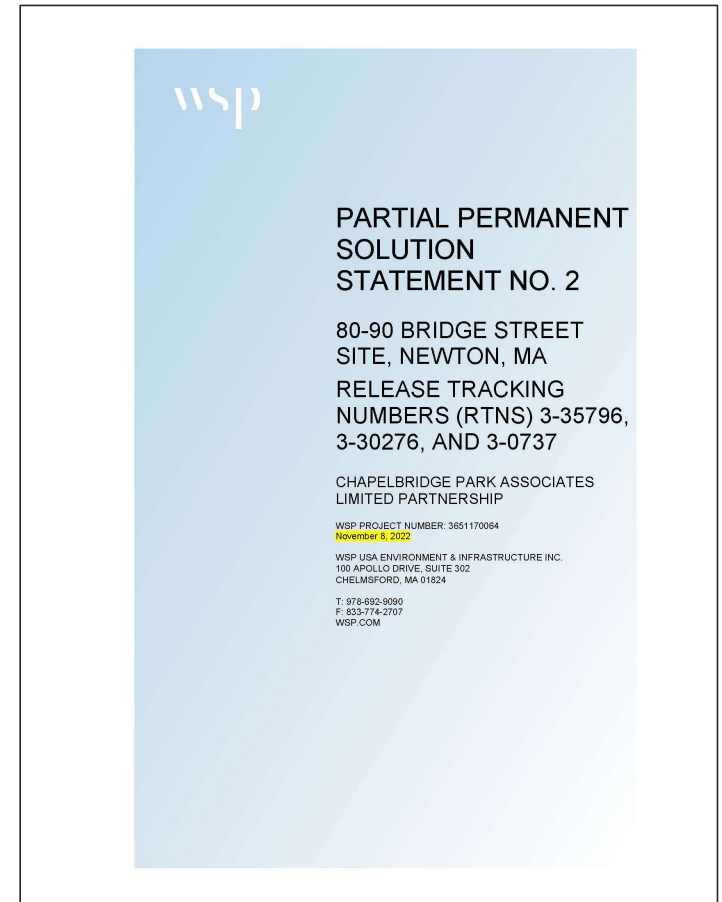
Purpose: describes the portions of the Disposal Site that have achieved a Permanent Solution without conditions.

Objective:

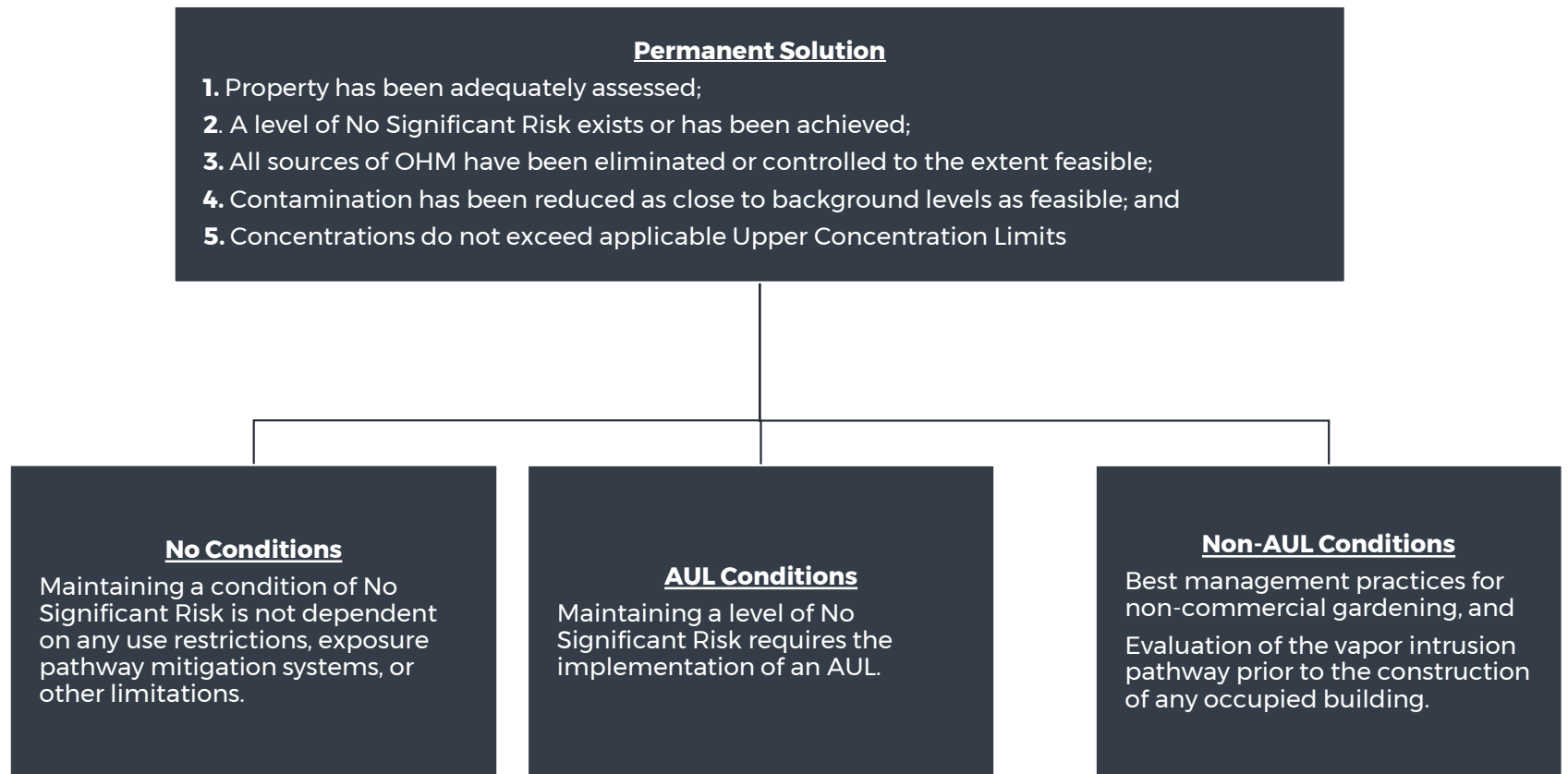
Summarize the evidence for why a Permanent Solution exists at each property.

Document Includes Evaluations of Need to:

- Eliminate or control sources
- Assess, eliminate, or control migration
- Reduce concentrations to background



Criteria for a Permanent Solution

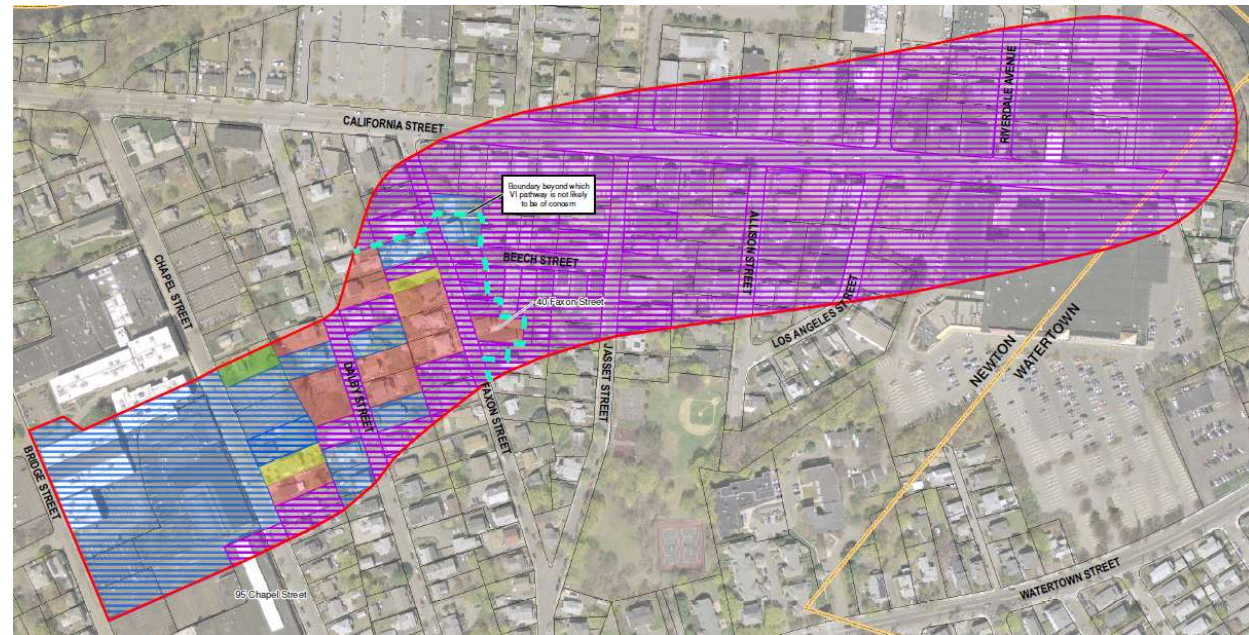


Properties Included in the Partial Permanent Solution

With the filing of this second report, about 95% of the Site has achieved a Permanent Solution.

This Partial Permanent Solution No. 2 includes:

- A portion of the property at 95 Chapel Street which was inadvertently omitted from Partial Permanent Solution No. 1
- Sixteen properties (in whole or in part) between Chapel Street and Faxon Street
- All the properties within the Disposal Site boundary east of Faxon Street to the Charles River (except for 40 Faxon Street where access has been denied)



Properties included in this Partial Permanent Solution (purple hatching), properties included in Partial Permanent Solution No. 1 (blue hatching), properties where an AUL is required (gold shading), property where VI is currently being assessed (green shading), and properties where access has been denied (red shading)

Conclusions of the Partial Permanent Solution

1. The sources of contamination have been eliminated:
 - Manufacturing was discontinued and the chemicals and equipment were removed.
 - Contaminated soil beneath the 80 Bridge Street building was removed to the extent feasible.
2. There are no current or future risks to human health, public welfare, the environment and safety at the entire Site.
 - No Activity and Use Limitations (AULs) or Non-AUL Conditions are needed for the portion of the Site included in this Partial Permanent Solution.
3. It is not feasible to achieve or approach background in groundwater.
 - Costs are substantial and disproportionate to benefits of risk reduction and environmental restoration.
 - Implementation would be technically challenging due to access limitations
 - Highly uncertain if remediation would be successful and completed in a reasonable period of time.

Closing



Your Comments are Requested

Supplemental Phase II Report and Partial Permanent Solution No. 2 are available online:

<https://eeaonline.eea.state.ma.us/EEA/fileviewer/Rtn.aspx?rtn=3-0030276>

Documents are on BWSC126 Miscellaneous Document Transmittal Forms dated November 29, 2022 (Transaction IDs 1449193 and 1449197)

Copies can be provided via email or mail if requested.

Documents will be placed in Newton Free Library.

Submit written comments via email to Matt Grove (matt.grove@wsp.com) by December 20, 2022.

Written summary and response to relevant comments will be sent out within 30 days of end of comment period (by January 19, 2023).

Closing

Contact Information

Submit written comments on documents by December 20, 2022, to:

Matt Grove, Ph.D., LSP

WSP USA Environment & Infrastructure Inc.

100 Apollo Drive, Suite 302

Chelmsford, MA 01824

matt.grove@wsp.com

Questions?





Thank you



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