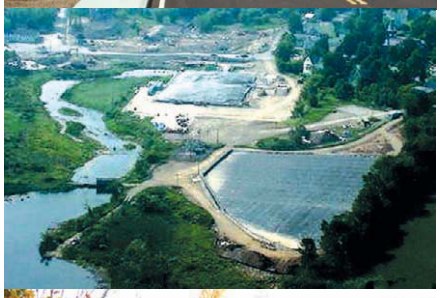
Vermont Edition

United States Environmental Protection Agency New England

2002/Superfund Annual Report



A status report on the New England Superfund remedial, removal, brownfields, oil spill and emergency response programs.

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WELCOME TO EPA NEW ENGLAND

The New England office of the U.S. Environmental Protection Agency is dedicated to protecting the public's health and the region's environment. This report summarizes the extensive progress and activities accomplished during fiscal year 2002 by the Office of Site Remediation and Restoration. This program oversees the long-term and short-term cleanup programs, the Underground Storage Tank and Brownfields programs, and our Homeland Security efforts. We thank you for your interest in the New England cleanup programs and look forward to another year of working with our Congressional delegation, states and tribes, the public and others with an interest in our work.

EPA New England's Office of Site Remediation and Restoration (OSRR) oversees the Superfund program, including the long-term cleanups of National Priorities List (NPL) sites, short-term removal actions and emergency responses. This office also administers the region's Brownfields program, helps parties prepare for potential oil spills and works to prevent environmental disasters. It oversees the regulation of underground storage tanks and administers corrective actions where facilities must clean contamination and create better systems for managing environmental threats.

In the past year, OSRR has also shifted its priorities to better secure our national environmental resources. In the wake of September 11, this agency joined other federal agencies in an all-out push to be prepared in the event of another terrorist attack. This led to the new homeland security plan, involving all of EPA in coordination with other governmental and community organizations.

In addition, this office joins the entire agency in a focused federal effort to make sure all New England residents receive their share of environmental benefits. The federal government recognize the importance of environmental justice and seeks to provide equal protection for all of our communities, large and small, rich and poor. Because communities have not been treated equally in the past when it comes to protecting the environment, OSRR now considers environmental justice in all of its programs and decisions.

This report begins with a brief history of Superfund and a basic 'refresher course' on EPA's Superfund program. It continues with a section on financial investments made at toxic waste sites, including specific web addresses to find more comprehensive information for each site. A second report outlines the environmental success stories across New England in the Brownfields redevelopment program and the push to reuse once-toxic waste sites. There is also information on specific New England sites where EPA is doing short-term cleanups that leave neighborhoods safer until the properties are developed for a permanent new use.

At EPA, we are especially excited about the impacts our programs are having across the region in bringing many properties that once sat idle back into use, and look forward to continuing to work with our state and local partners and the congressional delegation to promote a cleaner, healthier, more productive environment.

Please visit EPA's Internet web pages to find a great deal of useful information as well as detailed descriptions of each of the 110 Superfund sites in New England. Bookmark the following web addresses: www.epa.gov/ne/superfund and www.epa.gov/ne/brownfields

Thank you for your interest,

Robert W. Varney
Regional Administrator

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Following is a quick summary of EPA New England's Office of Site Remediation and Restoration (OSRR) programs highlighted in this report.

National Priorities List (Superfund) Program

OSRR's remedial branches oversee long-term cleanups at sites that are typically on EPA's National Priorities List. Short-term cleanups can correct many hazardous waste problems and eliminate most threats to human health and the environment. Some sites, however, require lengthier and more complex cleanups. These may include large-scale soil remediation, restoring groundwater and taking measures to protect wetlands, estuaries, and other ecological resources. These sites are often caused by years of pollution and may take several years, even decades, to clean.

Emergency Planning and Response

OSRR's Emergency Planning and Response branch prepares for and conducts responses to discharges of oil and releases of hazardous substances. In addition to planning and preparing for regional emergency responses, getting ready for counter-terrorism activities, inspecting oil storage facilities, and cleaning up emergency oil and chemical spills, this branch oversees time-critical short-term cleanups in New England.

Short-term cleanups, also referred to as "removal actions," address immediate threats to public health and the environment. Short-term cleanups may take anywhere from a few days to a few years, depending on the type and extent of contamination.

Brownfields Program

Originally established as an EPA initiative in January 1995, the Brownfields program has evolved into an effort involving more than 15 federal partners. This collaborative effort, referred to as the Brownfields National Partnership, was created in June 1997 to promote beneficial reuse of contaminated sites. EPA's Brownfields program consists of various initiatives designed to work with local, state and tribal partners to reuse brownfields in environmentally sound ways driven by the community. Key Brownfields programs include Site Assessment Demonstration Pilots, Targeted Brownfields Assessments, Cleanup Revolving Loan Funds, Job Training Grants, Showcase Communities and financial help to state brownfields programs, including Voluntary Cleanup Programs.

EPA NEW ENGLAND'S HOMELAND SECURITY PLAN

On September 11, 2001, our country was put on alert: we must be ready to protect our resources in the event of an attack or other national emergency. As a result of this unexpected attack and the anthrax incidents that followed, EPA New England has developed a detailed security and response readiness plan that should leave the region less vulnerable in the event of an emergency. EPA is working with other government and community organizations to better protect our water, air and land resources and to respond to an emergency that threatens these resources. In its plan, the agency has outlined specific actions to address vulnerabilities and identified specific actions needed to reduce the vulnerability of our critical environmental infrastructure. EPA goals aimed at achieving better homeland security include:

Identify and Address National Environmental Vulnerabilities: EPA is working with state and interstate organizations as well as water utilities and wastewater treatment facilities to help them understand and reduce the vulnerability of public drinking water supply systems.

Improve Procedures for Making Decision and Communicating: EPA will use its Regional Incident Coordination Team (RICT) to clarify responsibilities for how to make decisions and communicate internally during significant emergency incidents. This team's Operations Manual establishes lines of authority and responsibility.

Revise External Emergency Response: EPA has been participating in terrorism and hazardous material response exercises throughout New England to ensure the agency's readiness to respond in the event of an incident. Planning and coordinating these exercises requires many state, local and federal agencies to coordinate and already have resulted in many revisions to existing emergency response plans and structures.

Increase Resources: EPA has committed significant resources over the last two years to make sure that we are better prepared than ever before to respond to an emergency of any kind. Five On-Scene Coordinators were hired, and EPA has provided extensive health and training, as well as preparedness training to all staff. In the area of drinking water, EPA has shifted resources to help water suppliers prevent and prepare for acts of terrorism.

Identify and Address National Vulnerabilities; Preparedness: EPA New England is working aggressively with state Emergency Response Commissions, Local Emergency Planning Committees and industry and community groups to ensure that they have effective preparedness strategies and the tools necessary to carry them out.

EPA is incorporating security concerns into its enforcement actions and is helping to educate industrial facilities, pipeline owners, transporters, utilities, and warehousers of chemicals throughout New England on how to make their operations more secure. Among other things, EPA New England is providing businesses with a new Industrial Security Awareness guide.

Develop a Plan for Alerting The Public During National Emergencies: EPA's existing procedures for informing the public quickly and accurately during an emergency are being tested and revised in the event of a catastrophic event.

Invest in the Security of EPA Staff and Facilities: EPA New England immediately tightened physical security in the aftermath of September 11, adding security guards and tightening visitor procedures. Other steps to strengthen our physical security will be made based on vulnerability assessments.

Develop a Data Analysis and Information Management Infrastructure: EPA has assessed its analytical capability in light of major terrorist attacks and is seeking to expand its resources making use of state and private labs. EPA, in close partnership with laboratory directors, is compiling an inventory of lab capabilities across New England. The RICT, an EPA multi-disciplinary response team, has defined operational procedures for coordinating all activities and defining how data will flow within EPA to other agencies and to the public.

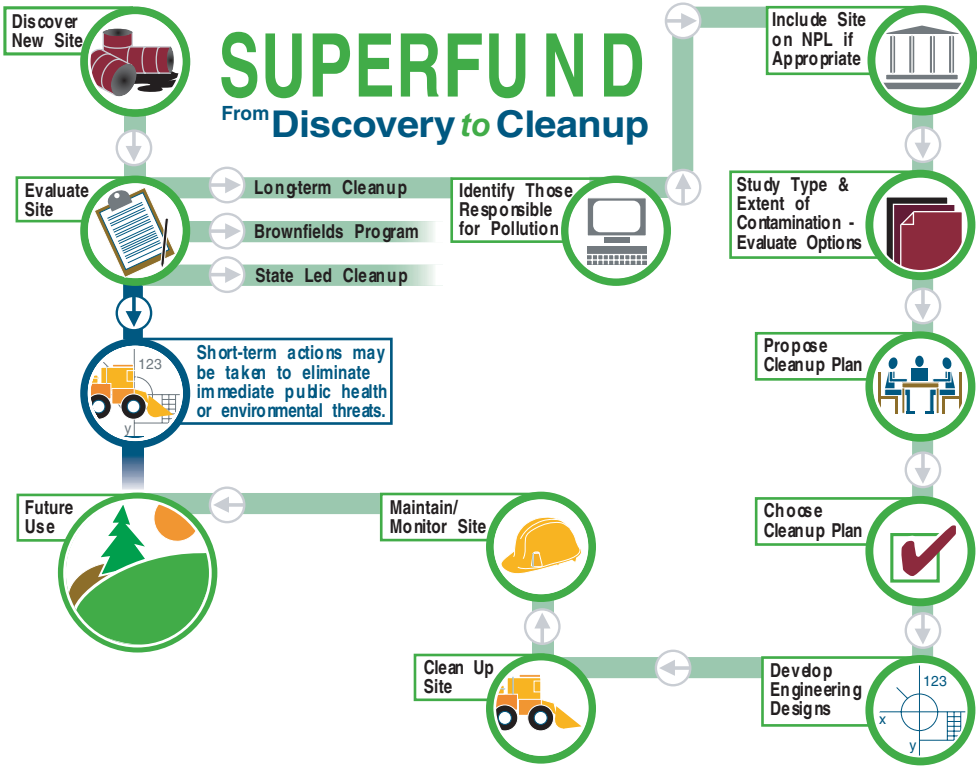
Together with state and local agencies, New England is advancing response capabilities, and ensuring the health and safety of all New Englanders.

SUPERFUND: A PRIMER

In response to growing concerns at Love Canal in New York and other sites around the country, Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Superfund law, on December 11, 1980. To implement this law, EPA created regulations establishing cleanup standards and procedures. These procedures were outlined in the National Contingency Plan (NCP), which dictates CERCLA response actions. The NCP includes procedures EPA and private parties must follow in selecting and completing emergency removals and long-term cleanups.

Several tools are available through the Superfund program to assess and clean up hazardous waste sites. The graphic below shows the cleanup process from discovery to cleanup. Cleaning a site may take many paths—through state sponsored cleanup programs, the Brownfields program, or a Superfund short-term or long-term cleanup action.

Today's Superfund program is the result of ongoing reform and revitalization. EPA is streamlining the program and trying to make it as fair as possible, at the same time it improves the effectiveness and consistency of the cleanup and increases community participation and public/private partnerships, and encourages economic development.



Discover Contamination (Site Discovery)

Anyone can report a suspected hazardous waste problem to the National Response Center which operates 24 hours a day, seven days a week, or to state and local authorities.

To Report an oil spill or other environmental emergency such as an oil or chemical spill, call the National Response Center at 1-800-424-8802.

Evaluate the Site (Site Assessment)

The top priority in evaluating a hazardous waste site is to determine whether or not an emergency exists. When a hazardous waste site is reported, EPA inspects the site to determine what type of "action" or cleanup procedure, if any, is necessary. EPA reviews existing data, inspects the site and may interview nearby residents to find out the history and the effects of the site on the population and the environment.

EPA New England has performed assessments on a number of sites where no decision has yet been made about whether to list the site on the National Priorities List. These sites are referred to as Sites Awaiting a NPL Decision (SAND). SAND sites include sites that have been assessed by the Superfund program, are now being addressed under state program authorities, or are in various stages of assessment and cleanup by other federal or state agencies. For additional information, visit the EPA New England Superfund SAND Web pages at www.epa.gov/ne/superfund/sand

EPA tests the soil, water and air to determine what hazardous substances were left at the site and how serious the risks may be to human health and the environment. Individuals or companies responsible for the contamination at the site may do these assessments under close EPA supervision. Many of the sites that are studied do not need cleanup by the Superfund program. Some sites do not require any action, while others are referred to the state, other EPA programs such as the Brownfields program, or other agencies or individuals for cleanup. If the site qualifies for cleanup through the Superfund program, EPA then decides whether the site is a short-term cleanup or a long-term cleanup.

Brownfields

Some hazardous waste sites, such as abandoned, idled or under-used industrial and commercial facilities, may be slightly contaminated and can be cleaned up fairly easily. These sites, where expansion or redevelopment is complicated by real or perceived environmental contamination, are commonly known as "brownfields." More information about brownfields in New England can be found in the Brownfields section of this report and on the EPA New England Brownfields program web site at www.epa.gov/ne/brownfields

Short-Term Cleanups

Short-term cleanups, also referred to as "removal actions," address immediate threats to public health and the environment, and typically address less complex or less extensive contamination problems than those that require long-term cleanup. Short-term cleanups may take anywhere from a few days to a few years to complete, depending on the type and extent of contamination. EPA also determines if additional long-term action will be necessary.

Not all short-term cleanups are equally urgent. For example, situations involving fire or explosions or imminent, catastrophic contamination of a reservoir may require prompt attention, while certain situations involving abandoned hazardous waste drums or cleanup of abandoned industrial facilities may not.

Steps in the short-term cleanup process include:

1. Investigate the contamination at the site.

2. **Assess factors that affect the level of risk at the site** and determine the urgency of the situation, which is the primary factor used to determine which type of short-term cleanup to conduct. There are three different types of short-term cleanups:

Classic Emergencies
include those cleanups where the release of hazardous materials requires that on-site cleanup activities be initiated within minutes or hours of determining that a short-term cleanup is appropriate.

Time-Critical Actions
are those cleanups where, based on an evaluation of the site, EPA determines that on-site cleanup activities must be initiated within six months of determining that a short-term cleanup is appropriate. For time-critical actions, EPA investigates contamination and produces an "action memorandum" authorizing and outlining the cleanup process before beginning work.

Non-Time-Critical Actions
are those cleanups where, based on an evaluation of the site, EPA determines that six months or more is available before on-site cleanup activities must begin. Non-time-critical removal actions require the preparation of an "Engineering Evaluation/Cost Analysis" (EE/CA). An EE/CA includes a description of the contamination, the threat to human health and the environment that the contamination poses, the objectives of the cleanup, the requirements that need to be met, the alternatives evaluated for addressing the contamination, and a recommended cleanup plan.

3. Conduct the cleanup and document its completion.

For information on short-term cleanups in New England and EPA New England's Emergency Planning and Response programs, see the Removal section of this report.

Long-Term Cleanups

Short-term cleanups can correct many hazardous waste problems and eliminate most threats to human health and the environment. Some sites, however, require lengthier cleanups. These may include restoring groundwater and taking measures to protect wetlands, estuaries and other ecological resources. These sites are often caused by years of pollution and may take several years, even decades, to clean. At any point during the long-term cleanup process, interim short-term cleanups may be done. Detailed information on long-term cleanups in New England is contained in the NPL section of this report.

Following is an explanation of the steps in the long-term cleanup process:

1. Identify those Responsible for Pollution (begin enforcement process)

Throughout the cleanup process, EPA works to identify companies or individuals who may have caused or contributed to the pollution at the site. These companies and individuals are known as Potentially Responsible Parties (PRPs). After completing a search to identify PRPs, EPA's first choice is for the PRPs to pay for and/or conduct the necessary studies and cleanup activities under the supervision of EPA. If the PRPs are unable or unwilling to do the work, EPA will fund the cleanup through the Superfund. EPA and the U.S. Department of Justice will then take appropriate enforcement actions to recover all the government's costs for cleaning up the site.

2. If Appropriate, Include the Site on the National Priorities List

In most cases, sites that are candidates for long-term cleanup become listed on the National Priorities List (NPL). To evaluate the dangers posed by hazardous waste sites, EPA has developed a scoring system called the Hazard Ranking System (HRS). EPA uses the information collected during the assessment phase of the process to score sites according to the danger they may pose to public health and the environment. Sites that score high enough on the Hazard Ranking System are eligible for the National Priorities List. A site may also be proposed for the National Priorities List if the Agency for Toxic Substances and Disease Registry (ATSDR) finds that it poses a significant risk to public health or if the site is chosen as a state's top priority site. The proposal is published in the Federal Register and the public has an opportunity to comment in writing on whether the site should be included on the National Priorities List. Brief summaries for all New England NPL sites are contained in the NPL section of this report. Detailed fact sheets and other site information are also available on the Internet, at www.epa.gov/ne/superfund/sites.

3. Study Type and Extent of Contamination and Evaluate Cleanup Options (Remedial Investigation/Feasibility Study)

A detailed study of the site is done to identify the cause and extent of contamination at the site, the possible threats to the environment and the people nearby, and options for cleaning up the site.

4. Propose a Cleanup Plan and Respond to Public Comments

EPA uses information from the EPA Remedial Investigation/Feasibility Study (RI/FS) to develop and present a proposed plan for long-term cleanup to citizens, and to local and state officials for comment. The proposed plan describes the various cleanup options under consideration and identifies the option EPA prefers. The community has at least 30 days to comment on the proposed plan. EPA may also invite community members to a public meeting to express their views and discuss the plan with EPA (and sometimes state) officials.

5. Choose Cleanup Plan (Record of Decision)

Once the public's concerns are addressed, EPA publishes a Record of Decision, which describes how the agency plans to clean up the site. EPA will also notify the community of the cleanup decision.

6. Develop Engineering Designs for Cleanup (Remedial Design)

Next, the cleanup method is designed to address the unique conditions at the site. This is called the Remedial Design. The design and actual cleanup is conducted by EPA, the state, or by the parties responsible for the contamination at the site. EPA closely oversees this design phase of the cleanup at the site. When the design is completed, EPA informs the community of the design and the next steps that will take place at the site.

7. Cleanup the Site (Remedial Action)

The cleanup process itself involves the removal, treatment, and/or disposal of contaminants at a site, and then the restoration of the site to a condition that is not dangerous to people or the environment. This step may involve different cleanup methods, such as the construction of a plant to treat contaminated groundwater, or the excavation and treatment of contaminated soil.

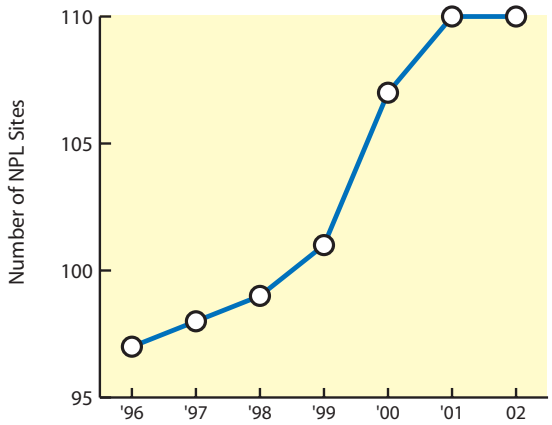
8. Maintain and Monitor the Site (Operations and Maintenance)

EPA can put in place equipment and manpower necessary to clean up a site, but it may take a long time to return a site to the way it was before it was contaminated (as in the case of long-term treatment of contaminated groundwater). Some sites, due to the extent of contamination, may never return to the way they were prior to the pollution; however, EPA will make sure that the site will be safe for the people living around the site now and in the future. EPA regularly monitors sites to make sure they remain safe. If there is any indication that a problem has arisen, immediate action will be taken to make the site safe again. NPL sites that meet all federal cleanup standards are deleted from the National Priorities List.

SUPERFUND LONG-TERM CLEANUP PROGRAM (NATIONAL PRIORITIES LIST)

Superfund distinguishes between short-term and long-term cleanup efforts. Long-term responses, also called "remedial actions," involve complex and highly contaminated sites that often require several years to fully study the problem, determine and plan a remedy and clean up the hazardous waste. There are 97 sites on the final National Priorities List (NPL or Superfund) in New England. An additional three sites have been proposed to the list and ten sites have been deleted because all cleanup has been complete. During 2002, two New England sites were added to the NPL.

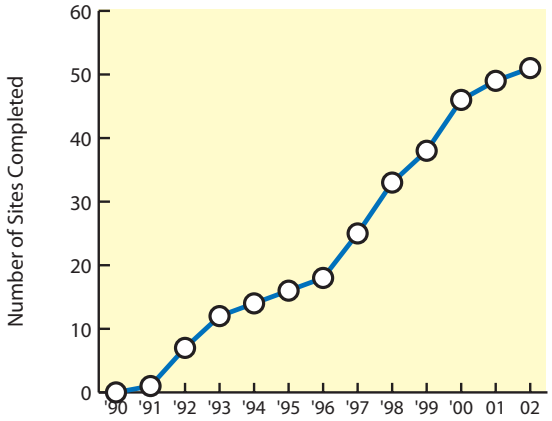
Cumulative Number of Sites Added to National Priorities List in New England by Year, 1996-2002



Source: EPA New England, January 1, 2003

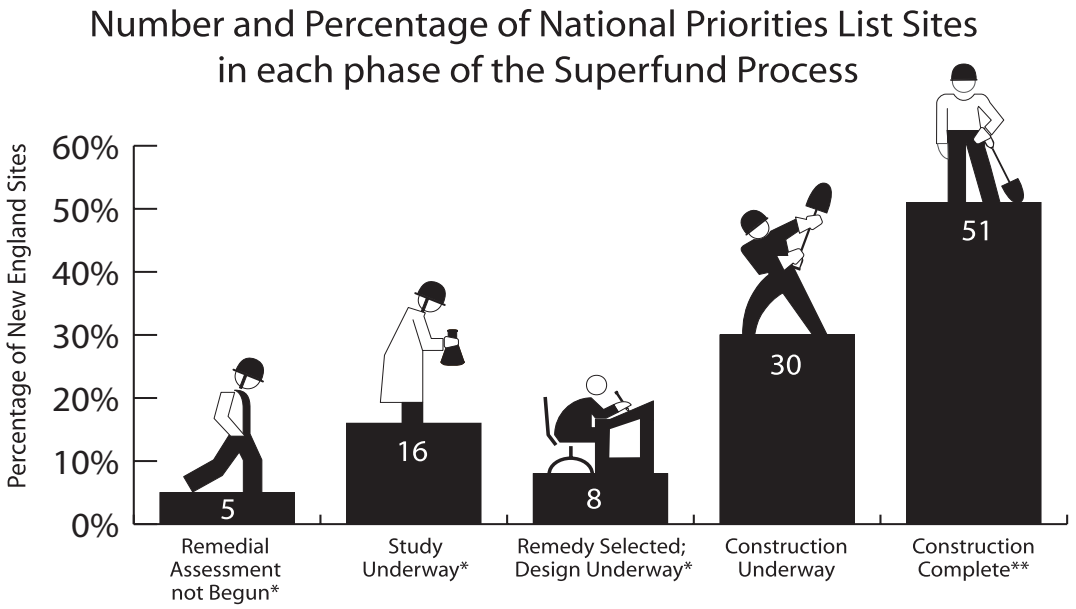
As the Superfund program enters its third decade, the landscape of cleanup programs has changed dramatically. At one time, Superfund was the only program dealing with our nation's abandoned hazardous waste sites. Today, the federal Brownfields program, state regulatory and voluntary cleanup programs all encourage and carry out site cleanups. EPA New England, working with the states, continues to evaluate sites to determine the best approach for cleanup and for adding sites to the NPL.

Cumulative Number of National Priorities List Sites cleaned up in New England by year, 1990-2002



Source: EPA New England, January 1, 2003

At three-quarters of New England NPL sites, EPA has either completed construction of all cleanup measures or has construction underway. Examples of cleanup measures include construction of an impermeable cap, a wastewater treatment plant, or a groundwater pump and treat system. Nationwide, EPA has completed construction of cleanup solutions at 848 sites, 51 in New England.



* may include sites where early action has occurred ** long-term monitoring, operation, and maintenance ongoing

Source: EPA New England, January 1, 2003

Our work is not done, however, when construction is done. At many sites, cleanup systems must be operated and maintained for the long-term, while conditions at the site must be monitored and reviewed periodically to make sure the remedies are still protecting the environment. The graphic on the next page shows the status of each project in New England.

	Remedial Assessment not Begun*	Study Underway*	Remedy Selected; Design Underway*	Construction Underway	Construction Complete**
CONNECTICUT	Broad Brook Mill^	Durham Meadow Nutmeg Valley Rd Precision Plating Scovill Landfill SRS		Linemaster Sw. N.London Sub Old Southington Raymark	Beacon Heights Cheshire GWater Gallups Quarry Kellogg-Deering Laurel Park Revere Textile Yaworski Lagoon Barkhamsted
MASSACHU-SETTS	Haverhill Landfill Nuclear Metals Sutton Brook	Blackburn & Union GE-Housatonic^ Hath.& Patterson Shpack Landfill S.Weymouth NAS	Atlas Tack Natick Army Lab Naval Weapons	Baird & McGuire Fort Devens Hanscom AFB Industriplex Iron Horse Park Army Matls Tech. New Bedford Nyanza Otis ANG Base Silresim WR Grace/Acton Wells G&H	Cannon Eng. Charles George LF Devens-Sudbury Ann. Groveland Wells Hocomonco Pond Norwood PCBs Plymouth Harbor PSC Resources Re-Solve, Inc. Rose Disposal Pit Salem Acres Sullivan's Ledge
MAINE	Callahan Mine		Eastland Woolen West Site/Hows Cor.	Portsmouth NSY	Brunswick NAS Eastern Surplus Loring AFB McKin Co. O'Connor Co. Pinette's Salvage Saco Municipal LF Saco Tannery Union Chemical Winthrop Landfill
NEW HAMP-SHIRE		Beede Waste Oil Mohawk Tannery^	Dover Landfill	Fletcher's Paint N.H. Plating Ottati & Goss Savage Muni. Somersworth LF	Auburn Road LF Coakley Landfill Kearsarge Metallurg. Keefe Enviro. Mottolo Pig Farm Pease AFB South Muni. Well Sylvester Tibbetts Road Tinkham Garage Town Garage/Radio Beac.
RHODE ISLAND		Centredale Manor W.Kingston/URI	Rose Hill Landfill	Central Landfill Davis Liquid Davisville NCBC Newport NETC Peterson/Puritan Picillo Farm	Davis GSR Landfill Landfill & Res.Rec. Stamina Mills Western Sand & Gravel
VERMONT		Elizabeth Mine Ely Copper Mine	Pownal Tannery	Parker Landfill Pine Street Canal	Bennington Landfill BFI Landfill Burgess Bros. LF Darling Hill Dump Old Springfield LF Tansitor Electronics

* may include sites where early actions (e.g., removal actions) have occurred or are underway
** long-term monitoring, operation, and maintenance ongoing
^ proposed NPL site
Note: Statistics represent most-advanced Operable Unit at each site, additional activities may be ongoing at these sites.

Source: EPA New England, January 1, 2003

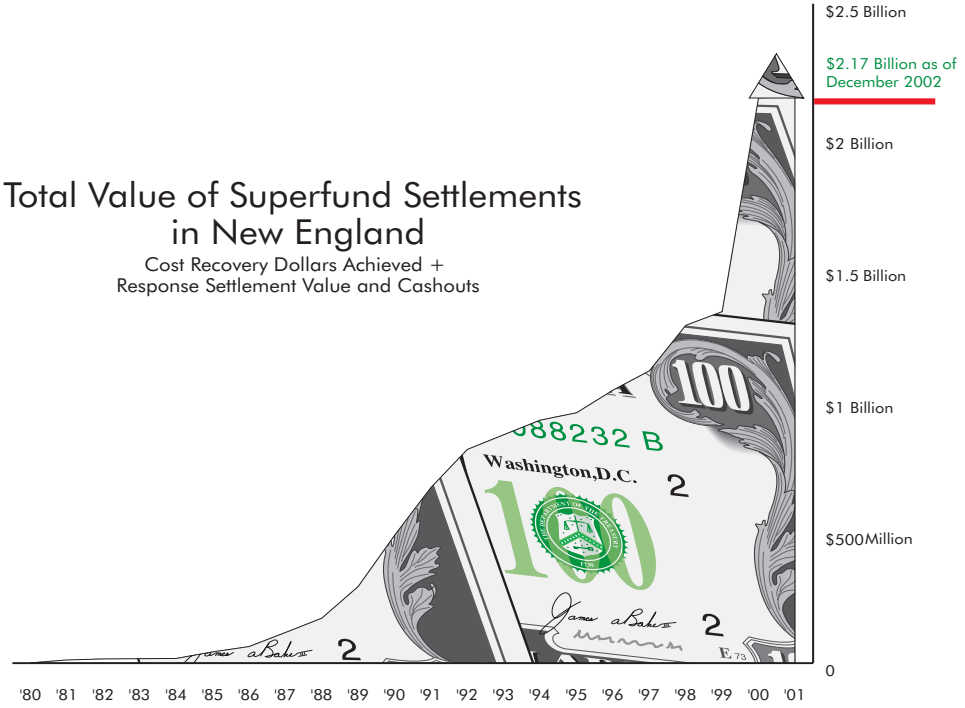
Cumulative Federal Superfund Dollars Expended at National Priorities List Sites in New England, 1980-2002

CT: $190.8 million
MA: $674.9 million
ME: $92.8 million
NH: $124.6 million
RI: $64.5 million
VT: $38.3 million
TOTAL : $1.186 billion

Source: EPA New England, January 1, 2003

EPA has spent nearly $1.2 billion from the Superfund Trust Fund to study and clean sites on the National Priorities List sites in New England.

EPA New England, with the cooperation of the U.S. Department of Justice, continues to ensure that companies responsible for contamination at sites pay their fair share of cleanup costs. In 2002, parties responsible for cleanups in New England, (via direct payments to the Superfund Trust Fund or via funding of studies and cleanup work, committed more than $22 million), bringing the overall total to more than $2.17 billion since the start of the Superfund program.



Source: EPA New England, January 1, 2003

While completing construction of cleanup remedies and deleting sites from the NPL symbolize the culmination of productive partnerships and hard work, true success comes when sites are cleaned well enough to allow for redevelopment. EPA New England, through the Superfund Redevelopment Initiative, is working with state and local governments to examine and rewrite land-use plans for National Priorities List sites and is designing remedies that encourage reuse.

The following pages outline specific information on the status and progress at NPL sites.

VERMONT

Following are a few "Fast Facts" about EPA National Priorities List sites in Vermont:

- **73%** of Vermont Superfund sites (proposed, final, and deleted) on the National Priorities List - **8** of **11** sites - have undergone or are undergoing cleanup construction.
- **Six** sites have all cleanup construction completed, **two** sites have cleanup construction underway.
- **Two** Vermont sites have been deleted from the NPL, Darling Hill Dump in Lyndon and Tansitor Electronics in Bennington.
- The Superfund Program has spent **$43.1** million on National Priorities List sites in Vermont.

EPA has helped promote economic development by removing **95** Vermont sites from the CERCLIS list of waste sites, including **four** in 2002.

Source: EPA New England, January 1, 2003

STATUS OF NEW ENGLAND NATIONAL PRIORITIES LIST SITES
VERMONT

Bennington
Bennington Municipal Sanitary Landfill

for more information on this project, see: www.epa.gov/ne/superfund/sites/bennington

NPL Status: Listed in 1989
Cleanup Status: All Construction Completed in 1999
Superfund $$ Spent: $2.1 million

Tansitor Electronics, Inc.

for more information on this project, see: www.epa.gov/ne/superfund/sites/tansitor

NPL Status: Deleted in 1999
Cleanup Status: All Construction Completed in 1997
Superfund $$ Spent: $812,000

Burlington
Pine Street Canal

for more information on this project, see: www.epa.gov/ne/superfund/sites/pinestreet

NPL Status: Listed in 1983
Cleanup Status: Construction Underway
Superfund $$ Spent: $9.1 million

Lyndon
Darling Hill Dump

for more information on this project, see: www.epa.gov/ne/superfund/sites/darlinghill

NPL Status: Deleted in 1999
Cleanup Status: All Construction Completed in 1992
Superfund $$ Spent: $848,000

Parker Sanitary Landfill

for more information on this project, see: www.epa.gov/ne/superfund/sites/parker

NPL Status: Listed in 1990
Cleanup Status: Construction Underway
Superfund $$ Spent: $2.9 million

VERMONT

Pownal
Pownal Tannery

for more information on this project, see: www.epa.gov/ne/superfund/sites/pownal

NPL Status: Listed in 1999
Cleanup Status: Remedy Selected; Design Underway
Superfund $$ Spent: $16.3 million

Rockingham
BFI Sanitary Landfill

for more information on this project, see: www.epa.gov/ne/superfund/sites/bfi

NPL Status: Listed in 1989
Cleanup Status: All Construction Completed in 1996
Superfund $$ Spent: $1.3 million

Springfield
Old Springfield Landfill

for more information on this project, see:
www.epa.gov/ne/superfund/sites/oldspringfield

NPL Status: Listed in 1983
Cleanup Status: All Construction Completed in 1994
Superfund $$ Spent: $2.5 million

Strafford
Elizabeth Mine

for more information on this project, see: www.epa.gov/ne/superfund/sites/elizmine

NPL Status: Listed in 2001
Cleanup Status: Study Underway, Removal Activities
Superfund $$ Spent: $5.1 million

Vershire
Ely Copper Mine

for more information on this project, see: www.epa.gov/ne/superfund/sites/ely

NPL Status: Proposed 2001
Cleanup Status: Study Underway
Superfund $$ Spent: $111,000

Woodford
Burgess Brothers Landfill

for more information on this project, see: www.epa.gov/ne/superfund/sites/burgess

NPL Status: Listed in 1989
Cleanup Status: All Construction Completed in 2000
Superfund $$ Spent: $2 million

VERMONT

VERMONT WATCH LIST

Sites included on the "Watch List" are those that both the state and EPA Site Assessment programs agree merit increased state-federal coordination and oversight. These sites are a small subset of the several thousand "active" sites included in the EPA New England and New England state inventories of known and suspected hazardous waste disposal sites. Criteria for including sites on the Watch List is loosely defined. In general, the Watch List includes sites that warrant special monitoring because they are strong NPL candidates, are the subject of considerable public interest, are particularly large and/or complex, require significant agency or state expenditures, or are state-lead sites that may be referred to EPA in the future. Watch List sites may be, but are not necessarily, listed in the federal CERCLIS inventory. Sites may be added or dropped if their status changes.

The purpose of the Watch List is to facilitate rapid information exchange between the states and EPA regarding the current status of these high profile sites, and to ensure agencies are kept abreast of key site issues. Agencies have agreed to share site information and to revise the status of sites as needed. At a minimum, however, the entire list will be reviewed and revised as appropriate every six months.

CORINTH

PIKE HILL COPPER MINE VTD988366720

The Pike Hill Copper Mine is an abandoned copper mine covering 400 acres and includes numerous tailing and slag piles. The mine was active from 1847 to 1919. Most of the ore was transported 25 miles southeast to the Ely Copper Mine for processing. There is concern about direct contact and environmental impacts in Pike Hill Brook and the Waits River.

The final Hazard Ranking Score has been completed. The Governor's letter was received in September 2002 along with the town of Corinth support letter in May 2002. The site has been submitted to EPA for NPL consideration.

This site was included in the GAO report of sites awaiting NPL decision. This is not a RCRA corrective action site.

HIGHGATE

YOUNG LANDFILL VTD980914931

The Young landfill is a 24 acre property that contains a landfill, burning dump and industrial waste disposal trenches. The property began as a sand and gravel operation in 1953 and in the 1960s began to accept municipal and industrial wastes. The disposal of industrial wastes ended in 1979. Although the landfill was supposed to stop receiving wastes in the late 1980s, intermittent disposal of wastes continues. Currently there is a small auto body shop located on the site. The pathways of concern are the potential contamination of nearby private wells and the surface water.

Roy F. Weston, an EPA contractor, has completed an environmental site study and has completed a preliminary HRS score for the site. Sampling was conducted in November 1998.

This site was included in the GAO report of sites awaiting NPL decision. This is not a RCRA corrective action site.

PUTNEY

PUTNEY PAPER COMPANY SLUDGE DISPOSAL VT0000128181

The Putney Paper Company Sludge Disposal and the adjacent Blood Farm Dump (VTD982542730) have received paper mill sludge. Each property is approximately five acres. The sludge disposal area is located between the Connecticut River and Interstate 91 and contains two landfill cells. Cell No. 1 began receiving wastes in 1983 and was closed in 1995. Cell No. 2 never received any waste. The Blood Farm Dump is located on the other side of Interstate 91 and received sludge in 1978 and possibly at other times.

Citizen complaints regarding poor drinking water quality and leachate seeps along the downstream pathways from both properties have raised several questions. These complaints have been the subject of several studies by VT DEC, ATSDR and EPA. In an attempt to provide adequate information to resolve the complaints, EPA (through its contractor) conducted extensive groundwater (drinking and monitoring wells), sediment and soil/sludge sampling in December 1998. More field investigative work was completed in 2002 and a Final Expanded Site Inspection Report was produced by Roy F. Weston. EPA is currently waiting for comments on this report from a local landowner before making its final determination on the site.

This site was not included in the GAO report of sites awaiting NPL decision. This is not a RCRA corrective action site.

WILLISTON

MITEC (ALLING INDUSTRIAL PARK)

Mitec formerly manufactured electronic and microwave components and is located in the Alling Industrial Park, Commerce Street, Williston. The industrial park is composed of about 20 properties on 34 acres. From 1972 to 1985, Mitec and previous occupants used an unlined lagoon to dispose of liquid wastes: chromium, cadmium, cyanide, nickel and industrial solvents. In 1985, contamination associated with the Mitec discharge was found in six private wells. These wells have been sealed and the homes connected to the public water supply. TCE from the groundwater appears to have migrated to the adjacent, unnamed stream.

In July of 2001, the state sent a letter to EPA requesting that EPA prepare a Hazard Ranking package for the site. An EPA contractor conducted sampling activies July 2002. The HRS product has been assigned to an EPA HQ contractor. The decision to add the site to the NPL will not occur until mid- to late-2003.

This site was not included in the GAO report of sites awaiting NPL decision although it has been submitted to EPA for consideration of listing. This is not a RCRA corrective action site.

VERMONT

St. Albans

ST. ALBANS GAS AND LIGHT (former) VTD988366688

The Saint Albans Gas and Light facility is a 1.28 acre former coal-gas manufacturing plant located at the corner of Maple and LaSalle streets in St. Albans. It operated between 1871-1950. In 1985, a petroleum/coal tar substance was encountered nearby. Since then a number of investigations have been completed documenting the presence of SVOCs, VOCs and inorganics on-site. In the 1970s, a number of low-income apartments buildings were built on-site housing 60 people.

Pathway(s) of concern is direct exposure to contaminated soils.

Weston Solutions, Inc. START (EPA contractor) has completed the Expanded Site Inspection in December 2002. EPA and the state will discuss HRS issue and NPL probability.

This is not a RCRA corrective action site.

COMMUNITY

JARD VTD048141741

The currently inactive Jard facility manufactured capacitors, non-fluid transformers, and motors used in household appliances between 1969-1989. The facility is located on a 34 acre parcel on Bowen Road in Bennington. Hazardous substances detected on-site include PCBs, SVOCs, VOCs and zinc.

In 1993, the Site Inspection report was completed by an EPA contractor. This is not a RCRA corrective action site.

UPPER CONNECTICUT RIVER STUDY (Special study area)

The Superfund Site Assessment program coordinated with VT and NH in a "site screening" effort where approximately 100 potential hazardous waste sources were evaluated for CERCLIS listing or further state remedial actions. EPA coordinated with both states to select the study area, the sites to be evaluated and decisions for additional actions (if needed). In addition, the Superfund program evaluated:

a. the effectiveness of an area wide site discovery effort
b. the potential for RCRA generators to be evaluated as CERCLIS/NPL sites
c. the benefits of coordinating efforts with other EPA programs

Approximately 100 sediment samples from the upper 150 miles of the river were collected in late August 2000. The sampling locations were coordinated with a concurrent fish tissue sampling study. Work continues on developing limited community profiles of potential problem areas within each of the 38 riverside communities.

Preliminary discussion have been initiated regarding the continuation of the study to the MA-NH-VT border.

EMERGENCY PLANNING AND RESPONSE PROGRAM

EPA New England's Emergency Planning and Response program prepares for, and responds to oil and chemical spills to the environment, and supports and supplements local, state, and private parties' efforts to address emergencies. In case of a chemical or biological threat or emergency, EPA has developed a detailed emergency response plan, a summary of which is in the Homeland Security section of this report.

EPA also oversees short-term cleanups across New England. Short-term cleanups, called "removal actions," reduce immediate threats to public health and the environment at sites that are typically less complex to cleanup than sites on the National Priorities List. (A description of the Superfund NPL program begins on page 18) Short-term cleanups may take anywhere from a few days to a few years to complete, depending on the type and extent of contamination.

An emergency occurs when hazardous or toxic chemicals are released into the environment causing potential health or environmental risks. EPA may need to respond within hours of the event.

Time-Critical Actions are those cleanups where, based on an evaluation of the site, EPA determines that on-site cleanup activities must be initiated within six months of determining that a short-term cleanup is appropriate. For time-critical actions, EPA conducts an investigation of the contamination and produces an "action memorandum" authorizing and outlining the cleanup process before beginning work.

Examples of the types of situations where EPA may be asked to respond immediately include those involving a fire, explosion or imminent, catastrophic contamination of a drinking water reservoir. In cases where an abandoned property has been identified with drums of toxic chemicals left behind, EPA may still assist in the cleanup but the timetable need not be as immediate. The following pages describe EPA's cleanup activities at non-NPL sites during 2002.

EPA's security and response readiness plan, discussed beginning on page 6 seeks to prepare the agency for the worst. In 2002, EPA hired five additional On-Scene Coordinators; provided extensive training to all staff to increase the level of preparedness to respond to an event; assisted municipalities and water districts across New England to reduce the vulnerability of public water supply systems; offered security awareness information to industrial facilities, pipeline owners, transporters, utilities, and warehousers of chemicals throughout New England; and improved plans to allow EPA to continue operation in an alternate location.

Cumulative Total Federal Superfund Dollars Expended at non-National Priorities List Sites in New England, 1980-2002

CT $67 million
MA $58.8 million
ME $28.3 million
NH $31.2 million
RI $12.9 million
VT $ 2.1 million
TOTALS: **$200.3 million**

Source: EPA New England, January 1, 2003

For further information on EPA New England's oil and chemical emergency response programs, visit our web site at www.epa.gov/ne/superfund/er/erindex.htm.

VERMONT

Following are a few "Fast Facts" about EPA's Emergency Response Program in Vermont:

- Since 1983, EPA has completed **10** short-term cleanups ("removal actions") in Vermont.
- EPA has spent **$2.1 million** on site assessment, investigation, and cleanup at non-National Priorities List sites in Vermont.
- Short-term cleanups at non-NPL sites in Vermont have removed over:
  - **18,000** gallons of liquid waste
  - **10** tons of debris
  - **40,000** tons of solid waste
  - **700** tons of contaminated soils and sludges

EPA conducted one oil spill cleanup in Vermont in 2002, valued at approximately **$450,000**. Since 1992, EPA has managed **five (5)** oil spill cleanups in the state, valued at over **$600,000**.

Source: EPA New England, January 1, 2003

Following is a summary of Vermont Superfund Emergency Response activities for 2002. For more information on short-term cleanup sites in New England, visit www.epa.gov/ne/superfund/sites

Bennington

Buckley Drive Waterline

EPA constructed an extension to the Bennington public water supply system to provide drinking water for 14 homes in the Buckley Drive neighborhood whose wells were contaminated or at risk for becoming contaminated by perchloroethylene, (PCE), a chlorinated solvent. The residences had private drinking water wells in the shallow aquifer.

Response Began: July 2002
Current Status: Ongoing
Superfund $$ Spent: $549,065

Barre

Howe Cleaners (former)

Located at 9 Depot Square in Barre, Howe Cleaners is located in a former Barre and Chelsea Railroad Company passenger depot built in the 1890s. For more than 35 years the property was used for dry cleaning and owned by various companies. In 1970, ownership changed and the business was named Howe Cleaners, Inc. At this time, the dry cleaning operations were converted to a perchloroethylene (PCE) based dry cleaning process. Reportedly, PCE-contaminated spent liquid was occasionally dumped outside a door of the building. Also, filters saturated with PCE from the dry cleaning equipment were regularly changed and stacked outside the building. In 1999, Vermont Department of Environmental Conservation (VT DEC) learned of elevated levels of PCE, trichloroethylene (TCE) and dichloroethylene (DCE) contaminants in a basement sump at a nearby property. VT DEC investigations concluded that the former Howe Cleaners property was the source of contamination and that elevated levels of concentrated PCE are present in soils and groundwater directly downgradient from the building.

Response Began: September 2002
Current Status: Ongoing
Superfund $$ Spent: $27,005

Bellows Falls (Rockingham)

TLR Mill Complex

Located at 1 Mill Road in the Village of Bellows Falls (town of Rockingham), the town-owned TLR Mill Complex is a small paper mill that operated from 1869-1986. Portions of the mill are on the National Register of Historic Places. Deterioration of the building and its contents led to the release of friable asbestos to the environment. While the town was looking into potential redevelopment of the mill using EPA Brownfields money, volatile organic chemicals were found in an open container, in drums and other containers of varying sizes. EPA, the state and village have been working on a cleanup plan that would include preservation of the historic building.

VERMONT

Response Began: October 2002
Current Status: Ongoing
Superfund $$ Spent: $53,000

Barre

Barre Coal Tar Oil Spill

The Barre Coal Tar Oil site is located in downtown Barre along the bank of the Stevens Branch of the Winooski River. After a large plume of coal tar located under the property was found to be discharging into the Winooski River, a series of recovery wells were installed to recover the coal tar. Operation of the system has minimized, but not eliminated the discharge to the river. Over time, the condition of the recovery system has deteriorated, resulting in the need to completely overhaul the system. EPA and VT DEC studied cleanup alternatives and determined that the coal tar needed to be removed and treated with a thermal system. This option is estimated to cost $10.8 million. EPA is investigating funding options.

Response Began: April 2001
Status: Ongoing
Oil Spill $$ Spent: $450,000
Wastes Removed: 200 gallons of coal tar shipped off site
Treated approximately 12,000,000 gallons of contaminated groundwater

EPA NEW ENGLAND BROWNFIELDS: RESTORING COMMUNITIES

Environmental contamination can rob a community of its economic potential and its social structure even when contamination is not severe enough for a Superfund designation. Any amount of contamination - or even the perception of possible contamination – can prevent the use of valuable property. Across New England, hundreds of properties are abandoned or underused because of the fear of environmental contamination, a contamination that may not even exist. And at the same time these sites are left unused, development is consuming valuable open space elsewhere. Although such idle properties, called brownfields, are usually urban warehouses or abandoned factories, they can also be found in rural areas. When mines are abandoned or fields host illegal dumping, the value of the property can plummet.

EPA New England's Brownfields program provides solutions by helping communities restore the value to these abandoned sites. The program focuses on providing grants and services to help communities assess contamination, plan for new uses, and clean sites to ready them for redevelopment. Since 1995, the Brownfields program has distributed more than $56 million to dozens of communities, states, and agencies around the region.

In January 2002, EPA significantly increased its spending on brownfields through the Small Business Liability Relief and Brownfields Revitalization Act, Public Law 107-118. The law lets communities use grants to clean sites, provides new liability protections for prospective purchasers and greatly enhances state and tribal programs, which continue to play a critical role in restoring and revitalizing Brownfields.

The EPA New England brownfields program includes:

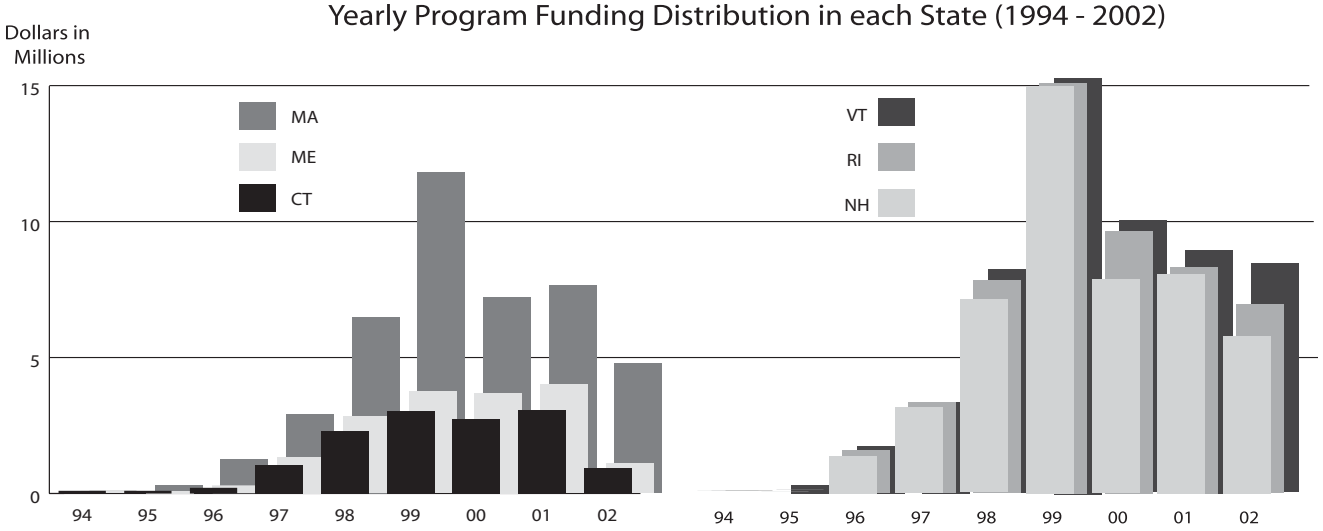
- Grants for assessing and cleaning up sites
- Site assessments carried out by EPA and/or states for communities
- Job training grants
- Showcase Community designations that bring with them a full-time EPA staffer working on Brownfields in the community.
- Grants to establish revolving loan funds for Brownfields cleanup

More details about EPA New England's Brownfields program and many success stories are contained in the publication: *Land and Community Development: Brownfields*.

What are Brownfields?

Brownfields are real property, the expansion, redevelopment or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

Yearly Program Funding Distribution in each State (1994 - 2002)



Source: EPA New England, January 1, 2003

Source: EPA New England, January 1, 2003

BROWNFIELDS REDEVELOPMENT PROVIDE OPPORTUNITIES

For years, contaminated and potentially contaminated properties around New England have sat idle and unused, stark demonstrations of the environmental damage progress can cause. But recently, turnarounds have been made possible by the federal Brownfields program.

In New London, Connecticut, one acre of a former railroad yard on the Thames River that sat deteriorating has been taken over by the city and combined with other properties to make way for a popular waterfront boardwalk that opened last year. The project is part of a comprehensive plan to open the city back up to the waterfront and take advantage of its recreational and educational resources.

In Massachusetts, 200 industrial acres in the Mystic River Valley north of Boston that sat deteriorating for decades are being cleaned and redeveloped to bring jobs, energy and green space back to an area that once served as the center of the region's economy. TeleCom City, a project involving three communities, will include 1.8 million square feet of office, laboratory and manufacturing space, as well as 200 units of housing and 60 acres of designated green space.

In Providence, Rhode Island, abandoned mill buildings and properties along the Woonasquatucket River in Providence are being cleaned up and readied for neighborhood parks that will eventually be linked to a 4.4-mile linear park and bike trail known as the Woonasquatucket River Greenway. Among the lynchpins of the Greenway project are the Riverside Mills and Lincoln Lace and Braid properties, two riverfront eyesores that are well on their way to being restored.

A burned-out building at the Manchester Airport in Londonderry, New Hampshire for years sat abandoned and empty of anything but hundreds of unidentified chemicals that had been packaged and stored on the site for much of the 1980s and 1990s. The five-acre property, which had been owned most recently by a chemical products company before it went bankrupt in 1994, has been cleaned of storage tanks, chemicals and contaminated oil and redeveloped for Enterprise Rent-a-Car's regional distribution center. The project is an important part of a major expansion project by the Manchester Airport Development Authority.

These turnarounds are just a few of the many success stories seen around New England as the eight-year-old federal Brownfields program bears fruit. Since 1995, EPA New England has provided more than $56 million of Brownfields assistance—for grants, site evaluations, job training and cleanup loan programs—to dozens of communities, states and agencies around the region. The assistance has led to 630 completed site assessments, more than 100 cleanups that are underway or completed and thousands of new jobs. By targeting development to these sites, the assistance also is protecting precious open space from new development.

Emboldened by the success and huge popularity of the program, President Bush and Congress enacted new Brownfields legislation this year that substantially increased the funds available for Brownfields work – boosting annual funding to roughly $167 million a year—and make more properties eligible for cleanups. The new law will greatly expand financial assistance to public entities and nonprofit groups for Brownfields revitalization, including grants for assessments, loans, cleanups and job training. It also provides new liability protections for prospective purchasers and greatly enhances state and tribal programs, which continue to play a critical role in restoring and revitalizing Brownfields.

Guidelines that were recently approved as part of the new legislation include various new precedents including: broadening the eligibility for funding to include sites with petroleum

contamination; providing cleanup grants to eligible entities, including nonprofit organizations that own property they wish to clean up; and allowing local governments to use up to 10 percent of the funds for monitoring the health of local populations exposed to hazardous wastes.

In October 2002, nearly 200 representatives from cities, towns, state agencies, tribes, nonprofit groups and consulting firms attended meetings in Massachusetts and New Hampshire to learn about the new legislation and upcoming funding opportunities for public entities and nonprofit groups. Based on feedback at these meetings, we expect to see many exciting projects move forward in the months ahead.

Information on financial assistance that is available can be found at
www.epa.gov/ne/brownfields

SUPERFUND GLOSSARY OF TERMS

There are many terms and acronyms specific to the Superfund program that you may not recognize. This glossary defines both terms and acronyms to ensure that the information provided in this document is easy to understand for everyone.

Action Memorandum
A document authorizing and outlining the cleanup plan that will be followed as part of a short-term cleanup.

Acute Exposure
A single exposure to a hazardous material for a brief length of time.

Administrative Record
A compilation of documents supporting an administrative action; under Superfund, administrative actions often compel Potentially Responsible Parties (PRPs) to undertake or pay for hazardous waste site cleanups.

Advection
Transportation of contaminants by the flow of a current of water or air.

Agency for Toxic Substances and Disease Registry (ATSDR)
An agency of the U.S. Department of Health and Human Services whose purpose is to prevent exposure and adverse human health effects and diminished quality of life associated with exposure to hazardous substances from waste sites, unplanned releases, and other sources of pollution present in the environment.

Aquifer
An underground geological formation, or group of formations, containing water; sources of groundwater for wells and springs.

Benthic
Relating to or occurring at the bottom of a body of water.

Bioaccumulation
The storage and buildup of chemicals in wildlife and plants. This process can take place in one of two ways: through direct consumption of chemicals, or when one organism consumes another that has already consumed these chemicals. The second method contributes to the level of these substances in the organism that is higher on the food chain.

Carcinogen
A substance or agent that may produce or increase the risk of cancer.

Chronic Exposure
Continuous or repeated exposure to a hazardous substance over a long period of time.

Clean Air Act (CAA)
A federal law that gives EPA authority to set standards for air quality and to control the release of airborne chemicals from industries, power plants, and cars.

Clean Water Act (CWA)
A federal law that regulates the pollution that will reach surface waters (rivers, lakes, ponds, and streams). The law prohibits a point source from discharging pollutants into the water unless the discharge meets certain permit requirements.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
A federal law, enacted in 1980 and nicknamed "Superfund," that provides the authority through which the federal government can compel people or companies responsible for creating hazardous waste sites to clean them up. It also created a public trust fund, known as the Superfund, to assist with the cleanup of inactive and abandoned hazardous waste sites or accidentally spilled or illegally dumped hazardous materials.

Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)
A database that supports EPA headquarters and regional implementation of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 and the Superfund Amendments and Reauthorization Act (SARA) of 1986. It contains information on site inspections, preliminary assessments, remedial information, and emergency and non-emergency cleanup activities for all hazardous substance/waste sites evaluated under the Superfund program, including federal facilities. In addition, CERCLIS contains information about all potential Superfund sites, as well as "Proposed" and "Final" sites that have been listed on the National Priorities List (NPL).

Concentration
The amount of a chemical in a given volume of air, water, or other medium. An example is 15 parts of carbon in a million parts of air.

Contaminant
Harmful or hazardous matter introduced into the environment.

Contaminant Level
A measure of how much of a contaminant is present.

Corrective Action
Cleanup of hazardous waste contamination at non-Superfund sites. See also Resource Conservation and Recovery Act (RCRA).

Dense Non-Aqueous Phase Liquid (DNAPL)
Liquid contaminants that are relatively insoluble and heavier than water; also known as sinkers because they will sink to the bottom of an aquifer, where they become especially difficult to detect and clean up.

Ecosystem
A specialized community, including all the component organisms, that forms an interacting system; for example, a marsh, a shoreline, a forest.

Emergency Planning and Community Right-to-Know Act (EPCRA)
A federal law, also known as SARA Title III, that was enacted in November 1986. This law provides an infrastructure at the state and local levels to plan for chemical emergencies. Facilities that store, use, or release certain chemicals may be subject to various reporting requirements. Reported information is then made publicly available so that interested parties may become informed about potentially dangerous chemicals in their community.

Emergency Response
A response action to situations that may cause immediate and serious harm to people or the environment.

Engineering Evaluation/Cost Analysis (EE/CA)
A study conducted as part of a non-time critical short-term cleanup. The EE/CA identifies the objectives of the cleanup and analyzes various cleanup alternatives in terms of cost, effectiveness, and ease of implementation. The EE/CA is made available for public review and comment, prior to the publication of an action memorandum, which outlines the selected cleanup method.

Epidemiology
Study of causes of disease or toxic effects in human populations.

Exposure
Coming into contact with a substance through inhalation, ingestion, or direct contact with the skin; may be acute or chronic.

Explanation of Significant Differences (ESD)
A document which outlines significant changes to a remedy selected in a Record of Decision (ROD) with respect to scope, performance, or cost.

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)
A federal law that requires labels on pesticides that provide clear directions for safe use; FIFRA also authorizes EPA to set standards to control how pesticides are used.

Five-year Review
A periodic review of site conditions, data, land use, etc., to ensure that cleanup actions remain protective of human health and the environment.

Food Chain
The sequence of transfers of energy in the form of food from one organism to another when one organism eats or decomposes another organism.

Groundwater
Water found beneath the Earth's surface that fills pores between materials, such as sand, soil, or gravel.

Hazard Ranking System (HRS)
The method EPA uses to assess and score the hazards posed by a site that takes into account the nature and extent of contamination and the potential for the hazardous substances to migrate from the site through air, soil, surface water, or groundwater; HRS scores are used to determine whether a site should be placed on the National Priorities List (NPL).

Hazardous Substance
A broad term that includes all substances that can be harmful to people or the environment.

Hazardous Waste
By-products or waste materials of manufacturing and other processes that have some dangerous property; generally categorized as corrosive, ignitable, toxic, or reactive, or in some way harmful to people or the environment.

Health Risk Assessment
Scientific evaluation of the probability of harm resulting from exposure to hazardous materials.

Heavy Metals
Metals such as lead, chromium, copper, and cobalt that can be toxic at relatively low concentrations.

Information Repository
A set of information, technical reports, and reference documents regarding a Superfund site; it usually is located in a public building that is convenient for local residents, such as a public school, city hall, or public library.

Innovative Treatment Technologies
New and creative methods used to effectively treat hazardous waste.

Inorganic Compounds
Molecules that consist of chemical combinations of two or more elements that are not carbon, hydrogen, oxygen, or nitrogen.

Liability
Under Superfund, a party responsible for the presence of hazardous waste at a site is also legally responsible for acting and paying to reduce or eliminate the risks posed by the site.

Light Non-Aqueous Phase Liquid (LNAPL)
Liquid contaminants that are relatively insoluble and lighter than water; also known as floaters because they will float on top of an aquifer.

Long-term Cleanup
A response action that eliminates or reduces a release or threatened release of hazardous substances that is a serious but not an immediate danger to people or the environment. This action, also known as a Remedial Action (RA), may take years to complete.

Migration
The movement of a contaminant from one place to another.

Migration Pathways
The routes a contaminant may move around in the environment (e.g., soil, groundwater, surface water, air).

Monitoring Well
A well drilled at a hazardous waste management facility or Superfund site to collect groundwater samples for analysis to determine the amounts, types, and distribution of contaminants in the groundwater beneath the site.

Municipal Solid Waste
Garbage that is disposed of in a sanitary or municipal solid waste landfill.

Mutagenic
Causing alteration in the DNA (genes or chromosomes) of an organism.

National Institute of Environmental Health Sciences (NIEHS) Superfund Basic Research Program
Provides funding to 18 programs at 70 universities and institutions around the United States to study the human health effects of hazardous substances in the environment, especially those found at uncontrolled, leaking, waste disposal sites.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP)
The federal government's blueprint for responding to both oil spills and hazardous substance releases. The NCP is the result of efforts to develop a national response capability and promote overall coordination among the hierarchy of responders and contingency plans.

National Priorities List (NPL)
EPA's list of the most serious uncontrolled or abandoned hazardous waste sites, identified as candidates for long-term cleanup using money from the Superfund trust fund.

Non-time Critical Removal Actions
A type of short-term cleanup in which, based on an evaluation of the site, EPA determines that more than six months is available before on-site activities must begin. A non-time-critical action includes a more extensive study of the contamination and cleanup options, called an Engineering Evaluation/Cost Analysis (EE/CA), and more formal public participation prior to the publishing of an action memorandum authorizing and outlining the cleanup plan.

Occupational Safety and Health Act (OSHA)
A federal law that sets minimum health and safety standards for the workplace. Private employers must protect their employees by following OSHA requirements.

Office of Site Remediation and Restoration (OSRR)
The EPA New England office that oversees the following programs: Superfund, Brownfields, Oil Spill, RCRA Corrective Action, and Underground Storage Tanks.

Oil Pollution Act (OPA)
A federal law that was signed into law in August 1990, largely in response to rising public concern following the Exxon Valdez incident. The OPA improved the nation's ability to prevent and respond to oil spills by establishing provisions that expand the federal government's authority, and provide the money and resources necessary, to respond to oil spills. The OPA also created the national Oil Spill Liability Trust Fund, which is available to provide up to one billion dollars per spill incident.

Operable Unit (OU)
The cleanup of a site can be divided into a number of operable units, depending on the complexity of the problems associated with a site. Operable units may address geographical portions of a site, specific site problems, or initial phases of an action, or may consist of any set of actions performed over time or any actions that are concurrent but located in different parts of a site.

Operation and Maintenance (O&M)
Activities that protect the integrity of the selected remedy for a site. O&M measures are initiated by a state after the remedy has achieved the Remedial Action (RA) objectives and remediation goals outlined in the Record of Decision (ROD), and is determined to be operational and functional (O&F) based on state and federal agreement.

Organic Compounds
Molecules that typically contain carbon, hydrogen, oxygen, or nitrogen.

Percolation
The movement of water downward and radially through subsurface soil layers, usually continuing downward toward groundwater.

Permeability
The degree to which groundwater can move freely through an aquifer.

Pesticide
Any chemical used to kill or control undesired insects, weeds, rodents, fungi, bacteria, or other organisms. Some pesticides are known to cause cancer.

Plume
A body of contaminated groundwater flowing from a specific source. The movement of the groundwater is influenced by such factors as local groundwater flow patterns, the character of the aquifer in which groundwater is contained, and the density of contaminants.

Point Source
A stationary location or fixed facility from which pollutants are discharged; any single identifiable source of pollution; e.g., a pipe, ditch, ship, ore pit, factory smokestack.

Polychlorinated biphenyls (PCBs)
A group of toxic chemicals used for a variety of purposes including electrical applications. PCBs are known to cause cancer in animals. PCB use and sale was banned in 1979 with the passage of the Toxic Substances Control Act (TSCA).

Potentially Responsible Parties (PRPs)
Any individual or company who may have contributed to contamination at a Superfund site. Under CERCLA, PRPs are expected to conduct or pay for site cleanup.

Preliminary Assessment (PA)
The process of collecting and reviewing available information about a known or suspected hazardous waste site or release that is used to determine if the site requires further study.

Proposed Plan
A Superfund site cleanup strategy prepared by EPA that is subject to public comments.

Reactive
One of four categories of hazardous waste; substances capable of changing into something else in the presence of other chemicals, usually violently or producing a hazardous by-product.

Recharge Areas
Area in which an aquifer is replenished with water by the downward percolation of precipitation through soil and rock.

Record of Decision (ROD)
A public document that explains which cleanup alternatives will be used to clean up a Superfund site. The ROD for sites listed on the National Priorities List (NPL) is created from information generated during the Remedial Investigation/Feasibility Study (RI/FS).

Release
When a hazardous substance goes from a controlled condition (for example, inside a truck, barrel, storage tank, or landfill) to an uncontrolled condition in the air, water, or land.

Remedial Action (RA)
The phases in Superfund site cleanup following the Remedial Design (RD) phase where the actual construction or implementation occurs. The RA is based on the specifications described in the Record of Decision (ROD).

Remedial Design (RD)
The phase in Superfund site cleanup where the technical specifications for cleanup remedies and technologies are designed. The RD is based on the specifications described in the Record of Decision (ROD).

Remedial Investigation/Feasibility Study (RI/FS)
Performed at the site after a site is listed on the National Priorities List (NPL). The RI serves as the mechanism for collecting data. The FS is the mechanism for the development, screening, and detailed evaluation of alternative remedial actions. The RI and FS are conducted concurrently; data collected in the RI influence the development of remedial alternatives in the FS, which in turn affect the data needs and scope of treat ability studies and additional field investigations.

Remedy
The method selected to clean up a Superfund site.

Removal Action
See short-term cleanup.

Residual Contamination
Amount of a pollutant remaining in the environment after a natural or technological process has taken place (e.g., the level of chemical remaining in soil after it has been treated).

Resource Conservation and Recovery Act (RCRA)

A federal law whose primary goals are to protect human health and the environment from the potential hazards of waste disposal, conserve energy and natural resources, reduce the amount of waste generated, and ensure that wastes are managed in an environmentally sound manner. Management of solid waste (e.g., garbage), hazardous waste, and underground storage tanks holding petroleum products or certain chemicals are regulated by RCRA.

Response Action

An action taken by EPA or another federal, state, or local agency to address the risks posed by the release or threatened release of hazardous substances--generally categorized as emergency response, short-term cleanup, and long-term cleanup.

Safe Drinking Water Act (SDWA)

A federal law that ensures that our tap water is fit to drink. Passed in 1974, SDWA sets national drinking water standards for public systems that deliver water to the tap. SDWA is used with the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) to protect and clean up groundwater by setting water quality standards.

Sampling

The collection of representative specimens analyzed to characterize site conditions.

Saturated Zone

The area below the water table where all open spaces are filled with water under pressure equal to or greater than that of the atmosphere.

Semi-Volatile Organic Compounds (SVOCs)

A group of chemicals composed primarily of carbon and hydrogen that have a tendency to evaporate (volatilize) into the air from water or soil. Some of the compounds that make up asphalt are examples of SVOCs.

Short-term Cleanup

A cleanup process that addresses immediate threats to public health and the environment that typically consist of less complex or less extensive contamination problems than those which require a long-term cleanup. There are three types of short-term cleanups: emergencies (e.g., fire or explosions), time-critical actions, and non-time-critical actions. Also referred to as removal actions.

Site Assessment

The process by which EPA determines whether a potential site should be placed on the National Priorities List (NPL); it can consist of a Preliminary Assessment (PA) or a combination of a PA and a Site Inspection (SI).

Site Inspection (SI)

A technical phase in Superfund site cleanup following the Preliminary Assessment (PA), during which EPA gathers information (including sampling data) from a site in order to use the Hazard Ranking System (HRS) to determine whether the site should be placed on the National Priorities List (NPL).

Source Reduction
The design, manufacture, or use of products that in some way reduces the amount of waste that must be disposed of; examples include reuse of by-products, reducing consumption, extending the useful life of a product, and minimizing materials going into production.

Spill Prevention, Control and Countermeasures (SPCC)
A plan that outlines how a facility will prevent oil spills, as well as how it plans to control and contain an oil spill to keep it from reaching surface water. Examples include: installing a secondary containment such as a dike, and making sure oil tanks are located within a fenced or locked area.

Superfund Amendments and Reauthorization Act (SARA)
Amended the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) on October 17, 1986. SARA reflected EPA's experience in administering the complex Superfund program during its first six years and made several important changes and additions to the program.

Superfund Trust Fund
A public trust fund created with passage of CERCLA in 1980 to be used to help pay for the cleanup of abandoned hazardous waste sites.

Surface Water
Bodies of water that form and remain above ground, such as lakes, ponds, rivers, streams, bays, and oceans.

Time-critical Removal Actions
A type of short-term cleanup in which, based on an evaluation of the site, EPA determines that less than six months is available before site activities must be initiated. During time-critical actions, EPA conducts an investigation of the contamination and produces an action memorandum authorizing and outlining the cleanup before beginning the actual cleanup.

Toxic
Poisonous.

Toxic Release Inventory (TRI)
EPA requires annual reports of toxic chemical releases to the environment. These reports are submitted on EPA Form R, the TRI Reporting Form. The reports are required to provide the public with information on the releases of listed toxic chemicals in their communities and to provide EPA with release information to assist the Agency in determining the need for future regulations.

Toxic Substances Control Act (TSCA)
A federal law, passed in 1976, that requires tests of chemicals that may harm human health or the environment; reviews of new chemical substances; limits on the availability of some existing chemicals; and import certification standards to ensure that imported chemicals comply with domestic rules. TSCA bars the introduction of chemicals that may pose unreasonable risks to people or the environment, when the risks outweigh possible economic and social benefits.

Toxicology
Study of the effects of poisons in living organisms.

Treatment Technologies
Processes applied to hazardous waste or contaminated materials, to permanently alter their condition through chemical, biological, or physical means, and reduce or eliminate their danger to people and the environment.

Underground Storage Tank (UST)
An underground tank storing hazardous substances or petroleum products. Under the Resource Conservation and Recovery Act (RCRA), Congress directed EPA to establish regulatory programs that would prevent, detect, and clean up releases from UST systems containing petroleum or hazardous substances.

Unsaturated Zone
The area above the water table where soil pores are not fully saturated, although some water may be present.

Volatile Organic Compounds (VOCs)
A group of chemicals composed primarily of carbon and hydrogen that have a tendency to evaporate (volatilize) into the air from water or soil. VOCs include substances that are contained in common solvents and cleaning fluids. Some VOCs are known to cause cancer.

Water Table
The top of the water-saturated portion of an aquifer.

Well
A bored, drilled, or driven shaft whose purpose is to reach underground water supplies.

www.epa.gov/ne/superfund
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