PUTTING SITES TO WORK

How Superfund Redevelopment in Region 3 Is Making a Difference in Communities

2021 DATA

REGION 3 ECONOMIC PROFILE

EPA

Cover page photos:
Avtex Fibers (Virginia), EI Du Pont De Nemours (Delaware), Dorney Road Landfill (Pennsylvania), Havertown PCP (Pennsylvania), Saunders Supply Co. (Virginia)

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Figure 1. Fire and rescue station at the Abex Corporation site (Virginia).

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PREFACE

EPA's Superfund program is a cornerstone of the work that the Agency performs for people 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 Program, the Agency contributes to these communities' economic vitality by supporting the return of sites to productive use.

EPA is focused on accelerating work and progress at all Superfund sites across the country, and supporting redevelopment and community revitalization. Using resources from the 2021 Bipartisan Infrastructure Law, EPA is providing necessary funding to enable delayed cleanup efforts at 49 Superfund sites to begin. More than 60% of these sites are in historically underserved communities. EPA is leading the way to support the return of these and other 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

EPA Region 3 covers the Mid-Atlantic – Delaware, Maryland, Pennsylvania, Virginia, West Virginia and the District of Columbia – which is one of the nation's most diverse, developed and populated regions. Residents and visitors benefit from the region's diverse landscapes, which provide opportunities to enjoy wildlife and remarkable natural resources such as the Appalachian Mountains and the Chesapeake Bay. Looking to the future, the priorities of many Mid-Atlantic communities include sustainable economic growth and a healthy environment. A key part of this work centers on finding new uses for old industrial and federal facility sites, including Superfund sites. The Superfund program in EPA Region 3 is proud to play a role in these efforts.

The cleanup and reuse of Superfund sites often restores value to site properties and amenities to 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 efforts such as the Superfund Redevelopment Program, EPA Region 3 helps communities reclaim cleaned-up Superfund sites. Factoring the reasonably anticipated future use of Superfund sites into the cleanup process promotes their safe redevelopment. In addition, EPA Region 3 works closely with state and local officials to remove barriers that have kept many Superfund sites vacant or underused. EPA Region 3 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 and income for local communities.[1]

Region 3 Sites in Reuse and Continued Use: Business and Job Highlights

Businesses:	*592*
Total Annual Sales:	*$4.1 billion*
Number of People Employed:	*14,989*
Total Annual Employee Income:	*$1.1 billion*

Figure 2. The Robert Morris University Island Sports Center at the Ohio River Park site hosts skating rinks, a golf training facility, a boathouse and dining facilities (Pennsylvania).

Superfund sites across Region 3 are now the location of business parks, shops and public-service facilities. Many sites continue to encompass industrial operations such as large-scale manufacturing facilities and warehouses. Other sites now support natural areas, recreation trails and athletic fields. On-site businesses and organizations at current and former Region 3 Superfund sites provide an estimated 14,989 jobs and contribute an estimated $1.1 billion in annual employment income. Sites in reuse and continued use in Region 3 generate $14.2 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 3. There are 78 Superfund sites in reuse or continued use in Region 3 for which EPA does not have business data, including 30 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 74 sites in reuse or continued use in Region 3 for which EPA does not have property value or tax data, including 30 NPL federal facilities.

This profile looks at how redevelopment activities at Superfund sites make a difference in communities across Region 3. 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 3.

Figure 3. Left: City of Portsmouth Fire Department facilities are located at the Abex Corp. site (Virginia). Right: Treated surface water provides irrigation for the nursery at the Saunders Supply site (Virginia).

SUPPORT FOR SUPERFUND REDEVELOPMENT

EPA Region 3 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, Region 3 partners with stakeholders to encourage redevelopment opportunities at Superfund sites. Region 3 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 redevelopment support efforts in EPA Region 3 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 3 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, such as the Rails-to-Trails Conservancy, the U.S. Soccer Foundation, the U.S. Fish and Wildlife Service and local economic development organizations.
- Developing reuse fact sheets, websites, webinars and reuse case studies to share opportunities and lessons associated with Superfund Redevelopment.

VISION FOR FUTURE USE

Hidden Lane Landfill Superfund Site
Sterling, Virginia

DECEMBER 2019

Introduction

The U.S. Environmental Protection Agency (EPA), the Virginia Department of Environmental Quality (VA DEQ) and Loudoun County are gathering community input on potential future use options for the Hidden Lane Landfill Superfund site to inform final cleanup, planning and potential redevelopment. The privately owned, wooded 149-acre property is situated along the Potomac River between two residential neighborhoods in Loudoun County, Virginia.

The Hidden Lane Landfill operated from 1971 to 1984 as a disposal facility. County and state officials identified contaminants from the site in the drinking water wells of homes in the adjacent Broad Run Farms neighborhood in 1989, and the site was added to EPA's National Priorities List (Superfund List) in 2008. Since 2008, federal and state agencies have been involved in investigating, monitoring and planning remedial actions to address potential exposure to site-related contaminants.

As EPA Region 3 approached completion of remedial planning in 2018, EPA Superfund Redevelopment sponsored a reuse planning process to support Loudoun County, the property owner, and the community to identify potential future use options for the site. Activities included:

- Engaging key stakeholders to identify preliminary future use goals for the property.
- Gathering input from community members and residents through a public meeting and an online survey.
- Analyzing site conditions that could inform the future use of the site.
- Developing a future use suitability map to identify areas for redevelopment.
- Summarizing information gathered in this vision report.

Purpose and Goals

The goal for reuse planning was to better understand the community's vision for interim use and a long-term use of the site. Overarching goals identified during the process include:

- Complete remedial activity and ensure ongoing maintenance, safety and protection to prevent additional contamination or risk.
- Ensure that surrounding neighborhoods' concerns, such as potential for increased traffic, parking, privacy, and protection of the remedy, are addressed in potential future use plans, including redevelopment and recreational uses.
- Maximize market value to increase value of surrounding properties.

Funded by EPA Superfund Redevelopment

Figure 1. Aerial photograph of the Hidden Lane Landfill Superfund site and adjacent neighborhoods. Source: Loudoun County Pictometry, 2017.

Figure 2. The October 2018 stakeholder meeting with representatives from surrounding neighborhoods, developers/builders, trails and recreation groups, Loudoun County, VA DEQ and EPA to discuss future use goals and site suitability.

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Figure 4. Reuse Plan for the Hidden Lane Superfund Site (Virginia).

These efforts have helped build expertise across Region 3, 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 the potential for future use opportunities 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.

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 NPL is a list of sites targeted by the Agency 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 to address it 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 has placed 221 sites in Region 3 on the NPL.

Whenever possible, EPA seeks to integrate redevelopment priorities into site cleanup plans. In Region 3, EPA currently tracks 153 NPL sites and six non-NPL Superfund sites that are in use. 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. Businesses and other organizations also support culturally and historically significant uses on site areas. 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 3.

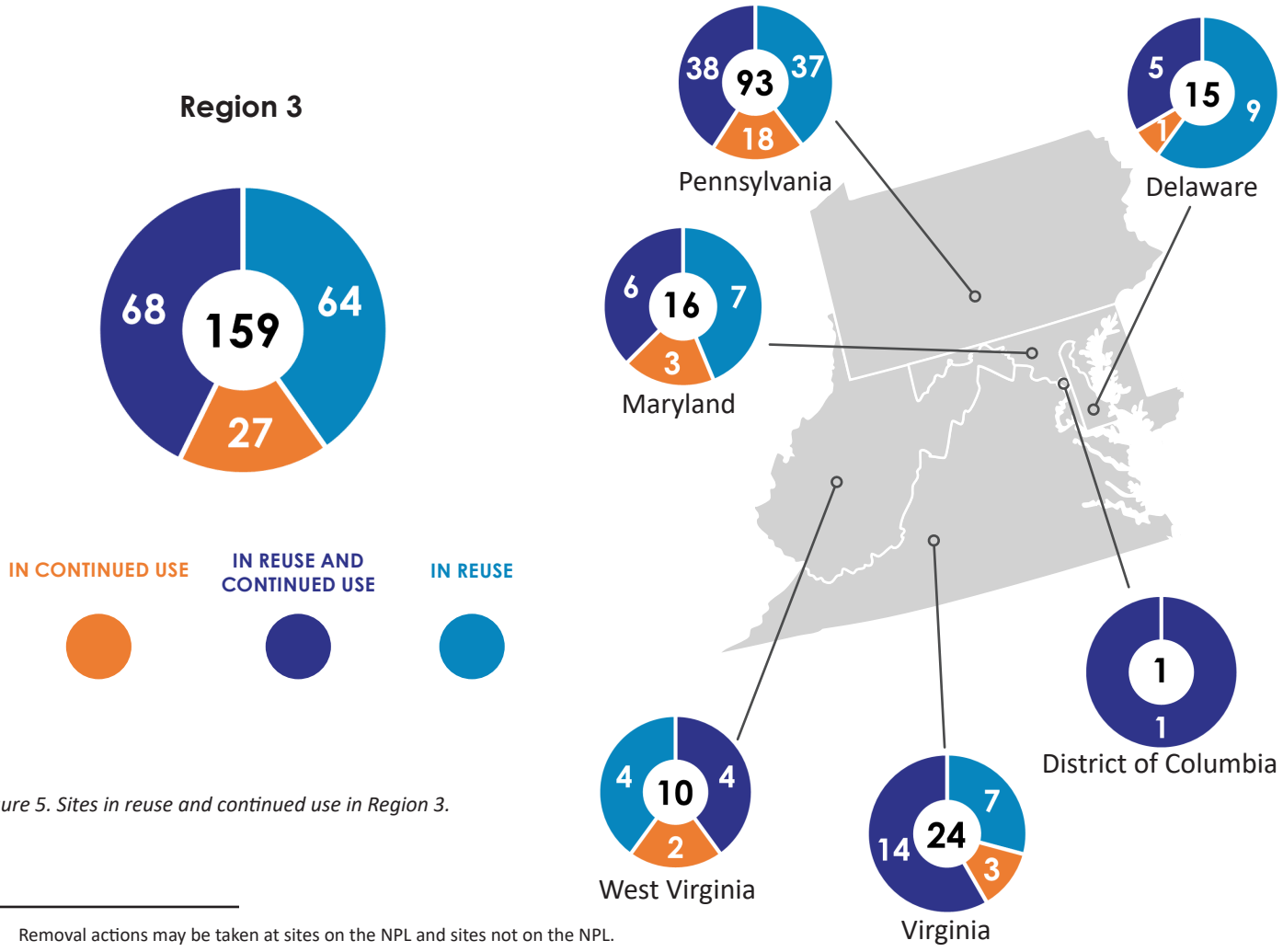


Figure 5. Sites in reuse and continued use in Region 3.

2 Removal actions may be taken at sites on the NPL and sites not on the NPL.

Figure 6. Left: Trailhead for the Virginia Blue Ridge Railway Trail at the U.S. Titanium site (Virginia). Right: One of several towing businesses located above the former area of groundwater contamination at the Chem-Solv, Inc. site (Delaware).

Sites in Reuse and Continued Use: A Closer Look

Reuse Type	Description	Region 3 Example
In Reuse	*Part or all of a site is being used in a new, different manner than before Superfund involvement. Or, the property was vacant and cleanup was designed to support a new, specific land use.*	*U.S. Titanium (Virginia) - Hikers and bikers take advantage of a recreation trail on about 50 acres at a former titanium dioxide manufacturing plant.*
In Continued Use	*Historical uses at a site remain active, and/or the site is still used in the same general manner as when the Superfund process started at the site.*	*Follansbee (West Virginia) - A coal- and tar-processing plant has operated at the site since 1914.*
In Reuse and Continued Use	*Part of a site is in continued use and part of the site is in reuse.*	*Chem-Solv, Inc. (Delaware) - Businesses continue to operate above the former area of groundwater contamination, and an apartment building is now located on the former facility property.*

BENEFICIAL EFFECTS OF SUPERFUND SITE REDEVELOPMENT IN REGION 3

Businesses and Jobs

EPA has collected economic data for 592 businesses, government agencies and civic organizations operating on 78 NPL sites and three non-NPL sites in reuse and continued use in Region 3.[3] (See the State Redevelopment Profiles for each state's reuse details.) Businesses and organizations at these sites are part of several different sectors, including lodging, professional trade, industrial trade and health care services.

Businesses and organizations at Region 3 Superfund sites include hotels, schools, grocery stores, restaurants, civic and social organizations, freight transportation facilities, health care centers and manufacturing facilities.

The businesses and organizations at these sites generate about $4.1 billion in estimated annual sales and employ 14,989 people, earning an estimated $1.1 billion 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. Table 1 provides more detailed information.[4]

Table 1. Site and Business Information for Region 3 Sites in Reuse and Continued Use (2021)

	Sites[a]	Sites with Businesses[b]	Businesses[c]	Total Annual Sales[d]	Total Employees	Total Annual Employee Income[e]
In Reuse[f]	64	40	167	$1.2 billion	3,887	$242 million
In Continued Use[g]	27	8	8	$335 million	668	$57 million
In Reuse and in Continued Use	68	33	417	$2.6 billion	10,434	$805 million
Totals	**159**	**81**	**592**	**$4.1 billion**	**14,989**	**$1.1 billion**

[a] Thirty sites are federal facilities. Federal facility sites are excluded from all other detailed site and business data presented above.

[b] See footnote 1, page 1. Also includes 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 the Sources section.

[e] Throughout this report, sales and annual employee income may not sum exactly to the totals presented due to rounding.

[f] A site "in reuse" refers to a site where a new use or uses are occurring such that there has been a change in the type of use (e.g., industrial to commercial), or the property was unused and now supports a specific use. This means that the developed site is actually used for its intended purpose by customers, visitors, employees, residents or fauna, in the case of ecological reuse.

[g] A site "in continued use" refers to areas being used in the same general manner as they were when the site became subject to the Superfund or Federal Facility Programs.

3 See footnote 1, page 1.

4 For more information on the collection of business, jobs and sales data, see the Sources section.

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. For example, site properties at the Price Battery Lead Smelter site in Pennsylvania are now valued at nearly $102 million. This increased value can boost property tax revenues, which help pay for local government operations, schools, transit systems and other public services.

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 3 Sites in Reuse and Continued Use: Property Value and Tax Highlights

Total Property Value: *$873 million*

Total Annual Property Taxes: *$14.2 million*

Figure 7. Leased property ready for redevelopment at the C & R Battery site (Pennsylvania).

EPA has collected property value and tax data for 85 Superfund sites in reuse and continued use in Region 3.[5] These sites span 2,470 property parcels and 9,133 acres. They have a total property value of $873 million. The average total property value per acre is $94,000.

Land and improvement property value information is available for 69 sites. These properties have a total land value of $192 million and a total improvement value of $496 million.[6]

Property tax information is available for 84 sites. The properties generate a combined $14.2 million in local property taxes annually.

Table 2. Property Value and Tax Information for Sites in Reuse and Continued Use in Region 3[a]

Total Land Value (69 sites)[b]	*Total Improvement Value[c] (69 sites)*	*Total Property Value (85 sites)*	*Total Property Value per Acre (84 sites)[d]*	*Total Annual Property Taxes (84 sites)*
$192 million	***$496 million***	***$860 million***	***$94,000***	***$14.2 million***

[a] Results are based on an EPA Superfund Redevelopment Program 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 2020 to 2022. For more information, see the Sources section. 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] Land and improvement value for one of the sites is listed as $0.

[d] Acreage information was available for 84 sites. Total property value per acre is calculated by dividing the property value amount of $860 million for those 84 sites by the total acreage of 9,133 for those same 84 sites.

5 There are 74 additional sites in reuse or continued use in Region 3 for which EPA does not have property value or tax data, including 30 NPL federal facilities. See footnote 1, page 1.

6 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 3 sites in reuse and continued use provide recreational and ecological benefits. Green space and habitat reuses help attract visitors and residents and indirectly contribute to local economies.

Figure 8. Following a removal action, new erosion controls protect restored habitat at the Brodhead Creek site (Pennsylvania).

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 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 serves 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 recreation 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.[7] 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 3 provide recreational and ecological benefits.

PALMERTON ZINC PILE

SUPERFUND CLEANUP ENABLES HISTORIC TRAIL TO RETURN TO ORIGINAL ROUTE

The Palmerton Zinc Pile Superfund site is in Palmerton, Pennsylvania. Former zinc smelting operations at two plants in Palmerton resulted in area-wide contamination. For nearly 80 years, the New Jersey Zinc Company disposed of smelting waste at the site. Former smelting operations released heavy metals into the valley, causing the widespread loss of trees on about 4,000 acres of Blue Mountain and contaminating soil across the community surrounding the smelters. EPA added the site to the NPL in 1983. Cleanup included revegetating Blue Mountain, diverting and treating surface water,

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

and cleaning up soil on private properties. About 9% of the more than 13,000 people living on site had an income below the federal poverty level during the previous year.

Figure 9. Walking trail through a thriving area of revegetation at the Palmerton Zinc Pile site (Pennsylvania).

In 2002, the Lehigh Gap Nature Center purchased over 750 acres of property along Blue Mountain. The following year, the Lehigh Gap Wildlife Refuge officially opened to the public. This habitat, along with other impacted areas of Blue Mountain, was created by the revegetation and reforestation of the site with native warm-season grasses and 13,000 trees, including 4,000 of the nearly extinct American Chestnut tree. The refuge provides habitat for local wildlife and migratory species while also stabilizing soils, minimizing erosion and improving water quality. The refuge has an extensive trail system for hikers, birders and outdoors enthusiasts. It also offers programs in environmental education, wildlife viewing and habitat restoration research. In 2010, a new visitor and education center opened at the site.

When smelting operations at the site contaminated soil and stripped the area of vegetation, subsequent cleanup efforts led to the rerouting of the Appalachian Trail, the scenic national hiking path that runs from Maine to Georgia. Cleanup and restoration efforts at the site have enabled the trail to return to its original route. In 2021, volunteers reestablished trail markers to once again guide hikers to the section known as the North Trail. Now, local and thru-hikers alike enjoy scenic views of the Lehigh Gorge while on the original stretch of the national scenic trail.

WHITMOYER LABORATORIES

Envisioning Recreational Redevelopment

The 22-acre Whitmoyer Laboratories Superfund site is in Jackson Township in Lebanon County, Pennsylvania. For 50 years, a veterinary and pharmaceutical manufacturing plant operated on site. Operators disposed of arsenic compounds in unlined lagoons. These practices contaminated soil, groundwater and surface water, endangering private drinking water wells nearby. EPA added the site to the NPL in 1986. Cleanup began in 1993. It included the connection of nearby homes to the public water supply, removal of all on-site buildings, and treatment and disposal of over 50,000 tons of hazardous waste. EPA continues to monitor site conditions; groundwater cleanup is ongoing. About 8% of the approximately 1,400 people living within 1 mile of the site's boundary had incomes below the federal poverty level during the previous year.

Figure 10. Walkers and runners frequent park trails at the Whitmoyer Laboratories site (Pennsylvania).

Early reuse planning and cooperation among EPA, the potentially responsible party group, township officials, and state and local partners resulted in the successful cleanup and recreational reuse of the site. Local leaders saw beyond the site's contamination to envision a redevelopment plan. The site is now home to Jackson Recreational Park and part of Fairlane Avenue Park, generating benefits for locals and visitors. The redeveloped area includes baseball and soccer fields, a disc golf course and a scenic walking trail surrounded by vegetation. The trail connects the community with other local and regional natural resources, such as Tulpehocken Creek and the historic Union Canal. These recreation opportunities at the site benefit long-time area residents as well as new arrivals, boosting positive health outcomes and property values. In addition, wetlands have been established on part of the site, providing valuable habitat for wildlife.

WOODLAWN COUNTY LANDFILL

UPDATED REMEDY FACILITATES REUSE AND HABITAT RESTORATION

The 38-acre Woodlawn County Landfill Superfund site is in Cecil County, Maryland. Originally, a sand-and-gravel quarry operated at the site. Cecil County later operated a municipal landfill on site from 1960 to 1978. From 1978 to 1981, after the site stopped receiving municipal waste, landfill operators disposed of industrial sludge at the site. Landfill operations contaminated soil, groundwater and stream sediment. EPA added the site to the NPL in 1987. About 9% of the more than 700 people living within 1 mile of the site's boundary had incomes under the federal poverty level during the last year.

Figure 11. Signage for the new Woodlawn Wildlife Area at the Woodlawn County Landfill site (Maryland).

In 1993, EPA selected an engineered groundwater remedy to clean up and restore groundwater quality. Around the same time, the site's potentially responsible party, Bridgestone Americas, began to work with the Wildlife Habitat Council to explore an ecological reuse vision for the site. Studies starting in the mid-1990s showed contaminant concentrations in the groundwater were decreasing at a rate much faster than predicted. Based on these findings, Bridgestone Americas collaborated with EPA to explore the option of revising the remedy to include a permeable, vegetated landfill cap and continuous monitoring of naturally attenuating contaminant concentrations. In 1999, EPA updated the site's remedy, changing it to support the site's return to beneficial use while also saving millions of dollars in cleanup costs. Cleanup finished in 2001. Long-term monitoring of groundwater, surface water, landfill gas and the vegetative soil cover are ongoing.

Together with an adjacent 58-acre area, the site is now part of an environmental education center called New Beginnings – The Woodlawn Wildlife Area, which is home to a green-roof structure, a wetland and a picnic area. Birders and dog walkers from the community visit the site. Local schools, the Boy Scouts of America, the Girl Scouts of America and the Cecil County Master Gardeners use the site for a variety of purposes, including nature and science projects and environmental education. The county runs a solid waste transfer station on part of the site, providing residents with drop-off facilities for trash, recycling and yard waste.

Why Are Wetlands Economically Important?

Superfund site reuse can support wetland habitat, as seen at several sites in Region 3. The Breslube-Penn, Inc. Superfund site in Allegheny County, Pennsylvania, is next to valuable natural habitat and recreation resources. As part of the cleanup, a wetland was constructed on site to replace a wetland contaminated by past site operations. At the Tybouts Corner Landfill Superfund site in New Castle, Delaware, cleanup restored contaminated lands to natural habitat and native vegetation. The potentially responsible parties used wildflowers and native grasses to stabilize the ground and prevent erosion on the landfill cap. The site is now a wildlife habitat area and wetland. The 94-acre Southern Maryland Wood Treating site is in Hollywood, Maryland. In 2000 and 2001, EPA regraded the site and planted a mix of wildflowers and grains to restore wildlife habitat on site. Today, wetlands cover most of the site.

Figure 12. Restored wetlands at the Tybouts Corner Landfill site (Delaware).

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 recreation amenities.

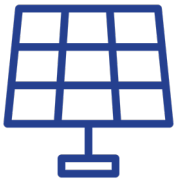
These benefits also have economic value. Replacing wetlands' water treatment services with manmade facilities, for example, would be expensive. Worldwide, wetlands provide an estimated $14.9 trillion benefit in ecosystem services. To learn more, see:

- *EPA's Economic Benefits of Wetlands:* www.epa.gov/sites/default/files/2021-01/documents/economic_benefits_of_wetlands.pdf.
- *EPA's Why Are Wetlands Important?:* www.epa.gov/wetlands/why-are-wetlands-important.
- *EPA's Functions and Values of Wetlands:* www.epa.gov/sites/default/files/2021-01/documents/functions_values_of_wetlands.pdf.

BENEFICIAL EFFECTS FROM ALTERNATIVE ENERGY PROJECTS

Alternative energy projects provide a range of beneficial effects. They support construction and operations jobs, spur local investment for manufacturing and materials, create benefits for landowners in the form of land lease and right-of-way payments, lower energy costs, and reduce greenhouse gas emissions. They also help hedge against energy price and supply volatility, support local business competitiveness and technology supply chain development, provide outreach and public relations opportunities for site owners and communities, and contribute to broader economic development planning. Alternative energy projects at Superfund sites and other contaminated lands help support White House priorities to strengthen resilience to climate change and increase access to clean energy sources. These projects can also help communities reclaim and return contaminated lands to productive uses, while supporting EPA's mission to protect human health and the environment.

As of September 2022, EPA tracks alternative energy projects at four Superfund sites in Region 3. These projects have an installed capacity of about 19 megawatts. One of these projects directly powers site-related cleanup activities.



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Solar Projects

Alternative energy projects tracked in **Region 3** generate an estimated **25,293 megawatt hours** each year.[8] This is equivalent to…

The carbon dioxide emissions from **2,258** homes' energy use for one year.

The greenhouse gas emissions of **3,862** gasoline-powered passenger vehicles driven for one year.

17,925 metric tons of carbon dioxide.

8 Equivalencies were calculated using power production. Estimated power production for solar projects was calculated using facility capacity (megawatts) with the National Renewable Energy Laboratory's PVWatts Calculator pvwatts.nrel.gov. To learn more about equivalencies, visit www.epa.gov/energy/greenhouse-gas-equivalencies-calculator.

OPPORTUNITY ZONE TAX INCENTIVES AS A SUPERFUND REDEVELOPMENT TOOL

Opportunity Zones are a powerful tool to encourage economic revitalization in distressed communities by incentivizing long-term, sustainable investment in redevelopment and stimulating economic growth. State governors have designated 8,756 Opportunity Zones across the country in geographic areas that suffer double the national poverty rate. Socio-economic metrics show that Opportunity Zones are among the highest-need communities in the nation. The U.S. Department of the Treasury estimates that Opportunity Zones may attract up to $100 billion in investments, which strengthens the financial viability of redevelopment projects at Superfund sites located in Opportunity Zones.

Redevelopment of current or former Superfund sites may qualify for Opportunity Zone tax benefits. Nationally, there are 343 NPL sites located entirely or partially in Opportunity Zones. Estimates indicate there are thousands of Superfund removal sites in Opportunity Zones across the nation. In Region 3, there are 25 NPL sites located entirely or partially in an Opportunity Zone. Redevelopment investments that meet appropriate qualifying criteria may be eligible for Opportunity Zone tax benefits. EPA and the U.S. Department of Housing and Urban Development (HUD) have tools and resources to help local leaders achieve equitable outcomes in Opportunity Zone development projects.

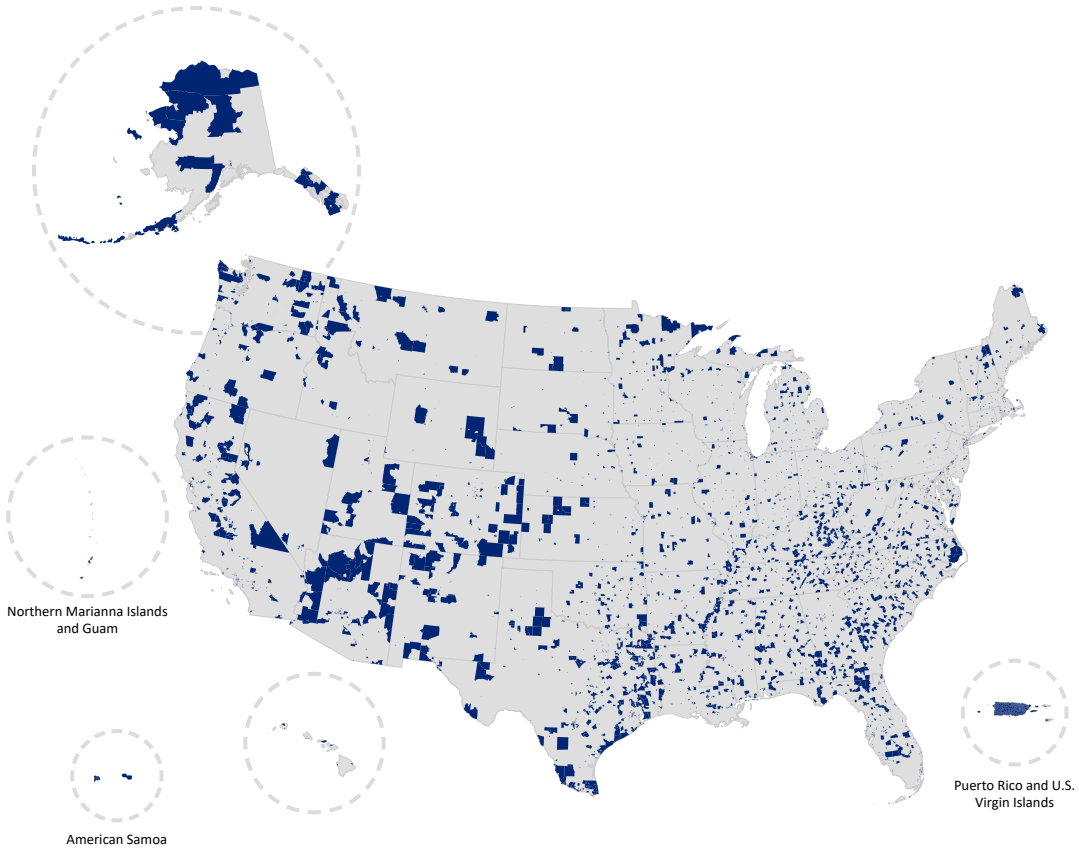

Figure 13. About 8,756 Opportunity Zones were established in all 50 states, the District of Columbia and the five U.S. territories.

ENVIRONMENTAL JUSTICE AND ECONOMIC REVITALIZATION

Communities with environmental justice concerns are disproportionately affected by environmental pollution and hazards and typically include marginalized, underserved, low-income groups and people of color, including tribal and indigenous people. Superfund cleanups and redevelopment are opportunities to evaluate how to reduce impacts on these communities and, through meaningful community involvement efforts, engage communities in productive dialogue to increase local benefits through reuse opportunities that meet community needs.

In 2021, President Biden issued two executive orders – Executive Order 13985 (Advancing Racial Equity and Support for Underserved Communities Through the Federal Government) and Executive Order 14008 (Tackling the Climate Crisis at Home and Abroad). The executive orders directed federal agencies to develop and implement policies and strategies that strengthen compliance and enforcement, incorporate environmental justice considerations in their work, increase community engagement, and ensure that at least 40% of the benefits from federal investments in climate and clean energy flow to underserved communities.

EPA has taken this charge to heart and, in September 2022, issued the *EJ Action Plan: Building Up Environmental Justice in EPA's Land Protection and Cleanup Programs*, intended to address land cleanup issues in overburdened communities across the country. The plan includes strategies to enhance nearly two dozen projects while addressing the need for stronger compliance, increased environmental justice considerations in EPA regulations, and improved community engagement. The plan also complements the recommendations for integrating environmental justice into the cleanup and redevelopment of Superfund and other contaminated sites highlighted in the May 2021 National Environmental Justice Advisory Council (NEJAC) report, *Superfund Remediation and Redevelopment for Environmental Justice Communities*.

In addition, EPA is using a $1 billion investment from the Bipartisan Infrastructure Law to fund new cleanup projects at 49 Superfund sites across the country. Many of these sites have been part of a backlog of Superfund sites awaiting funding for cleanup, some of which have been waiting for over four years. This historic investment will finance cleanup at three sites in Region 3.

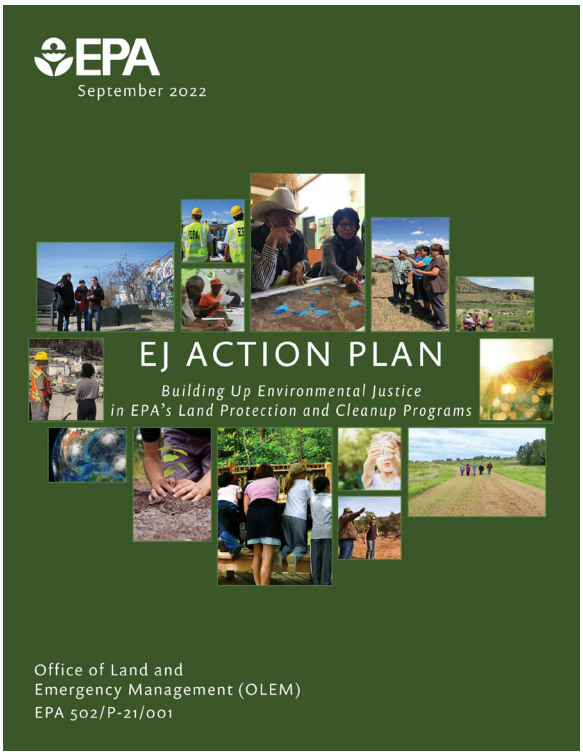

Figure 14: EPA's EJ Action Plan aims to address cleanup issues in overburdened communities across the country.

ARROWHEAD ASSOCIATES, INC./SCOVILL CORP.

Infrastructure Funding Accelerates Cleanup

The 30-acre Arrowhead Associates, Inc./Scovill Corp. Superfund site is in Westmoreland County, Virginia. From 1966 to 1979, Scovill Corporation and later Arrowhead Associates made cosmetic cases at the facility. Manufacturing practices included electroplating, lacquering and enameling. After plating stopped, the company abandoned machinery and process materials on site.

On-site residual process wastes, contaminated containers and manufacturing equipment contaminated site soil and groundwater. Wastewater from electroplating operations were treated inside the manufacturing building and discharged into settling ponds. Under permit, site operators discharged treated electroplating wastes to the nearby stream, Scates Branch. Testing found a plume of groundwater contamination under the site and flowing off site into Scates Branch and the South Fork of Scates Branch. EPA added the site to the NPL in 1990.

Figure 15. Training facility used by a tactical security training group at the Arrowhead Associates, Inc./Scovill Corp. site (Virginia).

Initial cleanup included the removal and disposal of contaminated materials from the site as well as the treatment and disposal of contaminated wastewater, sludge and soil from the inactive settling ponds. Subsequent cleanup activities included groundwater treatment with a reactive barrier wall, an impermeable surface cap and a soil vapor extraction system.

Today, the site is part of a larger, 360-acre tactical security training facility run by the O'Gara Group. In 2013, the company entered a settlement agreement with EPA. The company agreed to install a system in the remaining building on site to address potential hazardous vapor intrusion in order to protect anyone who might use it, including workers and visitors. The company also operates its HVAC system to improve air flow and minimize the concentration of vapor intrusion volatiles in the building.

The O'Gara Group uses the former manufacturing building and adjacent parking lot on site. Building uses have included battle simulations and vehicle maintenance services for nearby tactical driving courses. The company provides anti-terrorism, force protection and tactical training for U.S. and international militaries, as well as federal, international, state and local law enforcement agencies. The larger facility includes paved and off-road courses and obstacle areas, firing ranges, indoor and outdoor simulation areas, and a campus area with classrooms.

The company's business activities generate an estimated $13.3 million in sales, employing 40 people with a collective estimated annual income of nearly $1 million. An estimated 145 people live within 1 mile of the site. Of those people, more than 12% had an income below the federal poverty level during the previous 12 months.

In 2021, EPA announced the site would receive funding from the Bipartisan Infrastructure Law, providing long-awaited resources to accelerate the cleanup and address remaining contamination. EPA anticipates using the initial investment for the site – a planned $8.3 million – for more treatment of groundwater beneath the former manufacturing building. EPA and the on-site business have worked closely to protect the health and safety of people who use the facility, and now the infrastructure funding brings the finalization of the site's cleanup a step closer.

ATLANTIC WOOD INDUSTRIES, INC.

Collaboration During Cleanup Supports Local Jobs and Restores Ecological Assets

The Atlantic Wood Industries, Inc. Superfund site consists of about 50 acres of industrialized waterfront property in Portsmouth, Virginia, and over 30 acres of for contaminated sediment in the Southern Branch of the Elizabeth River. Atlantic Wood Industries (AWI), a wood-treating facility, operated at the site using creosote and pentachlorophenol (PCP) from 1926 to 1992. During World War II, the U.S. Navy leased part of the property and disposed of waste from the sand blasting of naval equipment, as well as contaminated sludge, on site.

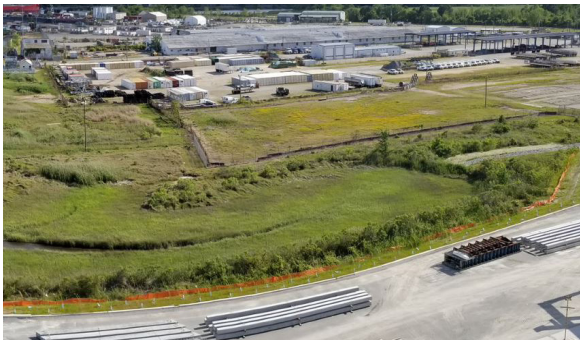

Figure 16. Top: The U.S. Navy's removal action restored acres of on-site wetlands. Bottom: The South Norfolk Jordan Bridge during construction at the Atlantic Wood Industries, Inc. site (Virginia).

AWI's wood-treating operations and waste disposal activities by the U.S. Navy contaminated soil and groundwater on site, as well as sediment in the Elizabeth River, with heavy metals and creosote. EPA added the site to the NPL in 1990. Cleanup activities included construction of an offshore sheet pile wall, dredging and capping of contaminated sediment, excavation and treatment of contaminated soil, monitored natural attenuation of groundwater and contaminated sediment, and land use controls. The U.S. Navy, in partnership with EPA, the Elizabeth River Project, AWI and the Virginia Department of Environmental Quality, received the 2004 Coastal America Spirit Award in recognition of their wetland restoration efforts at the site and two other sites. From 2011 to 2013, EPA's Superfund Redevelopment Program sponsored a future use planning process for the site and nearby properties. The resulting reuse framework for the Paradise Creek Industrial Corridor highlights a concept plan for industrial, transportation and habitat goals for the surrounding area. Within 1 mile of the site, 22% of the population is considered low-income compared with the state average of 10%.

In 2010, PER Properties purchased property at the north end of the site. The company built two ready-mix concrete plants and operates a concrete recycling facility. PER Properties is planning to build a port facility to export agricultural products. Because EPA removed the river contamination in front of this property, company plans call for more dredging to handle deep-draft vessels.

EPA completed cleanup of the site in 2020; operation and maintenance activities are ongoing. Collaborative communication over the years has enabled implementation of a complex and safe cleanup while also allowing on-site industry to continue operating. Though AWI stopped wood-treating operations in 1992, Atlantic MetroCast (an AWI subsidiary) began producing pre-cast concrete products at the site. Production efforts continue today.

On-site operations employ about 100 people, contributing over $6.5 million in estimated annual employee income and generating more than $80.6 million in estimated annual sales. Completed in 2012, the South Norfolk Jordan Bridge, a mile-long, 169-foot-high concrete bridge, crosses over the northern part of the site. Bridge construction efforts used precast parts produced on site.

CRATER RESOURCES, INC./KEYSTONE COKE CO./ALAN WOOD STEEL CO.

From Waste Disposal to Thriving Business Park

The 50-acre Crater Resources, Inc./Keystone Coke Co./Alan Wood Steel Co. Superfund site, known as the Crater Resources site, consists of commercial property, partially developed properties and four inactive quarries in Upper Merion Township, Pennsylvania. Beginning in 1919, Alan Wood Steel Company disposed of wastes from its coking facility in at least three of the site quarries. The coking process typically generated coal gas, light oils, tars containing phenolic compounds, naphthalene, ammonia and waste ammonia liquor (WAL). In 1977, Keystone Coke Company bought the Alan Wood Steel Company and continued to dispose of wastes at the site until 1981.

Figure 17. A sign listing some of the businesses at Renaissance Park, located at the Crater Resources, Inc./Keystone Coke Co./Alan Wood Steel Co. site (Pennsylvania).

Investigations found contaminated wastes, liquids, soil and sediment in the quarries. Groundwater was also contaminated. EPA added the site to the NPL in 1992. Cleanup included removal of contaminated soil and sediment and multi-layer capping. Groundwater monitoring and some cleanup activities are ongoing. Over the years, EPA has worked with localities and site owners to make sure site reuse would be compatible with the cleanup, including institutional controls where needed. In 2017, EPA updated the remedy for the Quarry 1 and Quarry 2 areas of the site, allowing for residential uses in these areas provided a vapor intrusion assessment is done and any vapor intrusion remedied prior to occupation. With completion of multimedia caps over Quarry 1 and Quarry 2 in 2019, previously restricted areas of the site are now available to support additional reuse, including residential development. Nearly 7% of the 6,000 people living within 1 mile of the site had an income level below the federal poverty level during the previous 12 months.

As cleanup has continued in stages, these efforts have paved the way for redevelopment. A commercial office park, known as Renaissance Park, is now located at the site. Businesses in the park provide the community with access to a wide range of services, including health care, childcare, legal and financial, real estate, life sciences and food services. As redevelopment and cleanup have continued, cleanup requirements have been reassessed and altered to ensure the safety of people on site today and in the future, including future residential use. To make sure vulnerable populations are safe, EPA requires sampling for any current or future developments near potential VOC (volatile organic compound) contamination. EPA determined that vapor intrusion did not present an unacceptable risk and required institutional controls for future development areas as needed. Together, 50 site businesses employ over 2,800 people, contributing nearly $315 million in estimated annual employee income and generating almost $900 million in estimated annual sales. A small part of an adjacent golf club is also on site.

In 2020, the King of Prussia District and Upper Merion Township expanded the district's boundary to include Renaissance Park, among other properties. The King of Prussia District is considering improvements to transportation and pedestrian infrastructure, streetscapes and signage, and public and special event spaces.

FORMER NANSEMOND ORDNANCE DEPOT

CLEANUP TRANSFORMS FORMER MILITARY DEPOT WITH BUSINESS AND HOUSING DEVELOPMENT

In Suffolk, Virginia, the U.S. Army operated at the property now known as the Former Nansemond Ordnance Depot Superfund site between 1917 and 1960. Originally known as Pig Point Ordnance Depot, the U.S. Army used the property for munitions storage, shipment, classification, reconditioning, loading and destruction activities. At the end of World War II, the U.S. Navy also used the depot for demobilization, including the destruction of unserviceable explosives, ammunition and chemicals. The depot officially ceased operations in the early 1960s.

Tidewater Community College began operating at the former depot in 1968. In the 1980s, officials found explosive TNT on the college campus, and shoreline erosion began to expose munitions waste along the shoreline. Improper disposal practices during depot operations resulted in extensive contamination in disposal pits, fill and demolition areas, an on-site landfill, holding tanks, trenches and even an offshore dumping area extending from the low tide line to 1 mile offshore, to the James River and Nansemond River channels. EPA added the site to the NPL in 1999.

The U.S. Army Corps of Engineers (USACE) is the lead agency for site cleanup, with oversight from EPA and the Virginia Department of Environmental Quality. The site's long-term cleanup plan addresses contaminated soil, sediment and groundwater. To date, the USACE has investigated hundreds of acres and removed 6,200 munitions items and 200,000 pounds of munitions debris, to prepare the site for safe, beneficial reuse. Investigations are ongoing.

Figure 18. Interior wall showing the watershed in the Hampton Roads Sanitation District's SWIFT Research Center at the site. Source: Hampton Roads Sanitation District.

Figure 19. New Housing at the Former Nansemond Ordnance Depot site (Virginia).

Today, the site supports a wide variety of land uses. Commercial and industrial businesses on site include the 708,000-square-foot Ashley Capital Bridgeway Business Center and Dominion Energy's Bridgeway Commerce Park. Commerce Park features restaurants, hotels, healthcare centers and commercial businesses. The site also supports several public services.

The Hampton Roads Sanitation District (HRSD) runs a wastewater treatment plant on site. In 2018, HRSD opened the award-winning Sustainable Water Initiative for Tomorrow (SWIFT) Research Center at the site. The innovative water treatment initiative works to ensure a sustainable source of groundwater while addressing environmental challenges, sea level rise and saltwater intrusion. The Virginia Department of Social Services has offices for its Division of Child Support Enforcement on site. Private schools and churches are also on site. Residential redevelopment is also underway.

REDEVELOPMENT ON THE HORIZON IN REGION 3

A.I.W. FRANK /MID-COUNTY MUSTANG
Superfund Site Accommodates Housing Boom

The 16-acre A.I.W. Frank/Mid-County Mustang Superfund site in Exton, Pennsylvania, is located in an area undergoing rapid development, from farmland to mixed residential, commercial and light industrial areas. The site consists of two adjoining properties: the 15-acre A.I.W. Frank property and the 1-acre Mid-County Mustang property. A Styrofoam plant and cup manufacturing facility operated at the larger property from 1962 to 1981. During the 1980s, an industrial appliance manufacturing facility operated there as well. Beginning in the 1940s, various auto repair and body shops operated at the Mid-County Mustang property. Improper waste disposal practices led to soil and groundwater contamination. EPA added the site to the NPL in 1989. Cleanup included soil removal, demolition of a building damaged by fire, and extraction and treatment of groundwater. EPA also connected nearby homes to the public water supply. Groundwater monitoring and treatment are ongoing.

Figure 20. After an open house for Lochiel Farm, applications from interested buyers vastly exceeded the supply of housing available at the A.I.W. Frank/ Mid-County Mustang site (Pennsylvania).

Following the 2015 rezoning of both properties to allow for residential and office use, developers purchased part of the site for residential redevelopment. In 2019, developer Bentley Homes received approval to build 140 new townhomes and renovate two historic single-family homes on the Lochiel Farm property. A second residential development project, Exton Knoll, is directly east of Lochiel Farm. It will consist of 99 luxury townhomes and 220 rental units.

EPA and the Pennsylvania Department of Environmental Protection are working closely with developers to make sure the integrity of the remedy is maintained and that appropriate protective measures are taken for new construction, such as installation of vapor mitigation systems. With an influx of urban residents seeking larger residential spaces, the demand for housing in this area has skyrocketed in recent years. Lochiel Farm, for example, had five times more applicants than available homes after an open house in 2019. Nearly 3,000 people live within 1 mile of the site. This number is expected to increase with ongoing development in the area.

DELAWARE CITY PVC PLANT
Cleanup of Former PVC Plant Opens the Door for Reuse Opportunities

The Delaware City PVC Plant Superfund site is in New Castle County, Delaware. About 2,000 people live within 1 mile of the site, and 11% of these people are considered low income. From 1966 to 2018, a polyvinyl chloride (PVC) manufacturing plant operated on site. Waste disposal practices resulted in contamination of soil and groundwater. EPA added the site to the NPL in 1983.

Cleanup activities included addressing contaminated soil and groundwater and connecting affected businesses and homes to the public water supply. The western groundwater plume achieved cleanup goals in 2016. EPA is currently investigating an eastern groundwater plume and will select a cleanup plan to address remaining groundwater contamination. Agricultural, industrial and commercial land uses above areas affected by groundwater contamination are ongoing.

Figure 21. Dart is a tenant at Delaware Logistics Park on the Delaware City PVC Plant site (Delaware).

In 2019, NorthPoint Development began construction of Delaware Logistics Park at the site. Comprising four industrial buildings with 2 million square feet of distribution and fulfillment space, the park continues to attract new tenants, including Amazon, which will operate a distribution center at the site. Today, on-site businesses support local economic growth, providing about 95 jobs and about $5.1 million in estimated annual employment income. In 2021, on-site businesses generated nearly $37 million in sales revenue. In 2021, site property parcels had a total value of over $23 million, generating more than $745,000 in annual property taxes.

In 2021, Formosa Plastics Corporation listed 115 acres of the site for sale. The site is zoned for industrial use and is well located, with easy access to the interstate and rail. With more parts of the site available for reuse, the site will provide additional benefits to the surrounding area over time.

HIDDEN LANE LANDFILL

Cleanup and Reuse Create New Paths for Redevelopment

Hidden Lane Landfill is a 25-acre former waste disposal facility located between the Broad Run Farms and Countryside communities in northern Virginia. Starting in 1971, the privately owned facility accepted a variety of solid wastes, including construction and demolition wastes, land-clearing wastes and other items such as appliances, tires, paper and cardboard. Loudoun County closed down the facility in 1984, pursuant to a local court decision.


Figure 22. Stakeholders explored reuse planning options while touring the Hidden Lane Landfill site (Virginia).

County and state health officials identified the landfill as the likely source of contamination detected in the drinking water wells of some homes in the Broad Run Farms subdivision just west of the landfill in 1989. EPA added the site to the NPL in 2008. To manage the cleanup, EPA divided the site into three parts, or operable units (OUs). OU1 addresses sitewide groundwater contamination. OU2 addresses water supply for properties affected, or potentially affected, by groundwater contamination. OU3 addresses source contamination and landfill closure.

As EPA approached the completion of remedial planning for OU2 in 2018, EPA's Superfund Redevelopment Program sponsored a reuse planning process to support Loudoun County, the property owner and the community in identifying potential future use options for the site. After community evaluation, passive recreation and nature conservation received the greatest local support.

In 2019, EPA issued an interim OU2 Record of Decision to address public exposure to site-related groundwater contamination in residential drinking water. The OU2 remedy will establish a municipal water supply line to the Broad

Run Farms development and surrounding area to ensure a safe drinking water supply for properties affected, or potentially affected, by site contamination. Land use controls will be used to ensure public protection from contaminated groundwater until it is restored as part of a remedy for OU1.

In 2021, EPA issued a Proposed Plan for OU3 – the landfill cap, soil and bedrock. The Proposed Plan includes repair and maintenance of the landfill cap, excavation of soil, sand and silt in the overburden source area, and bioremediation of the bedrock source area.

About 7,400 people live within 1 mile of the site. In 2019, the Superfund Redevelopment Program finalized a Vision for Future Use report for the site, bringing together community input on potential uses. Today, cleanup has opened the path forward to the site's safe and beneficial redevelopment.

LOWER DARBY CREEK AREA

HISTORIC INVESTMENT ACCELERATES CLEANUP, EMPHASIZES POTENTIAL FOR REUSE

The Lower Darby Creek Area (LDCA) Superfund site is located in Darby Township and Folcroft Borough in Delaware and Philadelphia counties in Pennsylvania. The site consists of two separate landfills: the Clearview Landfill and the Folcroft Landfill. Clearview Landfill is on the east side of Darby Creek, near the intersection of 84th Street and Lindbergh Boulevard. Folcroft Landfill is 2 miles downstream, on the west side of Darby Creek and in the John Heinz National Wildlife Refuge. Both landfills operated from the 1950s to the 1970s and closed in the mid-1970s. Wastes accepted at both landfills reportedly included municipal, demolition and hospital wastes. Waste disposal practices contaminated soil, groundwater and fish tissue with hazardous chemicals. EPA added the site to the NPL in 2001.

Figure 23. Vegetated landfill cap with City Park open space in the background at the LDCA site (Pennsylvania).

Federal, state and potentially responsible party actions are involved in the long-term cleanup. To facilitate the cleanup, EPA separated the site into four OUs. OU1 addresses Clearview Landfill. OU2 addresses Folcroft Landfill. OU3 addresses Clearview Landfill groundwater. OU4 addresses LDCA aquatic environments. Remedial work at Clearview Landfill began in 2017. It includes the permanent relocation of businesses on the landfill, removal of contaminated soil from City Park, construction of a new forested cover over the landfill waste and streambank stabilization. Investigations at Folcroft Landfill are ongoing. The U.S. Fish and Wildlife Service manages Folcroft Landfill as part of the John Heinz National Wildlife Refuge. As part of cleanup planning, EPA's Superfund Redevelopment Program supported community-based reuse planning efforts to explore potential future uses for the site. The city of Philadelphia plans to expand the East Coast Greenway trail throughout Eastwick regional park, which will help to connect the Eastwick neighborhood to the John Heinz National Wildlife Refuge.

In 2021, EPA announced a $30 million investment from the Bipartisan Infrastructure Law to complete the cleanup of Clearview Landfill. This funding will accelerate the cleanup timeline so that the project will be one to two years ahead of schedule. Low-income and minority communities living in the area will be the first to benefit from this accelerated timeline. About 28,000 people live within 1 mile of the site, and 19% of them have incomes below the federal poverty level.

As of early 2022, EPA has removed and replaced 26,000 tons of contaminated soil from 195 residential properties in Eastwick, remediated over 10 acres of City Park open space, capped and restored 12 acres of Clearview Landfill and installed a half-mile of creek stabilization features. Soon, with cleanup complete, the community will be able to move forward with its reuse priorities for Clearview Landfill.

CONCLUSION

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 153 NPL sites and six non-NPL Superfund sites in Region 3 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 3. EPA remains committed to working with all stakeholders to support Superfund redevelopment opportunities in Region 3.

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.

Figure 24. Wolf Trap Park at the Chisman Creek site includes two full-size soccer fields (Virginia).

Across Region 3, 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 continue supporting the restoration and renewal of these sites as long-term assets.

EPA Superfund Redevelopment Resources

EPA Region 3 Superfund Redevelopment Program Coordinator
Christopher Thomas| (215) 814-5555 | thomas.christopher@epa.gov

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

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

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

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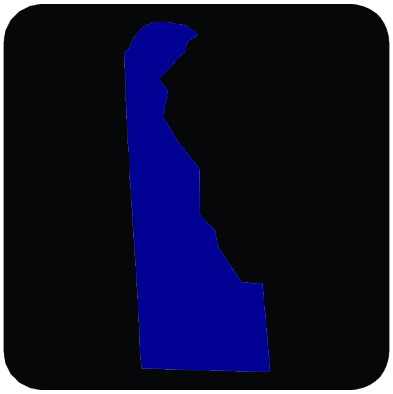
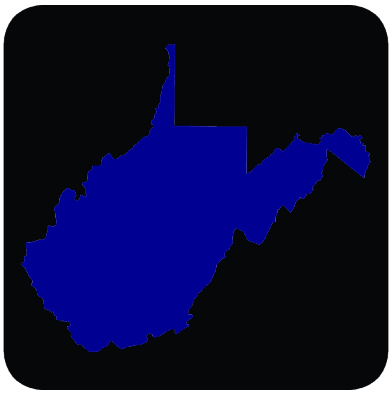
STATE REDEVELOPMENT PROFILES





DELAWARE REDEVELOPMENT PROFILE

EPA partners with the Delaware Department of Natural Resources and Environmental Control to oversee the investigation and cleanup of Superfund sites in Delaware. Delaware has 15 Superfund sites with either new uses in place or uses remaining in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse or continued use in Delaware.

Businesses and Jobs

EPA has collected economic data for 95 businesses and organizations operating on nine sites in reuse or continued use in Delaware.

Table 3. Detailed Site and Business Information for Sites in Reuse and Continued Use in Delaware (2021)

	Sites[a]	Sites with Businesses	Businesses[b]	Total Annual Sales[c]	Total Employees	Total Annual Employee Income
In Reuse	*9*	*5*	*16*	*$10 million*	*108*	*$5 million*
In Continued Use	*1*	*1*	*1*	*$2 million*	*6*	*$372,000*
In Reuse and in Continued Use	*5*	*3*	*78*	*$320 million*	*1,783*	*$118 million*
Total	***15***	***9***	***95***	***$332 million***	***1,897***	***$124 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.
[c] Annual sales figures are not available (or applicable) for every business.

Property Values and Property Tax Revenues

EPA has collected property value data for 11 Superfund sites in reuse or continued use in Delaware. These sites span 183 property parcels and 952 acres.

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

Total Land Value (11 sites)	Total Improvement Value (11 sites)	Total Property Value (11 sites)	Total Annual Property Taxes (11 sites)
$10 million	*$60 million*	*$70 million*	*$1 million*

[a] The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which was 2021 for all data collected.

Figure 25. The Johnson Victrola Museum is one of 73 organizations and businesses at the Dover Gas Light Company site (Delaware).

Did You Know?

The Dover Gas Light Company in Dover, Delaware, processed coal to make gas for streetlamps for nearly 90 years. Resulting coal tar residues contaminated soil and groundwater. Today, the 23-acre Dover Gas Light Co. Superfund site is home to 73 businesses.

DISTRICT OF COLUMBIA REDEVELOPMENT PROFILE

EPA partners with the District of Columbia's Department of Energy & Environment to oversee the investigation and cleanup of Superfund sites in Washington, D.C. The District of Columbia has one Superfund site with either new uses in place or uses remaining in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse or continued use in Washington, D.C.

Businesses and Jobs

EPA has collected economic data for zero businesses and organizations operating on one site in reuse or continued use in Washington, D.C.

Table 5. Detailed Site and Business Information for Sites in Reuse and Continued Use in Washington, D.C. (2021)

	Sites[a]	Sites with Businesses	Businesses	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	*0*	*0*	-	-	-	-
In Continued Use	*0*	*0*	-	-	-	-
In Reuse and in Continued Use	*1*	*0*	-	-	-	-
Total	***1***	***0***	**-**	**-**	**-**	**-**

[a] One site is a federal facility. Federal facility sites are excluded from all other detailed site and business data presented above.

Property Values and Property Tax Revenues

Property value and tax data were not available for the site in reuse and continued use in Washington, D.C.

Figure 26. An aerial view of the Washington Navy Yard (District of Columbia).

Did You Know?

Established in 1799, the 63-acre Washington Navy Yard in southeast Washington, D.C., is the nation's oldest naval shore facility. Waste from ordnance production and other industrial processes contaminated soil and groundwater. Today, the Washington Navy Yard remains active while remedial investigations are underway. In addition to continued base activity, two museums and several parks operate on site.

MARYLAND REDEVELOPMENT PROFILE

EPA partners with the Maryland Department of the Environment to oversee the investigation and cleanup of Superfund sites in Maryland. Maryland has 16 Superfund sites with either new uses in place or uses remaining in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse or continued use in Maryland.

Businesses and Jobs

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

Table 6. Detailed Site and Business Information for Sites in Reuse and Continued Use in Maryland (2021)

	Sites[a]	Sites with Businesses	Businesses[a]	Total Annual Sales[b]	Total Employees	Total Annual Employee Income
In Reuse	*7*	*4*	*10*	*$19 million*	*261*	*$10 million*
In Continued Use	*3*	*0*	*-*	*-*	*-*	*-*
In Reuse and in Continued Use	*6*	*0*	*-*	*-*	*-*	*-*
Total	***16***	***4***	***10***	***$19 million***	***261***	***$10 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.
[c] Annual sales figures are not available (or applicable) for every business.

Property Values and Property Tax Revenues

EPA has collected property value data for seven Superfund sites in reuse or continued use in Maryland. These sites span 12 property parcels and 232 acres.

Table 7. Property Value and Tax Information for Sites in Reuse and Continued Use in Maryland[a]

Total Land Value (7 sites)	Total Improvement Value (7 sites)	Total Property Value (7 sites)	Total Annual Property Taxes (7 sites)
$4 million	*$2 million*	*$6 million*	*$88,000*

[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 2020 to 2022 for all data collected.

Figure 27. A business stores large vehicles, including school buses, at the Mid-Atlantic Wood Preservers, Inc. site (Maryland).

Did You Know?

Wood-treating operations at the Mid-Atlantic Wood Preservers, Inc. site in Harmans, Maryland, left contamination in soil and groundwater. A 1994 Prospective Purchaser Agreement enabled a neighboring property owner to expand its operations onto the site and return it to commercial use after cleanup. Annual sales generated by current tenants total nearly $6.7 million.

PENNSYLVANIA REDEVELOPMENT PROFILE

EPA partners with the Pennsylvania Department of Environmental Protection to oversee the investigation and cleanup of Superfund sites in Pennsylvania. Pennsylvania has 93 Superfund sites with either new uses in place or uses remaining in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse or continued use in Pennsylvania.

Businesses and Jobs

EPA has collected economic data for 402 businesses and organizations operating on 52 sites in reuse or continued use in Pennsylvania.

Table 8. Detailed Site and Business Information for Sites in Reuse and Continued Use in Pennsylvania (2021)

	Sites[a]	Sites with Businesses	Businesses[b]	Total Annual Sales[c]	Total Employees	Total Annual Employee Income
In Reuse	*37*	*22*	*111*	*$1.1 billion*	*3,251*	*$210 million*
In Continued Use	*18*	*6*	*6*	*$332 million*	*662*	*$56 million*
In Reuse and in Continued Use	*38*	*24*	*285*	*$2.1 billion*	*7,522*	*$617 million*
Total	***93***	***52***	***402***	***$3.6 billion***	***11,435***	***$883 million***

[a] Seven 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.
[c] Annual sales figures are not available (or applicable) for every business.

Property Values and Property Tax Revenues

EPA has collected property value data for 58 Superfund sites in reuse or continued use in Pennsylvania. These sites span 1,891 property parcels and 6,860 acres.

Table 9. Property Value and Tax Information for Sites in Reuse and Continued Use in Pennsylvania[a]

Total Land Value (42 sites)	Total Improvement Value (42 sites)	Total Property Value (58 sites)	Total Annual Property Taxes (57 sites)
$151 million	*$370 million*	*$706 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 2020 to 2022 for all data collected.

Figure 28. A steel structure at the Recticon/Allied Steel Corp. site (Pennsylvania).

Did You Know?

Historical silicon wafer manufacturing and steel manufacturing operations contaminated groundwater, including private wells, at the Recticon/Allied Steel Corp. Superfund site in East Coventry Township, Pennsylvania. Currently, two businesses – a retail store and home improvement showroom – operate on site. They employ 21 people and generate nearly $6.9 million in annual sales.

VIRGINIA REDEVELOPMENT PROFILE

EPA partners with the Virginia Department of Environmental Quality to oversee the investigation and cleanup of Superfund sites in Virginia. Virginia has 24 Superfund sites with either new uses in place or uses remaining in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse or continued use in Virginia.

Businesses and Jobs

EPA has collected economic data for 50 businesses and organizations operating on nine sites in reuse or continued use in Virginia.

Table 10. Detailed Site and Business Information for Sites in Reuse and Continued Use in Virginia (2021)

	Sites[a]	Sites with Businesses	Businesses[b]	Total Annual Sales[c]	Total Employees	Total Annual Employee Income
In Reuse	*7*	*5*	*25*	*$47 million*	*258*	*$16 million*
In Continued Use	*3*	*-*	*-*	*-*	*-*	*-*
In Reuse and in Continued Use	*14*	*4*	*25*	*$138 million*	*862*	*$58 million*
Total	***24***	***9***	***50***	***$185 million***	***1,120***	***$74 million***

[a] 11 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.
[c] Annual sales figures are not available (or applicable) for every business.

Property Values and Property Tax Revenues

EPA has collected property value data for five Superfund sites in reuse or continued use in Virginia. These sites span 164 property parcels and 685 acres.

Table 11. Property Value and Tax Information for Sites in Reuse and Continued Use in Virginia[a]

Total Land Value (5 sites)	Total Improvement Value (5 sites)	Total Property Value (5 sites)	Total Annual Property Taxes (5 sites)
$15 million	*$37 million*	*$52 million*	*$160,000*

[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 2021 to 2022 for all data collected.

Figure 29. A business at the C & R Battery Co., Inc. site (Virginia).

Did You Know?

The C & R Battery Co., Inc. site is in Chesterfield County, Virginia. Former battery-breaking operations contaminated soil, surface water and groundwater with lead. Institutional controls limit the 11-acre property to commercial and industrial uses. Cleanup is ongoing. Five businesses operate on site, generating more than $16 million in annual sales.

WEST VIRGINIA REDEVELOPMENT PROFILE

EPA partners with the West Virginia Department of Environmental Protection to oversee the investigation and cleanup of Superfund sites in West Virginia. West Virginia has 10 Superfund sites with either new uses in place or uses remaining in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse or continued use in West Virginia.

Businesses and Jobs

EPA has collected economic data for 35 businesses and organizations operating on seven sites in reuse or continued use in West Virginia.

Table 12. Detailed Site and Business Information for Sites in Reuse and Continued Use in West Virginia (2021)

	Sites[a]	Sites with Businesses	Businesses[b]	Total Annual Sales[c]	Total Employees	Total Annual Employee Income
In Reuse	*4*	*4*	*5*	*-*	*9*	*$540,000*
In Continued Use	*2*	*1*	*1*	*-*	*0*	*-*
In Reuse and in Continued Use	*4*	*2*	*29*	*$21 million*	*267*	*$11 million*
Total	***10***	***7***	***35***	***$21 million***	***276***	***$12 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.
[c] Annual sales figures are not available (or applicable) for every business.

Property Values and Property Tax Revenues

EPA has collected property value data for four Superfund sites in reuse or continued use in West Virginia. These sites span 220 property parcels and 404 acres.

Table 13. Property Value and Tax Information for Sites in Reuse and Continued Use in West Virginia[a]

Total Land Value (4 sites)	Total Improvement Value (4 sites)	Total Property Value (4 sites)	Total Annual Property Taxes (4 sites)
$12 million	*$27 million*	*$39 million*	*$617,000*

[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 2020 to 2021 for all data collected.

Figure 30. Public services at the Ravenswood PCE site include city hall, a public library, and a fire and rescue station (West Virginia).

Did You Know?

At the Ravenswood PCE Superfund site, a groundwater contamination plume underlies 30 city blocks in the community of Ravenswood, West Virginia. Groundwater treatment began in 2004. EPA installed two new production wells to provide clean water to residents. With access to clean water secured and cleanup ongoing, 28 businesses operate above the plume today. They employ over 250 people and generate $20.6 million in annual sales.

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 Program case studies as well as other resources. Links to EPA's Superfund Redevelopment Program case studies and other resources are included below.

EPA Resources

A.I.W. Frank/Mid-County Mustang. 2021. Fourth Five-Year Review Report. semspub.epa.gov/src/document/03/2314118.

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Whitmoyer Laboratories. 2020. Beneficial Effects Economic Case Study. semspub.epa.gov/src/document/HQ/100002683.

Whitmoyer Laboratories. 2019. Site Redevelopment Profile. semspub.epa.gov/src/document/HQ/403601.

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Other Resources

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A.I.W. Frank/Mid-County Mustang. 2021. Project updates – West Whiteland Township Real Estate Development. www.dlhowell.com/blog/project-updates-west-whiteland-township-real-estate-development.

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Photos

Images of Hampton Roads Sanitation District at the Former Nansemond Ordnance Depot used with permission of the Hampton Roads Sanitation District.

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) (www.dnb.com) database. EPA also gathers information on businesses and corporations from D&B. D&B maintains a database of over 330 million businesses worldwide.

When Hoovers/D&B research was unable to identify employment and sales volume for on-site businesses, EPA used the Reference Solutions database (www.thereferencegroup.com). In cases where Reference Solutions did not include employment and sales volume for on-site businesses, EPA used the Manta database (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 2021. Estimated annual employment income was calculated using 2021 jobs data and BLS average weekly wage data for those jobs from 2020 (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 2020 to 2022 where date information was provided. Throughout this report, property and tax values may not sum exactly to the totals presented due to rounding.

Back Cover page photos:
Culpeper Wood Preservers (Maryland), Atlantic Wood Industries, Inc. (Virginia), Havertown PCP (Pennsylvania), Dover Gas Light Co. (Delaware), Avtex Fibers, Inc. (Virginia)

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