

Proposed Plan

Blackburn & Union Privileges Superfund Site Walpole, MA

A Snapshot of the Cleanup Proposal...

- Collect and treat groundwater that is discharging to surface waters on-site
- Restrict groundwater use on-site and monitor to ensure contaminated groundwater is not moving off-site
- Comprehensive excavation and off-site disposal of contaminated soil east of South Street
- Maintain existing Area of Containment soil and asphalt cover
- Excavate Settling Basin No. 2 Containment Cell with off-site disposal
- Establish land use and access restrictions
- Excavate & dredge soil and sediment from the Neponset River, Former Mill Tailrace and Lewis Pond; dispose off-site

- The estimated cost is \$13 million

What do you think?

EPA is accepting public comment on this cleanup proposal **until July 18, 2008**. You don't have to be a technical expert to comment. If you have a concern or preference regarding EPA's proposed cleanup plan, EPA wants to hear from you before making a final decision on how to protect your community. Comments can be sent by mail, e-mail, or fax. People also can offer oral or written comments at the formal public hearing:

Monday, July 14, 2008

Informational Meeting from 6:30-7:30 pm

Formal Public Hearing from 7:30-9:00 pm

Walpole Town Hall, Main Meeting Room

135 School Street

Walpole, MA

**Send written comments,
postmarked no later than July 18, 2008, to:**

Dave Lederer

Project Manager

EPA New England

1 Congress Street

Suite 1100 (HBO)

Boston, MA 02114-2023

E-mail comments to:

lederer.dave@epa.gov

Fax comments to:

617-918-0325

If you have questions about how to comment, or if you have specific needs for the public hearing or questions about the facility and its accessibility, please contact EPA Community Involvement Coordinator Stacy Greendlinger at 617-918-1403.

A Closer Look at EPA's Proposal...

After careful study of the Blackburn and Union Privileges Superfund site, the U.S. Environmental Protection Agency (EPA), in consultation with the Massachusetts Department of Environmental Protection (MassDEP), has divided the site into four management units (see Figure 1):

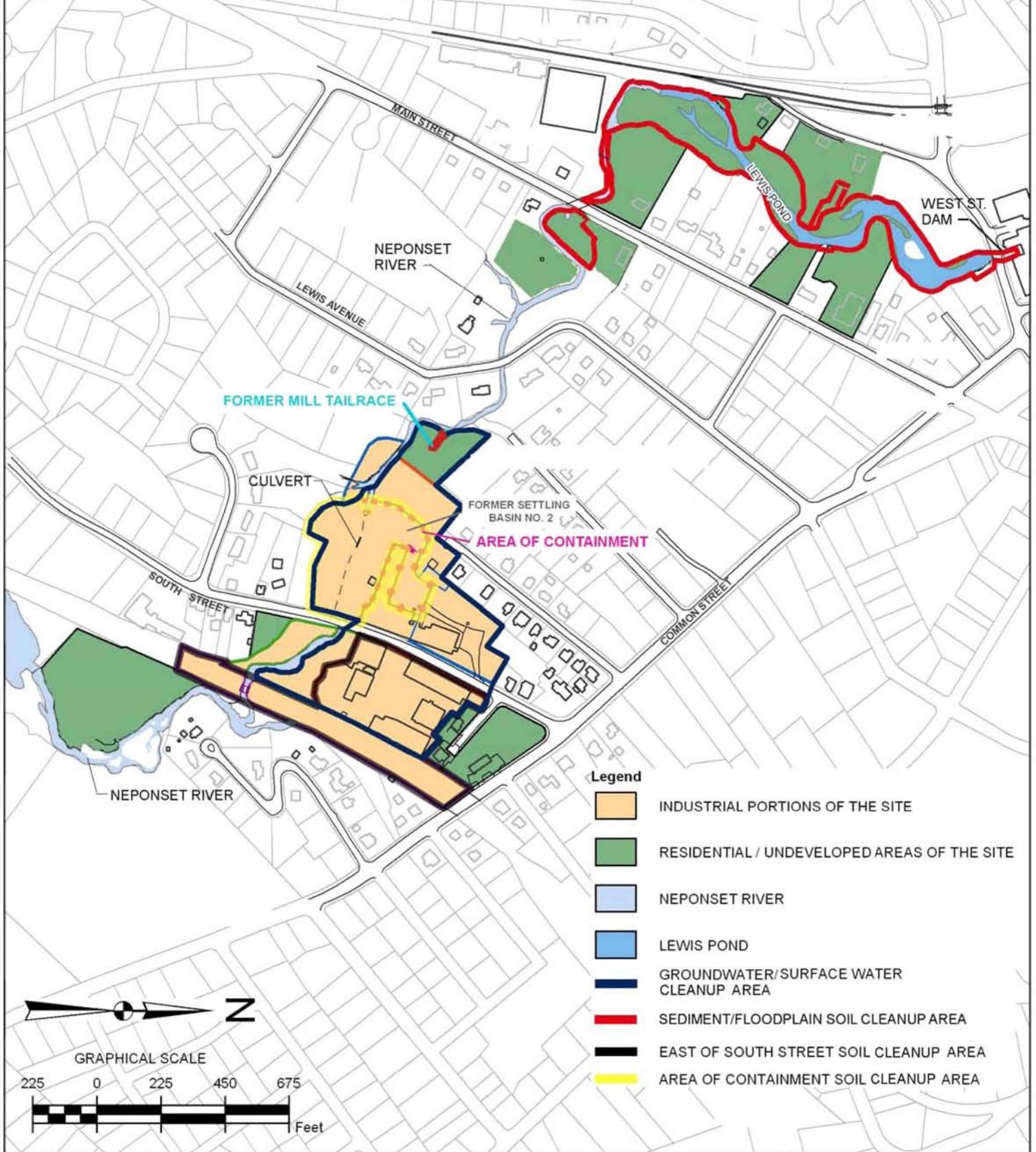
1. Groundwater & Surface Water (SW);
2. East of South Street Soil (SO);
3. Area of Containment (AOC) Soil West of South Street; and
4. Sediment and Floodplain Soil (SSW).

After analyzing alternatives developed for each of the four areas (as described beginning on page 7) EPA is proposing the following cleanup plan to address the site's contamination:

- Groundwater in the area west of the Area of Containment would be collected and treated for the purpose of protecting surface water in the Former Mill Tailrace and the Neponset River.
- Collected groundwater would be pumped to a new, on-site groundwater treatment system. The treated water would be discharged to the Former Mill Tailrace.
- Groundwater use restrictions would be established within a groundwater compliance boundary (Figure 2). Groundwater monitoring will be performed to confirm that contaminated groundwater is not moving from these areas.
- Excavation and off-site disposal would be performed for all impacted soil that exceed cleanup goals for volatile organic compounds (VOCs), lead, arsenic, asbestos, and polycyclic aromatic hydrocarbons (PAHs) east of South Street. The excavations would be refilled to grade.
- Institutional controls would be established to prevent residential use in the areas east and west of South Street where waste would be managed in place. A soil management plan would be established for areas with inaccessible soil below existing buildings and for any contaminated soil to be managed in place.
- Long-term monitoring of institutional controls to ensure compliance with site restrictions would be conducted in coordination with long-term monitoring of contaminated soil and groundwater.
- The Area of Containment (AOC) soil and asphalt cover, as well as the Neponset River culvert, would be maintained to prevent human and ecological exposure to contaminants.
- Approximately 2,500 cubic yards of contaminated soil from the Settling Basin #2 Containment Cell located west of South Street would be excavated and disposed of off-site. The excavation area would be backfilled and graded with clean fill and a grass cover.
- Contaminated sediment and floodplain soil exceeding cleanup goals from the Former Mill Tailrace, Neponset River, and Lewis Pond would be dredged or excavated. An estimated 4,450 cubic yards of excavated sediment and floodplain soil would be disposed off-site.

The estimated total value of this preferred cleanup plan, including construction, operation and maintenance, and long-term monitoring, is \$13 million.

Blackburn & Union Privileges Superfund Site Map: Figure 1



Blackburn & Union Privileges: Site History

- 1985 Environmental investigations initiated.
- 1988 EPA issued 1st Administrative Order for Removal Action to Shaffer Realty Nominee Trust and BIM Investment Trust to assess extent of contamination, prepare a report of assessment and proposed response plan.
- 1992 EPA issued 2nd Administrative Order for Removal Action to Shaffer Realty Nominee Trust, BIM Investment Trust, and W.R. Grace & Co.-Conn. to excavate asbestos-contaminated soil, consolidate and cover soil with 30 inches of clean soil and fence-in the covered area. This covered area is referred to as the Area of Containment (AOC). Grace also redirected the Neponset River with 400-foot long aluminum plate arch culvert to run through the AOC.
- 1994 Site was added to the National Priorities List of the Superfund Program.
- 1999 An Administrative Order on Consent was reached with the potentially responsible parties to perform the Remedial Investigation/Feasibility Study. A recovery of past costs agreement was reached with W.R. Grace and Tyco.
- 2000-05 Preliminary Remedial Investigation work was completed.
- 2006 Additional asbestos risk sampling and assessment was performed. Additional groundwater & 2007 and soil samples were analyzed. Remedial Investigation was completed. Feasibility Study of cleanup alternatives was developed.

Site Description & Uses

Site Description

The approximately 20-acre Blackburn and Union Privileges Superfund site is located in a mainly residential area bisected by South Street and the Neponset River in Walpole, MA. The site includes 21 parcels of land consisting of both industrial properties and undeveloped or residential properties and other areas where contamination has come to be located. The non-industrial properties include several parcels along the Neponset River and the shoreline of Lewis Pond downstream. The nearest municipal well is within one mile and the Neponset River bounds the site's southern portion.

Industrial and commercial processes on the site using chromium, arsenic, and mercury date back to the 1600s. In about 1811, the Blackburn Privilege was established east of South Street and around 1812 the Union Factory Privilege was established west of South Street. The term privilege refers to a grant enabling commercial usage of the Neponset River for water supply and power. Water was diverted through a canal into a powerhouse and then through a mill tailrace before it was discharged back into the Neponset River. Between 1891 and 1915, the site was used for manufacture of tires, rubber goods, and insulating materials. The crushing of raw asbestos in the manufacture of brake and clutch linings occurred at the site between 1915 and 1937. The former mill building west of South Street, which is currently vacant, was the site of much of these operations and housed The Standard Woven Fabric Company, which was renamed Multibestos Corporation. Various cotton and fabric production processes were conducted at the site from 1937 until 1985. Part of this operation included discharging treated wastewater through one of two settling basins and then to the Walpole sewer system. The former mill building west of South Street has been vacant for many years. The buildings east of South Street are currently partially occupied by Cosmec, Inc. The industrial portion of the site (see Figure 1) is currently privately owned.

Current and Future Land Use

Within the Blackburn & Union Privileges Superfund site, much of the privately-owned industrial property is located in Walpole's Limited Manufacturing zoning district which currently permits industrial and limited uses by children (such as schools and daycare). The Town's 2005 report *Reuse and Redevelopment Planning Alternatives* recommends considering acquiring some of the industrial properties and designating them for municipal uses, commercial offices, light industrial uses, or age-restricted housing. Recently, the Walpole Town Meeting authorized the creation of an Economic Development and Industrial Corporation in order to facilitate the site's potential redevelopment. EPA will attempt to coordinate site cleanup with potential development. The remaining areas of the site are currently zoned residential. Lewis Pond is an impounded section of the Neponset River that is maintained by the owners of the West Street dam.

Nature and Extent of Contamination at Blackburn & Union Privileges

The Remedial Investigation determined the extent and nature of contamination at the site and found that on-site soil, sediment, and groundwater are contaminated with inorganic chemicals (including asbestos and metals), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), as well as highly alkaline compounds. Actual or threatened releases of hazardous substances from the site, if not addressed, present threats to public health or the environment.

Health Risks

On-Site Groundwater and Surface Water

The groundwater and surface water have high alkalinity (pH), as well as metals (such as arsenic and lead), VOCs, and PAHs at levels which pose unacceptable risks from ingestion, dermal contact, or inhalation.

On-Site Soil and Sediment

Lead, PAHs, and arsenic concentrations in soil are elevated and pose unacceptable risks from direct soil contact and, in the case of arsenic, from ingestion of garden produce as well. There also is a risk posed by contaminated soil gas, from trichloroethene, which poses unacceptable future indoor inhalation risk within a limited area west of South Street.

Asbestos

During the previous 1992 Removal Action, asbestos was cleaned up using a standard of 1% in soil. In order to assess any remaining risks that could exist in these cleaned-up areas, EPA conducted site-specific activity-based sampling to measure potential asbestos air concentrations during low intensity (raking) and high intensity (lawn mowing) soil disturbance activities. The test location was selected because it was considered representative of the contaminant levels, terrain, and anticipated land uses found at other areas of potential concern. The raking activity data are considered applicable to other low intensity activities, like walking and jogging, which may occur at the site. The lawn mowing activity data are considered applicable to other high intensity activities like biking, gardening, landscaping, and soil excavation, which may occur at the site.

In light of the activity-based sampling results, EPA's risk assessment found that areas previously cleaned up to below 1% asbestos in soil do not pose an unacceptable risk from any potential remnant asbestos in the soil that could become air-borne.

Some asbestos was found at levels above 1% in soil on the industrial portion of the site and within the floodplain of the Neponset River. This asbestos-contaminated soil could pose unacceptable risk due to inhalation of airborne fibers from disturbed soil. Asbestos at levels greater than 1% found in sediment along portions of the banks of the Neponset River, between the site and Lewis Pond and in Lewis Pond sediment, pose unacceptable risk due to the potential for inhalation of airborne fibers from sediment that is, or could become, exposed.

Ecological Risks

No actionable ecological risks were identified in the Feasibility Study based on evaluation of data from the Remedial Investigation and the baseline ecological risk assessment. However, concentrations of several contaminants in surface water exceed their respective federal and state water quality criteria for protecting aquatic life. These include aluminum, copper, lead, and pH.

Feasibility Study

Information gathered during the Remedial Investigation informed a Feasibility Study which identified all of the options EPA considered for the cleanup. The options, referred to as cleanup alternatives, are different combinations of plans to restrict access to, contain, remove, or treat contamination to protect public health and the environment. EPA, in this Proposed Plan, identifies potential cleanup approaches which will prevent risk of exposure from the site. Exposure occurs when people eat, drink, breathe or have direct skin contact with a substance or waste material. Based on existing or anticipated future land use, EPA develops different possible exposure scenarios to determine possible risk, the appropriate cleanup levels, and potential cleanup approaches to meet the determined site cleanup goals. Based on the currently permitted uses and anticipated future uses, potential exposure scenarios for the Blackburn & Union Privileges Superfund site include:

- Site worker;
- Construction worker;

Nature and Extent of Contamination at Blackburn & Union Privileges

continued..

- Trespasser;
- Municipal worker;
- Commercial worker;
- Landscaper;
- Children attending libraries, schools, and daycare facilities.

For the parts of the site that currently are zoned residential, EPA developed its cleanup goals assuming the parcels would remain residential.

As part of its cleanup plan, EPA developed cleanup objectives to address human health and ecological risks posed by exposure to site contaminants. Based on the objectives listed below, EPA in consultation with MassDEP, proposed site-specific cleanup levels which are protective of human health and the environment based upon the exposure scenarios evaluated in the Remedial Investigation. Detailed technical information on the cleanup options and the human health and ecological risk assessments can be found in the Feasibility Study.

Human Health Cleanup Objectives

Groundwater and Surface Water

- Prevent risks from ingestion, dermal contact, or inhalation by a future resident with groundwater used as a domestic water supply;
- Prevent dermal contact by a future construction worker with groundwater having elevated pH conditions and meet Applicable or Relevant and Appropriate Requirements;
- Prevent dermal contact by a current or future wader with surface water having elevated pH conditions, and meet Applicable or Relevant and Appropriate Requirements;
- Prevent movement of contaminated groundwater beyond the compliance boundaries for the East of South Street and Area of Containment waste management areas; and
- Surface water concentrations will meet Applicable or Relevant and Appropriate Requirements.

Soil and Sediment

- Prevent ingestion of soil by a construction worker and meet Applicable or Relevant and Appropriate Requirements;
- Prevent ingestion or dermal contact by a current or future resident with contaminated soil and sediment;
- Prevent exposure to asbestos fibers from soil, sediment, or potentially airborne asbestos and meet Applicable or Relevant and Appropriate Requirements; and
- Prevent nonresidential exposure to contaminated soil within the Area of Containment and meet Applicable or Relevant and Appropriate Requirements.

Soil Vapor

- Prevent inhalation of indoor air that is impacted by soil vapor and meet Applicable or Relevant and Appropriate Requirements.

Ecological Cleanup Objectives

Soil and Sediment

- Prevent ecological exposure to Area of Containment contaminated soil.

Surface Water

- Meet water quality criteria for the protection of aquatic life within the Former Mill Tailrace.

Cleanup Alternatives Considered for the Blackburn & Union Privileges Superfund Site

Once areas of risk have been identified at a site, cleanup alternatives are developed to address the identified risks and achieve the cleanup objectives. A short synopsis of the alternatives considered are outlined below. A more detailed description and analysis of each alternative developed to reduce risks from contaminated soil, sediment, and groundwater is presented in the Feasibility Study report which is also available for public review.

Groundwater and Surface Water (SW) Cleanup Alternatives

Alternative SW-1: No Action

The no action alternative is required to be evaluated by EPA's Superfund regulations and is used throughout the Feasibility Study process as a baseline for comparison to other cleanup alternatives. This alternative would not consider any further cleanup although statutorily required Five-Year Reviews would still be conducted. The estimated cost is \$30,000.

Alternative SW-2: Limited Action

Under this alternative the following actions would be taken: establishment of a groundwater compliance boundary (Figure 2) around the East of South Street and Area of Containment site areas; quarterly inspections; land use restrictions to prevent use and exposure to contaminated groundwater; institutional controls to prevent exposure to contaminated soil and surface water around the Former Mill Tailrace; yearly compliance monitoring; long-term groundwater monitoring; and Five-Year Reviews.

This alternative would not involve active treatment of groundwater or surface water; hence contamination levels would likely remain unchanged except for any natural dilution. Groundwater contamination concentrations are expected to exceed cleanup goals for greater than 100 years. The estimated cost is \$2.4 million.

Alternative SW-3: Collect Groundwater and Treat On-Site Establish Institutional Controls Conduct Long-Term Monitoring

This is EPA's preferred alternative. Please see Figure 2 and page 13 for more information.

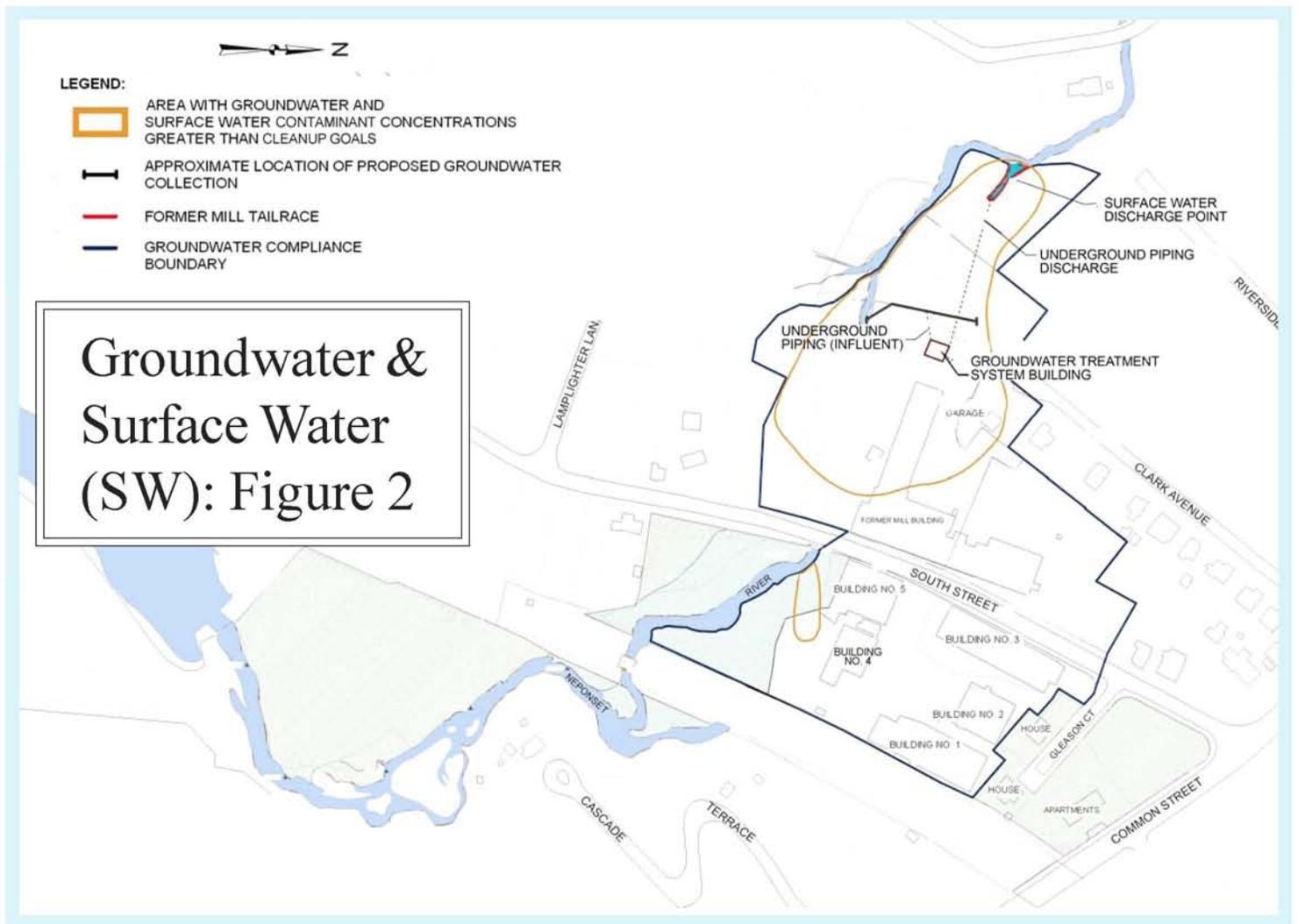
East of South Street Soil (SO) Cleanup Alternatives

Alternative SO-1: No Action

The no action alternative is required to be evaluated by EPA's Superfund regulations and is used throughout the Feasibility Study process as a baseline for comparison to other cleanup alternatives. This alternative would not consider any further cleanup, although statutorily required Five-Year Reviews would still be conducted. The estimated cost is \$30,000.

Alternative SO-2: Limited Action

Under this alternative, protection of human health would be undertaken by actions to limit exposure to contaminants. The integrity of the existing asphalt cover on the property would be checked by regular site inspections; restricted areas would be



**Groundwater &
Surface Water
(SW): Figure 2**

fenced; institutional controls would be implemented to prevent exposure to contaminated soil (including compliance monitoring and reporting); and Five-Year Reviews would be completed.

Site soil and soil vapor conditions would likely remain relatively unchanged, except for changes brought about by naturally occurring processes. This alternative would not address risk posed to the current allowed uses of the site, which includes use for daycare. The estimated cost is approximately \$96,000.

Alternative SO-3: Address Vapor Intrusion and Cover Asbestos-Containing Soil

This alternative would eliminate exposure to a future site worker from VOC-contaminated indoor air and would maintain the existing pavement in areas where asbestos concentrations in soil are greater than or equal to 1% or where potentially airborne asbestos would contribute to an unacceptable risk.

Alternative SO-3 includes all of the measures proposed under the Limited Action alternative (except for installing and maintaining a fence). In addition, it would include the installation of a horizontal barrier and sub-slab depressurization system for a hypothetical future building to address potential indoor air risks from VOC-impacted soil vapor. Asbestos in soil would be addressed by maintaining the asphalt cover over the asbestos-impacted soil. This alternative would not address risk posed to the current allowed uses of the site, which include use for daycare. The estimated cost is \$50,000.

Alternative SO-4: Limited Excavation

This alternative would include excavation and off-site disposal of approximately 460 cubic yards of VOC- and asbestos-impacted soil which exceeds site worker cleanup goals. Also included would be institutional controls which would prohibit

development of the site for child-intensive uses (the current allowed use), as well as requiring compliance with a groundwater and soil management plan if the site would be disturbed. The estimated cost is \$250,000.

Alternative SO-5: Excavate & Dispose Contaminated Surface Soil Off-Site and Cover Remaining Contaminated Soil

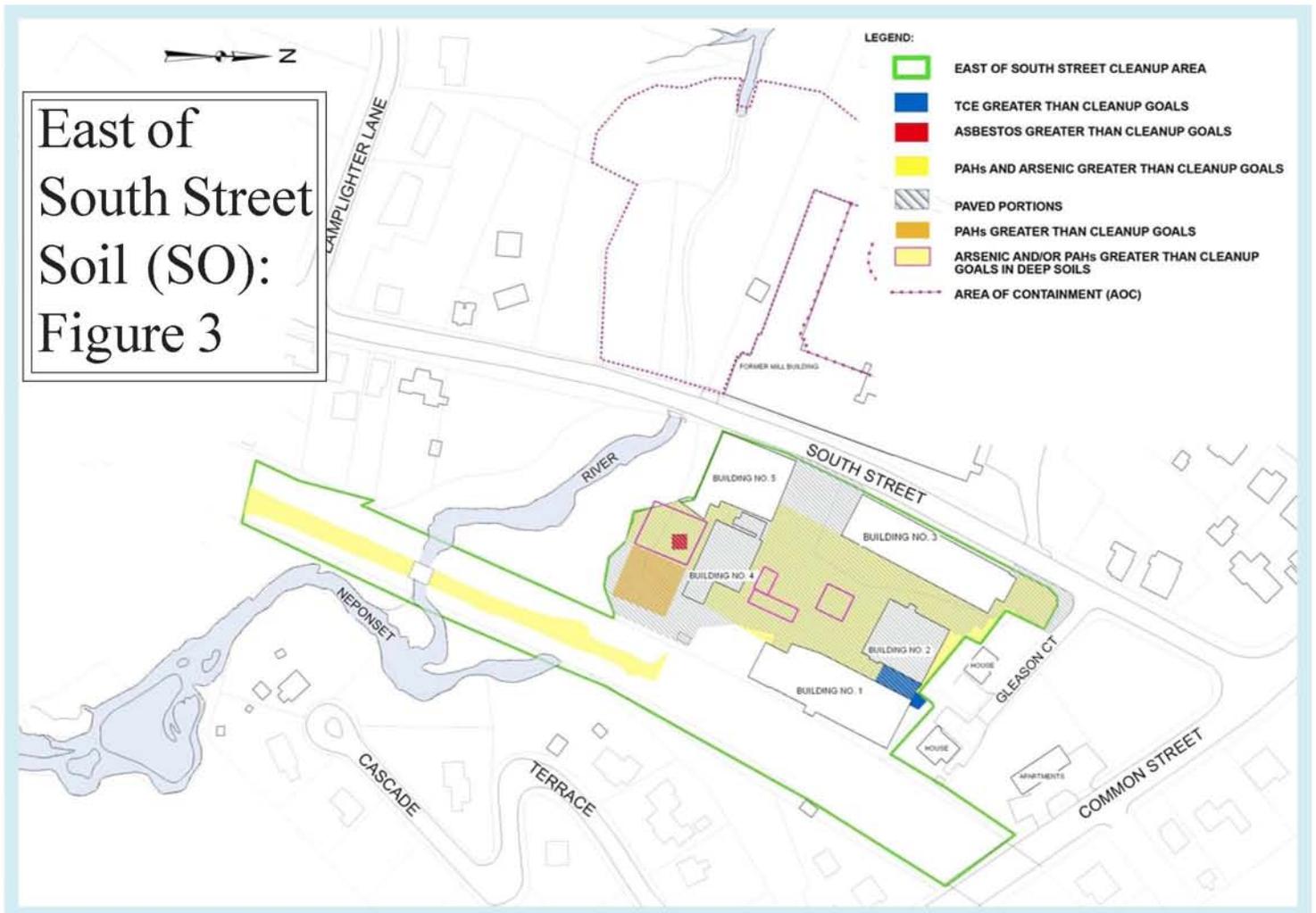
This alternative would call for the excavation, with off-site disposal, of approximately 3,100 cubic yards of arsenic, lead, and PAH contaminated soil, down to one foot below the ground surface over most of the area and two feet below ground surface in the railroad right-of-way. This soil exceeds risk levels for the current allowed uses of the site. Also included would be the excavation of the same VOC- and asbestos-impacted soil that would be removed in the Limited Excavation alternative (SO-4).

The excavation would be backfilled with clean cover to grade and the cover would be designed and maintained to prevent exposure to the un-excavated contaminated soil to be left on-site. This approach would include institutional controls to prevent disturbance of the cleanup, long-term maintenance and monitoring, and Five-Year Reviews.

The estimated completion time, absent the long-term maintenance requirements, is about one month from initiation of excavation activities and the approximate cost is \$1,700,000.

Alternative SO-6: Comprehensively Excavate Contaminated Soil Exceeding Cleanup Goals Dispose Off-Site Establish Institutional Controls

This is EPA's preferred alternative. Please see Figure 3 and page 14 for more information.



Area of Containment (AOC) West of South Street Cleanup Alternatives

Alternative AOC-1: No Action

The no action alternative is required to be evaluated by EPA's Superfund regulations and is used throughout the Feasibility Study process as a baseline for comparison to other cleanup alternatives. This alternative would not consider any further actions to maintain or monitor the current cover in the Area of Containment. Statutorily required Five-Year Reviews would still be conducted. The estimated cost is \$30,000.

Alternative AOC-2: Limited Action

Active treatment or removal of contaminants would not be included in this alternative, however, it would maintain and monitor the existing Area of Containment (AOC) cover to limit human and ecological exposure to contaminants. Actions to maintain and repair the soil- and asphalt-covered portions of the AOC would be part of this alternative, as would maintaining the existing fencing surrounding the AOC, and installing and maintaining appropriate warning signs. Regular inspections of the site and culvert, regular monitoring, and Five-Year Reviews would also be included.

This alternative would include evaluating the AOC deed restriction established during the 1992 Removal Action, which precludes development, to confirm that it remains protective. The deed restriction would become finalized as part of this alternative and would include provisions for a soil management plan to address inaccessible contaminated soil under existing structures and potential site redevelopment. The estimated cost is \$410,000.

Alternative AOC-3: Maintain Existing AOC Soil and Asphalt Covers Excavate Settling Basin #2 Containment Cell and Dispose Off-Site Establish Institutional Controls

This is EPA's preferred alternative. Please see Figure 4 and page 14 for more information.

Alternative AOC-4: Excavate Area of Containment & Settling Basin #2 Containment Cell Remove Culvert Dispose Off-Site Establish Institutional Controls

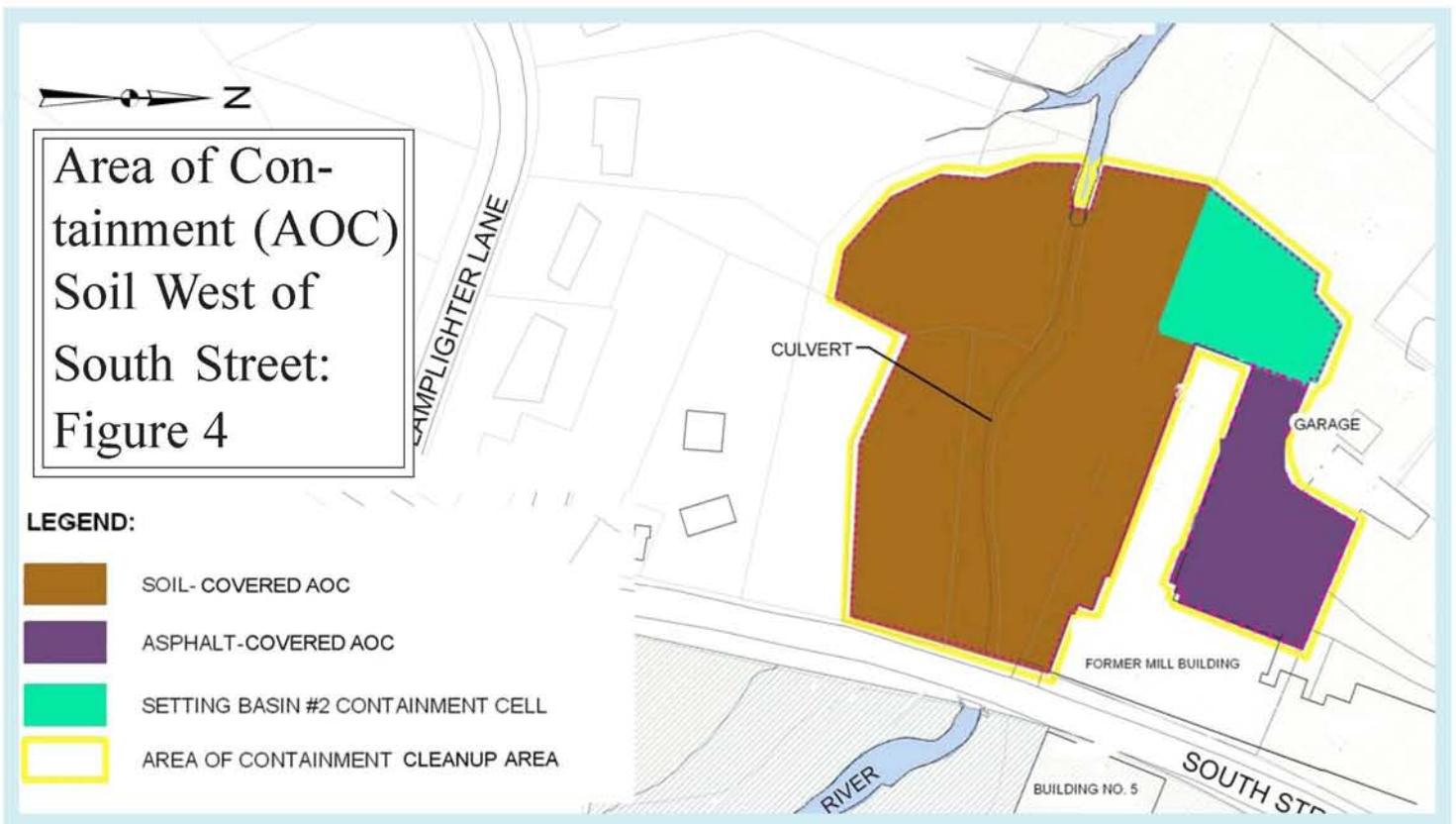
This alternative would include excavation and off-site disposal of approximately 39,000 cubic yards of contaminated soil located above the groundwater table in the soil and asphalt covered portions of the AOC. Soil in the Settling Basin #2 Containment Cell, which was originally excavated from the Former Mill Tailrace and placed in the cell during the removal action, would also be removed. This alternative would include removing the aluminum culvert that contains the Neponset River in the AOC and restoring and stabilizing the Neponset River riverbank.

Areas of contaminated soil below the water table would be covered to prevent exposure. Land use and access restrictions, to protect human health and ecology from disturbance of the cover, would also be included. Five-Year Reviews would be required. The completion time would be approximately 6 to 12 months from initiation of excavation activities and the estimated cost is \$12.0 million.

Sediment and Floodplain Soil (SSW) Cleanup Alternatives

Alternative SSW-1: No Action

The no action alternative is required to be evaluated by EPA's Superfund regulations and is used throughout the Feasibility Study process as a baseline for comparison to other cleanup alternatives. This alternative would not consider any further actions to



address sediment or soil contamination at the Former Mill Tailrace, Neponset River Floodplain, and Lewis Pond. Statutorily required Five-Year Reviews would still be conducted. The estimated cost is \$30,000.

Alternative SSW-2: Limited Action

This alternative would consist of long-term monitoring, institutional controls, and limited access restrictions to protect human health by limiting exposure to contaminants. This alternative would not involve active treatment or removal of contaminants.

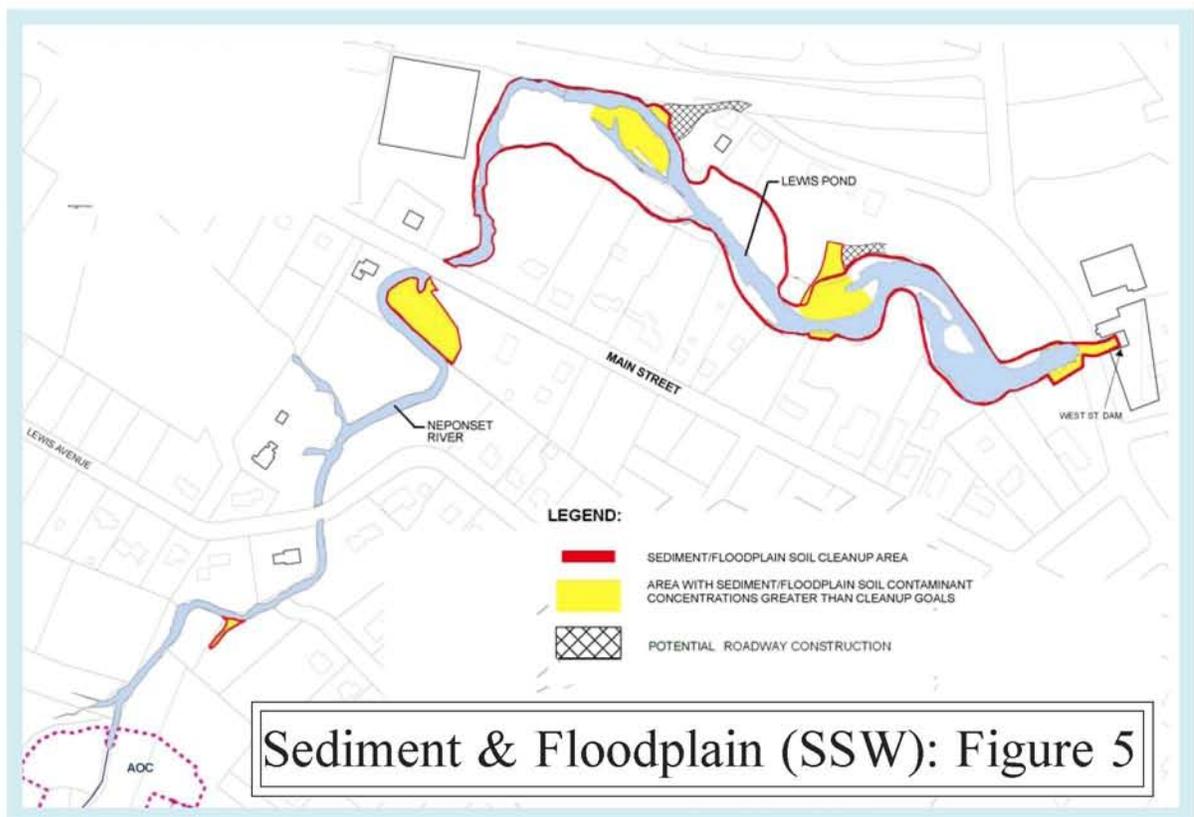
Fencing around contaminated areas near Lewis Pond would be installed as well as establishing institutional controls on residentially zoned plots to preclude disturbance of areas that have contaminated soil or sediment concentrations greater than cleanup goals. A component of this deed restriction would also include requirements for adhering to the guidelines of a soil and sediment management plan which would be established for specific activities (e.g., maintenance of the West Street dam). This alternative would also include regular inspections, monitoring, and Five-Year Reviews. The estimated cost is \$580,000.

Alternative SSW-3: Excavate or Dredge Soil and Sediment from Neponset River and Former Mill Tailrace

Maintain Lewis Pond Sediment Aqueous Cap

This alternative would involve excavation and off-site disposal of the sediment and floodplain soil from the Neponset River and the Former Mill Tailrace. In addition, exposure to contaminated sediment in Lewis Pond would be addressed by controlling the water levels at the West Street dam, also referred to as an “aqueous cap.”

The key components of this alternative would include excavation and dredging approximately 850 cubic yards of lead and asbestos contaminated floodplain soil and sediment, coupled with off-site disposal. Wetland areas impacted by the excavation or dredging would be restored. To address contaminated sediment in Lewis Pond, the alternative would maintain water levels to keep the asbestos contaminated sediment covered. The alternative would also include long-term monitoring



and institutional controls. Access restrictions such as fencing would be necessary to restrict long-term access to the water's edge by abutters.

This alternative would involve preparation of deed restrictions to preclude removal of the West Street dam as well as adhering to the guidelines of a sediment management plan, which would be established for potential activities in impacted areas of the site which are located in residential areas. The dam would be inspected annually and minor repairs performed as required. The estimated cost is \$1,300,000.

Alternative SSW-4: Excavate and Dredge Soil and Sediment from the Neponset River and Former Mill Tailrace
Subaqueous Cap Lewis Pond Sediment

This alternative would involve excavation and off-site disposal of the sediment and Neponset River floodplain soil and dredging of sediment located in the Former Mill Tailrace. Wetlands impacted by the excavation or dredging would be restored. In addition, an engineered "subaqueous cap" would be installed over contaminated sediment under water in Lewis Pond. The subaqueous cap would include placement of a double-layered fabric "envelope" underwater at the bottom in the area to be capped. A cement mixture then would be pumped into this envelope to create a barrier to exposure. Long-term monitoring and institutional controls will also be required. Lost flood storage capacity and wetland resources altered by the cap would require mitigation within the waterway.

This action would involve preparation of deed restrictions to prevent non-essential disturbance of the engineered cap and underlying sediment and adherence to a sediment management plan, which would be established for potential essential construction-related activities (e.g., maintenance of the West Street dam) in capped portions of the site. The estimated cost is \$1,600,000.

Alternative SSW-5: Excavate and Dredge Neponset River Floodplain Soil and Sediment, Former Mill Tailrace, and Lewis Pond

This is EPA's preferred alternative. Please see Figure 5 and page 15 for more information.

A Closer Look at EPA's Proposed Cleanup Approach

Based upon the alternatives evaluated in the Feasibility Study and outlined above, EPA's preferred cleanup approach at the Blackburn & Union Privileges Superfund site is a combination of the following alternatives:

Groundwater and Surface Water (*SW*)

Alternative SW-3: Collect Groundwater and Treat On-Site
Establish Institutional Controls
Conduct Long-Term Monitoring

East of South Street Soil (*SO*)

Alternative SO-6: Comprehensively Excavate Contaminated Soil Exceeding Cleanup Goals
Dispose Off-Site
Establish Institutional Controls

Area of Containment (*AOC*) West of South Street

Alternative AOC-3: Maintain Existing AOC Soil and Asphalt Covers
Excavate Settling Basin #2 Containment Cell and Dispose Off-Site
Establish Institutional Controls

Sediment and Floodplain Soil (*SSW*)

Alternative SSW-5: Excavate and Dredge Neponset River Floodplain Soil and Sediment, Former Mill Tailrace, and Lewis Pond

The estimated total present value of this preferred cleanup plan, including construction, operation and maintenance, and long-term monitoring is approximately \$13 million. Each component of the preferred cleanup approach is outlined below and is discussed in the Feasibility Study in greater detail.

Groundwater & Surface Water (*SW*)

Alternative SW-3: Collect Groundwater and Treat On-Site
Establish Institutional Controls
Conduct Long-Term Monitoring

In this preferred alternative (see Figure 2), groundwater and surface water would be protected through a combination of approaches:

- **Collect and treat** shallow groundwater to protect surface water in the Former Mill Tailrace and the Neponset River.
- **Establish institutional controls** to prevent groundwater use within the groundwater compliance boundary.
- **Long-term monitoring** would confirm that contaminated groundwater has not moved from beyond the groundwater compliance boundary (see Figure 2).

Contaminant concentrations in the Former Mill Tailrace are elevated due to the discharge of contaminated groundwater to the surface water in this area. Groundwater would be pumped to a new, on-site groundwater treatment system. The treated water would be discharged to the Former Mill Tailrace.

Capture of the contaminated groundwater plume that currently discharges to the Former Mill Tailrace could be accomplished by either a recovery well(s), or interceptor trench(es). For cost estimating purposes, a 200-foot long trench was assumed. The trench would serve primarily as a containment measure to intercept groundwater before reaching the Former Mill Tailrace. Final design of the groundwater extraction system would be based on the results of pre-design investigations.

Treatment activities would include pH adjustment to reduce influent groundwater pH; filtration and treatment to reduce some metals concentrations; as well as, liquid granular activated carbon filtration to reduce VOCs and Semi Volatile Organic Compound (SVOCs) concentrations.

In addition, for the area around the Former Mill Tailrace, the alternative implements deed restrictions that would require a soil and groundwater management plan for potential construction-related activities within this area. Periodic groundwater and surface water monitoring is also a component of this alternative.

Construction of the groundwater collection, treatment, and discharge system would take about one year to complete. Once in operation, it is estimated that less than a month would be required to achieve surface water cleanup goals in the Former Mill Tailrace. EPA has determined that this alternative is the least damaging practicable alternative to protect wetland and floodplain resources from contaminated media at the site. The estimated cost, including operation and maintenance costs is \$7,000,000.

East of South Street Soil (SO)

Alternative SO-6: Comprehensively Excavate Contaminated Soil Exceeding Cleanup Goals Dispose Off-Site Establish Institutional Controls

This preferred alternative would include excavation and off-site disposal of all VOC, lead, arsenic, asbestos, and PAH impacted soil that exceeds cleanup goals (approximately 8,200 cubic yards). Excavated areas would be refilled to grade. The areas where soil contaminant concentrations exceed the cleanup goals based on currently allowed potential uses of the property are depicted in Figure 3.

Institutional controls would be established to prevent unrestricted residential use and establish a soil management plan for inaccessible soil below existing buildings. Long-term monitoring of institutional controls would be conducted in coordination with monitoring of contaminated soil and groundwater.

Pre-design investigations focused on further delineating the extent of soil contaminants that exceed their current allowed use cleanup goals would be necessary to appropriately design this alternative's cleanup components. In the event that soil samples indicate that the soil would be deemed hazardous, the soil would be mixed with stabilization agents to render the soil non-hazardous on-site. This would allow their off-site disposal as non-hazardous waste and allow for potential cost savings.

Absent the long-term maintenance and monitoring requirements, this alternative would take about two months from initiation of excavation activities. The estimated cost is \$2,000,000.

Area of Containment West of South Street (AOC)

Alternative AOC-3: Maintain Existing AOC Soil and Asphalt Covers Excavate Settling Basin #2 Containment Cell and Dispose Off-Site Establish Institutional Controls

This alternative would employ land use and access restrictions, excavation of contaminated soil from Settling Basin #2, and maintaining the Area of Containment (AOC) soil and asphalt covers to limit human and ecological exposure to contaminants (see Figure 4).

Evaluating the AOC deed restriction established during the 1992 Removal Action to confirm that it remains protective would occur. The deed restriction would become finalized as part of this alternative and would include restrictions preventing site redevelopment on the cover and exposure to contaminated soil under buildings, protection of the Neponset River culvert, and the requirement to adhere to a soil management plan.

Actions to maintain and repair the soil- and asphalt-covered portions of the AOC would be part of this alternative, as would maintaining the existing fencing surrounding the AOC, as well as installing and maintaining appropriate warning signs. Annual

inspections of the culvert would occur, as would yearly monitoring and reporting of compliance with institutional controls. Additionally, a review of site conditions and risks would be performed at five-year intervals, and these conditions would be documented in a Five Year Review report available to the public.

This alternative would also include excavation and off-site disposal of approximately 2,500 cubic yards of contaminated soil from the Settling Basin #2 Containment Cell. Backfilling and grading the excavation area with clean fill and a grass cover similar to the soil-covered AOC would occur.

It would take an estimated two to four months to finish the excavation of the Settling Basin #2 Containment Cell. Since the remaining AOC contaminated soil would remain on-site under this alternative, for costing purposes, it is assumed that monitoring and maintenance of the soil and asphalt covers, as well as the Neponset River culvert, would be required for 100 years. The estimated cost is \$900,000.

Sediment and Floodplain Soil (SSW)

Alternative SSW-5: Excavate & Dredge Neponset River Soil & Sediment, Former Mill Tailrace & Lewis Pond

EPA's proposed cleanup approach for sediment and floodplain soil involves excavation of Neponset River floodplain soil and dredging and excavation of contaminated sediment in the Former Mill Tailrace and Lewis Pond (see Figure 5). An estimated 4,450 cubic yards of soil and sediment would be disposed of off-site.

Cleanup would occur in locations that may require construction of a temporary roadway in order to secure access. Since these roadways would be located primarily on residential properties, the roads would need to be removed and the areas restored to their original condition following completion of excavation and dredging activities.

Following excavation and dredging, confirmatory sampling and analysis would be completed to ensure cleanup goals have been met. Excavated sediment and soil would be characterized for waste disposal purposes. In the event that the results of waste sampling indicate that the materials would be deemed hazardous, treatability studies may be completed to develop a suitable mixture of stabilization agents to render the materials non-hazardous on-site, prior to off-site disposal.

Dredging activities to address sediment contamination would occur within wetland areas and would necessitate wetland restoration. The success of wetlands restoration would depend in part on the design, which ties the restored and constructed wetlands areas with the existing hydrology of Lewis Pond or the Former Mill Tailrace. Pre-design investigation activities would be focused on obtaining the data needed to achieve this goal. Prior to sediment dredging, further characterization of soil, vegetation, and hydrology would be performed. A wetland functional assessment would be conducted to assess the existing functions and values of the wetland.

Restoration of wetlands within the sediment dredging areas would be accomplished by post-dredging grading, importing wetland soil, planting wetlands vegetation, modifying surface water flow patterns so that the restored area receives adequate water, and post-restoration monitoring. EPA has determined that this alternative is the least damaging practicable alternative to protect wetland and floodplain resources from contaminated media at the site.

It is estimated that the time necessary to complete this alternative would be approximately 4 to 6 months from initiation of road construction activities, not inclusive of wetland monitoring. The estimated cost is \$3,100,000.

The total estimated cost of EPA's preferred cleanup plan with its four components is \$13 million.

| | | |
|---------------------------------|--------------------|-----------------------|
| ▪ Groundwater and Surface Water | Alternative SW-3: | \$7,000,000 estimated |
| ▪ East of South Street Soil | Alternative SO-6: | \$2,000,000 estimated |
| ▪ Area of Containment | Alternative AOC-3: | \$900,000 estimated |
| ▪ Sediment and Floodplain Soil | Alternative SSW-5: | \$3,100,000 estimated |

The Nine Criteria for Choosing a Cleanup

EPA uses nine criteria to compare alternatives and select a final cleanup plan. EPA has already evaluated how well each of the cleanup alternatives developed for the Blackburn & Union Privileges Superfund site meets the first seven criteria (see table on pages 17-20). Once comments from the state and the community are received, EPA will select the cleanup plan.

1. Overall protection of human health and the environment: Will it protect you and the plant and animal life on and near the site? EPA will not choose a plan that does not meet this basic criterion.

2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs): Does the alternative meet all federal and state environmental statutes, regulations and requirements? The chosen cleanup plan must meet this criterion.

3. Long-term effectiveness and permanence: Will the effects of the cleanup plan last or could contamination cause future risk?

4. Reduction of toxicity, mobility or volume through treatment: Using treatment, does the alternative reduce the harmful effects of the contaminants, the spread of contaminants, and the amount of contaminated material?

5. Short-term effectiveness: How soon will site risks be adequately reduced? Could the cleanup cause short-term hazards to workers, residents or the environment?

6. Implementability: Is the alternative technically feasible? Are the right goods and services (i.e. treatment machinery, space at an approved disposal facility) available for the plan?

7. Cost: What is the total cost of an alternative over time? EPA must find a plan that gives necessary protection for a reasonable cost.

8. State acceptance: Do state environmental agencies agree with EPA's proposal?

9. Community acceptance: What objections, suggestions or modifications does the public offer during the comment period?

Four Kinds of Cleanup

EPA looks at numerous technical approaches to determine the best way to reduce the risks presented by a Superfund site. The EPA then narrows the possibilities to approaches that would protect human health and the environment. Although reducing risks often involves combinations of highly technical processes, there are really only four basic options.



Limited or no action

Leave the site as it is, or just restrict access and monitor it.



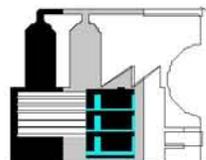
Contain contaminants

Leave contamination where it is and cover or contain it in some way to prevent exposure to, or spread of, contaminants. This method reduces risks from exposure to contamination, but does not destroy or reduce it.



Move contaminants off site

Remove contaminated material (soil, groundwater, etc.) and dispose of it or treat it elsewhere.



Treat contamination on site

Use a chemical or physical process on the site to destroy, immobilize, or remove the contaminants. Treated material can be left on-site. Contaminants captured by the treatment process are disposed in an off-site hazardous waste facility.

Groundwater and Surface Water (SW) Comparison of Cleanup Alternatives

| Nine Criteria | SW-1 No Action | SW-2 Limited Action | * SW - 3 Groundwater Collection & Treatment |
|-------------------------------------|--------------------------------------------------|---------------------------|---------------------------------------------------|
| Protects human health & environment | X | X | ✓ |
| Meets federal & state requirements | X | X | ✓ |
| Provides long term protection | X | ✓ | ✓ |
| Reduces mobility, toxicity & volume | X | X | ✓ |
| Provides short-term protection | ✓ | ✓ | ✓ |
| Implementable | ✓ | ✓ | ✓ |
| Cost (millions) | \$0.03 | \$2.4 | \$7.0 |
| State agency acceptance | To be determined after the public comment period | | |
| Community acceptance | To be determined after the public comment period | | |

✓ Meets or Exceeds Criterion

X Does NOT Meet Criterion

✓ Partially Meets Criterion

* EPA's Preferred Alternative

East of South Street Soil (SO)

Comparison of Cleanup Alternatives

| Nine Criteria | #1 No Action | #2 Limited Action | #3 Vapor Mitigation & Soil Cover | #4 Limited Excavation | #5 Excavate Surface Soil & Soil Cover | * #6 Comprehensive Excavation |
|-------------------------------------|--------------------------------------------------|-------------------------|-------------------------------------------|-----------------------------|------------------------------------------------|-------------------------------------|
| Protects human health & environment | ✗ | ✗ | ✗ | ✗ | ✓ | ✓ |
| Meets federal & state requirements | ✗ | ✗ | ✗ | ✗ | ✓ | ✓ |
| Provides long term protection | ✗ | ✗ | ✗ | ✗ | ✓ | ✓ |
| Reduces mobility, toxicity & volume | ✗ | ✗ | ✓ | ✓ | ✓ | ✓ |
| Provides short-term protection | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Implementable | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Cost (millions) | \$0.03 | \$0.96 | \$0.5 | \$0.25 | \$1.7 | \$2.0 |
| State agency acceptance | To be determined after the public comment period | | | | | |
| Community acceptance | To be determined after the public comment period | | | | | |

✓ Meets or Exceeds Criterion

✗ Does NOT Meet Criterion

✓ Partially Meets Criterion

* EPA's Preferred Alternative

Area of Containment (AOC) Soil West of South Street Comparison of Cleanup Alternatives

| Nine Criteria | #1 No Action | #2 Limited Action | * #3 Maintain AOC Cover & Excavate Settling Basin 2 | #4 Excavate AOC & Settling Basin 2 Containment Cell |
|-------------------------------------|--------------------------------------------------|-------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|
| Protects human health & environment | ✗ | ✓ | ✓ | ✓ |
| Meets federal & state requirements | ✗ | ✓ | ✓ | ✓ |
| Provides long term protection | ✗ | ✓ | ✓ | ✓ |
| Reduces mobility, toxicity & volume | ✗ | ✗ | ✓ | ✓ |
| Provides short-term protection | ✓ | ✓ | ✓ | ✗ |
| Implementable | ✓ | ✓ | ✓ | ✓ |
| Cost (millions) | \$0.03 | \$0.41 | \$0.90 | \$12.0 |
| State agency acceptance | To be determined after the public comment period | | | |
| Community acceptance | To be determined after the public comment period | | | |

✓ Meets or Exceeds Criterion

✗ Does NOT Meet Criterion

✓ Partially Meets Criterion

* EPA's Preferred Alternative

Sediment and Floodplain Soil (SSW) Comparison of Cleanup Alternatives

| Nine Criteria | #1 No Action | #2 Limited Action | #3 Excavate, Dredge Soil & Sediment from Neponset River & Former Tailrace. Aqueous cap on Lewis Pond Sediment | #4 Excavate, Dredge Soil & Sediment from Neponset River & Former Tailrace Subaqueous Cap on Lewis Pond Sediment | * #5 Excavate, Dredge River Floodplain Soil & Sediment, Tailrace, & Pond |
|-------------------------------------|--------------------------------------------------|-------------------------|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Protects human health & environment | ✗ | ✗ | ✗ | ✓ | ✓ |
| Meets federal & state requirements | ✗ | ✗ | ✗ | ✓ | ✓ |
| Provides long term protection | ✗ | ✓ | ✓ | ✓ | ✓ |
| Reduces mobility, toxicity & volume | ✗ | ✗ | ✓ | ✓ | ✓ |
| Provides short-term protection | ✓ | ✓ | ✓ | ✓ | ✓ |
| Implementable | ✓ | ✗ | ✓ | ✓ | ✓ |
| Cost (millions) | \$0.03 | \$0.58 | \$1.3 | \$1.6 | \$3.1 |
| State agency acceptance | To be determined after the public comment period | | | | |
| Community acceptance | To be determined after the public comment period | | | | |

✓ Meets or Exceeds Criterion

✗ Does NOT Meet Criterion

✓ Partially Meets Criterion

* EPA's Preferred Alternative

Why Does EPA Recommend this Proposed Cleanup Plan?

Based on the results of the Remedial Investigation and human health and ecological risk assessments, EPA has reviewed the Feasibility Study and recommends this proposed cleanup plan for the Blackburn & Union Privileges Superfund site because EPA believes it achieves the best balance among EPA's nine criteria used to evaluate various alternatives.

The proposed plan is protective of both human health and the environment while, at the same time, is cost effective. This cleanup plan provides both short and long-term protection of human health and the environment; attains Federal and State applicable or relevant and appropriate requirements (ARARs); reduces the toxicity, volume, and mobility of contaminated soil and sediment through treatment, to the maximum extent practicable; utilizes permanent solutions and uses institutional controls to prevent unacceptable exposures in the future to all wastes that will be contained on-site.

What impacts would the cleanup have on the local community?

Air Quality:

Excavation of contaminated soil and sediment would be required as part of the proposed cleanup. Any option that disturbs the wastes during cleanup has the potential to present short-term risks during excavation, consolidation, capping, or other construction activities. Air monitoring would be performed to protect workers and to ensure that the surrounding neighborhood air quality is not impacted. Dust suppression methods would be employed as necessary.

Truck Traffic:

Building materials and process equipment for construction of the on-site groundwater treatment facility would be trucked to the site. Soil and other cover materials would also need to be delivered in order to backfill excavated areas. The proposed dredging and excavation for floodplain soil near the Neponset River and sediment in Lewis Pond would require careful coordination with nearby residents and businesses. EPA would work with the community to determine the best routes for minimizing traffic concerns and would notify the community before activities begin.

Impacts to the Flood Plain and Wetlands:

Because a portion of the Blackburn & Union Privileges Superfund site is located within the 100 year floodplain and there are wetlands on site, Section 404 of the Clean Water Act and Executive Orders 11990 (Protection of Wetlands) and 11988 (Protection of Floodplains) require a determination that federal actions involving dredging and filling or activities in wetlands and floodplains minimize the destruction, loss or degradation of wetlands and floodplains and to preserve and enhance the natural and beneficial values of wetlands and floodplains. Through its analysis of the alternatives, EPA has determined that because significant, high level contamination exists in the wetland and floodplain areas of the site, there is no practicable alternative to conducting work in these areas. **Through this Proposed Plan, EPA is specifically soliciting public comment concerning its determination that the alternatives chosen are the least damaging practicable alternatives for protecting wetland and floodplain resources.**

The data collected for the Remedial Investigation and the results of the Human Health Risk Assessment support this determination. Once EPA determines that there is no practical alternative to conducting work in wetlands and floodplains, EPA is then required to minimize potential harm or avoid adverse effects to the extent practicable. Best management practices would be used throughout the site to minimize adverse impacts on wetland and floodplain resources, including wildlife and its habitat. Damage to these resources would be mitigated through erosion control measures and proper regrading and revegetation of the impacted area with indigenous species. Following excavation activities, wetlands would be restored or replicated consistent with the requirements of the federal and state wetlands protection laws. Any lost flood storage capacity from cleanup activities within the 100-year floodplain would be restored.

Next Steps

This fall, EPA expects to have reviewed and evaluated all comments received on this proposal and sign a Record of Decision (ROD), which is a document that describes the chosen cleanup plan. The ROD and a summary of responses to any public comments (the Responsiveness Summary) will then be made available to the public at the Walpole Public Library, EPA's Records Center in Boston, and via the internet. EPA will announce the final decision on the cleanup plan through the local media and via EPA's website.

After the ROD is signed, EPA will begin to negotiate with the Responsible Parties for the purpose of reaching an agreement with them to conduct the cleanup under EPA supervision. Before the cleanup work begins, each major component of the cleanup plan must be designed. That design process is expected to take one to two years.

What is a Formal Comment?

During the 30-day formal comment period, EPA will accept formal written comments and hold a hearing to accept formal verbal comments. EPA uses public comments to improve the cleanup proposal.

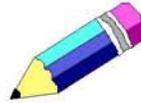
To make a **formal** comment you need only speak during the public hearing on July 14, 2008 or submit a written comment during the comment period.

Federal regulations require EPA to distinguish between “formal” and “informal” comments. While EPA uses your comments throughout site investigation and cleanup, EPA is **required to respond to formal comments in writing only**. EPA will not respond to your comments during the formal hearing on July 14, 2008.

The fact that EPA responds to formal comments in writing only does not mean that EPA can not answer questions. EPA will be holding an informational meeting prior to start of the formal hearing portion of the July 14, 2008 meeting. Additionally, once the meeting moderator announces that the formal hearing portion of the meeting is closed, EPA can respond to informal questions.

EPA will review the transcript of all formal comments received at the hearing, and all written comments received during the formal comment period, before making a final cleanup decision. EPA will then prepare a written response to all the formal written and oral comments received.

Your formal comment will become part of the official public record. The transcript of comments and EPA’s written responses will be issued in a document called a Responsiveness Summary when EPA releases the final cleanup decision.



For More Detailed Information

To help the public understand and comment on the proposal for the site, this publication summarizes a number of reports and studies. All of the technical and public information publications prepared to date for the site are available at the following information repositories:

EPA Records Center
1 Congress Street
Boston, Massachusetts 02114
(617) 918-1440
Please call to schedule an appointment



Walpole Public Library
65 Common Street
Walpole, MA
(508) 660-7340

Information is also available for review on-line at: www.epa.gov/region1/superfund/sites/blackburn. All documents may be downloaded and printed.

public comment sheet (continued)

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stamp
here

Mr. Dave Lederer
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Boston , MA 02114-2023