PUTTING SITES TO WORK

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

REGION 3 ECONOMIC PROFILE

Cover page photos:

Dover Gas Light Co. (Delaware), Atlantic Wood Industries, Inc. (Virginia), Haverton PCP (Pennsylvania), E.I. Du Pont De Nemours & Co., Inc. (Newport Pigment Landfill) (Delaware), Palmerton Zinc Pile (Pennsylvania), Ravenswood PCE (West Virginia)

Figure 1. The Briggs Museum of American Art at the Dover Gas Light Co. site (Delaware).

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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

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 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 3 helps communities reclaim cleaned-up Superfund sites. Factoring future use of Superfund sites into the cleanup process promotes their safe redevelopment as appropriate. In addition, EPA Region 3 works closely with state and local officials to remove barriers that have kept many Superfund sites underutilized. EPA Region 3 works to ensure that businesses on properties being cleaned up under Superfund can continue operating so that protection of human health and the environment during site investigations and cleanup work occurs. This continuity enables these businesses to remain open and serve as a source of jobs for communities.

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

Businesses:	*626*
Total Annual Sales:	*$3.9 billion*
Number of People Employed:	*15,289*
Total Annual Employee Income:	*$1.1 billion*

Figure 2. Mr. Storage facility at the Havertown PCP site (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 15,289 jobs and contribute an estimated $1.1 billion in annual employment income. Sites in reuse and continued use in Region 3 generate nearly $11 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 77 Superfund sites in reuse or continued use in Region 3 for which EPA does not have business data, including 29 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 97 sites in reuse or continued use in Region 3 for which EPA does not have property value or tax data, including 29 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. Top: Continued industrial use at the Culpeper Wood Preservers, Inc. site (Virginia). Bottom: The Robert Morris University Island Sports Center recreation facility at the Ohio River Park site (Pennsylvania).

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.

Figure 4. EPA reuse award ceremony at the Sharon Steel Corp. (Fairmont Coke Works) site in June 2018 (West Virginia).

- 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.

These efforts have helped build expertise across the Mid-Atlantic Region, 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.

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 has placed 220 sites in Region 3 on the NPL.

Whenever possible, EPA seeks to integrate redevelopment priorities into site cleanup plans. In Region 3, 147 NPL sites and three non-NPL Superfund sites 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. In addition, redevelopment of some Superfund sites in Region 3 has helped spark revitalization of nearby underused industrial land. 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.

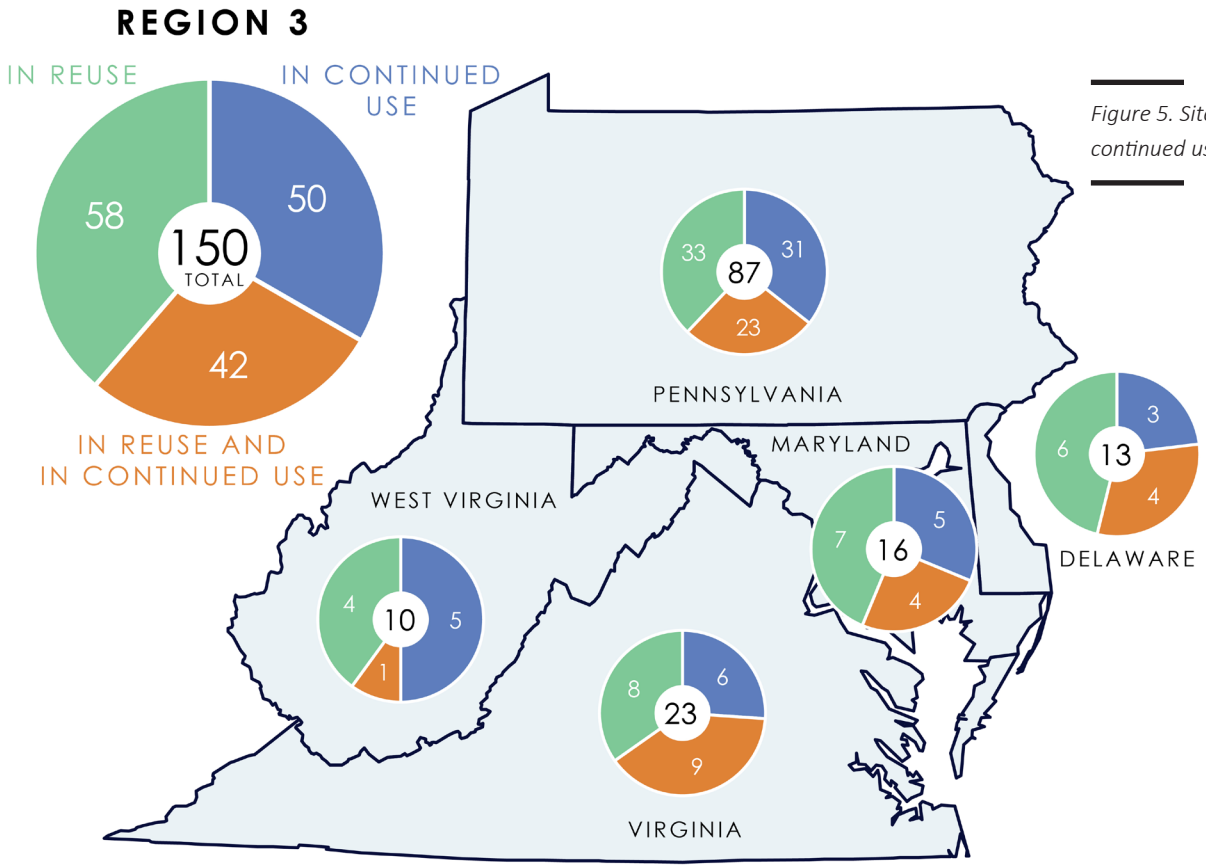

Figure 5. Sites in reuse and continued use in Region 3.[3]

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

3 Not shown: District of Columbia. The District of Columbia has one federal facilities NPL site in continued use.

Figure 6. Left: Renaissance Park business at the Crater Resources, Inc./Keystone Coke Co./Alan Wood Steel Co. site (Pennsylvania). Right: Wood storage area at the Culpeper Wood Preservers, Inc. site (Virginia).

Sites in Reuse and Continued Use: A Closer Look

Reuse Type	Description	Region 3 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.*	*Crater Resources, Inc./Keystone Coke Co./Alan Wood Steel Co. (Pennsylvania) – former industrial waste disposal area is now Renaissance Park, a commercial office park.*
In Continued Use	*Historical uses at a site remain active; these uses were in place when the Superfund process started at the site.*	*Culpeper Wood Preservers, Inc. (Virginia) – since 1976, Culpeper Wood Preservers has continued to operate its wood-treating facility on site.*
In Reuse and Continued Use	*Part of a site is in continued use and part of the site is in reuse.*	*Atlantic Wood Industries, Inc. (Virginia) – pre-cast concrete manufacturing continues at the site; the new South Norfolk Jordan Bridge runs through the site and across the Southern Branch of the Elizabeth River; a grain export and concrete mix plant is under construction on part of the site.*

BENEFICIAL EFFECTS OF SUPERFUND SITE REDEVELOPMENT IN REGION 3

Businesses and Jobs

EPA has collected economic data for 626 businesses, government agencies and civic organizations operating on 71 NPL sites and two non-NPL sites in reuse and continued use in Region 3.[4] (See the State Redevelopment Profiles for each state's reuse details.) Businesses and organizations at these sites are part of several different sectors, including wholesale trade, construction, manufacturing, transportation and warehousing, professional, scientific and technical services, and health care and social services.

Businesses, facilities and organizations at these sites include international chemical company BASF Corporation, restaurants, navigation instrument manufacturing company Cobham, fire and police stations, the YMCA, the U.S. Geological Survey, and campus facilities for Pennsylvania State University.

The businesses and organizations at these sites earn about $3.9 billion in estimated annual sales and employ about 15,289 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. More detailed information is presented in Table 1.[5]

Table 1. Site and Business Information for Region 3 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	*58*	*32*	*185*	*$495 million*	*3,604*	*$208 million*
In Continued Use	*50*	*24*	*78*	*$840 million*	*2,055*	*$160 million*
In Reuse and in Continued Use	*42*	*17*	*363*	*$2.5 billion*	*9,630*	*$685 million*
Total	***150***	***73[e]***	***626***	***$3.9 billion[f]***	***15,289***	***$1.1 billion[f]***

[a] Twenty-nine 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.

4 See footnote 1, page 1.
5 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 significantly increase in value. 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 Abex Corp. site in Virginia are now valued at $14 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 3 Sites in Reuse and Continued Use: Property Value and Tax Highlights

Total Property Value: *$341 million*

Total Annual Property Taxes: *$10.7 million*

Figure 7. Continued use at the Ravenswood PCE site (West Virginia).

EPA has collected property value and tax data for 53 Superfund sites in reuse and continued use in Region 3.[6] These sites span 1,934 property parcels and 4,241 acres. They have a total property value of $341 million. The current average total property value per acre is $80,000.

Land and improvement property value information is available for 42 sites. These properties have a total land value of $76 million and a total improvement value of $175 million.[7]

Property tax information is available for 52 sites. The properties generate a combined $10.7 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 (42 sites)[b]	Total Improvement Value (42 sites)[c]	Total Property Value (53 sites)	Total Property Value per Acre (53 sites)[d]	Total Annual Property Taxes (52 sites)
$76 million	*$175 million*	*$341 million*	*$80,000*	*$10.7 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 2016 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] Land and improvement value for one of the sites is listed as $0.

[d] Based on total property value amount of $341 million divided by total acreage of 4,241.

6 There are 97 additional sites in reuse or continued use in Region 3 for which EPA does not have property value or tax data, including 29 NPL federal facilities. See footnote 1, page 1.

7 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. Greenspace and habitat reuses help attract visitors and residents and indirectly contribute to local economies.

Figure 8. Chisman Creek Park at the Chisman Creek site (Virginia).

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.[8] 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. The Hunn Nature Park located on the Wildcat Landfill site in Dover, Delaware, includes nature trails for walking, jogging and biking. The county has also completed several plantings and set up wildlife viewing areas and bird boxes on site. The Ohio River Park site on Neville Island in Pennsylvania has been redeveloped as the Island Sports Center, a recreation facility that includes miniature golf, ice skating, batting facilities, track and field areas, and lacrosse facilities. At the Chisman Creek site in York County, Virginia, two popular athletic fields are home to several sports leagues with over 1,000 players.

> *"Having Wolf Trap and Chisman Creek Parks available as high-quality recreation facilities for our citizens to use has been a tremendous asset to York County. Since the parks opened, they have hosted thousands of games and visitors, and we have received numerous compliments about the quality of the fields. These fields will continue to be an important part of York County's parks and recreation programming for years to come."* **Mark Carter, deputy county administrator York County, in reference to the Chisman Creek Superfund site.**

> *"This site will be a real asset to Jackson Township and Lebanon County. Not only will the site be reused for recreation, the work here also includes a restoration project on the Tulpehocken Creek and the historic Union Canal. This project removed contaminated soils and re-built the creek banks with new grasses and plants, eliminating the arsenic discharge to the Tulpehocken Creek."* **David E. Hess, former Secretary of the Pennsylvania Department of Environmental Protection, in reference to the Whitmoyer Laboratories Superfund site.**

8 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 3. At the Palmerton Zinc Pile site in Palmerton, Pennsylvania, extensive ecological revitalization efforts included the restoration of 40 acres of wetlands following contaminated soil removal. Innovative cleanup at the Ryeland Road Arsenic site in Heidelberg Township, Pennsylvania, involved using ferns to reduce arsenic levels in the on-site wet meadow wetland, eliminating the need for more invasive approaches. At the Army Creek Landfill site in New Castle, Delaware, EPA collaborated with federal, state and local agencies to incorporate wildlife habitat in the cleanup design. The project included the creation of standing wetlands to prevent erosion and surface water runoff and provide valuable habitat.

Figure 9. Ferns at the Ryeland Road Arsenic site (Pennsylvania).

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.

REDEVELOPMENT IN ACTION

SHARON STEEL CORP. (FAIRMONT COKE WORKS)

New State Police Headquarters Facility

The 97-acre Sharon Steel Corp (Fairmont Coke Works) Superfund site is located in Fairmont, West Virginia. Prior to 1973, coke production, waste treatment and waste disposal operations took place on site. These operations resulted in soil, surface water and groundwater contamination. To stabilize the site, EPA conducted an emergency removal action, which included removal of chemical storage containers, tanks and buildings, disposal of contaminated oil, and treatment of contaminated water. EPA later added the site to the NPL in 1996. As part of a second removal action, the site's potentially responsible party (PRP) removed waste materials and contaminated soil from the site. The site's long-term cleanup plan includes limited groundwater treatment and monitoring, wetland restoration and land and groundwater use restrictions.

EPA worked closely with the community and the site's PRP, ExxonMobil, to support redevelopment opportunities at the site. In May 1999, ExxonMobil, EPA, the West Virginia Department of Environmental Protection, and local stakeholders, including the city of Fairmont, entered into a Project XL (eXcellence and Leadership) Agreement. EPA's Project XL Program was a national pilot program developed to test innovative environmental management strategies to achieve better and more cost-effective environmental and public health protections. The project at the site focused on aligning cleanup and reuse priorities. As part of the agreement, ExxonMobil agreed to undertake beneficial restorative actions that were beyond EPA's authority to require. In return, EPA agreed to provide regulatory flexibility, within its discretion, rather than strict adherence to the traditional Superfund process.

The site's Project XL Agreement resulted in significant community engagement to determine the most appropriate future use for the site property. The community's reuse priorities for the site included public service, commercial, industrial and recreational uses. The locality then updated its zoning ordinance to reflect these priorities.

The first redevelopment project at the site, a troop headquarters for the West Virginia State Police, was completed in April 2017. About 50 additional acres on site are currently available for redevelopment.

In June 2018, EPA Region 3 recognized Enso Properties, LLC and ExxonMobil with its Excellence in Site Reuse Award. Region 3 established the Excellence in Site Reuse Award for those who have supported the reuse of Superfund sites through outstanding efforts that go above and beyond required cleanup.

Figure 10. West Virginia State Police Troop 1 Headquarters at the Sharon Steel Corp (Fairmont Coke Works) site (West Virginia).

REDEVELOPMENT IN ACTION

CHISMAN CREEK

Pioneering Recreational Reuse

The 27-acre Chisman Creek Superfund site is located in York County, Virginia. From 1957 to 1974, a contractor for the Virginia Electric and Power Company, a subsidiary of Dominion, disposed of ash from the Yorktown Power Station in abandoned sand and gravel pits at the site. The ash was a byproduct of burning coal and petroleum coke to generate electricity. In the early 1980s, state agencies investigated the site and found heavy metals in groundwater and surface water. EPA placed the site on the NPL in 1983.

Early in the remedy selection process, the community identified recreational reuse of the property as a top priority. In 1986, after considering the community's input and with the Virginia Department of Environmental Quality's (VDEQ's) concurrence, EPA selected a cleanup plan specifically tailored to support future recreational use of the site. Under EPA and VDEQ oversight, Dominion conducted cleanup activities. Cleanup included connecting nearby residents to the public water supply, extraction and off-site treatment of contaminated groundwater, capping of ash and contaminated soil, and surface water and groundwater monitoring. Cleanup also included modification of surface water drainage pathways and implementation of land and groundwater use restrictions.

Dominion worked with York County to configure the remedy to support soccer and softball fields at the site. Grading of the caps was designed to allow for a level playing surface. In addition, "clean corridors" were planned for the parks' underground electric lines to allow for lighting towers at the softball fields. The electric lines were placed in concrete conduits, allowing for utility workers to access them in the future without coming in contact with contamination. As part of constructing the site's caps, Dominion installed the parks' ground features – the playing fields, the utilities and foundations for the restroom facilities. After Dominion completed the ground features, York County finished the parks, building sidewalks, restroom facilities and parking lots, and establishing grass playing surfaces. The county also purchased a lighting system for the softball fields, which Dominion installed during the final stages of cleanup. Dominion completed cleanup in 1988; groundwater and surface water monitoring are ongoing.

In May 1991, York County hosted the grand opening of Chisman Creek Park at the site. About 300 local residents, Dominion officials, and EPA, state and county personnel gathered to celebrate the opening of the 13-acre park with its two full-size, lighted softball fields. In the spring of 1992, the county opened Wolf Trap Park on site. The 28-acre park includes two full-size soccer fields and two smaller, instructional-size soccer fields. Chisman Creek Park and Wolf Trap Park have become an integral part of York County's park system, with both parks in high demand. The Chisman Creek site was one of the first Superfund sites in the country, and the first Superfund site to be redeveloped after cleanup. Today, it continues to serve as a leading national example of what can happen when site owners, responsible parties, communities and regulators work together on remedies that protect public health and the environment and enable productive and beneficial reuse.

Figure 11. Soccer players at the Chisman Creek site (Virginia).

REDEVELOPMENT IN ACTION

HAVERTOWN PCP

Businesses, Recreation and Public Health

The 12-acre Havertown PCP Superfund site is located in Haverford Township, Pennsylvania. From 1947 to 1991, National Wood Preservers operated a wood treatment facility on site. Improper disposal of wood-treating process wastes contaminated soil, sediment and groundwater. EPA added the site to the NPL in 1983. To date, EPA has removed contaminated materials and capped areas to protect public health. Groundwater treatment and monitoring are ongoing.

Today, parts of the site remain in continued use and support new uses. Philadelphia Chewing Gum Company closed its on-site plant in 2003. Recognizing the opportunity presented by a large, developable parcel in an underserved area, the YMCA approached Haverford Township about using the property for a new gymnasium. YMCA worked with EPA and Haverford Township on plans for the site's redevelopment. Crews began construction in May 2012 and the 80,000-square-foot Haverford Area YMCA facility opened in October 2013. Serving 24,000 members, the facility features an indoor track, gymnasium, swimming pools, a childcare area, a 10,000-square-foot wellness center and classrooms. In October 2015, the YMCA facility received EPA Region 3's 2015 Excellence in Site Reuse Award.

In 2015, reuse of the National Wood Preservers portion of the site west of North Eagle Road moved forward. A Mr. Storage self-storage facility was built on top of the 3-acre cap installed in 1997. EPA, the state and Haverford Township reviewed construction plans and monitored the project to make sure it did not impact the protectiveness of the cap or the operation of the groundwater treatment system. Construction of the 21,000-square-foot, 3-story facility finished in 2016. The storage facility's slab built over the cap helps further protect the site's remedy.

Once a blighted and abandoned former industrial area, the Havertown PCP site has been restored to productivity as a bustling hub that supports businesses, recreation and public health. Today, site businesses employ over 400 people and contribute nearly $15 million in estimated annual employment income to the local economy. In 2017, the properties that make up the site had a combined value of nearly $8 million.

Figure 12. The Mr. Storage self-storage facility at the Havertown PCP site (Pennsylvania).

REDEVELOPMENT IN ACTION

PALMERTON ZINC PILE

Ecological Restoration

The Palmerton Zinc Pile Superfund site is located in Palmerton, Pennsylvania. Former zinc smelting operations at two plants in Palmerton (east and west plants) 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 placed the site on the NPL in 1983.

Cleanup included revegetation of Blue Mountain, surface water diversion and treatment, and soil cleanup on private properties. EPA is in the process of conducting a remedial investigation to address shallow groundwater, surface water, sitewide ecological risk and the need for institutional controls.

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.

In 2014, EPA Region 3 awarded Lehigh Gap Nature Center its Excellence in Site Reuse Award. The award highlights the organization's efforts to reuse a large portion of the site as a wildlife preserve that promotes ecological conservation and education. In the spring of 2018, 65 solar panels were installed on the roof of the Nature Center's Osprey House. The Osprey House is the center's "green" building used for indoor instruction and gatherings. In August 2018, the Center celebrated the 15th anniversary of the opening of the Lehigh Gap Refuge. Cleanup also enabled continued residential, commercial and industrial use at the site. Together, businesses operating across the different parts of the site employ over 1,700 people, providing over $86 million in estimated annual employee income and generating nearly $249 million in estimated annual sales.

Figure 13. The Lehigh Gap Nature Center at the Palmerton Zinc Pile site (Pennsylvania).

REDEVELOPMENT ON THE HORIZON IN REGION 3

TRANSFORMING A FORMER WOOD TREATMENT PLANT INTO A COMMERCIAL/INDUSTRIAL ASSET

The Rentokil, Inc. Superfund site in Richmond, Virginia, was the location of wood-treating operations from 1957 to 1990. EPA selected a final cleanup approach for the site in 1993 and the site's owner, Virginia Properties, Inc. (a Rentokil subsidiary), completed remedy construction in 1999. Remedial components included off-site disposal of contaminated materials, cap and slurry wall construction, long-term groundwater monitoring and wetland restoration.

During remedy design, Virginia Properties proposed constructing the remedy in a way that would support future redevelopment following remedy construction. EPA and Virginia Department of Environmental Quality accepted the proposal, which included the incorporation of building foundations – "divider walls" – within the area contained by the slurry wall to support future commercial and light industrial development.

In 2009, EPA deleted a fully cleaned-up part of the site from the NPL to further accommodate commercial and industrial development. The parts of the site deleted from the NPL included an 8.4-acre parcel and a 3.8-acre parcel from which EPA had excavated and removed all contaminated soils and sediments. Virginia Properties sold the 3.8-acre former Wetland Area B property, which is zoned for commercial and industrial use and ready for development. Virginia Properties is currently marketing other site areas for redevelopment. As a result of those efforts, potential purchasers have started making inquiries into the property.

Figure 14. Vacant property ready for reuse at the Rentokil, Inc. site (Virginia).

CONCLUSION

EPA works closely with its partners at Superfund sites across the Mid-Atlantic Region to make sure sites can safely be reused or remain in continued use during and following cleanup.

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 at the sites and at surrounding properties. There are 147 NPL sites and three 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.

Figure 15. The former American Viscose Corporation administrative building now houses several small businesses and the Front Royal-Warren County Economic Development Authority at the Avtex Fibers, Inc. site (Virginia).

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, PRPs, 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 the Mid-Atlantic Region, 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 3 Superfund Redevelopment Initiative 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-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

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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 13 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 Delaware.

Businesses and Jobs

EPA has collected economic data for 99 businesses and organizations operating on six sites in reuse or continued use in Delaware.

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

	Sites[a]	Sites with Businesses	Businesses[b]	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	*6*	*3*	*19*	*$8 million*	*90*	*$4 million*
In Continued Use	*3*	*1*	*1*	*$2 million*	*6*	*$336,000*
In Reuse and in Continued Use	*4*	*2*	*79*	*$420 million*	*1,979*	*$116 million*
Total	*13*	*6*	*99*	*$430 million*	*2,075*	*$120 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 eight Superfund sites in reuse or continued use in Delaware. These sites span 170 property parcels and 657 acres.

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

Total Land Value (8 sites)	Total Improvement Value (8 sites)	Total Property Value (8 sites)	Total Annual Property Taxes (8 sites)
$7 million	*$18 million*	*$25 million*	*$596,000*

[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 2017 to 2018.

Figure 16. Solar panels at the E.I. Du Pont De Nemours & Co., Inc. site.

Did You Know?

Since 1902, a pigment manufacturing plant has operated at the E.I. Du Pont De Nemours & Co., Inc. (Newport Pigment Plant Landfill) site in Newport, Delaware. The pigment plant continues to operate on site. The plant and other related on-site businesses employ over 200 people, providing nearly $24 million in estimated annual employee income and generate over $384 million in estimated annual sales. A solar development and park are also located 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 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 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 5. Detailed Site and Business Information for Sites in Reuse and Continued Use in Maryland (2019)

	Sites[a]	Sites with Businesses	Businesses[b]	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	*7*	*3*	*8*	*$12 million*	*111*	*$6 million*
In Continued Use	*5*	*1*	*2*	*$287,000*	*1*	*$46,000*
In Reuse and in Continued Use	*4*	*0*	*0*	*$0*	*0*	*$0*
Total	*16*	*4*	*10*	*$12 million*	*112*	*$6 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 three Superfund sites in reuse or continued use in Maryland. These sites span four property parcels and 41 acres.

Table 6. Property Value and Tax Information for Sites in Reuse and Continued Use in Maryland[a]

Total Land Value (2 sites)	Total Improvement Value (2 sites)	Total Property Value (3 sites)	Total Annual Property Taxes (3 sites)
$435,000	*$55,000*	*$2 million*	*$29,000*

[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 2017 to 2019.

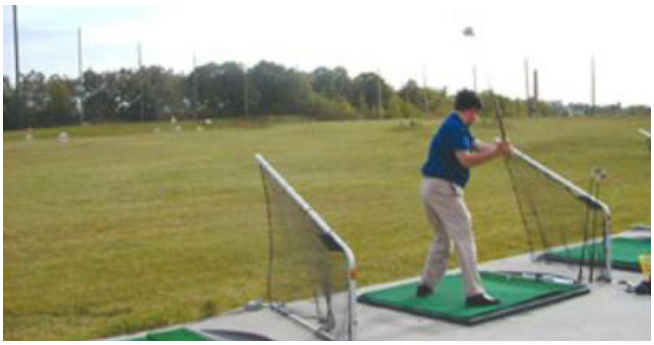

Figure 17. Driving range at the Kane & Lombard Street Drums site.

Did You Know?

For more than 22 years, an open municipal and industrial waste landfill operated at the Kane & Lombard Street Drums site in Baltimore, Maryland. EPA made sure cleanup was compatible with redevelopment. Today, site uses include a golf driving range, a shipping container management and trailer repair business, and a business focused on fire prevention. Together, on-site businesses employ 99 people, providing nearly $5 million in estimated annual employee income and generate nearly $12 million in estimated annual sales.

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 87 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 Pennsylvania.

Businesses and Jobs

EPA has collected economic data for 433 businesses and organizations operating on 47 sites in reuse or continued use in Pennsylvania.

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

	Sites[a]	Sites with Businesses	Businesses[b]	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	*33*	*16*	*101*	*$356 million*	*2,358*	*$128 million*
In Continued Use	*31*	*17*	*49*	*$797 million*	*1,898*	*$153 million*
In Reuse and in Continued Use	*23*	*14*	*283*	*$2 billion*	*7,551*	*$562 million*
Total	*87*	*47*	*433*	*$3.2 billion*	*11,807*	*$843 million*

[a] Six 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 35 Superfund sites in reuse or continued use in Pennsylvania. These sites span 1,618 property parcels and 2,860 acres.

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

Total Land Value (25 sites)	Total Improvement Value (25 sites)	Total Property Value (35 sites)	Total Annual Property Taxes (34 sites)
$57 million	*$133 million*	*$279 million*	*$10 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 2019.

Figure 18. Material recovery operations at the Metal Bank site.

Did You Know?

From 1968 until 1972, a scrap metal and transformer salvage facility operated at the Metal Bank site in Philadelphia, Pennsylvania. In 2016, the adjacent property owner purchased the site property to expand its material recovery operation. A nonprofit arts organization also operates on site. These businesses employ 110 people, providing nearly $5 million in estimated annual employee income and generate $20 million in estimated 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 23 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 Virginia.

Businesses and Jobs

EPA has collected economic data for 56 businesses and organizations operating on nine sites in reuse or continued use in Virginia.

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

	Sites[a]	Sites with Businesses	Businesses[b]	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	*8*	*6*	*52*	*$119 million*	*1,029*	*$69 million*
In Continued Use	*6*	*2*	*3*	*$8 million*	*30*	*$1 million*
In Reuse and in Continued Use	*9*	*1*	*1*	*$81 million*	*100*	*$6 million*
Total	*23*	*9*	*56*	*$208 million*	*1,159*	*$76 million*

[a] Eleven 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 five Superfund sites in reuse or continued use in Virginia. These sites span 137 property parcels and 677 acres.

Table 10. 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)
$12 million	*$23 million*	*$35 million*	*$127,000*

[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 2016 to 2019.

Figure 19. The fire department headquarters and training facility at the Abex Corp. site.

Did You Know?

Improper disposal practices and emissions contaminated soils and surrounding properties at the Abex Corp. site in Portsmouth, Virginia. In 2001, the community opened a fire department headquarters and training facility at the site. Additional redevelopment includes a beverage distribution center, a shopping center, a community health center and a park. On-site businesses employ nearly 130 people, providing over $9 million in estimated annual employee income and generate over $21 million in estimated 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 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 West Virginia.

Businesses and Jobs

EPA has collected economic data for 28 businesses and organizations operating on seven sites in reuse or continued use in West Virginia.

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

	Sites[a]	Sites with Businesses	Businesses[b]	Total Annual Sales[c]	Total Employees	Total Annual Employee Income
In Reuse	*4*	*4*	*5*	*$387,000*	*16*	*$767,000*
In Continued Use	*5*	*3*	*23*	*$32 million*	*120*	*$5 million*
In Reuse and in Continued Use	*1*	*0*	*0*	*$0*	*0*	*$0*
Total	*10*	*7*	*28*	*$32 million*	*136*	*$6 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] 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

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

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

Total Land Value (2 sites)	Total Improvement Value (2 sites)	Total Property Value (2 sites)	Total Annual Property Taxes (2 sites)
$308,000	*$245,000*	*$553,000*	*$8,000*

[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 2017 to 2018.

Figure 20. Tanker trucks parked at the Fike Chemical, Inc. site.

Did You Know?

Chemical and sewage operations at the Fike Chemical, Inc. site in Nitro, West Virginia, contaminated soil and groundwater. Cleanup enabled the reuse of the site. Today, a company uses capped areas for parking and tanker truck washing and maintenance.

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 varied from 2016 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.

EPA Resources

Havertown PCP. 2017. Reuse and Benefit to the Community, Havertown PCP Superfund Site. semspub.epa.gov/src/document/HQ/100000609.

Palmerton Zinc Pile. 2013. Demonstration Project. semspub.epa.gov/src/document/03/900124.

Pioneering Recreational Reuse: The Chisman Creek Superfund Site in York County, Virginia. 2017. semspub.epa.gov/src/document/HQ/176439.

Sharon Steel Corp (Fairmont Coke Works). 2018. Site Redevelopment Profile. semspub.epa.gov/src/document/HQ/197407.

Other Resources

Energy Services – Electric Rate Hearing. The Town of Front Royal, Virginia. March 11, 2018. frontroyalva.com/CivicMedia?VID=Energy-Services-Electric-Rate-Hearing-76.

Josh Gully. "Construction on new police station about halfway done." The Northern Virginia Daily. May 3, 2018. www.nvdaily.com/news/front-royal/construction-on-new-police-station-about-halfway-done/article_d96fb790-4d76-59b8-aaeb-590dd4b0e20b.html.

Lehigh Gap Nature Center. lgnc.org.

Terry Ahner. "Solar panels installed at Osprey House." Times News Online. May 12, 2018. https://www.tnonline.com/20180512/solar-panels-installed-at-osprey-house/.

Back cover photos: ***Dover Gas Light Co. (Delaware), Avtex Fibers, Inc. (Virginia)***


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