PUTTING SITES TO WORK

How Superfund Redevelopment in the New England Region Is Making a Difference in Communities

REGION 1 ECONOMIC PROFILE

Cover page photos:
Iron Horse Park (Massachusetts), Mukluk Preserve (Connecticut), Wells G&H (Massachusetts),
Blackburn & Union Privileges (Massachusetts), Peterson/Puritan, Inc. (Rhode Island),
Industri-Plex (Massachusetts), Kearsarge Metallurgical Corporation (New Hampshire), Former Lawrence Metals (Massachusetts)

Figure 1. The James Anderson Regional Transportation Center opened at the Industri-Plex site in 2001 (Massachusetts).

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PREFACE

EPA's Superfund program is a cornerstone of the work that the Agency performs for citizens and communities across the country. The revitalization of places affected by contaminated lands is a key part of Superfund's mission, meeting community needs for thriving economies and improved environmental and public health outcomes. Through EPA's Superfund Redevelopment Initiative, the Agency contributes to these communities' economic vitality by supporting the return of sites to productive use.

EPA has established a renewed focus on accelerating work and progress at all Superfund sites across the country and created the Superfund Task Force whose work included promoting redevelopment and community revitalization. Working closely with communities, developers and property owners, EPA is leading the way to return these once-contaminated sites back to productive use.

These regional profiles highlight community-led efforts as EPA expedites cleanup and remediation and engages with partners and stakeholders to support redevelopment and community revitalization.

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INTRODUCTION

America's Industrial Revolution had its origins in New England. The resulting innovations had far-reaching impacts across the United States and internationally. While each state in EPA Region 1 – Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont – has grown in different ways, each has had to address contamination resulting from past industrial operations. Today, New England states and communities are working diligently to find new uses for their old industrial sites, including Superfund sites. The Superfund program in EPA Region 1 is proud to play a role in these efforts.

The cleanup and reuse of Superfund sites often restores value to site properties and surrounding communities that have been negatively affected by contamination. Site redevelopment can revitalize a local economy with jobs, new businesses, tax revenues and local spending.

Through programs like the Superfund Redevelopment Initiative, EPA Region 1 helps communities reclaim cleaned-up Superfund sites. Factoring future use of Superfund sites into the cleanup process promotes their safe redevelopment. In addition, EPA Region 1 works closely with state and local officials to remove barriers that have kept many Superfund sites underused. EPA Region 1 works to ensure that businesses on properties being cleaned up under Superfund can continue operating in a way that protects human health and the environment during site investigations and cleanup work. This continuity enables these businesses to remain open and serve as a source of jobs for communities.

Region 1 Sites in Reuse and Continued Use: Business and Job Highlights

Businesses:	*655*
Total Annual Sales:	*$1.9 billion*
Number of People Employed:	*10,930*
Total Annual Employee Income:	*$729 million*

Figure 2. The Home Depot at the Raymark Industries, Inc. site (Connecticut).

Superfund sites across Region 1 are now the locations of office and business parks, shopping centers, supermarkets, restaurants, homes, condominiums, apartments and hotels. Other sites support public uses, including a commuter train and bus station. Many sites continue to host industrial operations, including manufacturing facilities. Some sites now support energy projects. Other sites host soccer fields, hiking trails, an ice-skating arena and a model airplane flying field. On-site businesses and organizations at current and former Region 1 Superfund sites provide an estimated 10,930 jobs and contribute an estimated $729 million in annual employment income. Sites in reuse and continued use in Region 1 generate $17.3 million in annual property tax revenues for local governments.[1]

1 Business and property value tax figures represent only a subset of the beneficial effects of sites in reuse or continued use in Region 1. There are 44 Superfund sites in reuse or continued use in Region 1 for which EPA does not have business data, including 14 federal facilities on the Superfund National Priorities List (NPL). Not all sites in reuse involve an on-site business or other land use that would employ people. Several sites without businesses have beneficial effects that are not easily quantified, such as properties providing ecological or recreational benefits (e.g., parks, wetlands, ecological habitat and open space). In addition, there are 58 sites in reuse or continued use in Region 1 for which EPA does not have property value or tax data, including 14 NPL federal facilities.

This profile looks at how redevelopment activities at Superfund sites make a difference in communities across Region 1. In particular, it describes some of the beneficial effects of redevelopment and continued use of current and former Superfund sites. The profile also describes the land values and property taxes associated with Superfund sites returned to use and sites that have remained in use throughout the cleanup process. EPA updates these profiles periodically. The beneficial effects may increase or decrease over time due to changes in:

- The number of sites in reuse or continued use.
- The number of on-site businesses.
- Data availability.
- Changes in business and property value data.

Figures presented represent only a subset of all Superfund sites in reuse or continued use in Region 1.

Figure 3. Left: Novelty Bias Binding Company, a division of Hope Global, develops and manufactures engineered textiles for a wide range of industries at the Peterson/Puritan, Inc. site (Rhode Island). Right: Raytheon facility at the Industri-Plex site (Massachusetts).

SUPPORT FOR SUPERFUND REDEVELOPMENT

EPA is committed to improving the health and livelihood of Americans by cleaning up and returning land to productive use. In addition to protecting human health and the environment through the Superfund program, EPA partners with stakeholders to encourage redevelopment opportunities at Superfund sites. EPA helps communities and cleanup managers consider redevelopment during cleanup planning and evaluate remedies already in place to ensure appropriate redevelopment. In addition, EPA participates in partnerships with communities and encourages opportunities to support Superfund Redevelopment projects that emphasize environmental and economic sustainability.

Specific EPA redevelopment support efforts include:

- Identifying and evaluating local land use priorities to align with site cleanup plans through the redevelopment planning process.
- Facilitating cleanup and redevelopment discussions to help resolve key issues between parties interested in site redevelopment.
- Supporting targeted projects intended to help Region 1 communities and EPA find the right tools to move site redevelopment forward.
- Making efforts to help address communities' and developers' liability, safety and reuse concerns through development of educational materials, comfort letters, developer agreements and environmental status reports – known as Ready for Reuse Determinations – that provide information about the appropriate use of sites.
- Supporting partnerships with groups committed to returning Superfund sites to productive use.
- Developing the Process for Risk Evaluation, Property Analysis and Reuse Decisions Workbook for local governments considering the reuse of contaminated properties.
- Developing reuse fact sheets, websites, webinars and reuse case studies to share opportunities and lessons associated with Superfund Redevelopment.

These efforts have helped build expertise across EPA, making it easier to both consider future use of Superfund sites prior to cleanup and to identify opportunities for removing reuse barriers. These efforts also help tribes, state agencies, local governments, communities, potentially responsible parties, site owners, developers, and other partners and stakeholders to better understand potential future uses for Superfund sites. This helps stakeholders engage early in the cleanup process, ensuring that Superfund sites are restored as productive assets for communities. Most importantly, these efforts lead to significant returns for communities, including jobs, annual income and tax revenues.

> *"[Site redevelopment] is an exact case of how we can be successful in economic development by cleaning up contaminated properties and getting them back on our tax rolls."* **John Harkins, former Mayor of Stratford, Connecticut.**

SUPERFUND REDEVELOPMENT: THE BIG PICTURE

EPA can take and oversee immediate action at contaminated sites through short-term cleanup actions, also called removal actions.[2] EPA refers sites warranting long-term cleanup to its remedial program or to state programs. EPA's National Priorities List (NPL) is a list of sites the Agency is targeting for further investigation and possible remediation through the Superfund program. Once EPA places a site on the NPL, the Agency studies the contamination, identifies technologies that could address the material and evaluates alternative cleanup approaches. EPA then proposes a cleanup plan and, after collecting public input, issues a final cleanup plan. The Agency then cleans up the site or oversees cleanup activities. EPA currently has 120 sites listed on the NPL in New England.

Whenever possible, EPA seeks to integrate redevelopment priorities into site cleanup plans in consultation with state and local partners. In Region 1, 72 NPL sites and eight non-NPL Superfund sites are in use.[3] These sites have either new uses in place or uses that remain in place from before cleanup. Many of these sites have been redeveloped for commercial, industrial and residential purposes. Others have been redeveloped for recreational, ecological and agricultural uses. Many redeveloped sites support multiple uses and have the capacity to support additional uses and further redevelopment. The following sections take a closer look at the beneficial effects of businesses operating on current and former Superfund sites in Region 1.

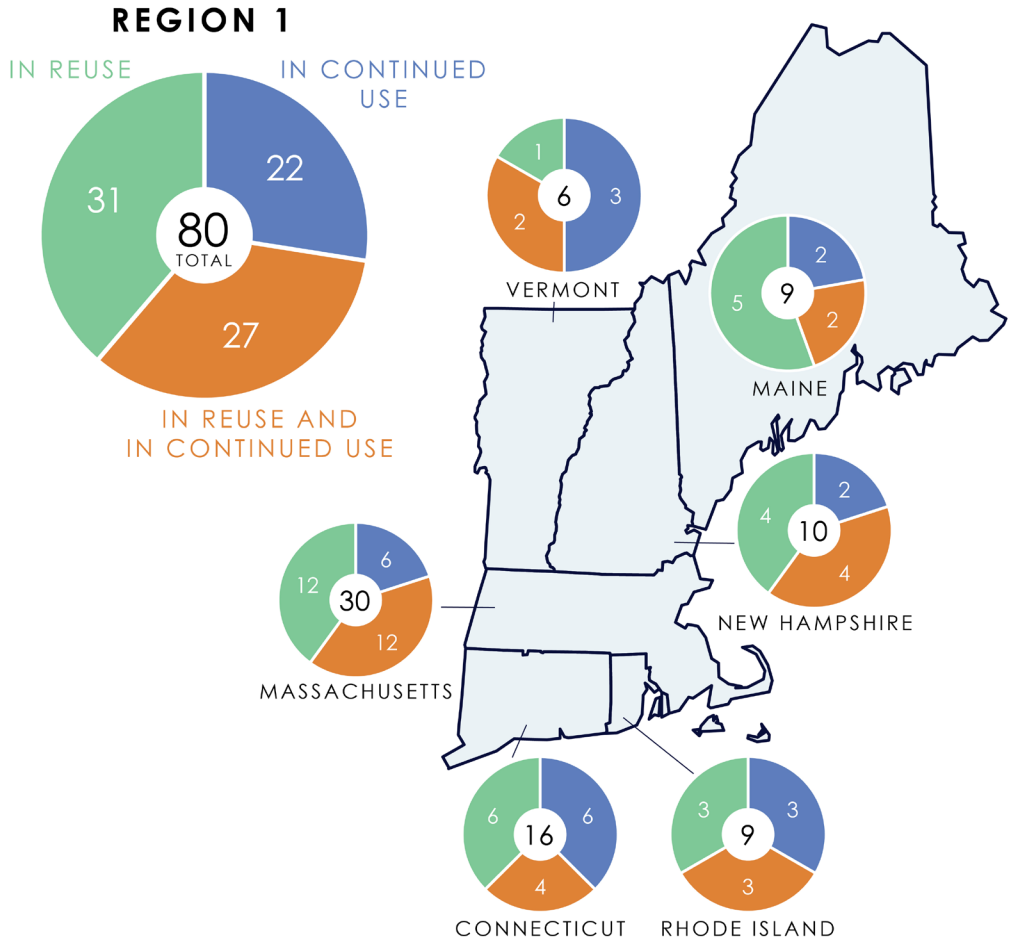

Figure 4. Sites in reuse and continued use in Region 1.[4]

2 Removal actions may be taken at sites on the NPL and sites not on the NPL.
3 Non-NPL sites are typically sites where removal actions have been performed under the Superfund program but not placed on the NPL.
4 See page 5 for an explanation of terms.

Figure 5. Over 5,000 block-mounted, fixed-tilt solar panels are in operation at the Sullivan's Ledge site (Massachusetts).

Sites in Reuse and Continued Use: A Closer Look

Reuse Type	Description	Region 1 Example
In Reuse	*There is a new land use or uses on all or part of a site. This is because either the land use has changed (e.g., from industrial use to commercial use) or the site is now in use after being vacant.*	*Fletcher's Paint Works and Storage (New Hampshire) – former paint manufacturing plant and retail outlet now provides recreational space and additional parking for nearby Keyes Recreational Field and houses a Korean War Memorial.*
In Continued Use	*Historical uses at a site remain active; these uses were in place when the Superfund process started at the site.*	*Scovill Industrial Landfill (Connecticut) – continued use of condominiums, apartment buildings, small commercial buildings and a shopping mall is ongoing on part of the site.*
In Reuse and Continued Use	*Part of a site is in continued use and part of the site is in reuse.*	*Sullivan's Ledge (Massachusetts) – a 1.75-megawatt solar facility on the site's capped area began operating in 2014; wetland areas remain in ecological use and a golf course on site has remained open during cleanup.*

Enabling Reuse at Removal Action Sites

EPA is committed to incorporating reuse plans into removal action cleanups. In EPA Region 1, removal action sites are now parks, a tree farm, a supermarket, a museum, a hotel and a manufacturing operation. Developers and other parties are evaluating reuse options at other sites where EPA has recently completed removal actions. To learn more, see profiles of removal action sites in reuse in the Reuse Summary Profiles section.

Figure 6. Homewood Suites hotel at the Lawrence Metals (Former) site (Massachusetts).

BENEFICIAL EFFECTS OF SUPERFUND SITE REDEVELOPMENT IN REGION 1

Businesses and Jobs

EPA has collected economic data for 655 businesses, government agencies and civic organizations operating on 33 NPL sites and three non-NPL sites in reuse and continued use in Region 1.[5] (See the State Redevelopment Profiles for each state's reuse details.) Businesses and organizations at these sites are part of several different sectors, including manufacturing, professional, medical and nursing care services, technical services, service and hospitality, and retail trade.

Businesses and organizations at current and former Region 1 Superfund sites such as the Raymark Industries, Inc. site include large retail operations such as Home Depot and Walmart. Other sites are home to manufacturing and production companies such as the Linemaster Switch Corporation, Elkay Plastics and General Dynamics Advanced Information Systems. Hope Global, a manufacturing corporation specializing in engineered textiles for automotive, commercial and industrial uses, continues to run its operations from its international headquarters at the Peterson/Puritan, Inc. site in Rhode Island.

The businesses and organizations at these sites earn about $1.9 billion in estimated annual sales and employ about 10,930 people, earning an estimated $729 million in annual employment income. This income injects money into local economies and generates revenue through personal state income taxes. These businesses also help local economies through direct purchases of local supplies and services. On-site businesses that produce retail sales and services also generate tax revenues through the collection of sales taxes, which support state and local governments. More detailed information is presented in Table 1.[6]

Table 1. Site and Business Information for Region 1 Sites in Reuse and Continued Use (2019)

	Sites[a]	Sites with Businesses[b]	Businesses[c]	Total Annual Sales[d]	Total Employees	Total Annual Employee Income
In Reuse	*31*	*12*	*68*	*$353 million*	*1,268*	*$70 million*
In Continued Use	*22*	*9*	*51*	*$162 million*	*1,034*	*$51 million*
In Reuse and in Continued Use	*27*	*15*	*536*	*$1.4 billion*	*8,628*	*$608 million*
Total	***80***	***36[e]***	***655***	***$1.9 billion[f]***	***10,930***	***$729 million[f]***

[a] 14 sites are federal facilities. Federal facility sites are excluded from all other detailed site and business data presented above.
[b] Also includes other organizations such as government agencies, nonprofit organizations and civic institutions.
[c] Business information is not available for all businesses on all Superfund sites in reuse or continued use.
[d] For information on the collection of business, jobs and sales data, see Sources.
[e] See footnote 1, page 1.
[f] Throughout this report, sales and annual employee income may not sum exactly to the totals presented due to rounding.

5 See footnote 1, page 1.
6 For additional information on the collection of business, jobs and sales data, see Sources.

Property Values and Property Tax Revenues

Properties cleaned up under the Superfund program and returned to use have the potential to increase in value significantly. This increased value can boost property tax revenues, which help pay for local government operations, schools, transit systems and other public services. Site properties at the Raymark Industries, Inc. site in Connecticut, for example, are now valued at over $106 million.

Identifying increases in property values and property taxes following cleanup and reuse is challenging. This is due to several factors, including limited data on past property values and the frequency and timing of local property value assessments. Likewise, many factors affect property values, including external economic and neighborhood factors not related to a site's contamination or Superfund status. It is also difficult to isolate the effects of Superfund cleanup and redevelopment using current property values. However, these values do provide insight into the current value of Superfund properties and the potential loss in economic value if the properties were not cleaned up and made available for reuse or continued use.

Region 1 Sites in Reuse and Continued Use: Property Value and Tax Highlights

Total Property Value: *$781 million*

Total Annual Property Taxes: *$17.3 million*

Figure 7. In 2006, this 20-unit senior housing facility opened at the Eastland Woolen Mill site (Maine).

EPA has collected property value and tax data for 22 Superfund sites in reuse and continued use in Region 1.[7] These sites span 936 property parcels and 2,799 acres. They have a total property value of $781 million. The average total property value per acre is $279,000.

Land and improvement property value information is available for 22 sites. These properties have a total land value of $268 million and a total improvement value of $513 million.[8]

Property tax information is available for 20 sites. The properties generate a combined $17.3 million in local property taxes annually.

Table 2. Property Value and Tax Information for Sites in Reuse and Continued Use in Region 1[a]

Total Land Value (22 sites)[b]	*Total Improvement Value (22 sites)*	*Total Property Value (22 sites)*	*Total Property Value per Acre (22 sites)[c]*	*Total Annual Property Taxes (20 sites)*
$268 million	***$513 million***	***$781 million***	***$279,000***	***$17.3 million***

[a] Results are based on an EPA Superfund Redevelopment Initiative effort to collect on-site property values and property taxes for a subset of Superfund sites. The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which varied from 2015 to 2019. For additional information, see Sources. Throughout this report, property and tax values may not sum exactly to the totals presented due to rounding.

[b] Detailed (land and improvement) property value data as well as tax data were not available for every site.

[c] Based on total property value amount of $781 million divided by total acreage of 2,799 acres.

7 There are 58 additional sites in reuse or continued use in Region 1 for which EPA does not have property value or tax data, including 14 NPL federal facilities. See footnote 1, page 1.

8 Property values consist of land value and the value of any improvements (buildings and infrastructure) placed on a property. When sites are redeveloped, some or all of these improvements may be new or already in place. In some cases, the breakdown showing the land value and improvement value is not always available; only the total property value may be available.

Beneficial Effects from Enhanced Recreational and Ecological Amenities

In addition to hosting commercial developments, retail centers and industrial facilities, many Region 1 sites in reuse and continued use provide recreational and ecological benefits. Greenspace and habitat reuses help attract visitors and residents and indirectly contribute to local economies.

Careful planning can enable the integration of green spaces and habitat into site cleanup plans, resulting in the transformation of contaminated properties into valuable community and wildlife assets. Green spaces are integral components of sustainable communities – they can help protect the environment and human health while providing other social and economic benefits. Parks, community gardens and other public green spaces create opportunities for people to gather, exercise and connect with nature. The creation of green spaces and habitat at once-contaminated properties can serve to re-introduce ecosystems and biodiversity into urban and suburban landscapes by providing corridors for migrating species and preserving habitat. They can also mitigate stormwater runoff problems by slowly absorbing and naturally filtering stormwater, resulting in improved water quality due to decreased runoff and erosion.

Parks, natural areas and scenic landscapes also have great economic value – supporting regional economies through tourism, agriculture and other activities. Economic impacts of recreational activities can include outdoor recreation spending and reduced public costs related to healthcare and infrastructure. In 2017, outdoor recreation contributed $887 billion to the U.S. economy, supporting 7.6 million jobs and generating $65.3 billion in national tax revenue and $59.2 billion in state and local tax revenue.[9] Protected green space can also increase the property values of nearby homes by providing amenities that draw people to live and work in the community.

Many sites in Region 1 provide recreational and ecological benefits. The Atlas Tack Corp. site in Fairhaven, Massachusetts, for example, provides valuable habitat for many bird species, including the Pie-billed Grebe, the American Bittern and the Least Bittern, which are endangered in the commonwealth. At the Saco Municipal Landfill in Maine, the city of Saco has completed construction of two soccer fields and has plans for hiking, biking and ice skating facilities. In New Hampshire, an on-site trail network on the Troy Mills Landfill is part of the 42-mile Cheshire Branch Rail Trail system. The town of Sprague, Connecticut, has transformed the Mukluk Preserve site into a wildlife preserve with opportunities for fishing, hunting, boating and other recreation.

Figure 8. Bird habitat at the Atlas Tack Corp. site (Massachusetts).

9 The Outdoor Recreation Economy. Outdoor Industry Association. Available at https://outdoorindustry.org/wp-content/uploads/2017/04/OIA_RecEconomy_FINAL_Single.pdf.

Why Are Wetlands Economically Important?

Superfund site reuse can support wetland habitat, as seen at several sites in Region 1. Cleanup of the Nyanza Chemical Waste Dump in Ashland, Massachusetts, involved extensive wetland restoration efforts. At the Ottati & Goss/Kingston Steel Drum site in Kingston, New Hampshire, wetland restoration work included the planting of more than 1,000 trees and shrubs. Forested wetlands cover most of the southern portion of the Tansitor Electronics site in Bennington, Vermont.

Figure 9. The 5.5-acre restored Eastern Wetland at the Nyanza Chemical Waste Dump site (Massachusetts).

Wetlands provide a variety of benefits. The combination of shallow water, high levels of nutrients and primary productivity is ideal for organisms that form the base of the food web and feed many species of fish, amphibians, shellfish and insects. Wetlands are extremely effective in removing pollutants from water and acting as filters for future drinking water. Wetlands play a role in reducing the frequency and intensity of floods. They can store large amounts of carbon. They also provide recreational amenities.

These benefits also have economic value. Replacing wetlands' water treatment services with manmade facilities, for example, would be expensive. Worldwide, wetlands provide an estimated $14.9 trillion in ecosystem services. To learn more, see:

- EPA's *Economic Benefits of Wetlands*: www.epa.gov/sites/production/files/2016-02/documents/economicbenefits.pdf.
- EPA's *Why Are Wetlands Important?*: www.epa.gov/wetlands/why-are-wetlands-important.

Figure 10. Wetlands at the Iron Horse Park site (Massachusetts).

Alternative Energy Development in Region 1

In recent years, there has been considerable interest in Region 1 in creating alternative energy projects on Superfund and other contaminated sites. These projects can provide many beneficial effects. Projects are supplying electricity to the grid or using alternative energy systems to directly power cleanup equipment or offset grid-supplied power used for site cleanup activities.

Several efforts in Region 1 have encouraged opportunities for alternative energy project development on Superfund and other impaired sites:

- Since 2013, a 3.6-megawatt ground-mounted solar array has operated at the **Groveland Wells** site in Massachusetts, powering more than 500 homes.
- Since 2014, a 37.5-megawatt biomass facility has operated at the **Gallup's Quarry** site in Connecticut. The plant uses waste wood to generate enough electricity to power the equivalent of about 40,000 homes in Plainfield.
- In 2014, Megawatt Energy Solutions installed over 2,000 solar panels on the roof of a warehouse building on the **Peterson/Puritan, Inc.** site in Rhode Island. The solar array produces about 650,000 kilowatts of electricity per year. The warehouse owner also installed a similar system on another building at the site.
- In the summer of 2014, a 6-megawatt solar array was activated at Shaffer Landfill – a 25-acre portion of the **Iron Horse Park** site in Massachusetts. Since then, a 4-megawatt solar array was constructed on site, followed by a 6-megawatt array in 2017. The solar facilities allow the town of Billerica to benefit from significant long-term energy cost savings.
- In the fall of 2014, a 1.8-megawatt solar project began operating on the capped area of the **Sullivan's Ledge** site in Massachusetts. The city of New Bedford buys energy generated from the solar arrays, which enables the city to increase its use of renewable energy sources and save 30% on municipal electricity bills. In addition, a 200-kilowatt solar facility was constructed at the **Re-Solve, Inc.** site in Massachusetts to fully power the site's groundwater treatment plant.
- In 2016, Citizens Energy Corporation completed a 3.6-megawatt solar photovoltaic facility at the **Charles George Reclamation Trust Landfill** site in Massachusetts.

Figure 11. Completed solar panel array near the Iron Horse Park entrance (Massachusetts).

Figure 12. Biomass facility at the Gallup's Quarry site (Connecticut).

Figure 13. Installation of solar panels at the Charles-George Reclamation Trust Landfill site (Massachusetts).

- In 2017, a private developer completed a 7-megawatt solar project on the **Elizabeth Mine** site in Vermont that produces enough power for about 1,300 homes. In addition, the town of Concord completed a 4.5-megawatt solar photovoltaic facility on the **W.R. Grace & Co., Inc. (Acton Plant)** site in Massachusetts, which will provide about 5% of the town's power needs.
- In 2018, solar facilities were completed at the **Rose Hill Regional Landfill** site (4.5 megawatts) and **West Kingston Town Dump/URI Disposal Area** site (3.9 megawatts) in Rhode Island.
- At the **Joint Base Cape Cod (Otis Air National Guard Base/Camp Edwards)** site, 4.5 megawatts of wind energy help to power the daily treatment of more than 10 million gallons of contaminated groundwater. Through a net metering program with a local utility, the three wind turbines help offset electricity costs and air emissions attributed to groundwater cleanup activities by 100%. The turbines are expected to result in $1.5 million in annual electricity cost savings for the U.S. Air Force.

Redevelopment of Federal Facility Sites

EPA Region 1 provides cleanup oversight and support at many federal facilities across New England. EPA works with the U.S. Department of Defense to:

- Ensure appropriate plans are in place for site cleanup and long-term monitoring.
- Provide cleanup oversight.
- Assist with cleanup actions when appropriate.

Cleanups of federal facilities are often complex, involving many parties to address contamination across large areas. At active federal facilities, EPA works with all appropriate parties to minimize the impact of cleanup activities on military operations.

At federal facilities identified for closure or new missions, where appropriate, EPA works with federal, state and local parties to make sure cleanup efforts align with redevelopment plans. Former federal facility sites are now in use for a wide range of purposes, from business parks and industrial complexes to cultural centers and parks. These uses provide benefits for communities impacted by facility closures. Here are a few examples:

Figure 14. Businesses at the Pease Air Force Base site (New Hampshire).

- EPA placed **Pease Air Force Base** in New Hampshire on the NPL in 1990. The U.S. Air Force continues to investigate site conditions and is putting systems in place to treat contaminated groundwater. The site is now home to an airport, the Great Bay National Wildlife Refuge and the Pease International Tradeport. The thriving Tradeport business park is home to over 260 businesses. The site also supports the New Hampshire Air National Guard and a golf course. Site businesses employ nearly 8,000 people, providing estimated annual employment income of $637 million and generating $2.3 billion in estimated annual sales revenue.
- EPA placed the **Loring Air Force Base** in Maine on the NPL in 1990. During investigations and cleanup, the Loring Development Authority has worked with the U.S. Air Force and EPA to establish the Loring Commerce Centre, an industrial complex, aviation centre and business park. Businesses and federal agencies in the centre provide jobs and income for the surrounding community. Together, these agencies, businesses and other organizations employ over 800 people and provide over $29 million in estimated annual employment income.

- EPA placed 9,000-acre **Fort Devens** in Massachusetts on the NPL in 1989. While cleanup and investigations continue, a successful partnership between EPA, the U.S. Department of Defense, the U.S. Army, the commonwealth of Massachusetts and MassDevelopment contributed to increased employment opportunities as well as increased revenue for the community. Over 157 establishments are currently active on site, including warehouses and distribution centers, manufacturing and industrial space, and research and development facilities. These businesses employ about 4,600 people, provide close to $345 million in estimated annual income and generate over $850 million in estimated annual sales. Redevelopment also includes over 100 new and rehabilitated housing units, with ongoing construction of additional housing and expansion of the Oxbow National Wildlife Refuge.

Figure 15. Hilton Garden Inn at the Fort Devens site (Massachusetts).

- EPA placed the **Materials Technology Laboratory (USARMY)** site in Massachusetts on the NPL in 1994. Cleanup removed contamination and demolished an on-site nuclear reactor. The site is now home to retail stores, restaurants, a child care facility, a fitness center, corporate offices and other businesses, as well as the Arsenal Center for the Arts. Site businesses employ about 2,600 people, providing estimated annual employment income of $376 million and generating over $505 million in estimated annual sales revenue.

Figure 16. Bike trail at the Davisville Naval Construction Battalion Center site (Rhode Island).

- EPA placed the **Davisville Naval Construction Battalion Center** in Rhode Island on the NPL in 1989. Today, over 70 companies are located on site, employing almost 1,500 people. Park and recreation areas for the community have also been created. The site is also the cornerstone of the Quonset Business Park, which is home to over 200 companies employing 12,000 people.

More summary profiles of federal facilities in reuse and continued use are available in the Reuse Summary Profiles section.

REDEVELOPMENT IN ACTION

BLACKBURN & UNION PRIVILEGES SITE

New Police Station and Senior Center

The Blackburn & Union Privileges Superfund site is located in Walpole, Massachusetts. Industrial and commercial processes using chromium, arsenic and mercury at the site date back to the 1600s. 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. Various cotton and fabric production processes took place at the site from 1937 to 1985, when the facility was abandoned. Industrial operations contaminated soil, sediment and groundwater. EPA placed the site on the NPL in 1994.

EPA approved the site's cleanup plan in 2008. It includes excavation and dredging with off-site disposal of contaminated soil and sediment, extraction and treatment of contaminated groundwater, long-term monitoring, and implementation of land and groundwater use restrictions. Cleanup construction began in 2015 and is ongoing. The town of Walpole has taken ownership of many site parcels for unpaid taxes.

In 2000, EPA awarded the town of Walpole a Superfund Redevelopment Initiative (SRI) grant to develop reuse plans for the property. The town completed its redevelopment plan in 2004. It proposed several reuse options, including commercial, industrial, municipal and recreational uses.

In May 2018, town officials, police and community members gathered to attend a ribbon-cutting ceremony to open a new police station. The facility provides space for the growing department and includes up-to-date safety equipment and emergency response technology as well as training space for seminars and training sessions. The station employs about 50 people and has an evidence room, a processing area and a dispatch area that will house police and fire dispatch services.

In December 2018, another ribbon-cutting ceremony marked the completion of a new on-site senior center – the Walpole Co-operative Bank South Street Center. The Walpole Council on Aging officially opened the facility in January 2019. The new 13,000-square-foot center houses the veterans' services office, offers several recreation department adult education classes, and hosts community gatherings. The town's new Rail Trail, which opened in 2018, is located behind the senior center building, offering local seniors easy access to the recreation resource. During the ribbon-cutting ceremony, EPA recognized the town of Walpole and the Walpole Council on Aging for their exceptional reuse leadership and hard work transforming this former industrial area into the community's first stand-alone senior center. In August 2019, EPA and the town of Walpole held an event celebrating SRI's 20th anniversary.

Figure 17. New police station at the Blackburn & Union Privileges site (Massachusetts).

REDEVELOPMENT IN ACTION

ELIZABETH MINE SITE

New Solar Facility

The Elizabeth Mine Superfund site is located in Strafford and Thetford, Vermont. From the early 1800s to 1958, copper mining took place at the site, leaving behind mine tailings and waste rock, which generate acid mine drainage. The acid mine drainage and erosion of mine waste into streams contaminated sediment and surface water with heavy metals. Mining wastes have also contaminated site groundwater. EPA placed the site on the NPL in 2001.

EPA is addressing site cleanup through removal actions and a multi-phased remedial approach that addresses the different site areas. Cleanup to date includes consolidation and capping of contaminated mine wastes, construction of a water treatment system, stabilization of the tailings dam, and construction of surface water diversion channels. EPA considered future use of the tailings pile cap during remedy design. During cleanup, EPA also restored 10 acres of wetland for ecological reuse. In 2014, the U.S. Army Corps of Engineers Sustainability Award Program presented the Green Dream Team Award to the Elizabeth Mine Superfund Site Project Delivery Team for wetlands restoration at the site. As a result of the cleanup, the state of Vermont delisted four miles of impaired West Branch of the Ompompanoosuc River and portions of Lord Brook from the Clean Water Act's impaired waters list based on the recovery of the benthic and fish communities.

In 2017, a developer installed a 7-megawatt solar array on top of the cap that covers two remediated tailings piles. Its design included mounting solar panels on poured-in-place ballasted racks that sit on top of the ground, protecting the surface of the cap. In September 2017, about 100 people gathered at the site for a ribbon-cutting ceremony. Today, the project supplies electricity to the Green Mountain Power grid and produces enough energy to power about 1,300 homes.

Figure 18. Aerial view of the solar array at the Elizabeth Mine site (Vermont). Image used with permission of Weston and Sampson, Conti Solar, and Elizabeth Mine Solar I, LLC.

REDEVELOPMENT IN ACTION

FLETCHER'S PAINT WORKS & STORAGE SITE

New Recreational Use

The Fletcher's Paint Works & Storage Superfund site is located in Milford, New Hampshire. The 2-acre site includes two areas – a former manufacturing plant and retail outlet on Elm Street and a storage area on Mill Street. The plant operated from 1949 to 1991. A 1982 inspection by the New Hampshire Department of Environmental Services (NHDES) found leaking and open drums on site. NHDES also found site-related contamination in the Keyes Municipal Water Supply Well next to the site. Facility operations contaminated soil, groundwater and nearby sediment in the Souhegan River. EPA placed the site on the NPL in 1989.

Early cleanup efforts included building demolition, drum removal, fencing installation, use of temporary cover systems and removal of contaminated soil from residential properties. In 1996, at the request of the town of Milford, the potentially responsible party (PRP), removed soil with low levels of contamination from the Elm Street area of the site to allow for construction of a Korean War Memorial. A removal action in 2016 included excavation and off-site disposal of contaminated sediment from the Souhegan River. In 2017, the site's PRP completed remedy construction. Cleanup of the Mill Street area included soil excavation, backfilling of the area with clean soil and a grass cover, and relocation of Mill Street over part of the area to improve traffic management. Cleanup of the Elm Street area included soil excavation and installation of an engineered soil and grass cover permitting recreational uses. An asphalt cover over some areas provided the town with additional parking for nearby Keyes Recreational Field. Discussions are underway regarding the development of a Vietnam War memorial on site.

Figure 19. Recreational use area at the Fletcher's Paint Works & Storage site (New Hampshire).

REDEVELOPMENT IN ACTION

WEST KINGSTON TOWN DUMP/ URI DISPOSAL AREA SITE

Recreation Trails and Solar Power Generation

The 18-acre West Kingston Town Dump/University of Rhode Island (URI) Disposal Area Superfund site in South Kingstown, Rhode Island, includes two former dumping areas. The West Kingston Town Dump accepted industrial, residential and commercial wastes beginning in 1951. URI operated a nearby unregulated dump beginning in 1945. Dumping in both areas ended in 1987, when the Rhode Island Department of Health began environmental investigations. The Department determined that leaking drums on site had contaminated subsurface soil and groundwater.

The Rhode Island Department of Health connected homes with affected groundwater wells to city water. EPA placed the site on the NPL in October 1992. Cleanup involved closing affected wells, removing wastes and disposing of them off site, consolidating wastes and capping them on site, injecting chemicals to help break down contaminants in the soil and groundwater, and placing land use controls on the area. The cleanup has finished and the land use controls are in place. Operation and maintenance activities and groundwater monitoring are ongoing.

In 2015, the town of South Kingstown, the town of Narragansett and URI formed the South Kingstown Solar Consortium to pursue solar development opportunities. The coalition worked with Kearsarge Energy on three solar projects that were completed in 2018: an 8-acre, 1.2-megawatt facility on the West Kingston Town Dump, a 14-acre, 2.7-megawatt facility on the URI dump and an adjacent field, and a 20-acre, 4.7-megawatt facility at a nearby Superfund site (Rose Hill Regional Landfill). Kearsarge Energy owns and operates the solar facilities, supplying net-metering credits for the generated energy to consortium members at a discount. The project has returned the site to productive use and is creating energy cost savings for the localities and the university. In addition, area residents and URI students enjoy a walking trail along the southern end of the site.

Figure 20. Aerial view of the West Kingston Town Dump/URI Disposal Area site (Rhode Island). Image used with permission of Kearsarge Energy.

REDEVELOPMENT IN ACTION

IRON HORSE PARK SITE

Continued Commercial/Industrial Uses with New Solar Facility

The Iron Horse Park Superfund site is a 553-acre industrial complex in North Billerica, Massachusetts. Industrial activities at the site, including manufacturing, rail yard maintenance and landfilling, began in the early 1900s. Improper materials handling and waste disposal practices contaminated site soil, sediment, groundwater and surface water. In 1984, EPA conducted a short-term cleanup and capped a 13.3-acre asbestos landfill. Later that year, EPA added the site to the NPL. Cleanup included the removal and treatment of contaminated soil and sediment, landfill closure and capping, marsh restoration, and new wetland habitat. Cleanup is ongoing.

EPA's cleanup incorporated reuse planning efforts and supported the continued operation of industrial businesses on site. These areas include lumber, manufacturing and railyard maintenance facilities. Together, these businesses support over 350 jobs and provide nearly $23 million in estimated annual employment income. In 2019, site businesses generated an estimated $57 million in annual sales. In 2017, site property parcels had a total value of over $21 million, generating over $361,000 in annual property taxes.

EPA also coordinated with developers on plans to support energy infrastructure at the site. While the site landfill was not developable for conventional purposes, it drew the attention of alternative energy developer Urban Green Technologies (UGT) as a potential location for solar power infrastructure. EPA worked with UGT on plans to maximize use of available land, account for the landfill's steep slopes, and ensure the integrity of the landfill cap. Following the plan's approval in 2012, UGT began construction of the 6-megawatt, 25-acre array in 2013. To account for the landfill's steep slopes, UGT installed the array's 20,000 panels in small sub-arrays rather than one large installation. The project employed about 50 people during construction. Since project construction finished in 2014, two additional solar projects have followed. Through a virtual net metering agreement, one of the site's solar projects provides the energy for four school systems and the local government. Together, the three solar arrays have a total generating capacity of 16 megawatts. In 2014, EPA recognized the project team, including the town of Billerica, UGT and investment company Capital Dynamics, with Region 1's first Excellence in Site Reuse Award.

Figure 21. Sign and solar panels at the entrance to the Iron Horse Park site (Massachusetts).

REDEVELOPMENT IN ACTION

KEARSARGE METALLURGICAL CORP. SITE

Commercial and Industrial Uses

The 9-acre Kearsarge Metallurgical Corp. (KMC) Superfund site is located in Conway, New Hampshire, on the north bank of Pequawket Pond. From the mid-1960s through the early 1980s, KMC made stainless steel valves and other materials on site. Facility operations included the disposal of hazardous wastes in waste piles on site, the discharge of waste solvents into the site septic system and storage of wastes in rusted drums. These practices contaminated site groundwater and soil. EPA added the site to the NPL in 1984.

EPA and NHDES made sure to consider the site's potential future use early in the cleanup process and completed a reuse assessment in 2004. The assessment found that the site would likely support commercial or industrial uses in the future. Cleanup included the removal of waste pile materials, other contaminated source materials and contaminated soil, and groundwater treatment until 2005. Cleanup also included land and groundwater use restrictions and treatment of contaminated soil in the forested wetland area on site. The cleanup restored the wetland habitat and helps protect nearby Pequawket Pond, a local recreational amenity. Groundwater monitoring is ongoing.

With the site sitting idle for decades, the town of Conway was eager to support its return to productive use. The town took ownership of the site in 2012 and began preparing the property for reuse. A portion of the original KMC building posed a hazard and the town demolished it. In 2013, the town sold the property to a new owner who restored the remaining original KMC buildings and converted the former groundwater treatment building into an automobile workshop. The property's transformation spurred activity in the surrounding industrial park, an important economic resource for the town that had mostly stood vacant. Today, the site supports three businesses – a towing company, a heating business, and a farm equipment and diesel truck repair facility. These businesses provide about $378,000 in estimated annual employee income. In 2019, site businesses generated about $636,000 in estimated annual sales.

Figure 22. The former KMC building, now home to Hurteau Towing and Jon Hurteau Heating Services (New Hampshire).

REDEVELOPMENT IN ACTION

PETERSON/PURITAN, INC. SITE

Recreational and Continued Industrial Use

The 500-acre Peterson/Puritan, Inc. site is located in Lincoln and Cumberland, Rhode Island. The site spans 2 miles of recreational, commercial and industrial property along the banks of the Blackstone River. Historically, site operation included aerosol packaging, chemical manufacturing, warehousing and landfilling. Improper waste management and chemical spills contaminated site soil and groundwater. EPA added the site to the NPL in 1983.

Cooperation among EPA, the Rhode Island Department of Environmental Management, and other stakeholders resulted in the successful ongoing cleanup and reuse of parts of the site. By remaining open during cleanup, site businesses have continued to support jobs that generate revenues, income and local spending. Today, site businesses employ about 725 people and contribute an estimated $32 million in annual employment income. In 2019, site businesses generated over $95 million in estimated annual sales. In 2017, the combined value of site property parcels was over $21 million, resulting in the generation of over $295,000 in local property taxes. Railroad improvements on site are also bolstering rail business and providing area companies with more efficient transportation options.

Cooperation between EPA and site stakeholders led to the deletion of a 19.8-acre part of the site from the NPL. In 2005, landowners hoped to redevelop the area, the Macklands and Berkeley properties, for residential uses. Following environmental investigations, EPA determined that the two properties were not affected by site-related contamination. In May 2005, EPA deleted them from the NPL. This step helped facilitate the successful redevelopment of the area. Today, the Berkeley Commons and River Run subdivisions are located there.

The site also provides recreational and cultural opportunities, including the Blackstone River State Park and Bikeway. The cleanup contributes to the rehabilitation of the Blackstone River and to the preservation of a designated National Heritage Corridor. In 1986, the Blackstone River State Park became a key part of the larger Blackstone River Valley National Heritage Corridor. The corridor is a 46-mile network of parks and natural areas stretching from Providence to Worcester. A reuse assessment planning process involving site stakeholders is also now underway for other areas of the site.

Figure 23. The 30 Martin Street building is home to several small businesses at the Peterson/Puritan, Inc. site (Rhode Island).

REDEVELOPMENT IN ACTION

RAYMARK INDUSTRIES, INC. SITE

Commercial Shopping Center

The Raymark Industries, Inc. (Raymark) Superfund site includes over 500 acres near the Housatonic River in Stratford, Connecticut. From 1919 to 1989, Raymark and its predecessors made automotive brakes, clutch parts and other friction components on a 34-acre area. The facility disposed of its manufacturing wastes and wastewater in lagoons on the facility property. Raymark also used industrial waste as fill material to cover wetlands to expand the factory and later gave the waste away as free fill, which was used all over town at homes, schools, businesses and a nearby ballfield. These practices contaminated site groundwater and soil. EPA added the site to the NPL in 1995.

EPA considered future use when developing the cleanup plan for the former Raymark facility. The area was centrally located with nearby access to Interstate 95, attracting developers interested in commercial redevelopment opportunities. EPA coordinated closely with a developer, their engineer and U.S. Army Corps of Engineers to make sure the remedy could support commercial development at the property in the future. Cleanup included decontamination and demolition of buildings, removal of contaminated groundwater, capping of contaminated soil, and institutional controls.

After cleanup, a consortium of companies acquired the property at a bankruptcy auction in January 2000. In 2002, these companies began work on the Stratford Crossing Shopping Center. Construction finished in 2005. Today, the shopping center is a bustling commercial area home to several regional and national companies, including Walmart, Home Depot, ShopRite, Subway and Webster Bank. On-site businesses employ over 1,100 people, contribute about $58 million in estimated annual employee income and generate nearly $281 million in estimated annual sales. The 2017 total value of site properties exceed $106 million, resulting in the generation of over $2 million in local property taxes.

In 2015, the town announced reuse plans for a former ball field. Waste from several properties will be consolidated and capped in place. The cap will be designed by EPA to support a planned expansion of the Department of Public Works. Separately, discussions between a private developer and EPA are underway vis-a-vis Bonafide Prospective Purchaser Agreement (BFPP) negotiations regarding development at another contaminated property to be capped.

Figure 24. The Walmart store at the Stratford Crossing Shopping Center (Connecticut).

REDEVELOPMENT IN ACTION

SOLVENTS RECOVERY SERVICE OF NEW ENGLAND SITE

New Rails-to-Trails Bike Path and Parking for Recreational Use

The Solvents Recovery Service of New England Superfund (SRSNE) site is located in Southington, Connecticut. The site includes a 4-acre former operations area and a 42-acre plume of contaminated groundwater. From 1955 to 1991, a hazardous waste treatment and storage facility operated at the site. During operations, spills occurred and operators stored process wastes in unlined lagoons. These practices resulted in soil and groundwater contamination. In 1979, the town of Southington discovered contamination in two public water supply wells downgradient of the site. The town closed these wells. EPA placed the site on the NPL in 1983.

In 1992, EPA removed 19 drums of contaminated materials from the site to address immediate threats to human health. The site's long-term cleanup includes groundwater containment and treatment, consolidation and capping of contaminated soil and sediment, treatment of contaminated soil in place, land use and groundwater restrictions, and long-term monitoring. Thermal treatment removed 500,000 pounds of volatile organic compounds from the soil in the former solvent recycling operations area. The site's PRPs built a 50-kilowatt solar array on top of the cap to power the site's groundwater extraction system. The U.S. Fish and Wildlife Service provided nearly $800,000 from natural resource damage settlements with the PRPs at the site and the Old Southington Landfill Superfund site for the removal of two dams and an exposed inactive water line to expand the Upper Quinnipiac River recreational canoe trail. The site's PRPs completed remedy construction in 2017; long-term groundwater monitoring and maintenance of the landfill cap will continue for decades.

Throughout the cleanup, EPA, the Connecticut Department of Energy and Environmental Protection, and the site's PRPs worked on ways to incorporate enhancements into the project to provide long-term community benefits. With that in mind, stakeholders looked for ways to support recreation opportunities in Southington and help expand the local rails-to-trails corridor. Two miles of the trail in the center of Southington and another 2-mile stretch on the southern side of town were already complete. The site's PRPs expanded the trail system across the on-site cap and built a trail parking area. The parking area also provides overflow parking for the nearby Southington Police Station. In September 2017, EPA, the state, stakeholders and community members held a ribbon-cutting ceremony to celebrate the completion of the new section of the nearly 80-mile Farmington Canal Heritage Trail that crosses the site.

Figure 25. Trail and signage at the Solvents Recovery Service of New England site (Connecticut). Image used with permission of de maximis, inc.

REDEVELOPMENT IN ACTION

WELLS G&H SITE

Mixed-Use Community Asset

The Wells G&H site is located in Woburn, Massachusetts. For more than a century, Woburn was home to many tanneries and other heavy industries. In 1979, contamination was found in two of Woburn's municipal drinking water wells (wells G and H) in a section of the city with a long industrial history. In 1983, EPA placed the wells and the surrounding area on the NPL. The cleanup and redevelopment of the 330-acre site is a model of cooperation between EPA, state officials, the parties legally responsible for cleanup (responsible parties) and the community. Cleanup included treatment of contaminated soil, excavation and disposal of debris and mixed contaminated soil, and extraction and treatment of source-area groundwater, as well as removal of contaminated sediment and restoration. Cleanup activities are ongoing across the site.

Figure 26. Red Robin restaurant at the Wells G&H site (Massachusetts).

In 2000, EPA awarded the Woburn city government a $55,000 grant to complete a comprehensive land use plan for the site. Three of the site's responsible parties contributed an additional $45,000 for the effort. The Woburn Redevelopment Authority worked with community members on the land use plan. The Authority completed the final plan in 2005; it identified reuse scenarios for three priority site areas – the Aberjona Auto Parts property, the city of Woburn property and the W.R. Grace property.

The reuse scenario for the Aberjona Auto Parts property site area focused on an ice arena for local hockey leagues. Construction of Holland Arena finished in 2008. The facility now hosts youth hockey practices, games and clinics. The property owner also leases parts of the property to several small businesses, including a dog care facility.

The city of Woburn property is about one-third wooded upland and two-thirds shallow marsh wetland; the Aberjona River flows through the wetland. The land use plan identified public open space and passive recreation as priority future uses for the property. Passive recreational use was incorporated in the river sediment cleanup phase, during which walking trails and open space areas along the river were developed. In July 2017, the city of Woburn, EPA and the Massachusetts Department of Environmental Protection officially opened the Aberjona Nature Trail along the Aberjona River. The area is now a well-established natural area, wetland and recreation resource enjoyed by Woburn residents and visitors.

The Land Use Plan identified commercial land uses as the priority for the W.R. Grace property. In 2014, the property was purchased by Madison Woburn Holdings LLC for the development of a hotel and three restaurants. A Red Robin Gourmet Burgers and Brews opened in 2016, and a 110 Grill and Chick-Fil-A opened in 2019. Construction of a Homewood Suites and Hampton Inn hotel began in 2018, and was completed in 2019. The developers estimate that the project will create 250 jobs. Annual tax revenue benefits for the community are estimated to likely be over $1 million.

REDEVELOPMENT IN ACTION

FORMER LAWRENCE METALS SITE

New Hotel

The Former Lawrence Metals site is located in Chelsea, Massachusetts. From the late nineteenth century until 1974, when a fire destroyed the building, owner operators used the site property for textile production, barrel cleaning and painting. From 1979 to 1986, operators used the property for warehouse space. In 1986, the Lawrence Metals Forming Company began operating on site. Its operations resulted in the contamination of soil and site materials. In 1999, the city of Chelsea acquired the site property under an Urban Renewal Plan. The city demolished the site building in 2000. EPA, the city and the commonwealth coordinated cleanup, including the excavation of contaminated soil. The project was particularly challenging because of its proximity to a school and a city swimming pool. An upscale, extended-stay hotel is now located on site. The hotel contributes $1.2 million in estimated annual employee income.

Figure 27. Hotel on the Former Lawrence Metals site (Massachusetts).

31 WATER STREET SITE

Community Park

The 31 Water Street site is located next to the Back and Powwow rivers in Amesbury, Massachusetts. Several industrial operations contaminated site soil and surrounding surface water. The city of Amesbury discovered the contamination during initial revitalization efforts for the historic Amesbury Wharf building area, where the site is located. EPA's cleanup work included the removal of contaminated soil and riverbank stabilization, which was finished in 2015. The site, part of the community's Lower Millyard Project, is now home to Heritage Park. The park provides residents and visitors with a recreation resource next to the Powwow River. At a ceremony marking the completion of the Lower Millyard Project, Amesbury's mayor issued a proclamation thanking EPA for its assistance.

Figure 28. View of the 31 Water Street site (Massachusetts).

REDEVELOPMENT ON THE HORIZON IN REGION 1

TRANSFORMING A CONTAMINATED HARBOR INTO A THRIVING MARINE TERMINAL AND MIXED-USE REDEVELOPMENT

From 1938 to the late 1970s, industrial facilities producing capacitors and other electronics containing polychlorinated biphenyls (PCBs) discharged industrial wastes into the harbor abutting the city of New Bedford, and the towns of Acushnet and Fairhaven, Massachusetts. Today, EPA is addressing the 18,000-acre New Bedford Harbor Superfund site through a cleanup of the estuary system from the upper Acushnet River into Buzzards Bay.

Remedial activities include the removal and disposal of contaminated sediments at approved off-site facilities and within a confined aquatic disposal cell in the harbor. Cleanup work also includes removal of contaminated sediment and wetland restoration at shoreline properties. Dredging has taken place at the site since the 1990s, and annually since 2004.

After cleanup, the city of New Bedford plans to reuse EPA's shoreline sediment dewatering facility as an intermodal transportation facility. Located on the city's working waterfront, it includes a 55,000-square-foot industrial structure, berthing space for freighters and commercial fishing vessels, a large area for truck access near an interstate highway, and a connecting spur to the New Bedford rail yard.

A strong partnership between EPA and the Massachusetts Department of Environmental Protection is a large part of the story at the New Bedford Harbor Superfund site. Navigational dredging of the harbor is performed by the commonwealth of Massachusetts as part of a state-enhanced remedy performed in conjunction with the Superfund cleanup. The state enhancement has resulted in private investments to the commercial port, while at the same time removing hundreds of thousands of cubic yards of contaminated sediment from the environment. The recent construction of the New Bedford Marine Commerce Terminal, a 28-acre state-funded project specifically designed to service the commercial wind energy industry, is another product of the state-enhancement to EPA's Superfund remedy.

Conversion of former industrial mill buildings to residential spaces along the most heavily contaminated stretch of the Harbor is underway in anticipation of the completion of the river cleanup. EPA is currently actively remediating subtidal sediments in this river segment (Figure 29). At the same time, EPA is cooperatively planning its cleanup of shoreline property in this area in conjunction with the city of New Bedford's "Riverwalk" project along a 2.5-mile segment of the Harbor. The city hopes that the Riverwalk project will encourage more redevelopment by reconnecting the public with the waterfront. EPA's subtidal sediment dredging at New Bedford Harbor will be complete in 2019. In 2020, EPA's contaminated sediment dewatering plant will be decontaminated and turned over to the city of New Bedford for commercial reuse as a multi-modal marine terminal.

Figure 29. Left: Dredging of the New Bedford Harbor site is enhancing the selected remedy and facilitating commercial port development (Massachusetts). Middle: View of the newly constructed New Bedford Marine Commerce Terminal. Right: EPA Administrator Andrew Wheeler, city of New Bedford Mayor Jon Mitchell, and former EPA Region 1 Administrator Alexandra Dunn touring the harbor cleanup.

CONCLUSION

EPA works closely with its partners at Superfund sites across Region 1 to make sure sites can safely be reused or remain in continued use during and following cleanup. EPA also works with businesses and organizations at Superfund sites throughout the cleanup process to make sure they can remain open.

The businesses and organizations at these sites provide jobs and income for communities and generate local and state taxes. Cleanup and redevelopment also helps stabilize and boost property values. There are 72 NPL sites and eight non-NPL Superfund sites in Region 1 that have either new uses in place or uses that have remained in place since before cleanup. Future uses are planned for many more Superfund sites in Region 1, including at least one site in each of the six Region 1 states. EPA remains committed to working with all stakeholders to support Superfund redevelopment opportunities in Region 1.

Figure 30. Restored waterway following cleanup at the GE-Pittsfield/ Housatonic River site (Massachusetts).

The redevelopment of Superfund sites takes time and is often a learning process for project partners. Ongoing coordination among EPA, tribes, state agencies, local governments, communities, potentially responsible parties, site owners, developers, and nearby residents and business owners is essential. EPA tools, including reuse assessments and plans, comfort letters and partial deletions of sites from the NPL, often serve as the foundation for moving forward. At some sites, parties may need to take additional actions to ensure reuses are compatible with site remedies.

Across Region 1, Superfund sites are now home to major commercial and industrial facilities, mid-size developments and small businesses providing services to surrounding communities. EPA is committed to working with all stakeholders to support the restoration and renewal of these sites as long-term assets.

EPA Superfund Site Redevelopment Resources

EPA Region 1 Superfund Redevelopment Initiative Coordinator
Joe LeMay | 617-918-1323 | lemay.joe@epa.gov

Superfund Sites in Reuse: find more information about Superfund sites in reuse
www.epa.gov/superfund-redevelopment-initiative/find-sites-reuse

Superfund Redevelopment Initiative Website: tools, resources and more information about Superfund site reuse
www.epa.gov/superfund-redevelopment-initiative

EPA Office of Site Remediation Enforcement Website: tools that address landowner liability concerns
www.epa.gov/enforcement/landowner-liability-protections

“We have a vision for the Lower Millyard. To prosper, we need economic growth, just like every other city and town. [These projects and new growth] mean that we will have revenue to invest in our education system and provide tax relief to our residents.” **Thatcher Kezer, former Mayor of Amesbury, Massachusetts.**

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STATE REDEVELOPMENT PROFILES

CONNECTICUT REDEVELOPMENT PROFILE

EPA partners with the Connecticut Department of Energy & Environmental Protection to oversee the investigation and cleanup of Superfund sites in Connecticut. Connecticut has 16 Superfund sites with either new uses in place or uses that have remained in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse or continued use in Connecticut.

Businesses and Jobs

EPA has collected economic data for 81 businesses and organizations operating on 10 sites in reuse or continued use in Connecticut.

Table 3. Detailed Site and Business Information for Sites in Reuse and Continued Use in Connecticut (2019)

	Sites[a]	Sites with Businesses	Businesses[b]	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	*6*	*4*	*5*	*$8 million*	*38*	*$3 million*
In Continued Use	*6*	*4*	*42*	*$73 million*	*442*	*$23 million*
In Reuse and in Continued Use	*4*	*2*	*34*	*$322 million*	*1,264*	*$63 million*
Total	*16*	*10*	*81*	*$403 million*	*1,744*	*$89 million*

[a] One site is a federal facility. Federal facility sites are excluded from all other detailed site and business data presented above.
[b] Business information is not available for all businesses on all Superfund sites in reuse or continued use.

Property Values and Property Tax Revenues

EPA has collected property value data for six Superfund sites in reuse or continued use in Connecticut. These sites span 122 property parcels and 578 acres.

Table 4. Property Value and Tax Information for Sites in Reuse and Continued Use in Connecticut[a]

Total Land Value (6 sites)	Total Improvement Value (6 sites)	Total Property Value (6 sites)	Total Annual Property Taxes (6 sites)
$54 million	*$95 million*	*$149 million*	*$3 million*

[a] The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which varied from 2016 to 2017.

Figure 31. Recycling center at the Barkhamsted-New Hartford Landfill site.

Did You Know?

The Barkhamsted-New Hartford Landfill site in Barkhamsted, Connecticut, is now home to a transfer station and recycling center for the Regional Refuse Disposal District. The facilities generate an estimated $930,000 in annual sales and over $600,000 in annual employee income.

MAINE REDEVELOPMENT PROFILE

EPA partners with the Maine Department of Environmental Protection to oversee the investigation and cleanup of Superfund sites in Maine. Maine has nine Superfund sites with either new uses in place or uses that have remained in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse or continued use in Maine.

Businesses and Jobs

EPA has collected economic data for four businesses and organizations operating on three sites in reuse in Maine.

Table 5. Detailed Site and Business Information for Sites in Reuse in Maine (2019)

	Sites[a]	Sites with Businesses	Businesses[b]	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	*5*	*3*	*4*	*$28 million*	*137*	*$3 million*
In Continued Use	*2*	*0*	*0*	*$0*	*0*	*$0*
In Reuse and in Continued Use	*2*	*0*	*0*	*$0*	*0*	*$0*
Total	*9*	*3*	*4*	*$28 million*	*137*	*$3 million*

[a] Two sites are federal facilities. Federal facility sites are excluded from all other detailed site and business data presented above.
[b] Business information is not available for all businesses on all Superfund sites in reuse or continued use.

Property Values and Property Tax Revenues

EPA has collected property value data for one Superfund site in reuse in Maine. This site spans 18 property parcels and 15 acres.

Table 6. Property Value and Tax Information for Sites in Reuse in Maine[a]

Total Land Value (1 site)	Total Improvement Value (1 site)	Total Property Value (1 site)	Total Annual Property Taxes (1 site)
$219,000	*$2 million*	*$2 million*	*$31,000*

[a] The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which was 2018 for all data collected.

Figure 32. Reuses at the Bangor Gas Works site include a Shaw's Supermarket and Pharmacy.

Did You Know?

From 1852 to 1963, a coal gasification plant operated at the Bangor Gas Works site in Bangor, Maine. Today, a Shaw's Supermarket and Pharmacy and a community park are located on site. The supermarket and pharmacy employ 135 people. They provide over $3 million in estimated annual income and generate almost $28 million in estimated annual sales.

MASSACHUSETTS REDEVELOPMENT PROFILE

EPA partners with the Massachusetts Department of Environmental Protection to oversee the investigation and cleanup of Superfund sites in Massachusetts. Massachusetts has 30 Superfund sites with either new uses in place or uses that have remained in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse or continued use in Massachusetts.

Businesses and Jobs

EPA has collected economic data for 500 businesses and organizations operating on 11 sites in reuse or continued use in Massachusetts.

Table 7. Detailed Site and Business Information for Sites in Reuse and Continued Use in Massachusetts (2019)

	Sites[a]	Sites with Businesses	Businesses[b]	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	*12*	*4*	*58*	*$309 million*	*1,073*	*$63 million*
In Continued Use	*6*	*0*	*0*	*$0*	*0*	*$0*
In Reuse and in Continued Use	*12*	*7*	*442*	*$827 million*	*6,299*	*$499 million*
Total	*30*	*11*	*500*	*$1.1 billion*	*7,372*	*$562 million*

[a] Eight sites are federal facilities. Federal facility sites are excluded from all other detailed site and business data presented above.
[b] Business information is not available for all businesses on all Superfund sites in reuse or continued use.

Property Values and Property Tax Revenues

EPA has collected property value data for 12 Superfund sites in reuse or continued use in Massachusetts. These sites span 415 property parcels and 1,756 acres.

Table 8. Property Value and Tax Information for Sites in Reuse and Continued Use in Massachusetts[a]

Total Land Value (12 sites)	Total Improvement Value (12 sites)	Total Property Value (12 sites)	Total Annual Property Taxes (10 sites)
$195 million	*$329 million*	*$523 million*	*$12 million*

[a] The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which varied from 2015 to 2019.

Figure 33. Athletic goods store at the Norwood PCBs site.

Did You Know?

Following cleanup of the Norwood PCBs site in Norwood, Massachusetts, developers built a 56,000-square-foot retail center on site. Developers increased the thickness of the site's capped area to support a parking lot for the commercial hub. An athletic goods store currently occupies the facility. Several other businesses also operate on site. These businesses employ 306 people, providing over $20 million in estimated annual income. The businesses generate over $44 million in estimated annual sales.

NEW HAMPSHIRE REDEVELOPMENT PROFILE

EPA partners with the New Hampshire Department of Environmental Services to oversee the investigation and cleanup of Superfund sites in New Hampshire. New Hampshire has 10 Superfund sites with either new uses in place or uses that have remained in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse or continued use in New Hampshire.

Businesses and Jobs

EPA has collected economic data for 12 businesses and organizations operating on three sites in reuse or continued use in New Hampshire.

Table 9. Detailed Site and Business Information for Sites in Reuse and Continued Use in New Hampshire (2019)

	Sites[a]	Sites with Businesses	Businesses[b]	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	*4*	*0*	*0*	*$0*	*0*	*$0*
In Continued Use	*2*	*1*	*2*	*$86 million*	*559*	*$27 million*
In Reuse and in Continued Use	*4*	*2*	*10*	*$93 million*	*253*	*$7 million*
Total	*10*	*3*	*12*	*$179 million*	*812*	*$34 million*

[a] One site is a federal facility. Federal facility sites are excluded from all other detailed site and business data presented above.
[b] Business information is not available for all businesses on all Superfund sites in reuse or continued use.

Property Values and Property Tax Revenues

EPA has collected property value data for two Superfund sites in reuse or continued use in New Hampshire. These sites span 340 property parcels and 183 acres.

Table 10. Property Value and Tax Information for Sites in Reuse and Continued Use in New Hampshire[a]

Total Land Value (2 sites)	Total Improvement Value (2 sites)	Total Property Value (2 sites)	Total Annual Property Taxes (2 sites)
$12 million	*$73 million*	*$85 million*	*$2 million*

[a] The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which varied from 2016 to 2017.

Figure 34. The groundwater treatment facility at the South Municipal Water Supply Well site.

Did You Know?

The New Hampshire Ball Bearings manufacturing plant is located at the South Municipal Water Supply Well site in Peterborough, New Hampshire. The facility continues to operate during cleanup. Other site uses include commercial and residential areas, part of U.S. Route 202, and wetlands. On-site businesses employ 559 people. They provide over $26 million in estimated annual employee income and generate close to $86 million in estimated annual sales.

RHODE ISLAND REDEVELOPMENT PROFILE

EPA partners with the Rhode Island Department of Environmental Management to oversee the investigation and cleanup of Superfund sites in Rhode Island. Rhode Island has nine Superfund sites with either new uses in place or uses that have remained in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse or continued use in Rhode Island.

Businesses and Jobs

EPA has collected economic data for 54 businesses and organizations operating on six sites in reuse or continued use in Rhode Island.

Table 11. Detailed Site and Business Information for Sites in Reuse and Continued Use in Rhode Island (2019)

	Sites[a]	Sites with Businesses	Businesses[b]	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	*3*	*1*	*1*	*$8 million*	*20*	*$1 million*
In Continued Use	*3*	*2*	*5*	*$3 million*	*20*	*$882,000*
In Reuse and in Continued Use	*3*	*3*	*48*	*$96 million*	*725*	*$32 million*
Total	*9*	*6*	*54*	*$107 million*	*765*	*$34 million*

[a] Two sites are federal facilities. Federal facility sites are excluded from all other detailed site and business data presented above.
[b] Business information is not available for all businesses on all Superfund sites in reuse or continued use.

Property Values and Property Tax Revenues

EPA has collected property value data for one Superfund site in reuse and continued use in Rhode Island. This site spans 41 property parcels and 266 acres.

Table 12. Property Value and Tax Information for Sites in Reuse and Continued Use in Rhode Island[a]

Total Land Value (1 site)	Total Improvement Value (1 site)	Total Property Value (1 site)	Total Annual Property Taxes (1 site)
$7 million	*$14 million*	*$21 million*	*$295,000*

[a] The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which was 2017 for all data collected.

Figure 35. Looking east from Central Landfill.[10]

Did You Know?

The Central Landfill site in Johnston, Rhode Island, receives over 90% of the state's municipal solid waste. Cleanup of industrial liquid waste contamination on part of the site is ongoing. In addition to the landfill, a gas-to-electricity facility on site produces up to 20 megawatts of electricity each year.

10 RI LandfillEastview Providence by Tnricci available at https://commons.wikimedia.org/wiki/File:RI_LandfileEastview_Providence.jpg. CC BY-SA 4.0 available at http://creativecommons.org/licenses/by-sa/4.0.

VERMONT REDEVELOPMENT PROFILE

EPA partners with the Vermont Department of Environmental Conservation to oversee the investigation and cleanup of Superfund sites in Vermont. Vermont has six Superfund sites with either new uses in place or uses that have remained in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse or continued use in Vermont.

Businesses and Jobs

EPA has collected economic data for four businesses and organizations operating on three site in reuse or continued use in Vermont.

Table 13. Detailed Site and Business Information for Sites in Reuse and Continued Use in Vermont (2019)

	Sites	Sites with Businesses	Businesses[a]	Total Annual Sales[b]	Total Employees	Total Annual Employee Income
In Reuse	*1*	*0*	*0*	*$0*	*0*	*$0*
In Continued Use	*3*	*2*	*2*	*$517,000*	*13*	*$975,000*
In Reuse and in Continued Use	*2*	*1*	*2*	*$17 million*	*87*	*$7 million*
Total	*6*	*3*	*4*	*$18 million*	*100*	*$8 million*

[a] Business information is not available for all businesses on all Superfund sites in reuse or continued use.
[b] While sales values typically exceed estimated totals of annual income, sales can sometimes be lower than estimated income. This could be attributed to a number of business conditions and/or data reporting. In addition, annual sales figures are not available (or applicable) for every organization that makes jobs data available.

Property Values and Property Tax Revenues

Property value and tax data were not available for sites in reuse or continued use in Vermont.

Figure 36. The Ely Copper Mine during operations.

Did You Know?

For nearly a century, copper mining operations took place at the Ely Copper Mine site in Vershire, Vermont. Mining operations generated piles of waste rock, smelter waste and tailings. Since 1950, site activities have included commercial timber management as well as hunting, snowmobile riding and horseback riding. The site also includes historic mining-related artifacts and provides habitat for several species of threatened and endangered bats.

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SOURCES

BUSINESS, JOBS, SALES AND INCOME INFORMATION

Information on the number of employees and sales volume for on-site businesses comes from the Hoovers/Dun & Bradstreet (D&B) (https://www.dnb.com) database. EPA also gathers information on businesses and corporations from D&B. D&B maintains a database of over 330 million active and inactive businesses worldwide.

When Hoovers/D&B research was unable to identify employment and sales volume for on-site businesses, EPA used the ReferenceUSA database (http://resource.referenceusa.com). In cases where ReferenceUSA did not include employment and sales volume for on-site businesses, EPA used the Manta database (https://www.manta.com). The databases include data reported by businesses. Accordingly, some reported values might be underestimates or overestimates. In some instances, business and employment information came from local newspaper articles and discussions with local officials and business representatives. While sales values typically exceed estimated totals of annual income, sales can sometimes be lower than estimated income. This can be attributed to a number of business conditions and/or data reporting.

EPA obtained wage and income information from the U.S. Bureau of Labor Statistics (BLS). Part of the U.S. Department of Labor, the BLS is the principal federal agency responsible for measuring labor market activity, working conditions and price changes in the economy. All BLS data meet high standards of accuracy, statistical quality and impartiality.

EPA used the BLS Quarterly Census of Employment and Wages database to obtain average weekly wage data for site businesses. Average weekly wage data were identified by matching the North American Industry Classification System (NAICS) codes for each type of business with weekly wage data for corresponding businesses in site counties. If weekly wage data were not available at the county level, EPA sought wage data by state or national level, respectively. In cases where wage data were not available for the six-digit NAICS code, EPA used higher-level (less-detailed) NAICS codes to obtain the wage data.

To estimate the annual income earned from jobs at site businesses, EPA multiplied the average weekly wage figure by the number of weeks in a year (52) and by the number of jobs (employees) for each business.

Business and employment data used for this profile were collected in 2019. Estimated annual employment income was calculated using 2018 jobs data and BLS average weekly wage data for those jobs from 2018 (the latest available wage data at the time of this profile). Federal facility sites are included in calculations of total sites in reuse or continued use only. Federal facility sites are excluded from all other calculations (i.e., number of sites with businesses, number of businesses, total jobs, total income and total annual sales). All sales and income figures presented have been rounded for the convenience of the reader. Throughout this report, sales and annual employee income may not sum exactly to the totals presented due to rounding.

PROPERTY VALUE AND TAX INFORMATION

EPA collected on-site property values and property taxes included in this profile for a subset of Superfund sites by comparing available site boundary information with available parcel boundary information and gathering information for selected parcels from county assessor datasets. The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which typically varied from 2015 to 2019 where date information was provided. Throughout this report, property and tax values may not sum exactly to the totals presented due to rounding. Federal facility sites are excluded from all property value and tax calculations.

REUSE INFORMATION SOURCES

Write-ups of sites in reuse or continued use included in this profile are based on available EPA resources, including Superfund Redevelopment Initiative case studies as well as other resources. Links to EPA's Superfund Redevelopment Initiative case studies and other resources are included below.

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Scott Calzolaio. "New Walpole police station break ground." Wicked Local Walpole. Updated May 12, 2017. walpole.wickedlocal.com/news/20170512/new-walpole-police-station-breaks-ground.

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REUSE SUMMARY PROFILES

CONNECTICUT REUSE SUMMARY PROFILES

National Priorities List Sites

Barkhamsted-New Hartford Landfill

The 98-acre Barkhamsted-New Hartford Landfill Superfund site is located in the towns of Barkhamsted and New Hartford, Connecticut. From 1974 until 1988, the unlined landfill accepted municipal and industrial wastes. A barrel-crushing and metal reclamation operation was also active on site. In 1983, a state inspection found leaking drums containing hazardous solvents. Site operations contaminated groundwater.

Figure 37. The Barkhamsted-New Hartford Landfill site (Connecticut).

EPA placed the site on the National Priorities List (NPL) in 1989. In the fall of 1999, the landfill owner installed a cap, a runoff and leachate collection and treatment system, and a landfill gas capture system. Natural processes are underway that break down contaminants in the groundwater. The groundwater remedy includes long-term monitoring of groundwater, surface water and sediment as well as restrictions to prevent contact with contaminated groundwater. Today, the site consists of three separate areas: (1) a fenced landfill cap along with its appurtenances; (2) a recycling and transfer station operated by RRDD1; and (3) a parcel of land adjacent to the landfill consisting of an active solar farm that generates 1.5 megawatts of electricity and helps offset recycling transfer operating costs.

Cheshire Ground Water Contamination

The 15-acre Cheshire Ground Water Contamination Superfund site is located in Cheshire, Connecticut. From 1966 to 1980, two companies made plastic molding on site. Operations contaminated soil and groundwater with chemicals and solvents. In 1990, EPA placed the site on the National Priorities List (NPL). Cheshire Associates, under state and EPA orders, cleaned up the site by removing some contaminated soil. EPA extended the public water supply to residents with drinking water wells affected by site contamination. Carten Controls relocated to the site in 1996. After cleanup, EPA took the site off the NPL in 1997. Carten Controls continues to operate its semiconductor parts manufacturing facility on site.

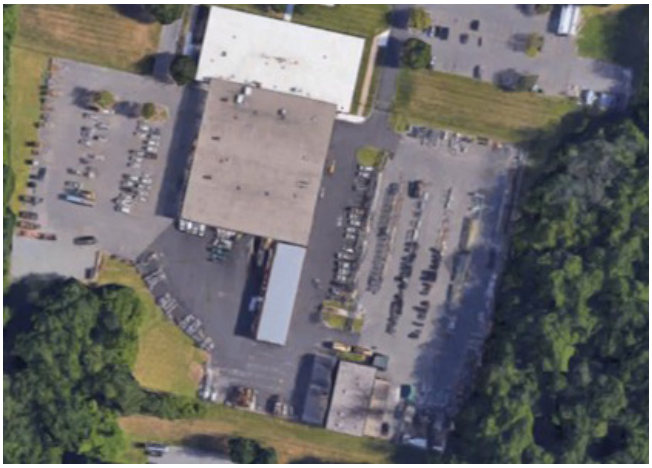

Figure 38. The Carten Controls facility at the Cheshire Ground Water Contamination site (Connecticut). Imagery © 2017 Google.

Durham Meadows

The Durham Meadows Superfund site is located in Durham, Connecticut. Merriam Manufacturing Company and Durham Manufacturing Company made metal cabinets, boxes and other items on site from 1851 until 1998. Improper storage and disposal practices contaminated site soil and groundwater. In 1982, the Connecticut Department of Energy & Environmental Protection (CT DEEP) found contamination in nearby private drinking water wells. Merriam Manufacturing Company and Durham Manufacturing Company installed filters on affected residential wells.

Figure 39. Aerial View of the Durham Meadows site (Connecticut). Imagery © 2017 Google.

EPA placed the site on the National Priorities List (NPL) in 1989. Cleanup activities include providing an alternate water supply for affected residents, removing soil, and monitoring and containing groundwater contamination. Cleanup also includes placing restrictions on land and groundwater use and investigating areas with possible indoor air risks. Cleanup of the Merriam Manufacturing Company area of the site is now complete. The town of Durham put an area-wide groundwater use restriction ordinance in place in 2015. Plans for the alternative water supply and cleanup of the Durham Manufacturing property are complete; construction began in 2019 and is expected to be completed in 2021. CT DEEP and EPA are working with the responsible parties and local officials to put final land and groundwater use controls in place. The Durham Manufacturing Company continues to make metal boxes on site. Commercial and public service reuses are also present on site. The site is also home to a volunteer ambulance corps, the District Board of Education, churches and many businesses.

Gallup's Quarry

The Gallup's Quarry Superfund site is a 29-acre abandoned gravel pit in Plainfield, Connecticut. During the 1970s, the site owner accepted chemical wastes without a permit. Disposal activities led to site soil and groundwater contamination. After the Connecticut Department of Energy & Environmental Protection removed waste drums and contaminated soil, EPA placed the site on the National Priorities List (NPL) in 1989. EPA's cleanup plan includes monitoring of natural processes to clean up groundwater and land use restrictions. Long-term soil, sediment and groundwater monitoring are ongoing.

Figure 40. The Greenleaf biomass facility at the Gallup's Quarry site (Connecticut). Image used with permission of Greenleaf Power LLC.

Today, the Plainfield Renewable Energy biomass facility is located on site. The facility became fully operational in 2014. The 37.5-megawatt power plant uses waste wood to generate enough electricity to power the equivalent of about 40,000 homes in Plainfield. Connecticut Light & Power purchases 80% of the generated energy under a 15-year agreement with the facility owner, while the remaining energy contributes to the regional renewable energy certificate market. Greenleaf Power bought the plant in 2015 and is now in charge of plant operations.

Kellogg-Deering Well Field

The Kellogg-Deering Well Field Superfund site is located in Norwalk, Connecticut. The site consists of a 10-acre municipal well field and the adjacent area that contributes to the well field contamination. Since 1955, the city of Norwalk has operated four municipal supply wells on site. During routine sampling in 1975, the city found elevated levels of trichloroethylene (TCE) at the well field. Afterwards, the city shut down wells with unacceptable levels of TCE. Inspections by the Connecticut Department of Energy & Environmental Protection between 1975 and 1980 found several hazardous chemicals in site groundwater and soils.

Figure 41. Commercial space and groundwater treatment building at the Kellogg-Deering Well Field site (Connecticut).

EPA placed the site on the National Priorities List (NPL) in September 1984. Cleanup included installing a wellhead treatment facility to allow continued use of the well field, soil vapor treatment, groundwater extraction and treatment, and institutional controls. Routine maintenance and monitoring activities are ongoing. A supplemental investigation identified the primary source of contamination, located about a half-mile east of the well field. Cleanup of source-area soils and groundwater began in 1996. Soils met cleanup goals in 2006. Groundwater remediation is ongoing. The municipal well field continues to operate and provides water to about 45,000 residents in Norwalk. Commercial and residential uses remain on site. Commercial uses include office space, a shopping plaza, a car wash and a restaurant.

Linemaster Switch Corp.

The 45-acre Linemaster Switch Corporation Superfund site is located in Woodstock, Connecticut. Electrical and pneumatic foot switches and wiring harness manufacturing has occurred on site since 1952. Site operations use chemicals, paint and thinners. Past operation practices resulted in groundwater, sediment, surface water and soil contamination.

In 1990, EPA added the site to the National Priorities List (NPL). Cleanup activities include soil and groundwater treatment. The groundwater treatment system remains in operation. Today, the Linemaster Switch Corporation continues to manufacture electrical power switches, air valves, electrical cord sets and metal name plates on site. Several residences, a banquet facility, a restaurant and an inn are also located on site.

Nutmeg Valley Road

The 28-acre Nutmeg Valley Road Superfund site is located in Wolcott, Connecticut. Beginning in the 1940s, metalworking and finishing shops operated on site. Two of these shops disposed of chemicals in site soils. These improper disposal practices contaminated private drinking water wells near the site. In 1989, EPA placed the site on the National Priorities List (NPL). In 1992, an emergency cleanup action addressed surface soil contamination and a potential source of groundwater contamination. After the cleanup action, groundwater studies found contaminant levels were naturally decreasing. The studies also found no evidence of widespread groundwater contamination. EPA took the site off the NPL in 2005.

Figure 42. New building at the Nutmeg Valley Road site (Connecticut).

Industrial, commercial and some residential uses are ongoing at the site. To further revitalize the area, the town of Wolcott made infrastructure improvements to area roads and offered visual enhancement incentives such as debris pickup and free paint for property owners. Local officials point to site improvements and the site's removal from the NPL as factors that led to the construction of a $2 million state-of-the-art greenhouse next to the site. The town of Wolcott expects these factors to encourage additional commercial and industrial development at the site. Recently, a new commercial building for Ultimate Services Professional Grounds Management was constructed at the site.

Old Southington Landfill

The 13-acre Old Southington Landfill Superfund site is located in Southington, Connecticut. The municipal landfill operated on site from the 1920s until 1967. Closure activities included compacting loose waste, covering the landfill with clean fill and reseeding the area with grasses. Between 1973 and 1980, the town subdivided and sold the landfill property for residential and commercial development. Construction of several homes and commercial businesses took place at the site and nearby. In 1979, sampling by the Connecticut Department of Public Health at Municipal Well #5 near the site found contamination in groundwater. Further investigations found groundwater, soil, sediment and surface water contamination at the site.

Figure 43. The northern portion of the capped Old Southington Landfill site, used by the community for passive recreation (Connecticut).

EPA placed the site on the National Priorities List (NPL) in 1989. Cleanup activities included permanent relocation of on-site structures, landfill capping and disposal of semi-solid sludge materials in a lined cell beneath the cap. Cleanup also

included construction of a passive soil gas collection system that is part of the landfill cap and long-term groundwater monitoring. Land use restrictions are in place for properties near the landfill at potential future risk from contaminated groundwater vapors moving under the buildings.

A park is located on the former residential portion of the site. It provides a recreation area where people can walk their dogs, sit on benches and go canoeing in nearby Black Pond. The U.S. Fish and Wildlife Service will use funds from potentially responsible parties to restore ecological habitat, including waterways and natural resources affected by the site. After completion, trail maintenance work along the Quinnipiac River will allow for additional recreational use.

Raymark Industries, Inc.

The Raymark Industries, Inc. Superfund site includes over 500 acres near the Housatonic River in Stratford, Connecticut. From 1919 until 1989, Raymark Industries made various automotive parts on a 34-acre area at the site.

Disposal of manufacturing wastes took place at the former manufacturing site, on dozens of residential, commercial and municipal properties across town, and in the wetlands next to the Housatonic River. Contaminated groundwater beneath the former facility impacted nearby commercial and residential areas due to the intrusion of vapors into overlying homes and buildings.

Figure 44. Shopping center at the Raymark Industries, Inc. site (Connecticut).

EPA placed the site on the National Priorities List (NPL) in 1995. Cleanup activities included removing contaminated soil and waste from several residential properties, capping the former manufacturing property, installing vapor mitigation systems in more than 100 homes, and temporarily covering and restricting access to other properties. People near the site do not currently use groundwater for drinking purposes.

EPA considered reuse in the construction of the cap over the former 34-acre manufacturing property. The cap allowed for redevelopment of the property while ensuring the remedy remained protective. EPA awarded the site a Superfund Redevelopment pilot grant in 2001. The Stratford Crossing Shopping Center, completed in 2002, currently occupies the site. The shopping center provides a mixed green and commercial space. The community enjoys access to several popular businesses, including Walmart, Home Depot, ShopRite Supermarket and Webster Bank. Investigation and cleanup activities continue on the other contaminated properties around town. In 2015, local and federal partners, including EPA, completed a removal action at Sikorsky Memorial Airport. The cleanup realigned Main Street to facilitate the extension of an airport runway safety zone. In 2015, EPA and the town jointly announced a reuse plan for a former ball field. Waste from several commercial and wetland properties will be consolidated with existing waste at the former ball field and capped. The cap will be designed by EPA to support a planned expansion of the Department of Public Works. Separately, discussions between a private developer and EPA are underway vis-a-vis Bonafide Prospective Purchaser Agreement (BFPP) negotiations regarding development of a self-storage facility at another contaminated property to be capped.

Scovill Industrial Landfill

The 25-acre Scovill Industrial Landfill Superfund site is located in Waterbury, Connecticut. From 1919 until the mid-1970s, the Scovill Manufacturing Company used the area as a landfill. By the mid-1990s, developers had built condominiums, apartment buildings, small commercial buildings and a shopping mall on the 18-acre southern portion of the site. The northern portion of the site is an undeveloped 6.8-acre parcel known as the Calabrese parcel. In 1988, residential development underway on the Calabrese parcel uncovered industrial wastes. The

Figure 45. The undeveloped parcel at the Scovill Industrial Landfill site (Connecticut).

Connecticut Department of Energy & Environmental Protection (CT DEEP) subsequently issued a stop-work order and removed 2,300 tons of contaminated soil along with 19 capacitors from the Calabrese parcel. CT DEEP then placed a temporary soil cap over the area and fenced it.

EPA placed the site on the National Priorities List (NPL) in 2000. In 2004, EPA helped the city of Waterbury with a reuse planning process for the site to develop future land use recommendations for the Calabrese parcel. In 2013, EPA selected the cleanup plan for the site. Cleanup activities include installation of a system to address contaminated vapors from groundwater moving through a building slab on site, targeted excavations in areas exceeding regulatory contaminant levels and placement of that soil under a soil cap on the Calabrese property. Excavated areas will be backfilled with clean fill and restored to original conditions with either new pavement or vegetation. Wetland remediation is also planned. Institutional controls for the entire site will be put in place to ensure public safety. Cleanup design allows for continued residential and commercial use at the site.

Solvents Recovery Service of New England

The Solvents Recovery Service of New England Superfund site is located in Southington, Connecticut. The site includes a 4-acre former operations area and a 42-acre groundwater contamination plume. From 1955 until 1991, a hazardous waste treatment and storage facility operated at the site. During operations, spills occurred and operators stored process wastes in unlined lagoons. These practices resulted in soil and groundwater contamination. In 1979, the town of Southington discovered contamination in two public water supply wells downgradient of the site. The town closed these wells.

Figure 46. Trail and signage at the Solvents Recovery Service of New England site (Connecticut). Image used with permission of de maximis, inc.

EPA placed the site on the National Priorities List (NPL) in 1983. EPA conducted short-term cleanup activities to remove 19 drums of contaminated materials. Cleanup activities also include treating groundwater, consolidating and capping contaminated soil, treating soil, monitoring, and restricting groundwater and land use. Cleanup construction completed in 2017; long-term monitoring and maintenance is ongoing. The U.S. Fish and Wildlife Service used funds from potentially responsible parties to restore ecological habitat, including waterways and natural resources affected by the site. In September 2017, construction was completed for a new section of the nearly 80-mile-long Farmington Canal Heritage Trail, which runs across the site, and a trail access parking lot. A 50-kilowatt solar array was also constructed to provide power for the long-term operation of the groundwater extraction system.

Other Cleanup Sites

Higganum Cove

The 13-acre Higganum Cove site is located off Nosal Road in Haddam, Connecticut. From the 1840s until 1983, various manufacturing operations took place on site. These included dyeing of fabrics and yarn and the production of bridge netting, marine paints and carbonless copy paper. Following reports of inappropriate handling of hazardous substances, the Connecticut Department of Energy & Environmental Protection (CT DEEP) performed site inspections from 1983 to 1989. The inspections found site soils and wetlands contaminated with industrial solvents, metals and polychlorinated biphenyls. In 2013, CT DEEP referred the site to EPA for a removal evaluation.

Figure 47. Park at the Higganum Cove site (Connecticut). Photo used with permission of CT DEEP.

After EPA identified the need for a removal action in 2014, EPA began emergency cleanup actions at CT DEEP's request. These actions included excavation and disposal of contaminated soils and wetlands restoration. EPA completed cleanup in late 2015. The cleanup actions facilitated reuse at the site. Through collaboration between EPA, CT DEEP and local officials, the site is now home to a nature park. The park includes hiking trails, picnic tables, a kayak launch and restored wetlands for the public's enjoyment.

Mitral Corporation

The 5-acre Mitral Corporation site is located in Harwinton, Connecticut. Between the mid-1960s and late-1980s, Mitral Corporation did metal stamping and tooling, tumbling, sanding, degreasing and other machining work on site. Waste materials included used solvents, sludge, waste oil and scrap metal. The Connecticut Department of Energy & Environmental Protection conducted inspections and subsequently referred the site to EPA for removal evaluation.

Figure 48. Aerial view of the Mitral Corporation site (Connecticut). Imagery © 2017 Google.

Beginning in 2007, EPA conducted cleanup activities. EPA removed asbestos-contaminated products, demolished an old factory building, removed sludge and storage tanks, removed and treated soil, and treated water. After EPA completed its cleanup in 2009, the site was vacant for five years. In 2012, two residents living next to the site purchased the property. The new owners planted a few hundred evergreen trees and plan to plant additional evergreens to sell as Christmas trees. They are considering selling the trees to benefit the Fidelco Guide Dog Foundation.

Mukluk Preserve

The 17-acre Mukluk Preserve site is a former skeet shooting range located in Sprague, Connecticut; it is part of the larger 645-acre Sprague Land Preserve. Cleanup included excavation and disposal of almost 28,000 tons of soil contaminated with lead and polyaromatic hydrocarbons. EPA coordinated closely with Connecticut Department of Energy & Environmental Protection and the town of Sprague to restore the site. The town provided all of the plantings/saplings used for restoration. EPA completed restoration of the site and supported its return to use as a recreation area for hiking, fishing, hunting, horseback riding, cross-country skiing, canoeing and other activities.

Figure 49. Wetlands at the Mukluk Preserve site following cleanup (Connecticut).

MAINE REUSE SUMMARY PROFILES

National Priorities List Sites

Callahan Mining Corp.

The 50-acre Callahan Mining Corp. Superfund site is located in Brooksville, Maine. Metal mining operations began at the site in 1880 and ended in 1972. In 1975, the Maine Department of Marine Resources studied marine organisms in the adjacent Goose Pond and found elevated levels of metals. The Maine Department Environmental Protection conducted additional sampling in 1999. The studies found hazardous substances in site soils and nearby residential properties, site groundwater and on-site waste materials.

Figure 50. The Callahan Mine property and adjacent marsh (Maine).

EPA placed the site on the National Priorities List (NPL) in 2002. EPA finalized the cleanup plan for part of the site in 2011. From 2010 to 2013, EPA conducted soil cleanup of residential properties and removed contamination from the former Mine Operations Area. Additional cleanup activities include stabilization of the tailings dam and construction of a cover system for the Tailings Impoundment. These activities are expected to begin in 2020. Ongoing design work is focused on the disposal of contaminated materials and sediments in an underwater containment cell, wetlands restoration, institutional controls and monitoring. Cleanup plans for the rest of the site are yet to be determined.

EPA conducted a reuse assessment for the former Callahan Mine property and Goose Pond. The reuse assessment was based on the goals of the site owner, local regulations, community input and reasonably anticipated future land uses. It recommended a habitat conservation area with potential recreation opportunities for the site. Residents currently use the site for various recreation activities, including hiking, rock collecting and ATV riding.

Eastern Surplus

The 5-acre Eastern Surplus Company Superfund site is located along Meddybemps Lake and Dennys River in Meddybemps, Maine. Eastern Surplus, an army surplus and salvage retailer, operated on site from 1946 until the early 1980s. A facility inspection in 1984 found contamination that threatened local active fisheries and spawning areas.

EPA placed the site on the National Priorities List (NPL) in 1996. To clean up the site, EPA removed contaminated soil and materials and disposed of them off site, and began operating a groundwater treatment system in 2000. Since then, EPA has continued to improve the effectiveness of the groundwater remedy. The groundwater treatment system is currently offline while EPA and the Maine

Figure 51. Commemorative patio area at the Eastern Surplus site (Maine).

Department of Environmental Protection evaluate the effects of these improvements. During cleanup, site investigations found Native American artifacts. EPA determined the northern part of the site was eligible for listing on the National Register of Historic Places.

This area, named N'tolonapemk (Our Ancestor's Place) by the Passamaquoddy Tribe, is now a major archaeological research site. In 2012, parties constructed a commemorative patio and pathway for the area. A seasonal home is located on the southern part of the site. EPA anticipates continued residential, commercial and agricultural use of the southern area.

Eastland Woolen Mill

The 25-acre Eastland Woolen Mill Superfund site is located on Main Street in downtown Corinna, Maine. A textile mill operated at the site from 1909 until 1996. Disposal practices resulted in contamination of sediments in the East Branch of the Sebasticook River as well as soil and groundwater. In 1999, EPA placed the site on the National Priorities List (NPL). Cleanup activities included removal of hazardous materials, the mill and contaminated soils. Cleanup activities also included installation of a water line and treatment of contaminated soils and groundwater. EPA's close coordination with the community ensured the productive reuse of the well-located property.

Figure 52. Eastland Woolen Mill site (Maine).

In 2001, EPA's Superfund Redevelopment Initiative provided a grant to the town of Corinna for a community-based reuse assessment and reuse plan. Based on these plans, a 20-unit senior housing facility opened on part of the site in 2006. EPA, the town of Corinna and the state of Maine also relocated the historic Odd Fellows Building from the site to a new location across Route 7. The site is also home to the town of Corinna War Memorial and a community bandstand. A community boardwalk runs through greenspace along the river. The remainder of the site includes commercial, residential and mixed-use development. In 2012, EPA took 80% of the site's land area off the NPL after determining cleanup of the areas was complete. This area includes several properties that are currently available for reuse. Site stakeholders hope the area's deletion from the NPL will further clarify the site's cleanup status and help support even more reuse.

*"EPA made every effort to work with the Town in the planning and implementation stages of both the cleanup and redevelopment of Corinna. The opening of the Corundel Commons housing facility is a prime example of what can be accomplished when agencies share the same goals." D*alton Mullis, former Town Manager of Corinna, Maine.

Pinette's Salvage Yard

The 12-acre Pinette's Salvage Yard Superfund site is located about a mile southwest of Washburn, Maine. In 1979, three electrical transformers broke at the site. Fluids containing hazardous chemicals spilled directly onto the ground. The fluids moved through the soil, contaminating groundwater and surface water.

Figure 53. The vehicle repair and salvage yard business at the Pinette's Salvage Yard site (Maine).

In 1982, EPA placed the site on the National Priorities List (NPL). In 1983, EPA removed some contaminated soil and disposed of it off site. EPA's cleanup plan addressed contaminated groundwater and remaining contaminated soil. After cleanup, EPA took the site off the NPL in 2002. EPA's cleanup plan allowed a vehicle repair and salvage yard to continue operating on site. Today, the vehicle repair and salvage yard business remains active. It stores and dismantles damaged vehicles and sells recovered auto parts.

Saco Municipal Landfill

The 90-acre Saco Municipal Landfill Superfund site is located in Saco, Maine. The city of Saco owned and operated the landfill from 1963 to 1989. The site includes four disposal areas. Chemicals and wastes contaminated soil and groundwater at the site. In 1990, EPA placed the site on the National Priorities List (NPL). Under EPA and Maine Department of Environmental Protection oversight, the city of Saco cleaned up the site. Cleanup activities included removing waste and removing and placing contaminated sediment under a cap. Cleanup also includes monitoring of natural processes to clean up groundwater and restricting land use.

Figure 54. Aerial view of the Saco Municipal Landfill site (Maine). Imagery © 2017 Google.

In 1998, the city of Saco began planning for site reuse. EPA approved a plan to improve wildlife habitat in the former gravel and sand pit in one of the site's disposal areas. In 2001, the city graded the area, established a vegetative cover, and installed a series of wetland areas next to one of the disposal areas. In 2003, the city completed plans for a community recreation area for hiking, biking, ice skating and soccer. The city has completed construction of two soccer fields for elementary and middle-school children. Reuse planning is ongoing for unused portions of the site for additional city facilities.

Federal Facility Sites

Brunswick Naval Air Station

The 3,100-acre Brunswick Naval Air Station Superfund site is located in Brunswick, Maine. After initially supporting a civilian airport, the U.S. Navy established Brunswick Naval Air Station during World War II. Wastes generated by the U.S. Navy as part of installation activities contaminated soil and groundwater. EPA placed the Brunswick Naval Air Station on the Superfund program's National Priorities List (NPL) in 1987. The U.S. Navy continues to conduct site investigations and cleanup activities.

Figure 55. Entrance to the community college at Brunswick Landing, located at the former Brunswick Naval Air Station site (Maine).

Naval air station operations continued at the site until May 2011, when the air station was officially decommissioned. Today, the site supports a wide range of commercial, industrial, recreational, educational, ecological, military and residential uses as well as renewable energy projects. The site is home to Brunswick Landing, a mixed commercial and industrial development, as well as the Kate Furbish Preserve and Mere Creek Golf Club. The site is also home to neighborhoods, including converted former naval air station housing, colleges, schools and vocational training centers, and a general aviation airport. Nearly 1,800 people are employed by on-site businesses and organizations, earning an estimated annual income of close to $80 million and generating over $345 million in estimated annual sales revenues. Former Brunswick Naval Air Station properties have a combined value of nearly $224 million, and generated nearly $1.7 million in annual property tax revenues in 2018.

Loring Air Force Base

Located in Limestone, Maine, the roughly 9,000-acre Loring Air Force Base was a major Strategic Air Command (SAC) base for the U.S. Air Force for over 40 years, before its closing in 1994. The Base housed a bomber wing and had SAC's largest capacity for weapons and fuel storage. Military operations contaminated soil, groundwater, surface water and sediment.

EPA added the site to the National Priorities List (NPL) in 1990. Cleanup included waste removal, excavations, landfill capping, institutional controls to prevent uncontrolled use and consumption of groundwater, provisional water supplies, long-term monitoring, and groundwater management zones. Some cleanup activities and investigations are ongoing.

The U.S. Air Force donated the site to the Loring Development Authority, which worked with the U.S. Air Force and EPA to establish the Loring Commerce Centre, an industrial complex, aviation center and business park. Businesses and federal agencies in the commerce center provide employment and income for the surrounding community. Tax credit and exemption programs, such as the Job and Investment Tax Credit and the Research Expense Credit, offer additional incentives to potential new tenants. Redevelopment at the site serves as a success story for other Base Realignment and Closure (BRAC) facilities. As of 2017, 36 businesses were operating on the site. Together, these businesses employ an estimated 822 people, contribute over $29 million in annual employment income and generate over $11 million in estimated annual sales. Site properties are currently valued at over $6 million.

Figure 56. Aerial view of the Loring Air Force Base site (Maine). Imagery © 2017 Google.

Portsmouth Naval Shipyard

The 278-acre Portsmouth Naval Shipyard Superfund site is located in Kittery, York County, Maine. The site consists of four islands connected by filled tidal flats. The U.S. Navy uses the Portsmouth Naval Shipyard for naval operations, including construction of ships and submarines. Industrial wastes, including used batteries, asbestos insulation, waste paint, chemical solvents and lead sludge, contaminated soils, groundwater and surface water at the site. This created a potential health risk for the 10,000 people living on and around the site. Contamination also threatened the unique wetlands and rivers nearby.

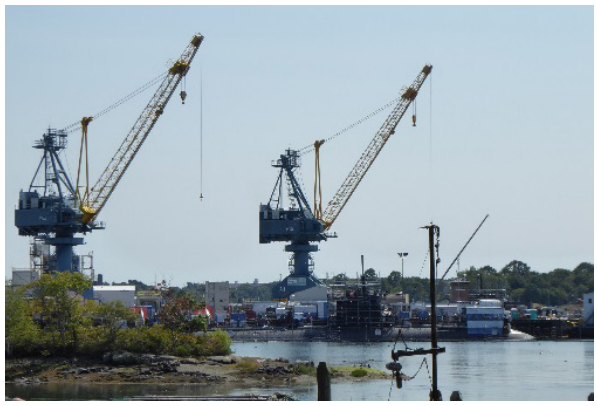

Figure 57. Naval facilities at the Portsmouth Naval Shipyard site (Maine).

In May 1994, EPA added the site to the National Priorities List (NPL). Following the immediate removal of heavily contaminated storage tanks and containment of those areas with a soil cap, EPA and the U.S. Navy removed localized areas of contaminated soil. They also installed stormwater controls along riverbanks and restored salt water wetlands. The site remains an active U.S. Navy shipyard; investigations and compliance monitoring are ongoing.

Other Cleanup Sites

Bangor Gas Works

From 1852 to 1963, the 6-acre Bangor Gas Works site operated as a coal gasification plant in Bangor, Maine. The extracted gas provided the city of Bangor with electricity. Operations stored the remaining thick tar waste in large tanks on site. Tar deposits contaminated site soils and sediments of the nearby Penobscot River. After residents reported fumes from sewer lines and tar sheen on the river surface, the city of Bangor acquired the site in 1978. The city removed site structures and extracted and removed some contaminated materials from the site. The city also buried and capped some contaminated materials on site. Redevelopment activities paved over the capped area for a parking lot. Today, site uses include commercial space with a 60,000-square foot Shaw's Supermarket as well as recreational space that connects to the Second Street Community Park next to the site.

Figure 58. Entrance to the Shaw's Supermarket at the Bangor Gas Works site (Maine).

MASSACHUSETTS REUSE SUMMARY PROFILES

National Priorities List Sites

Atlas Tack Corp.

The Atlas Tack Corporation Superfund site is located in Fairhaven, Massachusetts. It covers about 48 acres and includes upland areas, wetlands and saltwater marsh. From 1901 to 1985, the Atlas Tack facility made a variety of metal products, including tacks and steel nails, on site. Operations released waste containing acids, metals, and solvents into drains and an unlined lagoon near a marsh area. Waste disposal practices resulted in contamination of soil, surface water, sediment and groundwater.

Figure 59. View of the Atlas Tack Corp. site (Massachusetts).

In 1990, EPA placed the site on the National Priorities List (NPL). Cleanup activities included demolition of most remaining site structures, removal of contaminated soil, groundwater monitoring and site restoration. EPA completed these activities in 2007; monitoring began in 2008. Restored wetlands and the saltwater marsh now provide habitat for plants, fish and wildlife. Birders frequent the site for bird-watching activities. These citizen scientists have recorded several species on site, including the Pie-billed Grebe, the American Bittern and the Least Bittern, which are endangered in the commonwealth of Massachusetts. Potential future development at the site could include commercial and industrial reuse of upland areas.

Blackburn & Union Privileges

The Blackburn & Union Privileges Superfund site is located in Walpole, Massachusetts. Industrial and commercial processes on the site using chromium, arsenic, and mercury date back to the 1600s. 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. Various cotton and fabric production processes were conducted at the site from 1937 until 1985, when the facility was abandoned. Industrial operations contaminated soil, sediment and groundwater.

Figure 60. The police station at the Blackburn & Union Privileges site (Massachusetts).

EPA placed the site on the NPL in 1994. In 1999, EPA entered into a settlement with parties to perform the remedial investigation and feasibility study. EPA approved the site's cleanup plan in 2008. The cleanup plan divided the site into four management units requiring excavation and dredging with off-site disposal of contaminated soil and sediment, extraction and treatment of contaminated groundwater, and institutional controls and long-term monitoring. In 2010, EPA entered into a settlement with the parties to design and perform the site's cleanup. Cleanup construction began in 2015. The town took over site parcels for unpaid taxes and developed a new police station and senior center. In May 2018, town officials, police and community members gathered to attend a ribbon-cutting ceremony to open a new police station. In December 2018, another ribbon-cutting ceremony marked the completion of a new senior center – the Walpole Co-operative Bank South Street Center.

Cannon Engineering Corp. (CEC)

The 6-acre Cannon Engineering Corporation (CEC) Superfund site is located in Bridgewater, Massachusetts. Beginning in the 1970s, CEC transported, stored and burned hazardous wastes at the site. Mishandling of the waste and reporting violations led to the facility closing in 1980. In 1982, the Massachusetts Department of Environmental Protection (MassDEP) removed contaminated sludge and drums from the site.

Figure 61. Cell phone tower at the CEC site (Massachusetts).

EPA added the site to the National Priorities List (NPL) in 1983. Cleanup included installation of fencing, soil treatment of lesser-contaminated soils, excavation and disposal of highly contaminated soils, groundwater monitoring, decontamination and removal of contaminated buildings and structures, restoration of wetlands, and institutional controls. CEC completed the cleanup in 2013. In the mid-1990s, Osterman Propane Distribution (Osterman) relocated to the former CEC facility. This business is now closed. In 1998, Omnipoint Communications Enterprises began leasing the property and built a cellular communication tower. In 2013, EPA, with concurrence from MassDEP, took the site off the NPL. EPA continues to monitor the site, conducting a review of the cleanup actions every five years to make sure the remedy remains protective of human health and the environment.

Charles George Reclamation Trust Landfill

The 70-acre Charles George Reclamation Trust Landfill Superfund site is located in Tyngsborough, Massachusetts. Initially a small municipal dump, the landfill expanded to accept household and industrial wastes, chemicals containing volatile organic compounds and metal sludge. The commonwealth ordered the landfill closed in 1983. Site operations contaminated groundwater.

Figure 62. Solar panels at the Charles George Reclamation Trust Landfill site (Massachusetts).

EPA added the site to the National Priorities List (NPL) in 1983. Cleanup activities included providing a permanent water supply to residents affected by contaminated groundwater, capping the landfill, and collecting contaminated liquid draining from the landfill (leachate), groundwater and landfill gas. The Massachusetts Department of Environmental Protection operates the landfill gas collection/destruction system and the groundwater/leachate collection system and maintains the cap. In 2016, Citizens Energy Corporation completed construction of a 3.56-megawatt solar photovoltaic facility on the landfill.

Groveland Wells

The 850-acre Groveland Wells Superfund site is located in Groveland, Essex County, Massachusetts. The former Valley Manufacturing Products Company produced metal and plastic parts on site until 2002. The site's potentially responsible parties (PRPs) released cutting oils and chlorinated hazardous solvents on site. Additional waste leaked from storage tanks and disposal systems at the facility. Site releases contaminated the town of Groveland's public water supply.

Figure 63. The solar facility at the Groveland Wells site (Massachusetts).

EPA placed the site on the National Priorities List (NPL) in 1982. In late 1987 and early 1988, the PRPs installed and

used soil vapor extraction (SVE) to remove contaminants from site soils. The PRPs also installed a small groundwater treatment system in 1988. However, these systems were ineffective. EPA then designed and installed a large groundwater treatment system in 2000. In 2006, EPA removed abandoned underground storage tanks, a former disposal system and contaminated soils from the site. In addition, from 2009 to 2011, EPA designed, installed and operated an electrical resistive heating treatment system to replace the SVE system. Treatment activities were effective and concluded in 2014.

The Groveland Department of Public Works continues to operate on site. In 2012, a 3.6-megawatt solar array was installed on site. It provides power for more than 500 homes. The site remains in continued residential, commercial and industrial use. EPA continues to monitor conditions, conducting a review of the cleanup actions every five years to make sure the remedy remains protective of human health and the environment.

Hatheway & Patterson

The 38-acre Hatheway & Patterson Superfund site is located in Mansfield and Foxborough, Massachusetts. The site includes the area where the Hatheway and Patterson Company operated a wood-preserving facility from 1953 to 1993. Releases of chemicals used during these operations resulted in soil and groundwater contamination. It also resulted in contamination of sediment and surface water in the Rumford River's fisheries and surrounding wetlands.

Figure 64. The commuter parking lot at the Hatheway & Patterson site (Massachusetts).

EPA placed the site on the National Priorities List (NPL) in 2002. Cleanup included removal of contaminated soil, capping of a 2-acre area, institutional controls, and long-term monitoring of groundwater, surface water, fish tissue and sediment. EPA completed the cleanup in 2011. Today, a 119-space commuter parking lot is located on part of the site. It serves the nearby Mansfield commuter rail station. The town of Mansfield also uses part of the site for emergency vehicle storage and uses a remaining building for office space. The Mansfield portion of the site along County Street in not currently in use.

Industri-Plex

The Industri-Plex Superfund site in Woburn, Massachusetts, is located 12 miles outside of Boston. From 1853 to 1969, several manufacturers produced chemicals, insecticides, munitions and glue products at the site. Large waste piles, heavy metals and hazardous chemicals collected on site. This waste resulted in groundwater, surface water, soil and sediment contamination.

Figure 65. The Aberjona Nature Trail (Massachusetts).

In 1983, EPA placed the site on the National Priorities List (NPL). Cleanup included placement of protective covers over contaminated parts of the site, dredging and off-site disposal of contaminated sediments, construction of wetlands, and institutional controls. The covers were compatible with productive reuse of the areas.

During and after initial cleanup activities, several public- and private-sector improvements took place. They included a new interstate highway exchange, public roads, a 200,000-square-foot shopping center, an office park and a hotel complex. Restored wetlands and grass-covered hills provide scenic open space at the site. The site's successful redevelopment was recognized by the prestigious Phoenix Award in 2000. In 2001, the 34-acre, $10 million James Anderson Regional Transportation Center opened at the site. The center relieves congestion on highways leading into Boston and eases commutes for many area residents. In 2008 and 2009, additional redevelopment included a restaurant, a pet supply store and a furniture store. EPA, the state and local government worked with the developer to record property use restrictions, prepare work plans, remove a building and support the property's transformation. An

additional phase of cleanup will be completed in 2017. Mitigation projects along the Aberjona River include floodplain enhancements and the Aberjona Nature Trail as well as a fish ladder at the Center Falls Dam in nearby Winchester. EPA continues to support the safe redevelopment of properties at the site, and prepared a 2018 Explanation of Significant Differences that enabled two mixed-use and residential projects to move forward. In addition, construction of a 200-unit apartment community began in 2018 and was completed in 2019. Construction of a 289-unit luxury multi-family housing and over 9,000 square feet of commercial space development began in 2019.

Iron Horse Park

The Iron Horse Park Superfund site is a 553-acre industrial complex in Billerica, Massachusetts. Industrial activities, which began in 1913, included manufacturing, rail yard maintenance, waste storage and landfilling. These operations resulted in soil, groundwater and surface water contamination.

Figure 66. The solar array on the Shaffer Landfill at the Iron Horse Park site (Massachusetts).

EPA added the site to the National Priorities List (NPL) in 1984. Cleanup activities are ongoing. They have included removing contaminated soil, backfilling areas with clean soil, capping contaminated soil areas, and closing and capping landfills. These activities supported the continued operation of industrial businesses on site, including lumber, manufacturing and rail yard maintenance facilities. Cleanup also restored natural marshes and new wetland habitats. In 2012, site stakeholders began a project to place solar panels on the Shaffer Landfill, a former waste disposal area. After coordinating with EPA and the state, the town of Billerica signed a payment in lieu of taxes (PILOT) agreement in August 2013. The agreement guarantees project revenue over 25 years.

With the agreement in place, construction of the 25-acre solar array began in early 2014. Urban Green Technologies (UGT), the solar developer, placed 20,000 solar panels over the capped landfill. EPA worked with UGT to address the challenge of installing solar panels on the sloped landfill while ensuring its cap remained intact. In August 2014, EPA, the Massachusetts Department of Environmental Protection, UGT and the town of Billerica held a ceremony marking the project's completion. The 6-megawatt facility allows the town to reduce its dependence on fossil fuels and benefit from significant long-term energy cost savings. Since then, a 4-megawatt solar array was constructed on site, followed by a 6-megawatt array in 2017. The solar facilities allow the town of Billerica to benefit from significant long-term energy cost savings.

New Bedford Harbor

The 18,000-acre New Bedford Harbor Superfund site is located in New Bedford, Massachusetts. At least two companies produced capacitors and other electronics containing polychlorinated biphenyls (PCBs) on site from 1940 to the late 1970s. Operations discharged industrial wastes into the harbor, which contaminated the estuary from the upper Acushnet River into Buzzards Bay.

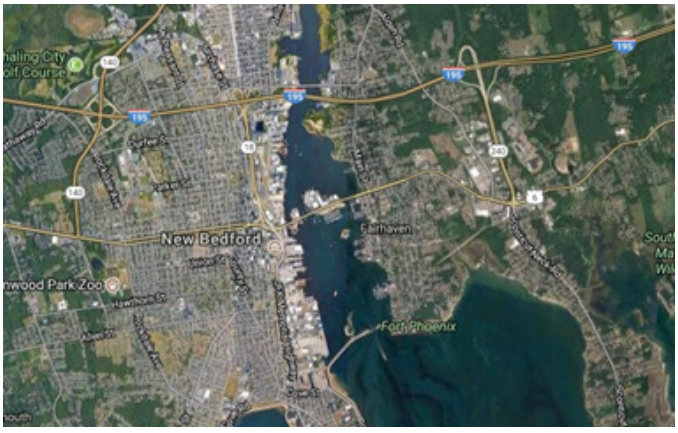

Figure 67. Aerial view of the New Bedford Harbor site (Massachusetts). Imagery © 2017 Google.

In 1983, EPA placed the site on the National Priorities List (NPL). Ongoing cleanup activities include the removal and disposal of contaminated sediments at approved off-site facilities, and within confined aquatic disposal cells in the harbor. Cleanup plans also include removal of contaminated sediment and wetland restoration at shoreline properties. Dredging has taken place at the site on a continuous basis since 2004.

The city of New Bedford plans to reuse EPA's shoreline sediment dewatering facility as an intermodal transportation facility. The facility, located on the city's working waterfront, will include berthing space for freighters and commercial fishing vessels, a 55,000-square-foot warehouse, and a rail spur that connects to the city's rail yard. In 2011, EPA completed demolition of the 11-acre Aerovox mill, located along the Acushnet River. The area will provide the city with space for potential future redevelopment. Residents use the harbor for recreation activities such as rowing.

Additionally, the cleanup plan allows for additional dredging efforts by local and state stakeholders. Dredging of the harbor, which enhances the remedy by removing sediment not addressed by the Superfund cleanup, has resulted in private investment to the commercial port. It paved the way for the recent construction of the New Bedford Marine Commerce Terminal, a 28-acre marine terminal designed to support development of off-shore wind energy. Redevelopment along the river is ongoing. Projects include the repurposing of former mills for apartments and commercial space. Finally, plans include a riverwalk along the Upper Harbor and habitat restoration, which will draw residents back to the waterfront for recreational activities. EPA's cleanup will address contamination along the shoreline prior to construction of the Riverwalk. Completion of the cleanup will allow for further redevelopment and repurposing of buildings along the shoreline. EPA's subtidal sediment dredging at New Bedford Harbor will be complete in 2019. In 2020, EPA's contaminated sediment dewatering plant will be decontaminated and turned over to the city of New Bedford for commercial reuse as a multi-modal marine terminal.

Norwood PCBs

The 26-acre Norwood PCBs Superfund site is located in Norwood, Massachusetts. From 1942 through the mid-1980s, several businesses made and maintained electrical components on site. During site investigations, EPA found polychlorinated biphenyls in soil and groundwater on site and in the sediment of a nearby brook.

Figure 68. Commercial facilities at the Norwood PCBs site (Massachusetts).

In 1986, EPA placed the site on the National Priorities List (NPL). Cleanup included removing contaminated soil and sediment and consolidating it beneath an asphalt cap. It also included demolition of on-site structures and long-term monitoring. A groundwater treatment facility operated on site until 2001. In 2008, the site owner and developers completed a 56,000-square-foot commercial retail facility on site. Developers located new buildings next to the capped area. They increased the thickness of the asphalt cap remedy to allow for its use as a parking lot. An athletic goods retailer and a fitness gym are currently located in the facility. EPA took the site off the NPL in 2011.

Nyanza Chemical Waste Dump

The 35-acre Nyanza Chemical Waste Dump Superfund site is located in Ashland, Massachusetts. From 1917 to 1978, companies made textile dyes, dye intermediates and other products at the site. Operators buried solid waste on site. They also released wastewater into a system of lagoons and storage areas that were periodically drained; the solid material was excavated and placed on a hill. Overland flow from the hill resulted in the contamination of nearby wetlands and surface water bodies, including the Eastern Wetland and the Sudbury River. These improper waste-handling practices also resulted in groundwater, soil and sediment contamination.


Figure 69. Restored wetlands at the Nyanza Chemical Waste Dump site (Massachusetts).

EPA placed the site on the National Priorities List (NPL) in 1983. In the mid-1990s, indoor air samples from residences near the site and above a contaminated groundwater

plume found potentially unsafe levels of volatile chemicals in indoor air. Cleanup activities included removing sludge and contaminated soils and sediments, placing a cap over contaminated soils, and installing systems to stop vapors from coming into homes. Cleanup also included extensive wetland restoration. Sediment and fish tissue monitoring for heavy metals has also been conducted in impacted reaches of the Sudbury River, and fish consumption advisories have been posted. While cleanup decisions have been made for most of the site, EPA is in the process of selecting the final groundwater remedy. Several businesses, including Nyacol Nano Technologies, continue to operate at the site. In December 2019, a solar array was completed and began operating on the site's landfill cap. Together, this array along with a nearby off-site solar array are capable of generating 5.8 megawatts of electricity.

PSC Resources

The 4-acre PSC Resources Superfund site is located in Palmer, Massachusetts. From 1974 to 1978, waste oil and solvent recovery and disposal resulted in spills contaminating soils, sediments and groundwater. EPA placed the site on the National Priorities List (NPL) in 1983. EPA dug up contaminated soils and sediment, treated them, and put them under an impermeable cap, which has been vegetated. A fence preventing access has been placed around the capped material. A Mobil Oil Company pipeline runs along a corridor south of the site. The site includes forest and wetland areas that are used by local residents for recreation activities.

Re-Solve, Inc.

The 6-acre Re-Solve, Inc. Superfund site is a former waste chemical reclamation facility in North Dartmouth, Massachusetts. Between 1956 and 1980, site operators disposed of residues from operations, liquid sludge waste, impure solvents and burned tires in on-site unlined lagoons. Site operators also spread oil waste over the site to control dust.

Figure 70. Solar panels at the Re-Solve, Inc. site (Massachusetts).

EPA placed the site on the National Priorities List (NPL) in 1983. EPA and the site's potentially responsible parties (PRPs) constructed a groundwater pump-and-treat system at the site. The system has operated continuously since 1998. As part of the cleanup, EPA and the PRPs restored 1 acre of wetlands at the site. The PRPs also worked closely with EPA and the U.S. Fish & Wildlife Service to convert 4 acres of the site into a native meadow for ecological reuse. The PRPs placed bird boxes, brush piles and sand piles for turtles to enhance the meadow habitat. An annual fishing derby at Cornell Pond on site engages the community in fish monitoring activities. EPA and the PRPs have also collaboratively evaluated sustainable treatment enhancements for the groundwater treatment system since 2004. In 2015, two anaerobic bio-reactor systems were located on site. The systems are underground, contained biological treatment beds where living organisms break down contamination. This process reduces the use of chemicals and the need for waste disposal. The groundwater treatment system is powered entirely by 644 solar panels.

Sullivan's Ledge

The Sullivan's Ledge Superfund site is located in New Bedford, Massachusetts. A 12-acre quarry operated on site until 1921. In 1935, the city of New Bedford took over the site and turned it into a dump for hazardous materials. Waste disposal activities took place on site from the 1940s through the 1970s. The city then closed the dump and backfilled the disposal areas. In 1982, during investigations associated with a proposed parking lot development, the Massachusetts Department of Public Works, now the Massachusetts Highway Department, found soil contamination at the site.

EPA conducted studies in the area and placed the site on the National Priorities List (NPL) in 1984. Cleanup activities included removing contaminated soil and sediment and capping the site. Cleanup also included removing contamination from a neighboring golf course. EPA's approach allowed for continued use of the golf course during cleanup. EPA also restored 13 acres of affected wetlands. Restoration work finished in 2002. Today, the wetlands provide habitat for many wildlife species, including the great blue heron, great egret, red-tailed hawk and spotted turtle. In 2013, EPA

approved the installation of a 1.75-megawatt solar project on the capped part of the site. Project partners SunEdison, Beaumont Solar, Pro-Tech Energy Solutions and BlueWave Capital completed construction in 2014. The 10-acre system includes more than 5,000 solar panels. A partnership between BlueWave Capital and the city of New Bedford is supporting further solar projects around New Bedford. The city of New Bedford buys energy generated from the solar arrays. This enables the city to increase its use of renewable energy sources and save 30% on municipal electricity bills. Over the course of 20 years, New Bedford will save about $2.7 million in energy costs through the purchase of solar net metering credits. In 2014, EPA recognized the project team, including the city of New Bedford, BlueWave Capital and SunEdison, with Region 1's first Excellence in Site Reuse Award.

Figure 71. Aerial view of the solar array at the Sullivan's Ledge site (Massachusetts).

Sutton Brooks Disposal Area

The 50-acre Sutton Brook Disposal Area Superfund site is located in Tewksbury, Massachusetts. From 1957 until 1988, a landfill operated on site, accepting municipal, commercial and industrial wastes. Waste disposal practices led to soil, sediment, surface water, groundwater and air contamination. In 1983, the Massachusetts Department of Environmental Protection inspected the landfill and took water samples from a nearby brook. The samples showed the presence of organic compounds.

Figure 72. Entrance to the Sutton Brooks Disposal Area site (Massachusetts).

EPA placed the site on the National Priorities List (NPL) in July 2000. EPA performed three short-term cleanups on and near the site, excavating and removing highly contaminated soils and drums. The site's long-term remedy included excavation of additional soils and sediments, consolidation of this material in on-site landfills, landfill capping, and wetlands restoration. It also included groundwater collection and treatment, monitored natural attenuation for groundwater outside the extraction system area, institutional controls and long-term monitoring. Cleanup finished in July 2016. The site now includes restored wetlands, providing habitat for local plants and animals.

W.R. Grace & Co., Inc. (Acton Plant)

The 260-acre W.R. Grace & Co., Inc. (Acton Plant) Superfund site is located in the towns of Acton and Concord, Massachusetts. For over 100 years, different companies operated a chemical manufacturing facility on site. W.R. Grace, the last site owner, ceased all operations in 1991. Facility operators created wastewater and solid industrial wastes and disposed of them in several unlined lagoons and an on-site landfill. These practices contaminated soils, groundwater, surface water and sediments. In 1978, investigations found contamination in two municipal wells in Acton. EPA directed W.R. Grace to begin interim cleanup actions at the site.

Figure 73. Aerial view of the solar array at the W.R. Grace & Co., Inc. (Acton Plant) site (Massachusetts).

EPA placed the site on the National Priorities List (NPL) in September 1983. Interim cleanup actions included groundwater extraction and treatment and removal of hazardous storage tanks. Final cleanup actions included

landfill and lagoon closure, capping of site soils and sludges, sediment dredging and removal, additional groundwater extraction and treatment, and restoration of site wetlands. After the site's remedy was in place, the town of Concord took ownership of a 70-acre parcel at the site in 2016. The first phase of the town's three-phase reuse plan involved construction of a 4.5-megawatt solar array, which was completed in early 2017. This project added more green, competitively priced energy to the town's power supply portfolio.

It is expected to supply 4.5% of the town's power supply needs, enough to power 625 homes. Additionally, the solar array will reduce greenhouse gas emissions and offset the town's peak demand for electricity by 10%. Planning for remaining reuse phases – for a school bus depot and a wastewater treatment facility – is underway.

Wells G&H

The Wells G & H Superfund site includes 330 acres of land and contaminated groundwater in Woburn, Massachusetts. Past operations at the site include dry cleaning, solvent storage, truck terminals, drum disposal and plastics manufacturing. In 1979, the Massachusetts Department of Environmental Protection (MassDEP) discovered significant levels of hazardous chemicals in two municipal supply wells. The wells were known as wells G and H. MassDEP closed the wells. EPA placed the site on the National Priorities List (NPL) in 1983. Cleanup included treatment of contaminated soils, excavation and disposal of debris and mixed contaminated soil, and extraction and treatment of source-area groundwater, as well as removal of contaminated sediment and restoration. Cleanup activities are ongoing across the site.

Figure 74. New restaurant at the Wells G&H site (Massachusetts).

In 2000, EPA awarded the Woburn city government a grant to complete a comprehensive land use plan for the site. Three of the site's responsible parties contributed additional funding for the effort. The land use plan identified reuse scenarios for three priority site areas: the Aberjona Auto Parts property, the city of Woburn property and the W.R. Grace property. The reuse scenario for the Aberjona Auto Parts property focused on an ice arena for local hockey leagues. Construction of Holland Arena finished in 2008. The property owner also leases parts of the property to small businesses. The land use plan identified public open space and passive recreation as priority future uses for the city of Woburn property. In July 2017, the Aberjona Nature Trail officially opened along the Aberjona River. The land use plan identified commercial land uses as the priority for the W.R. Grace property. In 2014, the property was purchased by Madison Woburn Holdings LLC for the development of a hotel and three restaurants. A Red Robin Gourmet Burgers and Brews opened in 2016 and a 110 Grill and Chick-Fil-A opened in 2019. Construction of a Homewood Suites and Hampton Inn hotel was completed in 2019.

Federal Facility Sites

Fort Devens

The 9,000-acre Fort Devens Superfund site, once a military base with extensive contamination, is now part of a large-scale redevelopment effort in central Massachusetts. Soil and groundwater contamination resulted from military activities at the site that started in 1917. In 1989, EPA added the site to the National Priorities List (NPL). Of the 324 sites initially identified by the U.S. Army, 54 required further investigation. Most of these areas require no further action or have cleanup plans in place, with certain cleanup activities and investigations ongoing.

Figure 75. The Bill Ashe Visitor Facility at the Fort Devens site (Massachusetts).

In 1994, the towns of Ayer, Harvard, Lancaster and Shirly, together with redevelopment authority MassDevelopment, developed the Devens Reuse Plan. The plan devoted more than a third of Devens' land area to open spaces and recreational areas. MassDevelopment has brought warehouses and distribution centers, manufacturing and industrial space, and research and development facilities to the site. Several federal agencies, including the U.S. Department of Justice, the U.S. Department of Labor, and the U.S. Department of Defense, have put almost 600 acres of the site back into productive use. The U.S. Fish and Wildlife Service used another 836 acres of the site to expand the Oxbow National Wildlife Refuge. While cleanup and investigations are ongoing, the successful partnership between EPA, the U.S. Department of Defense, the U.S. Army, the commonwealth of Massachusetts and MassDevelopment has contributed to increased employment opportunities as well as increased revenue for the local community.

Over 4,600 people are employed at Devens' businesses, earning an estimated annual income of close to $345 million. Devens' businesses generate over $850 million in estimated annual sales revenues. Former base properties have a combined value of $94 million and generated about $12,000 in annual property tax revenues in 2017.

"Devens' transformation into a regional hub shows how a collaborative approach to cleanup and redevelopment can help turn challenging sites into economic drivers. The Devens community is now home to more than 100 businesses, sustainable housing, and acres of open space, offering something for everyone in north-central Massachusetts." **Lauren Liss, President and CEO, MassDevelopment.**

Fort Devens-Sudbury Training Annex

The 2,750-acre Fort Devens Sudbury Training Annex Superfund site is a former U.S. Army military installation. The site covers about 4 square miles and includes portions of the towns of Maynard, Stow, Hudson, and Sudbury, Massachusetts. Established in 1942, the installation served as an ammunition depot, ordnance test station, troop training and research area, and laboratory disposal area. EPA identified contamination from use of pesticides and other chemicals on parts of the site.

Figure 76. The Assabet River National Wildlife Refuge at the Fort Devens Sudbury Training Annex site (Massachusetts).

EPA added the site to the National Priorities List (NPL) in 1990. The U.S. Army worked with EPA to remove contaminated soil, cover an on-site landfill with a cap, remove underground storage tanks, and monitor groundwater. EPA removed the site from the NPL in 2001; some cleanup investigations are still ongoing. Several entities own parts of the site.

In 2000, the U.S. Army transferred 2,230 acres of the site to the U.S. Fish and Wildlife Service. It established the Assabet River National Wildlife Refuge on the land. In 2005, the Service finished walking trails in the refuge. In 2008, it finished restoring Russell Bridge. In 2010, a visitor center and other park amenities opened at the refuge. The U.S. Fish and Wildlife Service used green building techniques for the visitor center, which includes a geothermal heating system and solar panels. The refuge provides recreation opportunities, including hiking, canoeing, guided tours of the military bunkers on site, hunting and fishing.

The U.S. Fish and Wildlife Service's plans for the refuge include educational demonstration areas, restoration of on-site bunkers, an urban education area and a rail-to-trail project for the abandoned railroad on the south side of the refuge. The refuge receives about 75,000 visitors annually. In 2002, the U.S. Army transferred 4 acres to the U.S. Air Force. It uses the area for operation of a radar and weather station. In 2003, the U.S. Army transferred about 72 acres of the site to the Federal Emergency Management Agency. It uses the land for its operations and training missions and has cleared 6 acres for use as a temporary antenna field.

Hanscom Field/Hanscom Air Force Base

Figure 77. Aerial view of the Hanscom Field/Hanscom Air Force Base site (Massachusetts). Imagery © 2017 Google.

The 1,120-acre Hanscom Field/Hanscom Air Force Base (AFB) Superfund site is located in an industrial area of eastern Massachusetts. The site is in the towns of Bedford, Concord, Lexington and Lincoln. In 1942, the commonwealth of Massachusetts leased the Bedford airport to the War Department for use by the Army Air Forces. In February 1943, the airport was renamed Laurence G. Hanscom Field. Military flight operations at the site ended in 1973. In August 1974, the U.S. Air Force terminated its lease of the airfield portion of Hanscom Field, which reverted to state control, but retained the right to use the field. Military use of the site resulted in contamination of groundwater and subsurface soil with chlorinated solvents, jet fuel and other petroleum compounds. Site investigations identified 22 possible sources, including former fire training, disposal, underground storage tank and other spill sites.

Under state oversight before the site's National Priorities List (NPL) listing in 1994, the potentially responsible party completed interim remedial actions, including excavation of contaminated soil and underground storage tanks, and installation of a groundwater extraction and treatment system. EPA's cleanup plan, as documented in a 2007 Record of Decision, includes continued operation of the groundwater treatment system, land use controls, and monitoring of groundwater and surface water. Some site investigations are ongoing. Today, the Massachusetts Port Authority operates L.G. Hanscom Field as a civilian airport. Hanscom AFB, an active U.S. Air Force installation, operates nearby.

Materials Technology Laboratory (USARMY)

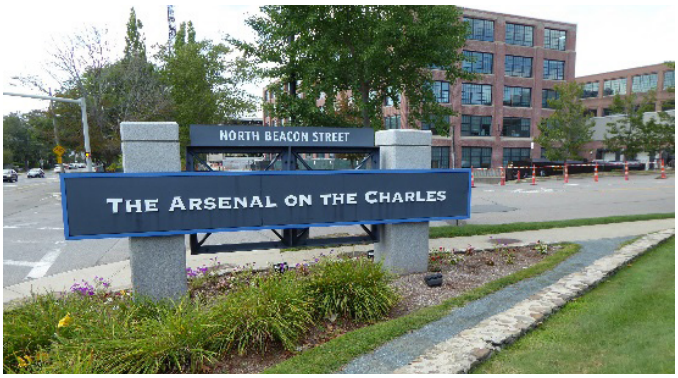

Figure 78. The mixed-use complex at the Materials Technology Laboratory (USARMY) site (Massachusetts).

The 48-acre Materials Technology Laboratory (USARMY) Superfund site, better known as the Arsenal, is located in Watertown, Massachusetts. In 1816, the U.S. Army began operations at the site; 10,000 people worked on the site by the end of World War II. The Army used the site for a variety of military- and war-related activities, including weapons and ammunition manufacturing and storage. In the 1960s, the U.S. Army used the site for nuclear reactor and molecular and atomic structure research activities. Wastes generated by the facility contaminated soil and groundwater at several areas across the site.

EPA added the site to the National Priorities List (NPL) in 1994. Cleanup removed contamination and demolished an on-site nuclear reactor. From 1996 to 2005, the Watertown Arsenal Development Corporation (WADC) helped redevelop 30 acres of the site. Harvard University bought the area and built a mixed-use complex called Arsenal on the Charles, which incorporates the style and architecture of the original brick buildings in the area. The complex includes stores, restaurants, a child-care facility, a fitness center, corporate offices and other businesses. The Arsenal Center for the Arts, also in the complex, is an important cultural asset in the community; it has a theater, gallery space, artists' studios, and other resources and services. The Commander's Mansion, a historic landmark, occupies a 7.2-acre area of the site; it provides space for meetings and formal functions. The popular Squibnocket Park is located on an 11-acre parcel along the Charles River; it provides biking and walking trails, as well as access to the Watertown Yacht Club, a privately owned marina since 1940. The U.S. Army restored wetlands along the Charles River. EPA deleted the site from the NPL in 2006; some cleanup activities are still ongoing. The site's largest employer, athenahealth, employs 2,300 people at the Watertown location. Altogether, site businesses employ about 2,600 people, providing estimated annual employment income of $376 million and generating over $505 million in estimated annual sales revenue. Site properties have a combined value of about $187 million and generate $4.5 million in annual property tax revenues.

Natick Laboratory Army Research, Development, and Engineering Center

The 78-acre former Natick Laboratory Army Research, Development, and Engineering Center Superfund site in Natick, Massachusetts, is now known as the U.S. Army Soldier Systems Center (SSC). The site occupies a peninsula on the eastern shore of Lake Cochituate State Park and Recreation Area. The U.S. Army built the Natick Laboratory in 1954. The U.S. Army conducted research and development activities on site. These activities contaminated soil, groundwater and surface water with hazardous chemicals. In 1989, personnel at the facility noticed a sheen on water running off the site during rainstorms. Construction workers also noticed a benzene-like odor in soil on site. The U.S. Army conducted soil gas surveys and detected several volatile organic compounds. Soil, groundwater and surface waste sampling also showed contamination.

Figure 79. The Natick Laboratory Army Research, Development, and Engineering Center site (Massachusetts).

EPA added the site to the National Priorities List (NPL) in 1994. Cleanup activities included groundwater containment, treatment and monitoring, soil excavation and removal, and sediment removal. Treated groundwater is reused as non-drinkable water for irrigation and toilets. The SSC still operates a U.S. Army research and testing facility on site. The facility researches, develops and manages food, clothing, shelters, airdrop systems and soldier support items. The facility currently employs about 1,000 people.

Joint Base Cape Cod (Otis Air National Guard Base/Camp Edwards)

The 22,000-acre Otis Air National Guard Base/Camp Edwards Superfund site is located on western Cape Cod in Barnstable County, Massachusetts. Also known as Joint Base Cape Cod (JBCC) (formerly known as Massachusetts Military Reservation until July 13, 2013), the site lies about 60 miles south of Boston and is immediately southeast of the Cape Cod Canal. Since its establishment in 1935, JBCC's primary mission has been to provide training and housing to U.S. Air Force and U.S. Army units. Historical chemical and fuel spills, fire training activities, and sewage treatment plant, landfill and drainage structure operations contaminated site soil and groundwater. Investigations in 1983 and 1984 found volatile organic compounds (VOCs) in on-site and nearby monitoring wells, as well as in several hundred private wells. Other site contaminants include heavy metals.

EPA listed the site on the National Priorities List (NPL) in November 1989. EPA documented the site cleanup plan in over 15 Records of Decision. Cleanup activities include installation of water supply lines to affected residents, installation of municipal water supply well treatment systems, treatment of 100,000 tons of soil, and construction and operation of many on-site and off-site groundwater treatment plants. Groundwater treatment systems currently operate on eight groundwater plumes. EPA has completed cleanups at 25 source areas. Cleanup investigations and activities are ongoing.

Figure 80. One of the wind turbines at Joint Base Cape Cod (Otis Air National Guard Base/Camp Edwards) site (Massachusetts).

The Barnstable County Correctional Facility, a jail with capacity for about 580 inmates, began operating on site in 2004. The Air Force installed three 1.5-megawatt wind turbines – one in 2009 and two in 2011 – to offset electrical costs for groundwater cleanup systems at the site. The Air Force estimates that the wind energy saves about $1.5 million a year in electricity costs. EPA's plans enabled continued site operations during cleanup. Today, five major organizations use the

site: 1) the Massachusetts Air National Guard (ANG) operates Camp Edwards; 2) the ANG/Massachusetts ANG operates Otis ANG Base; 3) the U.S. Air Force operates the Cape Cod Air Force Station; 4) the U.S. Coast Guard operates Air Station Cape Cod; and 5) the U.S. Department of Veterans Affairs operates the Massachusetts National Cemetery. As of May 2017, the base employed over 3,800 people and had a total economic impact of almost $331 million.

South Weymouth Naval Air Station

The South Weymouth Naval Air Station consists of 1,442 acres in the towns of Weymouth, Abington and Rockland, Massachusetts. Military operations at the site included aviation training, aircraft maintenance and refueling, personnel training, housing and administrative support services. Waste disposal activities also took place at the site. Sampling confirmed on-site contamination in 1991.

Figure 81. The Union Point development at the South Weymouth Naval Air Station site (Massachusetts). Photo used with permission of LSTAR Ventures.

EPA added the site to the National Priorities List (NPL) in 1994. The base closed under the Base Realignment and Closure Act (BRAC) and cleanup began in 1997. Cleanup activities included soil covers, removals, groundwater treatment and land use restrictions. The local reuse authority, the U.S. Coast Guard and the Federal Aviation Administration have received over 600 acres of the site. Redevelopment efforts are ongoing, with over 1,200 residences and a 25-acre athletic complex currently located on site. Future development plans envision over 10 million square feet of commercial space and 4,000 residences along with 50 miles of hiking/biking trails and 1,000 acres of open space.

Other Cleanup Sites

31 Water Street

The half-acre 31 Water Street site is located next to the Back and Powwow rivers in Amesbury, Massachusetts. Several industrial operations in the Lower Millyard contaminated site soils and surrounding surface waters. The city of Amesbury discovered the contamination during initial revitalization efforts for the historic Amesbury Wharf building area, where the site is located. EPA's Superfund removal program committed $1.2 million to remove contaminated soil from the site and stabilize the riverbanks. EPA dug up 1,400 tons of contaminated soil and disposed of it off site. EPA also stabilized the riverbanks with 400 feet of sheet pile wall. EPA completed cleanup actions in July 2015.

Figure 82. The park at the 31 Water Street site (Massachusetts).

The site, part of the community's Lower Millyard Project, is now home to Heritage Park. Funding from the commonwealth of Massachusetts and EPA's Superfund removal program facilitated the site's cleanup and redevelopment. The park provides residents and visitors with a recreation resource next to the Powwow River. A bandstand and river walk will soon be added to the park. The Amesbury Riverwalk, a 1.3-mile walking and biking trail, runs next to the site. At a ceremony marking the completion of the Lower Millyard Project, Amesbury's mayor issued a proclamation thanking EPA for its assistance.

Flynntan Tannery Site

The Flynntan Tannery site is located in Salem, Massachusetts. A leather tannery operated on site. EPA worked to clean up the site after the tannery's closure. A real estate developer bought the site property and has begun redeveloping it with housing units and commercial space.

Former Bendix Property

The 17.5-acre Former Bendix Property site is located in Greenfield, Massachusetts. A metalworking facility that made drill bits, taps and dies was located on site. A 94,000-square-foot, single-story building sat vacant for about 10 years and deteriorated. Openings in the roof allowed in rain and snow. The rain and snow damaged the heat and water piping, which was wrapped with asbestos-containing insulation wrap. Chromium-containing powder was present in and around the building. EPA removed contaminated materials and devices as well as chromium-containing powder, capacitors and contaminated water, and transported them to approved facilities. A metal tank and bin production company from Holyoke, Massachusetts, is interested in buying the site property to enlarge its operations.

Figure 83. View of the former Bendix Property site (Massachusetts).

Former Lawrence Metals

The Former Lawrence Metals site is located in Chelsea, Massachusetts. From the late nineteenth century until 1974, when a fire destroyed the building, owner operators used the site property for textile production, barrel cleaning and painting. From 1979 to 1986, operators used the property for warehouse space. In 1986, the Lawrence Metals Forming Company began operating on site. Its operations resulted in the contamination of soil and site materials. In 1999, the city of Chelsea acquired the site property under an Urban Renewal Plan. The city demolished the site building in 2000. EPA, the city and state agencies coordinated cleanup, including the excavation of contaminated soil. The project was particularly challenging because of its proximity to a school and a city swimming pool. An upscale, extended-stay hotel is now located on site.

Figure 84. The hotel on the Former Lawrence Metals site (Massachusetts).

GE - Pittsfield/Housatonic River

The GE-Pittsfield/Housatonic River site includes a 254-acre former manufacturing facility, filled river oxbows, neighboring commercial properties, the Allendale School, Silver Lake, the Housatonic River, floodplains and other areas. The site contains contamination released from the General Electric Company (GE) facility in Pittsfield, Massachusetts. A cleanup decision for portions of the Housatonic River is currently pending. A Consent Decree entered in federal court in 2000 outlined the cleanup of all other areas of the site. Nineteen of 20 cleanup actions outside the river are now complete. EPA expects completion of remaining cleanup actions outside the river in the next two years. Cleanup of 2 miles of the Housatonic River is also already complete.

Figure 85. Restored waterway following cleanup at the GE-Pittsfield/ Housatonic River site (Massachusetts).

As part of ongoing cleanup activities, the community prioritized the reuse of the former GE facility, located in the heart of downtown Pittsfield. Funded by a Superfund Redevelopment pilot grant from EPA, the Pittsfield Economic Development Authority (PEDA) developed a reuse plan. The plan outlined opportunities for sports fields and an office park. In 2004, GE built a 3-acre recreational facility on site for the community. The facility includes a baseball diamond, soccer field, jogging track, equipment storage, fencing and lighting. Between 2005 and 2012, PEDA received ownership of 50 acres at the site for the development of the William Stanley Business Park. The facility provides commercial and industrial space for area businesses. The park's first tenant, a financial services company, built a 170,000-square-foot building that opened in 2012. Western Massachusetts Electric Company installed an 8-acre solar power facility in 2010, using 2 acres of the site and 6 acres of an adjacent property, which generates 1.8 megawatts of electricity. In 2014, PEDA received a $9 million state grant to design and build the Berkshire Innovation Center (BIC). The BIC facility opened for business in February 2020. The facility supports shared research, early-stage production and commercialization, and workforce training for life science companies and related businesses. Two large employers continue to operate on the GE-owned portion of the 254-acre facility. Continued uses on the non-GE owned portion of the site (excluding the Rest of River) include an elementary school, about 86 residential properties, about 35 commercial properties and a city park.

Intervale

The Intervale site is located in Quincy, Massachusetts. A metals recycling business operated on site. Sampling in 2012 detected polychlorinated biphenyls, lead, arsenic and chromium in site soils. EPA removed about 4,400 tons of contaminated soil in 2014 and 2015. The city of Quincy will offer the site property for sale after completion of EPA's cleanup activities.

Figure 86. Cleanup activities at the Intervale site (Massachusetts).

King Philip Mills

The King Philip Mills site is located in Fall River, Massachusetts. A cotton mill was built on site between 1871 and 1892. EPA identified drums, containers and cylinders at the site. In November 2014, EPA completed a time-critical removal action to remove contaminated drums and containers as well as asbestos-containing material. EPA completed a second time-critical removal action in March 2017 to remove polychlorinated biphenyl oils from contaminated materials. In June 2017, a developer bought the site property at auction. The developer plans to create about 90 upscale residential units and open space with public access along Cook Pond.

Parsons Paper Mill

The 4.6-acre Parsons Paper site is located in Holyoke, Massachusetts. From 1896 to 2004, operators made writing and stationary paper as well as artist paper and archival paper for the art and framing industries on site. In 2008, a fire destroyed about 50% of the mill. The fire also damaged remaining parts of the interconnected building complex. In 2009, EPA sampling identified asbestos in the burned areas. Sources of asbestos includes asphalt shingles, window glazing and caulking, tank and pipe insulation, transite siding, cements and mastics, and floor tiles. In 2009 and 2010, EPA removed hazardous materials and asbestos that posed a threat to public health. In 2016, building demolition began for the expansion of Holyoke manufacturer Aegis Energy Services on site.

Figure 87. View of the Parsons Paper site (Massachusetts).

Peabody Street Asbestos

The Peabody Street Asbestos site is located in Salem, Massachusetts. The city of Salem identified asbestos during construction of a park in the downtown area. EPA excavated contaminated soil because of the urban setting and because the city and state did not have funds for the excavation. EPA recovered most expenses from the polluter. The city resumed construction of the park after EPA completed the excavation. Completed in 2010, the Peabody Street Park/Harborwalk serves as a gateway to the city of Salem's harbor. The park includes a playground, a canopy area, and seating for outdoor entertainment as well as game tables, benches and landscaping.

Figure 88. The Peabody Street Park/Harborwalk at the Peabody Street Asbestos site (Massachusetts).

Universal Steel & Trading Corporation

The 1.2-acre Former Universal Steel site is located in Salem, Massachusetts. From 1936 to 1998, metal recycling and reclamation activities took place on the site property. Activities included processing scrap metals and demolition debris, dismantling and processing transformers, and stockpiling automotive batteries. These activities contaminated site soil. EPA, the city of Salem, MassDevelopment and the Massachusetts Department of Environmental Protection worked together to clean up the site. Cleanup activities included excavation and off-site disposal of contaminated soil and debris, collection and disposal of lubrication oil, asbestos removal, and building demolition. FW Webb, a plumbing supply company, is buying the site property. FW Webb plans to use the property for parking, loading and storage as part of an 8,000-square-foot addition to an existing facility next door.

Figure 89. Parking and warehouse facilities at the Universal Steel & Trading Corporation site (Massachusetts).

NEW HAMPSHIRE REUSE SUMMARY PROFILES

National Priorities List Sites

Auburn Road Landfill

The 200-acre Auburn Road Landfill Superfund site is located in Londonderry, New Hampshire. The site includes three separate disposal areas that cover about 12 acres. A disposal area for chemical wastes, tires, demolition debris and solid waste operated on site from the 1960s to 1980. The state of New Hampshire found contamination in soil, groundwater and surface water and ordered the landfill's closure in 1980.

Figure 90. The model airplane flying field at the Auburn Road Landfill site (New Hampshire).

EPA placed the site on the National Priorities List (NPL) in 1983. Cleanup activities included capping and fencing of contaminated areas as well as extension of the public water supply to nearby residents. Groundwater sampling is ongoing. Parts of the site are now in recreational and residential reuse. A model airplane flying field opened on site in 2008. This recreational reuse was the result of collaboration among EPA, the New Hampshire Flying Tigers Academy of Model Aeronautics club and the town of Londonderry. Part of the Whispering Pines Mobile Home Park is located on the northern part of the site.

Fletcher's Paint Works & Storage

The Fletcher's Paint Works & Storage Superfund site is located in Milford, New Hampshire. A paint manufacturing plant and retail outlet operated on site from 1949 to 1991. In 1982, the New Hampshire Department of Environmental Services (NHDES) inspected the facility. NHDES found leaking and open drums on site. NHDES also found site-related contamination in the Keyes Municipal Water Supply Well next to the site.

Figure 91. The Elm Street recreation area at Fletcher's Paint Works & Storage site (New Hampshire).

EPA placed the 2-acre area on the National Priorities List (NPL) in 1989. Past cleanup efforts include building demolition, drum removal, fencing, temporary cover installation, removal of contaminated soil from residential properties, and placement of a temporary liner and gravel cover over highly contaminated areas. In 1996, at the request of the town of Milford, the potentially responsible party removed soil with low levels of contamination from the Elm Street area of the site to allow for construction of a Korean War Memorial. In 2017, construction activities were completed, which included the Mill Street area soil excavation, backfilling of the area with clean soil and a grass cover, and relocation of Mill Street part of the area for better local traffic management. Construction activities at the Elm Street area include soil excavation, an engineered soils and grass cover permitting recreational use, and an asphalt cover over select areas providing the town with additional parking for nearby Keyes Recreational Field. Groundwater monitoring is ongoing.

Kearsarge Metallurgical Corp.

The 9-acre Kearsarge Metallurgical Corporation (KMC) Superfund site is located in Conway, New Hampshire, on the north shore of Pequawket Pond. From the mid-1960s through the early 1980s, KMC made stainless steel castings on site. The manufacturing process created waste casting sands, wax and solvents. KMC dumped these wastes in a wooded wetland east of the facility. When operations ceased, the New Hampshire Department of Environmental Services (NHDES) and EPA found a waste pile, soils and groundwater contaminated with solvents.

Figure 92. Facilities in reuse at the Kearsarge Metallurgical Corp. site (New Hampshire).

EPA placed the site on the National Priorities List (NPL) in September 1984. Cleanup began in 1992, and included removal of 13,620 tons of contaminated soils and construction of a groundwater treatment plant. During 12 years of operation, the plant treated over 250 million gallons of water and removed more than 225 pounds of contaminants. In 2012, the town sold the site property at auction to help invigorate the surrounding industrial park. EPA and NHDES addressed remaining groundwater contamination with a soil treatment remedy in 2015. A towing company, a heating business, and a farm equipment and diesel truck repair facility are currently located in the former groundwater treatment plant and part of the original KMC building. Ecological reuse includes forested wetlands that provide ecological habitat along the northern bank of Pequawket Pond.

Ottati & Goss/Kingston Steel Drum

The 35-acre Ottati & Goss/Kingston Steel Drum Superfund site is located in Kingston, New Hampshire. The site includes a 6-acre parcel, known as the Great Lakes Corporation area, and a 1-acre parcel, known as the Ottati & Goss area. From the late 1950s through 1980, various owners reconditioned steel drums on the Great Lakes Corporation area. Runoff and seepage from this area into nearby surface water killed fish and aquatic vegetation. From 1978 through 1979, site operators processed waste at the Ottati & Goss area. Activities contaminated soil, groundwater and surface water. After operations ended in 1979, the New Hampshire Bureau of Solid Waste Management prohibited site operators from restarting operations. The Bureau ordered the removal of thousands of deteriorating and leaking drums from the site.

Figure 93. View of the Ottati & Goss/Kingston Steel Drum site (New Hampshire).

EPA placed the site on the National Priorities List (NPL) in 1983. Cleanup activities included removal of leaking drums and thousands of tons of soil and debris, excavation and on-site treatment of soil and sediment using thermal desorption, groundwater and soil treatment using in-place chemical oxidation, and wetland restoration for ecological reuse. Wetland restoration included the placement of over 20,000 cubic yards of manufactured wetland material and the planting of more than 1,000 trees and shrubs.

Somersworth Sanitary Landfill

The 26-acre Somersworth Sanitary Landfill Superfund site is located in Somersworth, New Hampshire. The city of Somersworth operated a waste disposal area at the site from the mid-1930s until 1981. The city burned residential, commercial and industrial wastes at the site. In 1958, the city stopped burning waste and converted the area into a landfill. Improper disposal practices contaminated site soil, sediment and groundwater.

Figure 94. Aerial view of the Somersworth Sanitary Landfill site (New Hampshire). Imagery © 2017 Google.

EPA added the site to the National Priorities List (NPL) in 1983. Cleanup included groundwater containment and treatment, a landfill cover, and gas venting, as well as land and groundwater use restrictions. Prior to the site's listing on the NPL, the city covered a 10-acre portion of the site with clean fill for use as a recreation area. This area now includes a basketball court. Part of the site not developed as a part of the landfill remains wetlands. In 2013, EPA presented the city with an initial assessment of renewable energy opportunities for the site. Currently, no renewable energy projects are planned for the site.

South Municipal Water Supply Well

The 250-acre South Municipal Water Supply Well Superfund site is located in the Contoocook River Valley in Peterborough, New Hampshire. Installed in 1952, the South Municipal Water Supply Well provided water to Peterborough for nearly 30 years. In 1982, testing by the state of New Hampshire revealed contaminants in the water, which resulted in the closing of the well. Investigations found that the nearby New Hampshire Ball Bearings facility was the source of the contamination. The facility has manufactured precision ball bearings since 1956. Activities at the facility contaminated soil, groundwater, wetland sediments and surface water.

Figure 95. Facilities at the South Municipal Water Supply Well site (New Hampshire).

EPA placed the site on the National Priorities List (NPL) in 1984. Initial cleanup activities included groundwater and soil treatment, off-site disposal of contaminated sediments, and wetland restoration. Later, EPA determined that restoration of some of the contaminated groundwater at the site was not possible. EPA updated the remedy to contain the groundwater instead of treating it. In 2008, EPA found that the site remedy was not functioning as intended. EPA updated the cleanup plan in 2010 to change source control and migration management activities. New Hampshire Ball Bearings completed a below-ground wall to clean up contaminated groundwater in 2014. In-place thermal treatment of an on-site source area finished in 2016. Current site uses include the 24-acre active New Hampshire Ball Bearings manufacturing plant, commercial and residential properties, part of U.S. Route 202, and wetlands.

Tinkham Garage

The 375-acre Tinkham Garage Superfund site is located in Londonderry, New Hampshire. On one end of the site, solvents and other hazardous substances were discharged behind a garage during the late 1970s. On another part of the site, petroleum, solvents and wash waters were discharged into the leach fields of the Woodland Village Condominium complex. In 1978, residents complained of foam and odors in a small unnamed stream that runs through the complex. Investigators found soil and groundwater contamination.

Figure 96. Commercial reuse at the Tinkham Garage site (New Hampshire).

In 1983, EPA placed the site on the National Priorities List (NPL). Cleanup activities included groundwater and soil treatment, extension of the public water line to the condominium complex and nearby houses as well as sewer lines, and groundwater monitoring. Groundwater monitoring, construction of additional water line extensions to residents, and additional source area and bedrock investigations are ongoing. During cleanup, EPA provided information to interested parties about reuse considerations for the site.

Today, a shopping complex with a Home Depot, Staples and Dunkin' Donuts occupies the northeast area of the site. The Woodland Village Condominium complex and several single-family homes remain on the northern part of the site. The Nevins Retirement Cooperative Association completed construction of over 125 residences on the central part of the site. These residences are part of a senior housing development. Site redevelopment has increased property values in Londonderry. Increased economic activity at the site has also encouraged local infrastructure improvements.

Town Garage/Radio Beacon

The Town Garage/Radio Beacon Superfund site is located in Londonderry, New Hampshire. The U.S. Department of Defense owned part of the site from the early 1940s until 1968 and operated a radio beacon there during World War II. Afterwards, the site contained a series of residential wells and one commercial well. A 1984 state inspection found groundwater contamination in many of the wells. In the late 1980s, owners of six residences affected by groundwater contamination in wells chose to connect to the local public water supply. As a precaution, several other residences have since connected to the public water supply.

Figure 97. Residential development east of the Town Garage/Radio Beacon site (New Hampshire). Imagery © 2017 Google.

EPA placed the site on the National Priorities List (NPL) in 1989. Cleanup activities included annual monitoring of natural processes to clean up groundwater and placing restrictions to prevent groundwater use for household purposes. The success of EPA's cleanup plan allowed for site reuse. Today, the site includes two residential developments and a wetland area. The Holton Circle development includes about 25 homes and the Saddlebrook development includes 20 new homes. In 2014, EPA took the site off the NPL.

Troy Mills Landfill

The Troy Mills Landfill Superfund site is part of a larger 270-acre parcel in Troy, New Hampshire. From 1967 until 1978, Troy Mills used the property to dispose of solid waste and hazardous materials generated by its manufacturing plant. In 1978, the state of New Hampshire ordered the company to stop these disposal practices. During the 1980s and 1990s, environmental investigations confirmed on-site soil, groundwater, surface water and sediment contamination. Troy Mills filed for bankruptcy in 2001.

Figure 98. View of open space at the Troy Mills Landfill site (New Hampshire).

EPA placed the site on the National Priorities List (NPL) in 2003. Cleanup actions included installing a system to collect hazardous materials from the groundwater. Cleanup also included removal of drums containing flammable liquid waste, waste sludge and contaminated soil. After removing contaminated soil, EPA backfilled excavated areas and capped them. In 2005, EPA supported community efforts to identify reuse options for the site. The community expressed interest in a recreation area. Today, an on-site trail network forms part of the 42-mile Cheshire Branch Rail Trail system. Limited access to the site for recreational use will continue until EPA finishes cleanup activities. Future recreation opportunities at the site could include hiking, horseback riding, snowmobiling, mountain biking and cross-country skiing.

Federal Facility Sites

Pease Air Force Base

The 4,000-acre former Pease Air Force Base is located in Rockingham County in the city of Portsmouth and the town of Newington, New Hampshire. From the 1950s until 1991, the U.S. Air Force (Air Force) used the facility to maintain military aircraft. Aircraft maintenance operations contaminated soil and groundwater with solvents and fuel.

Figure 99. Entrance to the airport at the Pease Air Force Base site (New Hampshire).

EPA added the site to the National Priorities List (NPL) in 1990. The Air Force continues to conduct investigations and is also operating two treatment systems for contaminated groundwater. In 1992, the Air Force transferred 1,702 acres of the site to the local government for use as a public airport. The Air Force kept 229 acres for the New Hampshire Air National Guard. The New Hampshire Department of Transportation leased 20 acres for a highway expansion project.

The Air Force also transferred 1,054 acres to the U.S. Fish and Wildlife Service for creation of the Great Bay National Wildlife Refuge. In 1997, the U.S. Fish and Wildlife Service received another 1,300 acres from the Air Force. In 2000, the Pease Development Association completed the Pease International Tradeport. In 2005, the Air Force transferred the remaining 268 acres of the site to the Pease Development Authority. Redevelopment of this area is ongoing. The Pease International Tradeport is home to over 260 businesses, education facilities and government offices. The site also supports Portsmouth International Airport, the New Hampshire Air National Guard and a golf course. Site businesses employ nearly 8,000 people, providing estimated annual employment income of $637 million and generating $2.3 billion in estimated annual sales revenue. Site properties have a combined value of over $507 million and generated about $8 million in annual property tax revenues in 2018.

Other Cleanup Sites

Former Synergy Site

Figure 100. View of the former Synergy Site (New Hampshire).

The Former Synergy Site is located in Claremont, New Hampshire. From the turn of the century until the mid-1940s, a manufactured gas plant operated on site. Operations contaminated soil with coal tar, a common contaminant of that process. Between 2010 and 2012, investigations identified waste perched on bedrock that was leaching into the Sugar River. Cleanup activities included removing structures and soil, stabilization, and capping. Because of the historical importance of the gas plant to the town's textile history and EPA's obligations under the Historical Preservation Act, EPA coordinated with the State Historic Preservation Office during cleanup activities. A brick-and-concrete structure with informative plaques now memorializes the site's history. The site is located near a visitor's center and is part of the community's historic downtown area. The site is currently a picturesque open space on the banks of the Sugar River. Looking forward, the town will consider reuse options for the property.

RHODE ISLAND REUSE SUMMARY PROFILES

National Priorities List Sites

Central Landfill

The Central Landfill Superfund site is a 154-acre former landfill in Johnston, Rhode Island. During the 1970s, operators disposed of industrial liquid waste in the landfill's hazardous material disposal area. In 1982, the State ordered the site owner to close this area. EPA placed the site on the National Priorities List (NPL) in 1986.

Figure 101. Aerial view of the Central Landfill site (Rhode Island). Imagery © 2017 Google.

Cleanup activities included construction of a multi-layer cap, containment and treatment of groundwater, deed restrictions on groundwater use and land use, and evaluation of the site's landfill gas collection system. Today, the site remains in continued use. Central Landfill, which is owned and operated by the Rhode Island Resource Recovery Corporation, operates on site. It receives over 90% of Rhode Island's municipal solid waste. Broadrock Renewables, LLC also owns and operates a facility on site that turns gas collected from the landfill into electricity. The company expanded the energy-generating facility in stages. The facility currently includes 15 engine generator sets that produce up to 20 megawatts of electricity.

Centredale Manor Restoration Project

The Centredale Manor Restoration Project Superfund site includes a 9-acre property in North Providence, Rhode Island, and downstream areas. A chemical company and a drum reconditioning facility operated on site at different times beginning in the early 1940s. Operations ended in 1972 when a fire destroyed most of the facility. Disposal practices included burying waste or releasing chemicals directly onto the ground or into the river. These practices resulted in widespread contamination on site and downstream. Residential development followed – Brook Village Apartments in 1977 and Centredale Manor Apartments in 1983. EPA investigations found contamination in soil, sediment, groundwater, surface water and animals on site.

Figure 102. View of the Centredale Manor Restoration Project site (Rhode Island).

EPA placed the site on the National Priorities List (NPL) in 2000. EPA's early actions included capping and fencing the site, as well as removing some contaminated soil from low-lying residential properties and restoring the Allendale Dam. The long term cleanup of the site is underway. Today, the Brook Village and Centredale Manor apartment complexes remain on site. EPA's cleanup approach has been compatible with the site's continued residential use.

Peterson/Puritan, Inc.

The Peterson/Puritan, Inc. Superfund site spans over 500 acres in Providence County, Rhode Island. In 1959, a plant at the north end of the site began packaging aerosol consumer products. A rail car accident and tank spill on the property in 1974 released 6,000 gallons of solvent. In 1979, the Rhode Island Department of Health found contamination in groundwater affecting nearby public well fields. Immediate measures took place to provide an alternative water supply to the local communities. EPA determined that the Peterson/Puritan, Inc. facility was the source of the groundwater contamination.

Figure 103. Business signs at the Peterson/Puritan, Inc. site (Rhode Island).

EPA placed the site on the National Priorities List (NPL) in 1983. In 1990, EPA divided the site into two cleanup areas, known as operable unit 1 (OU1) and OU2. The cleanup design for OU2 began in 2016. For OU1, systems are in place to clean up contaminated groundwater and soil. Cooperation between EPA, the Rhode Island Department of Environmental Management and the community enabled on-site businesses to remain in operation during the cleanup. Megawatt Energy Solutions installed over 2,000 solar panels on the roof of a warehouse building on site in 2014. The solar array produces about 650,000 kilowatts of electricity per year. The warehouse owner also installed a similar system on a second building at the site. The state of Rhode Island and the municipality also completed redevelopment projects on site, including a town dog pound. Other redevelopment includes a riverside park and a bike path along the Blackstone River and Canal. The Blackstone River remains an important natural, recreational and cultural resource for the region. In 2014, the area became part of the national park system as the Blackstone River Valley National Historic Park.

Rose Hill Regional Landfill

The Rose Hill Regional Landfill Superfund site is a former municipal landfill in South Kingstown, Rhode Island. From 1967 to 1983, South Kingstown leased the land for use as a domestic and industrial waste disposal facility. Improper disposal activities contaminated site groundwater, soils and three nearby private wells. Runoff contaminated nearby surface water bodies. EPA discovered the contamination in 1981. In 1983, the facility stopped operations and the operator graded and seeded the disposal areas.

Figure 104. Aerial view of solar facility at the Rose Hill Regional Landfill site (Rhode Island). Photo used with permission of Kearsarge Energy.

In 1989, EPA placed the site on the National Priorities List (NPL). Early investigations found landfill gases moving off site toward nearby homes. Cleanup activities included extending the municipal water supply to residences with contaminated wells, installing gas alarms for nearby residences and relocating one residence. Landfill cleanup activities include consolidating landfill areas, capping the landfill, installing a landfill gas destruction system, monitoring, and restricting groundwater use. EPA will determine the need for additional cleanup activities based on monitoring. A South Kingston transfer station for municipal wastes is located on part of the site. Surrounding land uses support a hunting preserve, a bird dog kennel and field training facilities, and a pet cemetery. The South Kingstown Town Council also authorized development of a solar photovoltaic energy farm on the property. The 4.7-megawatt solar farm was completed on the landfill caps in 2018.

West Kingston Town Dump/URI Disposal Area

Figure 105. Aerial view of the solar facility at the West Kingston Town Dump/URI site solar farms (Rhode Island). Photo used with permission of Kearsarge Energy.

Two former dumping areas in South Kingston, Rhode Island, make up the 18-acre West Kingston Town Dump/ University of Rhode Island (URI) Disposal Area Superfund site. A gravel mine began operating on part of the site, the West Kingston Town Dump area, in the 1930s. From the late 1940s until 1975, a gravel mine also operated on site, at the URI Disposal Area. Starting in 1951, area towns and URI began disposing of unregulated waste on site. The dump closed in 1978. However, disposal continued until at least 1987. Starting in 1988, the state connected affected residential wells nearby to city water. A 1989 inspection found leaking drums next to the site. Drum contents contaminated subsurface soil and groundwater.

EPA placed the site on the National Priorities List (NPL) in October 1992. For cleanup, the potentially responsible parties combined waste from both areas and capped it on site. In 2009 and 2011, EPA injected chemicals to help break down contaminants in the groundwater. Operation and maintenance activities and groundwater monitoring are ongoing. Residents and URI students currently use walking trails on site. Solar facilities with capacities of 1.2 megawatts and 2.7 megawatts, respectively, were completed for the West Kingston Town Dump area and the URI Disposal Area and adjacent field in 2018. These facilities have a combined capacity of 3.9 megawatts.

Western Sand & Gravel

Figure 106. View of the Western Sand & Gravel site (Rhode Island).

The Western Sand and Gravel Superfund site includes about 25 acres in a rural area on the boundary of Burrillville and North Smithfield, Rhode Island. From 1953 until 1975, a sand and gravel quarry operated on site. From 1975 to 1979, a waste disposal area operated on site. Operators disposed of wastes in unlined lagoons and pits. These waste handling practices resulted in contamination of soil and groundwater.

EPA placed the site on the National Priorities List (NPL) in 1983. Cleanup included a groundwater recirculation system, an alternate water supply, restrictions on groundwater and land use, and monitoring of natural processes to clean up groundwater. Cleanup also included waste removal, capping of a 2-acre area and fencing of the 6-acre contaminated soil area. In 2001, Supreme Mid-Atlantic purchased the site property. In 2004, the company completed construction of a 20,000-square-foot truck-body assembly building and open space for truck parking. Supreme Mid-Atlantic conducted assembly, sales and service activities at the site until 2016, when it closed its Rhode Island operation. The land and the building are currently for sale.

Federal Facility Sites

Davisville Naval Construction Battalion Center

The Davisville Naval Construction Battalion Center (Davisville NCBC) site is located 18 miles south of Providence, Rhode Island. The site includes 1,500 acres along the Narragansett Bay. From 1951 to 1994, Davisville NCBC supported mobilization of naval construction forces. Operations and waste disposal practices at the site resulted in widespread soil and groundwater contamination. Operations also contaminated surface water in nearby Allen Harbor.

Figure 107. View of cleanup activities at the Davisville Naval Construction Battalion Center site (Rhode Island).

In 1989, EPA added the site to the National Priorities List (NPL). The base on site closed in 1994, and the Base Realignment and Closure Act (BRAC) is addressing cleanup. In September 1997, the Rhode Island Port Authority, now called the Quonset-Davisville Redevelopment Corporation, leased about 704 acres of the site. Quonset-Davisville Redevelopment Corporation has since sold or conveyed the acreage through a Maritime Public Benefit Conveyance with 367 acres left in the lease. Further study is underway for this leased acreage. In May 2000, the town of North Kingstown received 189 acres of the site through a Public Benefit Conveyance for use as a park. There are restrictions on building construction over the groundwater plume. In 2003, a Public Benefit Conveyance gave another 15 acres of the site to the town of North Kingstown for use as a park. Restrictions limit the site to recreational use and land use requirements ensure the landfill cap is not damaged. 70 new companies are located on site. These businesses employ nearly 1,500 people, providing estimated annual employment income of nearly $64 million and generating nearly $254 million in estimated annual sales revenue. Site properties are valued at over $187 million and generated nearly $823,000 in annual property tax revenues in 2018. Park and recreational land for the local community has been created. The site is also the cornerstone of the Quonset Business Park, which is home to 200 companies employing 12,000 people. There are two solar farms and unique solar- and wind-powered street lights in the Quonset Business Park.

Newport Naval Education & Training Center

The 1,063-acre Newport Naval Education & Training Center Superfund site is located in Newport, Middletown, Portsmouth and Jamestown, Rhode Island. Starting in 1900, the U.S Navy used the site as a refueling depot. From 1955 to the mid-1970s, an 11-acre portion of the site along the shore of Narrangansett Bay, known as McAllister Point Landfill, accepted wastes. Wastes were mostly domestic refuse, acids, solvents, paint and waste oil. Improper disposal activities at the site contaminated groundwater and soil.

Figure 108. View of the Newport Naval Education & Training Center site (Rhode Island).

EPA listed the site on the National Priorities List (NPL) in 1989. Cleanup activities include tank removal, groundwater treatment, landfill capping, contaminated marine sediment removal, off-site eelgrass restoration, and groundwater and sediment monitoring. The U.S. Navy continues to lead ongoing investigations and cleanup, and continues to operate a naval base on site. Several parcels and buildings with no Superfund involvement have already been transferred and redeveloped as a marina, a community college campus and other uses. Non-Superfund parcels continue to be transferred.

VERMONT REUSE SUMMARY PROFILES

National Priorities List Sites

Elizabeth Mine

The Elizabeth Mine Superfund site is located in Strafford and Thatford, Vermont. The site contains waste rock, roast beds and mine tailings left behind after 150 years of mining activity. Mining wastes contaminated groundwater, soil and sediment with heavy metals and acid-rock drainage. Mining wastes also contaminated the adjacent West Branch of the Ompompanoosuc River, Lord Brook and two tributaries.

Figure 109. Solar array at the Elizabeth Mine site (Vermont). Image used with permission of Weston and Sampson, Conti Solar, and Elizabeth Mine Solar I, LLC.

EPA placed the site on the National Priorities List (NPL) in June 2001. In 2005, EPA stabilized the tailing pile with soil and repaired the tailing dam, preventing the release of large quantities of mining waste and potential catastrophic loss of life and property downstream. EPA built a water treatment system in 2008. EPA consolidated and covered the mining waste in 2012 with reuse in mind. During cleanup, EPA restored 10 acres of wetland for ecological reuse. In 2014, the U.S. Army Corps of Engineers Sustainability Award Program presented the Green Dream Team Award to the Elizabeth Mine Superfund Site Project Delivery Team for wetland restorations at the site. As a result of the cleanup, the state of Vermont delisted the 4 miles of the impaired West Branch of the Ompompanoosuc River and portions of Lord Brook from the Clean Water Act's impaired waters list based on the recovery of the benthic and fish communities. In 2017, a developer installed a 7-megawatt solar array on the radiated tailings pile. Today, the project supplies electricity to the Green Mountain Power grid and produces enough energy to power about 1,300 homes.

Ely Copper Mine

The 350-acre Ely Copper Mine Superfund site is located in Vershire, Vermont. From 1821 until 1920, copper mining operations generated piles of waste rock, smelter waste and tailings. Operators disposed of the materials on site. Mining operations stopped at the site in 1920; activities to remove dump-ore took place between 1949 and 1950.

Figure 110. Former entrance to main mining shaft at the Ely Copper Mine site (Vermont).

EPA placed the site on the National Priorities List (NPL) in 2001. EPA finalized cleanup plans for the site in 2016. Since 1950, activities at the site have included commercial timber management as well as hunting, snowmobile riding and horseback riding. The site also includes historic mining-related artifacts and provides habitat for several species of state and federal threatened and endangered bats.

Pownal Tannery

Figure 111. Aerial view of the Pownal Tannery site (Vermont).

The 28-acre Pownal Tannery Superfund site is located in North Pownal, Vermont. Beginning in the late 1880s, a woolen mill occupied the site. Starting in 1935, a hide tanning and finishing facility operated on site. After the facility closed in 1988, EPA found contamination in groundwater, soil and sludge. EPA placed the site on the National Priorities List (NPL) in 1999. EPA led two emergency removal cleanup actions, removing contaminated materials and the tannery mill building, decontaminating a facility warehouse, and capping a facility landfill. EPA completed these activities in 2001. Further investigations resulted in a 2002 cleanup decision that included treating soil and sludge on site and placing it beneath a protective cap. The final remedy also required land use restrictions and long-term monitoring of groundwater and river sediments. EPA worked with the town of Pownal to coordinate reuse planning as part of the cleanup process. Funded by a 1999 Superfund Redevelopment pilot grant, the Town developed plans for recreation areas and a new wastewater treatment plant on site. The treatment plant, completed in 2006, occupies part of the former lagoon area. The town of Pownal reused old forest beams from the former tannery building to build a recycling center and town equipment shed. Recreation areas include a small park, playing fields, benches, a historic marker near the North Pownal Bridge and walking paths in the former lagoon area. In 2017, Hoosic River Hydro LLC completed construction of a hydroelectric plant at a dam next to the site.

Tansitor Electronics, Inc.

Figure 112. Facilities at the Tansitor Electronics, Inc. site (Vermont).

The 44-acre Tansitor Electronics, Inc. Superfund site is located in Bennington, Vermont. About 36 acres of the site are located north of Route 9; the remainder of the site is located south of Route 9. Since 1956, various owners have made electrical components on part of the site. In 1981, Vishay-Tansitor notified EPA that operations between 1956 and 1979 had disposed of organic solvents and acids at the site. Disposal practices contaminated soil, sediment, groundwater and surface water.

EPA placed the site on the National Priorities List (NPL) in 1989. The selected cleanup plan included a waiver of groundwater standards for a 10-acre area of the site. The cleanup plan also included steps to address monitoring results and place restrictions on groundwater use. Outside the 10-acre area, groundwater contaminant concentrations are all below cleanup goals. EPA took the site off the NPL in 1999. Groundwater monitoring is ongoing. Vishay-Tansitor continues to operate its manufacturing facility on site. Forested wetlands cover most of the site south of Route 9.

Back cover photos: Industri-Plex (Massachusetts), Peterson/Puritan, Inc. (Rhode Island), Sullivan's Ledge (Massachusetts)

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April 2020

www.epa.gov/aboutepa/epa-region-1-new-england