



SUPERFUND REDEVELOPMENT:

Planning for the Future, Protecting Public Health
and the Environment

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EPA AND SUPERFUND REDEVELOPMENT:

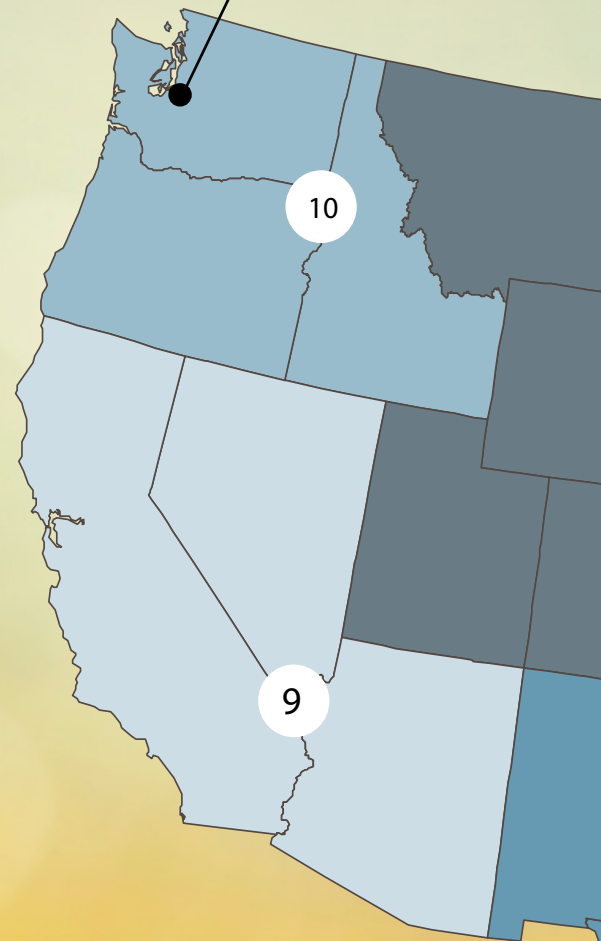
EPA's commitment to returning formerly contaminated sites to beneficial and productive use extends across all of its cleanup programs, including the Superfund program. EPA places a high priority on land reuse and revitalization as part of the cleanup mission for the Superfund program for a simple reason. *Effective protection of public health and the environment at Superfund sites requires consideration of how these sites will be used in the future.* Considering future use helps to identify long-term site stewards and engage vulnerable communities in productive dialogue, deters blight, vandalism and trespassing, and ensures that site remedies will remain protective of human health and the environment over time.

There are over 1,500 sites on the National Priorities List, with thousands more addressed through removal programs and the Superfund Alternative Approach. Today, more than half of these sites are in reuse. These uses support jobs and services that contribute significantly to local economies. The uses revitalize downtowns and connect rural areas, celebrate American history and culture, conserve natural resources, and provide community-wide amenities.

The Superfund Redevelopment Initiative (SRI) is EPA's national reuse resource for Superfund sites. Since its inception, SRI has developed cutting-edge tools and resources to address evolving community priorities and tackle new Superfund Redevelopment challenges. Recent projects have integrated remedy and reuse to save taxpayer dollars and accelerate cleanups, restored access to vital services and health care in urban areas, and enabled infrastructure projects that address multiple community priorities. Each of these projects generates new perspectives and lessons learned that SRI shares nationwide.

Much progress has been made. Much also remains to be done. There are sites that remain vacant or underused, hamstrung by stigma issues, lender and liability concerns, uncertain ownership and other factors. EPA plays a vital role in bringing stakeholders together to address these challenges, and in sharing tools and information resources that lead to new insights and breakthroughs. This report takes a closer look at these efforts.

The Thea Foss Waterway portion of the Commencement Bay Near Shore/Tide Flats site in Tacoma, Washington, is now a vibrant mixed-use waterfront. A public esplanade extends along the shore, punctuated by public parks, apartment buildings, restaurants and diverse businesses. New state-of-the-art marinas and water-based businesses have established the area as a major boating destination in the Puget Sound.

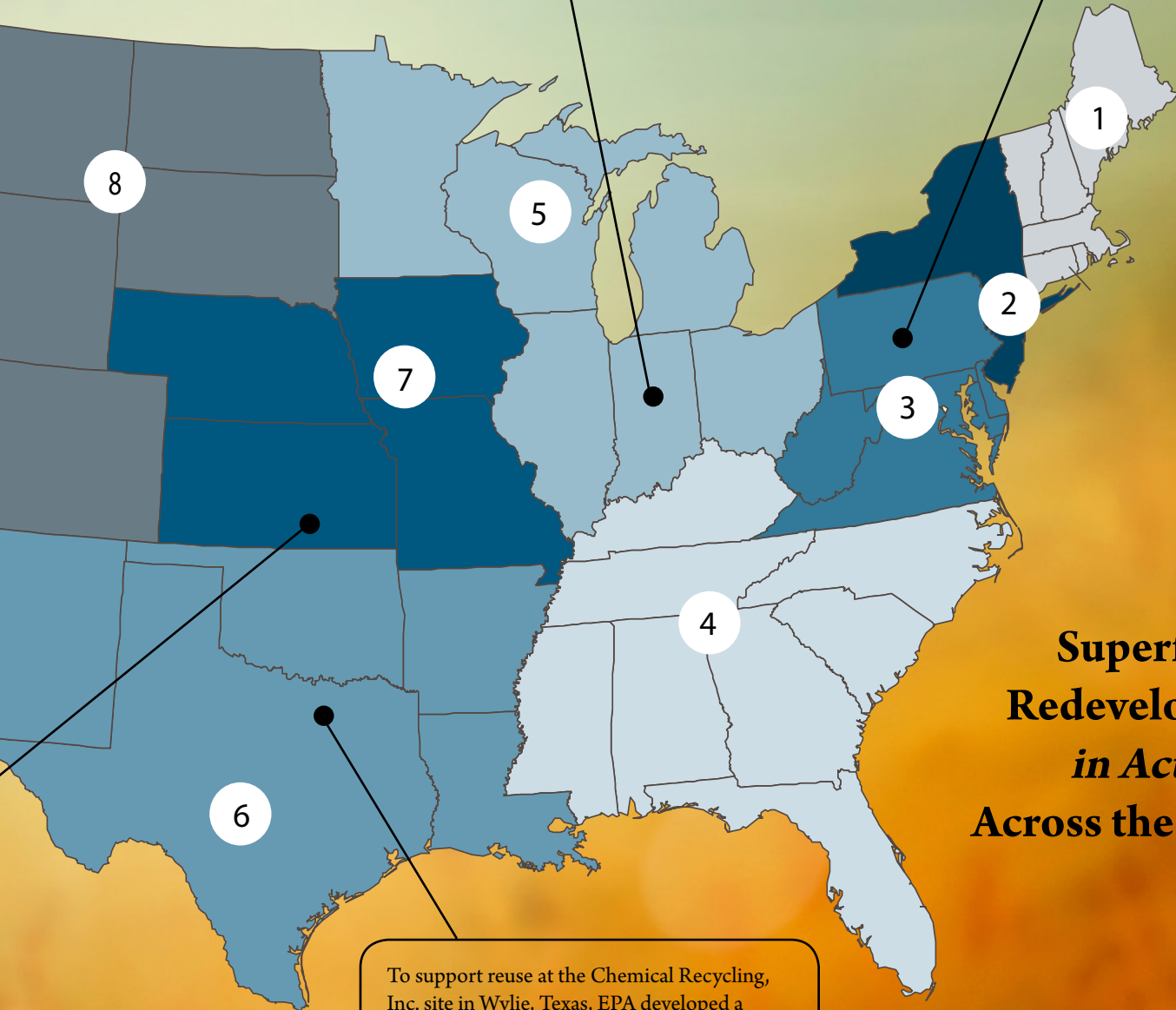


Twenty-eight commercial, industrial and public service organizations at the Strother Field site in Winfield, Kansas, employ more than 1,350 people. This once-blighted property is now valued at nearly \$20 million.

AN OVERVIEW

A 7.15-megawatt capacity solar array began operating on the Continental Steel site in Kokomo, Indiana, in December 2016. The facility generates enough energy to power up to 1,000 homes and has revitalized an area that had been vacant for decades.

At the Centre County Kepone site in State College, Pennsylvania, several interim uses – storage warehouses, office space, a fitness facility – now provide jobs and services. Long-term redevelopment planning for the entire site will generate additional benefits.



To support reuse at the Chemical Recycling, Inc. site in Wylie, Texas, EPA developed a Ready for Reuse Determination indicating that the property is ready to support commercial and industrial uses. The local government is using the tool to foster job creation and spur local economic development.

**Superfund
Redevelopment
in Action
Across the Country**

LOOKING BACK, LOOKING FORWARD

On December 11, 1980, Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act, also known as “Superfund.” This important legislation filled a major gap in environmental protection. Events at Love Canal in New York and other sites around the country had shown that wastes buried long ago – and mostly forgotten – could prove to be a serious threat to public health and the environment.

Over the past four decades, the Superfund program has taken thousands of actions to protect public health and the environment. Cleanups have been completed at more than 1,100 National Priorities List sites across the country. Over time, EPA recognized that cleanup did not necessarily ensure the long-term protectiveness of remedies. Some sites remained vacant and abandoned and became eyesores, targets for illegal dumping, trespassing and vandalism. At other sites, remedies unnecessarily limited reuse opportunities, fencing off cleaned-up areas and restricting access.

To tackle these issues, EPA launched the Superfund Redevelopment Initiative. SRI’s mission is to ensure that, at every Superfund site, EPA and its partners have an effective process and the tools and information needed to return these sites to productive use. Since 1999, SRI has helped communities reclaim and reuse tens of thousands of acres of land.

Redevelopment can serve as a catalyst for economic growth and community revitalization. Administrator Pruitt has set the expectation that there will be a renewed focus on accelerating work and progress at all Superfund sites across the country and has created the Superfund Task Force whose work includes 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.



Industri-Plex (Woburn, Massachusetts)

This former chemical and glue manufacturing facility was a local eyesore for decades. Today, it is home to an interstate highway exchange, a shopping center, an office park and a hotel complex. Restored wetlands and grass-covered hills provide scenic open space. The James Anderson Regional Transportation Center serves 1,200 commuter train riders daily and almost 20,000 Amtrak riders annually.

Sixty-two businesses on site employ almost 1,200 people, providing more than \$68 million in annual employment income. The businesses generate almost \$206 million in annual sales.



THE SUPERFUND REDEVELOPMENT INITIATIVE: A CLOSER LOOK

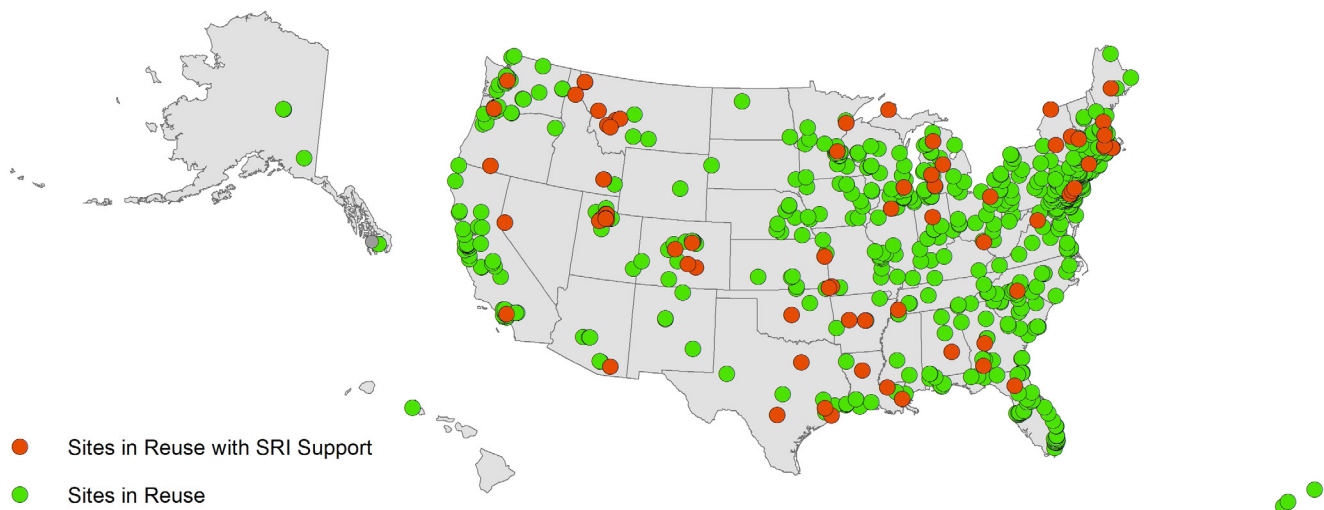
SRI works with partners and site stakeholders during every stage of the Superfund process. During site investigations and cleanup planning, SRI helps people consider ways to integrate remedy and reuse considerations, with protective remedies and land revitalization as overarching goals. At sites where remedies are in place, SRI helps communities remove unnecessary reuse barriers and provides site owners, businesses, local governments and lenders with the tools and information resources they need to make reuse happen.

Today, Superfund sites host every type of land use imaginable. These sites are seeing new life as centers of commerce, recreation, energy development, wildlife habitat, housing, agriculture and infrastructure. Nationally, the benefits provided to communities from the reuse of Superfund sites include over 156,000 jobs, approximately \$44 billion in sales and an estimated \$11.2 billion in annual income. More broadly, Superfund Redevelopment projects build community capacities and provide lasting social, economic and environmental benefits.

The consideration of future land use is an integral part of the Superfund process – from remedy selection to the long-term monitoring and stewardship of sites after cleanup. SRI focuses on two approaches to support Superfund site reuse. The first is working with site stakeholders to explore future uses before cleanups start. This gives EPA the best chance to design cleanup remedies that fit well with an intended use. The second is working with communities to remove unnecessary barriers to reuse at sites where remedies are already in place.

SRI Tools and Resources

- *Reuse Pilots*: From 1999 to 2002, SRI provided grants to local governments to support reuse planning efforts. Today, dozens of these sites are in reuse.
- *Regional Seeds*: These initial investments help communities and EPA Regions find the best tools to move reuse forward at sites. Regional seeds support reuse planning, energy resource feasibility studies, facilitation services and information materials.
- *Partnerships*: SRI partners with government agencies, businesses, non-profits and other organizations to foster reuse opportunities. Current partners include the Academy of Model Aeronautics, the U.S. Soccer Foundation, The Trust for Public Land, the Rails-to-Trails Conservancy and the Pollinator Partnership.
- *Ready for Reuse (RfR) Determinations*: These environmental status reports document how sites can be safely returned to use.
- *SRI Website* (<https://www.epa.gov/superfund-redevelopment-initiative>): This online resource provides case studies, videos, lessons learned and other materials to help communities pursue Superfund reuse opportunities.
- *Redevelopment Economics*: EPA captures and shares the economic impacts of Superfund site reuse. EPA tracks on-site job, income, sales revenue and property value data.
- *SRI Coordinators*: EPA Regional representatives work with EPA site teams and local stakeholders to explore reuse opportunities and provide access to reuse resources.



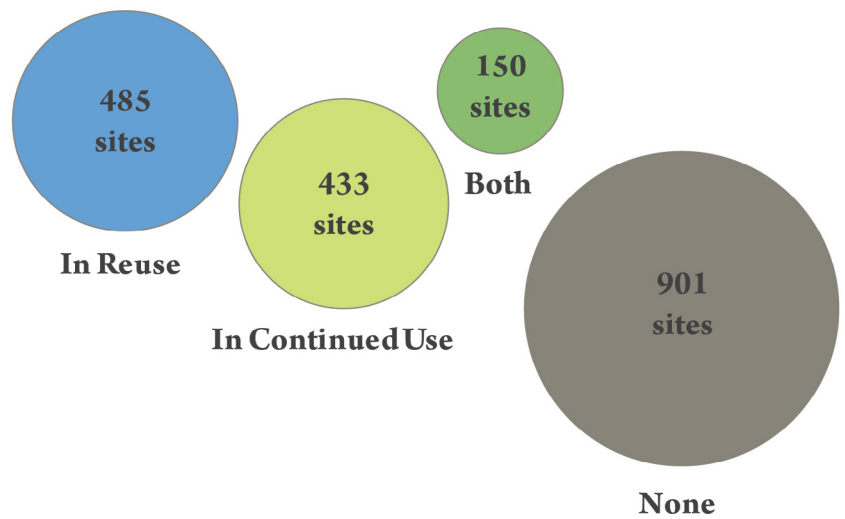
SUPERFUND REDEVELOPMENT TODAY

There are currently more than 900 non-Federal Facility Superfund sites in reuse or planned use. EPA tracks sites that support these uses. A site is “counted” as being in reuse when any part of the site supports a particular use. This includes both continued use – where a site use continues throughout the cleanup process, or is the same as before cleanup – and new site uses – where there are different uses prior to and after cleanup, or the site has been returned to use after a period of no use.

Reuse is often driven by factors external to EPA’s cleanup of the site, such as economic demand, area redevelopment pressures and available land use incentives. SRI strives to address barriers to reuse related to site safety, appropriate land use, liability concerns and others.

Many sites are also used for multiple purposes, such as a residential dairy farm or an industrial facility with a conservation easement and walking trails. The kinds of reuse that Superfund sites can support are as varied as the communities that design them.

Generally, reuses at non-Federal Facility Superfund sites fall into one of seven broad categories – commercial, public services, agricultural, recreational, ecological, industrial and residential. Many sites host several different land uses.



REUSE TYPE

SITE EXAMPLE

Commercial

Retail and grocery stores, offices, restaurants, other businesses

Norwood PCBs

(Norwood, Massachusetts)

56,000-square-foot commercial/retail space with multiple tenants



Public Services

Transportation services, libraries and schools, government offices, infrastructure, other public services

South Bay Asbestos

(Alviso, California)

Several schools



Agricultural

Farmland and pasture for livestock, orchards, agricultural research, irrigation

Milltown Reservoir/Clark Fork

River (Milltown, Montana)

Cattle ranch



Recreational

Sports facilities, golf courses, ballfields, open space and related facilities

Continental Steel

(Kokomo, Indiana)

Wildcat Creek Soccer Complex – additional future uses include ballfields, parking lots, trails



Ecological

Wildlife sanctuaries, nature preserves, meadows, wetlands

Palmerton Zinc Pile

(Palmerton, Pennsylvania)

Lehigh Gap Wildlife Refuge and Nature Center, trail system



Industrial

Factories, power plants, warehouses, landfills, salvage yards

PJP Landfill

(Jersey City, New Jersey)

Pulaski Distribution Center (provides 1,225 jobs, \$53 million in annual employee income, \$1.8 billion in annual business sales)



Residential

Single-family homes, townhomes, apartment complexes, condominiums, child/elder care facilities

Agriculture Street Landfill

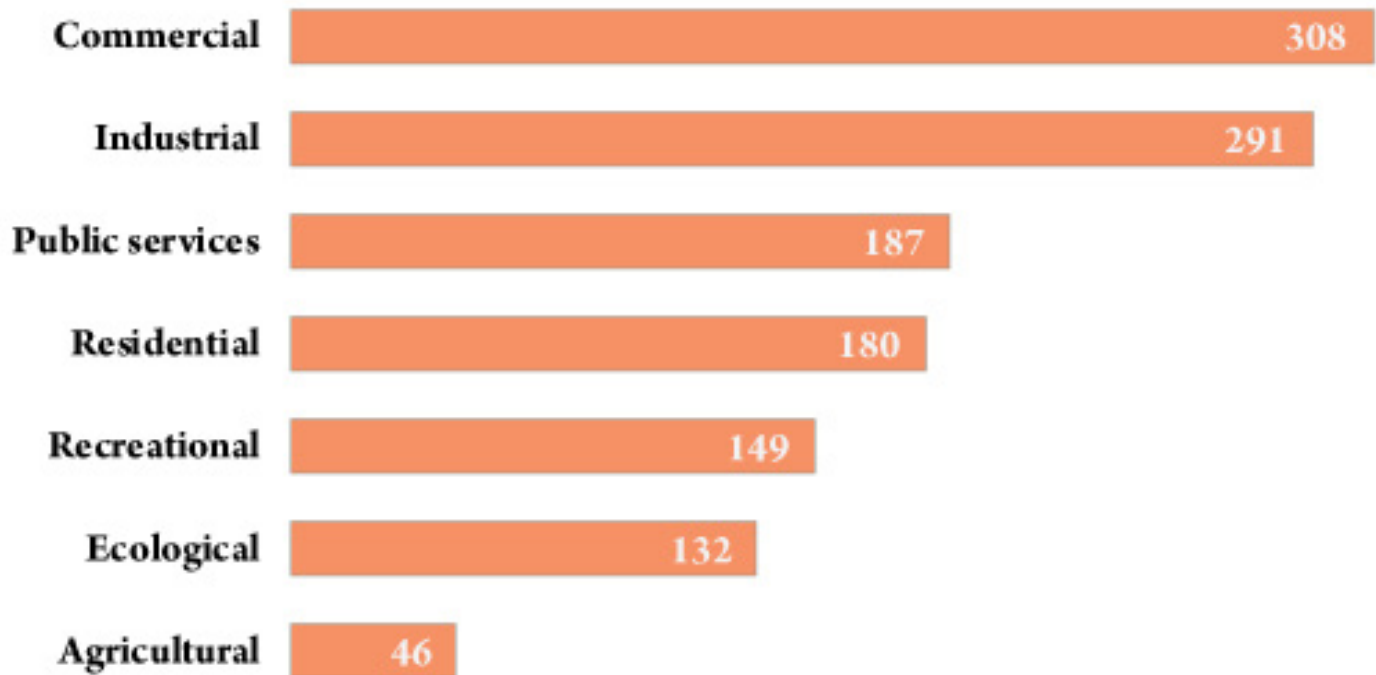
(New Orleans, Louisiana)

Neighborhood remains in continued use



SUPERFUND REDEVELOPMENT TODAY

The chart below shows the diversity and frequency of different reuses at Superfund sites, with commercial and industrial uses leading the way. Because many sites support multiple uses, the total number of site reuses is greater than the number of sites in reuse.



The site highlight below illustrates the benefits of redevelopment projects that incorporate several land uses.



Midvale Slag (Midvale City, Utah)

EPA worked with state agencies, Midvale City, community organizations and the site owner to integrate reuse considerations as part of cleanup planning for this former lead smelter area. Today, the site is home to Bingham Junction, a thriving mixed-use development that supports thousands of jobs. The value of the site property is about \$350 million, up from about \$4 million in 2004. Families have moved into new condominiums, with more than 2,500 residential units planned. Office buildings, a supermarket and other stores have been built, with up to 2 million square feet of commercial office and retail space planned. Sections of Bingham Junction's Riverwalk Park have opened, providing improved community access to the Jordan River. A Utah Transit Authority light rail station opened on site in 2011.



PET WASTE STATION



PLEASE CLEAN UP AFTER YOUR PET

DO NOT FEED WILDLIFE
OR OTHER ANIMALS

Dog Waste Bags

ARE THESE SITES SAFE?

In a word: Yes.

EPA's highest priority at any Superfund site is to protect human health and the environment. EPA can work with stakeholders before, during and after cleanup to make sure that sites are being reused or can be reused safely. However, not all remedies are protective for all uses. EPA works with communities during cleanup through a series of actions to identify likely future land uses so that, to the degree practicable, remedies and reuse can support one another.

One of the actions EPA takes is a thorough investigation of the contamination at each site. The investigation tells EPA whether the contamination is a threat to human health or the environment and, if it is, describes the nature and extent of the contamination. After the investigation, EPA meets with the site owner, the community and other interested parties to identify the reasonably anticipated future uses of the site. A reuse assessment, which involves collecting and evaluating information pertinent to reuse, can be done to develop assumptions about reasonably anticipated land uses at Superfund sites. It may involve a review of available records; visual inspections of the site; and discussions about potential future land uses with local government officials, property owners and community members. It can also be informed by reuse planning undertaken by communities. Based on its investigations, EPA selects a cleanup strategy tailored to the site that takes into account these anticipated uses. Before proceeding, EPA asks the community to comment on this strategy. After cleanup, EPA monitors the site to guard against any problems that may arise. EPA ensures that reuse in no way

compromises safety. In fact, anecdotal evidence suggests that reusing Superfund sites helps to keep them safe over time. Research suggests that sites being reused are less prone to vandalism and other activities that could harm the remedy.

Some sites are cleaned up for unrestricted access and use, meaning there are no use limitations based on the environmental condition of the sites. Other sites are cleaned up to be protective for specific types of use. For example, sites with long histories of industrial use in areas that are expected to remain industrial may be cleaned up to be protective for that use, but would not be suitable for other uses, such as housing. For other communities, these formerly industrial properties may present unique opportunities to support green infrastructure or recreational opportunities. In all cases, if waste is left in place, EPA specifies any use or activity limitations for its sites through something called an institutional control. Examples of institutional controls include "no residential use," "no use of groundwater for drinking water," and "no digging below a depth of 4 feet."

At a large number of Superfund sites, especially landfills, wastes are left buried on site with protective covers of soil and other materials, often many feet deep, to keep people from coming into contact with the wastes. As long as users do not dig into the cover, there is no exposure to wastes. At some of these sites there may be gas vents or monitoring wells, which also need protection. Each site must be evaluated individually to determine whether a particular use would interfere with these remedy components.





The Sitewide Ready for Anticipated Use, or SWRAU, measure was developed to comply with EPA's responsibility to report long-term, outcome-based accomplishments under the Government Performance and Results Act. The SWRAU measure reflects the importance of considering future land use as part of the cleanup process by tracking the number of sites meeting the following criteria:

- All aspects of the cleanup are in place and have been achieved for any media that may affect current and reasonably anticipated future land uses, so that there are no unacceptable risks.
- All land use restrictions or other controls required as part of the cleanup are in place.
- Sites are final or deleted National Priorities List sites, or Superfund Alternative Approach (SAA) sites, that have reached the construction completion milestone.

Nevertheless, a site can have reuse without being SWRAU (use of only a portion of the site) and a site that is SWRAU may be ready for reuse but not have a party interested in implementing reuse, so remain vacant. There is naturally some overlap between sites in reuse and sites that are SWRAU, but one does not necessarily equate with the other.

For more information about the SWRAU performance measure and which sites have achieved it, visit: <https://www.epa.gov/superfund-redevelopment-initiative/performance-measures-superfund-sites>.



**SWRAU data as of the end of Fiscal Year 2017. The SWRAU performance measure includes federal facility sites. Therefore, the numbers above include both federal facility and non-federal facility sites in reuse/continued use that have attained the SWRAU performance measure.*

REMEDIATION STRATEGIES

EPA considers anticipated future use when deciding on a site's remedy. EPA then, to the extent practicable, chooses cleanup techniques and technologies that are consistent with the reasonably anticipated future use of the land. Below is a list of some cleanup techniques that EPA uses to make sure that human health and the environment will be protected when sites are appropriately used:



OFF-SITE DISPOSAL:

Moving contaminants away from the site to a facility that can safely handle them.



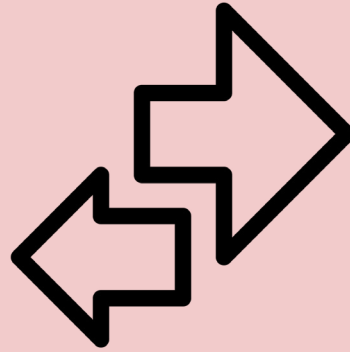
RECYCLING:

Treating or converting toxic waste material to make it safe and reusing it for other purposes.



CONTAINMENT:

Placing covers over toxic waste deposits or installing barriers around them to prevent migration and to keep people from coming into contact with the waste.



TREATMENT:

Processing the waste at the site to either remove the contaminants from soil, sediment or groundwater, or bind contaminants in soil, sediment and groundwater.

- **Thermal Treatment:** Using heat to render contaminants harmless by increasing their volatility; immobilizing them; or destroying them through burning, decomposition or detonation.
- **Physical treatment:** extracting contaminant vapors from soil; flushing soil; filtering groundwater; removing and air stripping volatile contaminants from groundwater; adsorption/absorption of groundwater contaminants.
- **Solidification:** Physically binding or enclosing contaminants within a solid mass like concrete.
- **Stabilization/solidification:** Inducing chemical reactions between a stabilizing agent (such as lime, Portland cement, fly ash or kiln dust) and the contaminants to reduce their mobility.
- **Bioremediation:** Breaking down toxic contaminants by using natural microorganisms or using composting or landfarming techniques to degrade contaminants.
- **Phytoremediation:** Using plants to help remediate sites. The plants draw up soil and water pollutants through their root systems and either immobilize the contamination or metabolize it.
- **Chemical Transformation:** Detoxifying contaminants by transforming their chemical structure.
- **Natural Attenuation:** Using natural biotransformation processes such as dilution, dispersion, volatilization, biodegradation, adsorption and chemical reactions to reduce contaminant concentrations over time to acceptable levels.



SUPERFUND REDEVELOPMENT TOOLS AND RESOURCES

This section provides more information on the tools and resources that SRI provides to help communities as they consider reuse opportunities for nearby Superfund sites.

Enhanced Stakeholder Engagement and Reuse Planning

Planning for the revitalization of environmentally impaired properties is a community-based process, relying on people and partnerships as well as information and analysis. SRI's teams of experts work with communities to reach out to diverse stakeholders, identify key needs and priorities, and develop reuse plans that reflect site conditions, cleanup requirements, ownership concerns and community perspectives.

EPA can support communities in this process by supplying teams of experts to work with them to gain a better understanding of reasonably anticipated future land use to inform remedy selection decisions. Often communities find it helpful to create community-based Land Use Committees, which guide the projects from the planning stage through implementation of the redevelopment plan. With this approach, it is important to provide training and education for committee members to ensure that the community has the ability to pursue land revitalization opportunities over the long term. EPA's expert team includes people with experience in facilitation, mediation, social equity and public outreach that can help communities devise effective land revitalization strategies, and bring together diverse local interests. These teams can help communities explore how to support sustainable reuse, encouraging the use of green infrastructure, pollinator habitat, integrated planning, community health and wellness, alternative energy and more to maximize beneficial outcomes. These activities can take place at any point in the cleanup process.

The reuse planning process is an integral part of EPA's remedial work because the remedial design and cleanup criteria and goals are developed with the future anticipated land use in mind. Most Superfund sites are privately owned and EPA cannot force a property owner to support a particular reuse or advocate for any specific land use activity. EPA's role is to ensure that any planned use of the site is compatible with the remedial design or the constructed remedy in place, and that this use will not impact protectiveness or lead to new exposure pathways. If a property owner is amenable to a proposed site use, EPA has determined the use would be compatible with the remedy and there is a party interested in implementing reuse at the site, EPA and SRI in particular can assist in addressing barriers to reuse such as liability concerns, clarifying due diligence and land use limitations for site use, providing information for potential lenders and consulting on design of the site use to minimize impact on the remedy.

While EPA can provide resources and guidance in the reuse planning process, the Agency cannot pay for site reuse or redevelopment.





Plainwell Paper Mill (Plainwell, Michigan)

The Plainwell Paper Mill was a vital part of Michigan's economy, history and heritage for more than a century. Since the mill's closure, the Plainwell city government has been the champion for its cleanup and redevelopment, recognizing the community-wide benefits and potential opportunities offered by the property's location, size and history. By turning it into a productive asset once again, the locality hopes to create new interest in the city's downtown, support local jobs and economic development, and increase area property values and tax revenues.

EPA aided the local government's efforts by funding a reuse planning project. SRI's project team helped the locality bring together a community-based Land Use Committee to guide the process. The 31-member committee met regularly and hosted a public meeting to share the project's findings with the larger community. SRI's project team organized public outreach efforts, provided research, analysis and design services, facilitated committee and public meetings, and developed and revised the project's reuse plan. The plan focused on opportunities to restore historic mill buildings, establish new commercial areas and neighborhoods, and create trails along the nearby Kalamazoo River.

Today, after years of making property improvements, marketing the area, and leveraging more than \$7.7 million in state and federal funding, the community's hard work has paid off.

- City development partner Conestoga-Rovers & Associates, an environmental consulting and development company, moved 50 staff into renovated space in the mill.
- Plainwell's new city hall facilities also opened in the mill.
- The area is now part of a Historic District on the National Register of Historic Places.

Today, as environmental cleanup work continues, the local government is focused on bringing trails and new residential and commercial ventures to the site.

Partnerships

While EPA can help make sure sites are used safely, the successful reuse of sites relies on many partners willing to bring resources, expertise and ingenuity to the table. As communities plan for the future, SRI has a network of partner organizations available to help them pursue particular opportunities.

Academy of Model Aeronautics (AMA)

The reuse of Superfund sites as flying fields benefits EPA and model aeronautic enthusiasts. Academy member clubs provide stewardship activities, mowing and maintaining areas and fences on the parts of Superfund sites they use, helping to protect site remedies. SRI works with interested AMA clubs to determine the compatibility of site remedies with aeromodelling activities to help secure new flying fields for AMA club members.

Pollinator Partnership (P2)

This nonprofit organization works to protect the health of managed and native pollinating animals vital to North American ecosystems and agriculture. P2's mission is to protect pollinators, critical to food and ecosystems, through conservation, education and research. P2 offers a broad range of resources that can complement a range of future uses, such as farming and ranching, corporate lands and buildings, golf courses and public lands. P2's resources also highlight policy documents and education opportunities.

Rails-to-Trails Conservancy (RTC)

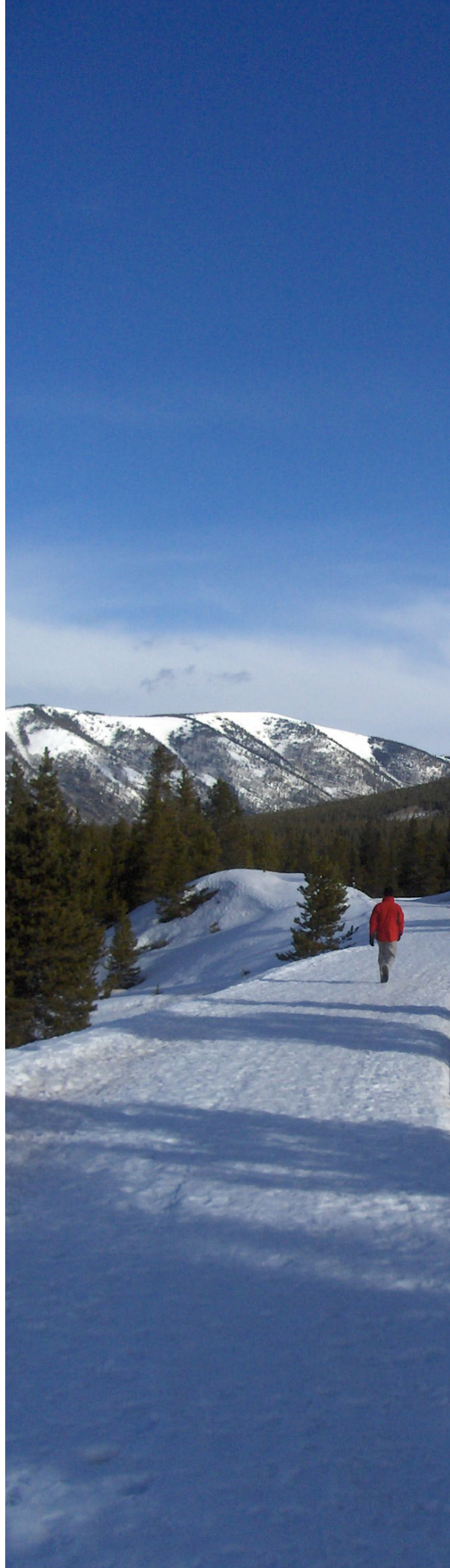
The mission of this nonprofit is to create a nationwide network of trails from former rail lines and connecting corridors to build healthier places for healthier people. RTC provides resources to find answers to technical questions and to guide people through the trail-building process by working at the community level to facilitate and spread trail successes.

The Trust for Public Land (TPL)

This nonprofit conserves land for people to enjoy as parks, gardens, historic sites, rural lands and other natural places. TPL can help communities identify and raise funds for conservation from federal, state, local and philanthropic sources; work on land transactions that create parks, playgrounds and protected natural areas; support park and green space creation; and help create parks and playgrounds using a participatory, community-based design process.

U.S. Soccer Foundation

This organization enhances, assists and grows the sport of soccer in the United States, with a special emphasis on underserved communities, including communities with Superfund sites. The Foundation provides grants, field design and planning assistance, engineering services, and sports equipment to communities that want to build soccer fields. These services provided by the Foundation have allowed for the successful establishment of soccer fields at several cleaned-up Superfund sites where EPA has determined that recreational use is appropriate.



For more information about SRI's Superfund Redevelopment partners, visit: <https://www.epa.gov/superfund-redevelopment-initiative/superfund-redevelopment-partnerships>.

To learn more about successful partnerships and reuse approaches at Superfund sites, visit: <https://www.epa.gov/superfund-redevelopment-initiative/depth-case-studies-superfund-reuse>.



**POLLINATOR PARTNERSHIP:
Chemical Commodities, Inc.
(Olathe, Kansas)**

Community stakeholders, site agencies and responsible parties worked with P2 and Monarch Watch on a natural habitat and education area for Monarch butterflies. The area includes habitat for birds, bees and butterflies, a tagging station for migrating butterflies, information kiosks, and a walking trail.

**TRUST FOR PUBLIC LAND PARTNERSHIP:
Pemaco Maywood
(Maywood, California)**

Working with TPL, the Maywood city government incorporated the site into a community park as part of the Los Angeles River Greenway project. Maywood Riverfront Park opened in May 2008. It offers several recreation facilities, including soccer fields, basketball courts and a play area, as well as native plant landscaping and picnic areas in an underserved urban community.

**TRIBAL PARTNERSHIP:
Tar Creek
(Ottawa County)**

For the first time in the history of EPA's Superfund program, a tribe has led cleanup efforts at a contaminated property. Seeking to protect and preserve the rich history of the Catholic 40 site, where many tribal members attended boarding school and church from the 1890s to the 1920s, the Quapaw Tribe of Oklahoma signed a cooperative agreement with EPA in 2012. The Quapaw Tribe Environmental Office led the cleanup effort, which included the excavation and off-site disposal of 108,000 tons of contaminated mining waste in late 2013 and early 2014. Historic structures and landscape features were protected during the cleanup. The Tribe plans to access these areas in the future for archeological research and education opportunities, and to celebrate the Tribe's rich culture and heritage.

"Our goal is to make this land useful and productive again," said Quapaw Tribal Chairman John Berrey. "We live here and we care about the outcomes, so we are very pleased to have these two new agreements in place."

Ready for Reuse (RfR) Determinations

These environmental status reports, written in plain language, document how Superfund sites can be safely returned to use. EPA issues RfR Determinations to provide the real estate market, lenders, local governments, communities and other parties with key site information, including any site conditions or cleanup requirements that may restrict certain uses. The goal is to help address parties' concerns and enable reuse projects to move forward. These environmental status reports can be written for an entire site, or for a portion of the site.

PAVING THE WAY TO NEW PUBLIC SERVICES LCP Chemicals Georgia (Brunswick, Georgia)

After EPA completed the remedial investigation for the site, but prior to development of the site's remedial action plan, EPA issued an RfR Determination for part of this former chemical manufacturing facility. Glynn County pursued the opportunity and decided to use the area for a county detention center. In 2012, parties finalized a \$475,000 agreement for the County's use of the property for the 610-bed facility. The center opened in September 2014.



For more information about RfR Determinations, including guidance for preparing an RfR Determination and example reports developed for Superfund sites, visit:

<https://www.epa.gov/superfund-redevelopment-initiative/ready-reuse-rfr-determinations-superfund-sites>.





Reuse How-to Guides

SRI has developed a series of guides for communities working on specialized redevelopment opportunities at Superfund sites. These reports take a close look at innovative project designs and approaches, discuss ways to address typical challenges, and provide additional tools and resources for next steps.

Agricultural Land Uses at Superfund Sites: Planting a Sustainable Future

Pilot Framework for Integrating Community Health and Wellness into the Superfund Reuse Assessment Process

Renewable and Alternative Energy at Superfund Sites: Harnessing New Sources of Power

Reusing Cleaned Up Superfund Sites: Golf Facilities Where Waste is Left on Site

Reusing Superfund Sites: Commercial Use Where Waste is Left on Site

Reusing Superfund Sites: Recreational Opportunities at Abandoned Mine Lands

Reusing Superfund Sites: Recreational Use of Land Above Hazardous Waste Containment Areas

To access the guides, visit: <https://www.epa.gov/superfund-redevelopment-initiative/superfund-site-reuse-how-reports>.





Community Involvement for Better Remedial and Reuse Outcomes

All communities deserve to have a say in the decisions that affect their lives and EPA provides technical assistance opportunities to help communities better understand technical issues related to Superfund site investigations and cleanup. With this information, communities are then in a better position to share their concerns and priorities with EPA and can remain engaged and informed throughout the Superfund process.

A variety of technical assistance opportunities are available to communities (see text box to the right). If you are interested in receiving support for the use of a Superfund site in your community, please contact the appropriate Superfund Redevelopment coordinator. Contact information for these individuals is available on the inside back cover of this publication.

For detailed information about the following tools, visit: <https://www.epa.gov/superfund/superfund-community-involvement>.

- Technical Assistance Needs Assessments (TANAs)
- Community Advisory Groups (CAGs)
- Technical Assistance Services for Communities (TASC) Program
- Superfund Job Training Initiative (SuperJTI)
- Technical Assistance Grants (TAGs)
- Conflict Prevention and Resolution Services (CPRS)



THE ECONOMICS OF SUPERFUND REDEVELOPMENT

SRI collects and maintains economic data for Superfund sites in reuse and continued use. SRI has estimated the national economic beneficial effects of Superfund sites in reuse since 2011. In 2017, SRI gathered economic data for 487 sites in reuse; a total of 6,622 businesses at these sites generated \$44 billion in estimated annual sales and employed over 156,000 people, as shown in the table below.

A total of 6,622 businesses at these sites generated \$44 billion in estimated annual sales and employed over 156,000 people

The primary economic information collected includes the names of businesses operating at sites, the number of people employed at site businesses, wage and income data, and annual business sales. This economic information is stored in EPA's SUp erfund REdevelopment (SURE) information library and updated annually. All data undergoes a multi-step QA/QC review. EPA uses the economic information gathered during the annual SURE Economics Update to track progress in returning sites to beneficial use.

YEAR	SITES IN REUSE WITH ECONOMIC INFORMATION	NUMBER OF BUSINESSES	ANNUAL SALES*	JOBS	ANNUAL EMPLOYMENT INCOME*
2011	135	271	\$9.6 billion	24,308	\$1.8 billion
2012	276	972	\$21.3 billion	46,475	\$3.5 billion
2013	363	2,216	\$34.3 billion	70,270	\$5.1 billion
2014	450	3,474	\$32.6 billion	89,646	\$6.2 billion
2015	454	3,908	\$30.0 billion	108,445	\$8.1 billion
2016	458	4,720	\$34.7 billion	131,635	\$9.4 billion
2017	487	6,622	\$43.6 billion	156,352	\$11.2 billion

*Adjusted to 2017 USD using the Consumer Price Index (CUUR0000SA0, not seasonally adjusted, U.S. city annual average).

While there are close to 800 non-federal facility Superfund sites in various types of active reuse, economic information has been collected for only 487 of those sites. There are several factors that result in the lack of economic information for those remaining sites in reuse. The primary factor is that not all reuse types involve an on-site business or other land use that employs people on the site.

Efforts are routinely made to identify new sites that are in reuse that might support new revenue-generating businesses, as well as to identify previously unknown revenue-generating business on sites. Each year, SRI focuses on:

- Tracking the few new sites that move into reuse each year.
- Updating site-specific changes, as every year businesses open and close and site-specific data values can fluctuate based on external economic conditions.
- Updating the jobs, incomes and sales data for the known businesses.

Local Beneficial Effects Case Studies

SRI develops site-specific case studies that take a closer look at the stories behind the numbers. They include detailed economic information about organizations operating on sites and highlight economic benefits provided by particular uses such as energy facilities. The table below shares highlights from several of these case studies.

LOCAL BENEFICIAL EFFECTS CASE STUDY HIGHLIGHTS

PJP Landfill

Today, this site is an economic hub and ecological asset rather than a contaminated landfill. Four businesses operate on site – a paper product manufacturing company, a distribution facility for an online grocery supplier, a trucking company and a gas station. The area also includes over 32 acres of green space along the Hackensack River.

As of December 2017, site businesses employed about 1,225 people, providing estimated annual employment income of nearly \$53 million and generating \$1 billion in estimated annual business sales revenues. In 2015, site properties generated \$1.8 million in tax revenues and had a total estimated property value of \$24.3 million.



Kansas City Structural Steel

This site is now home to the La Plaza Argentine commercial area and other property ready for redevelopment. The project's anchor tenant and commercial cornerstone is a Wal-Mart Neighborhood Market. As of December 2017, on-site commercial businesses supported 65 full-time employees, providing over \$1.6 million in annual employment income. In 2015, the site property value was nearly \$5.3 million.



Tucson International Airport Area

As of December 2017, at least 103 industrial and commercial businesses were active at this site, employing about 4,000 people and contributing over \$273 million in estimated annual employment income. In 2017, those businesses generated over \$402 million in annual sales. The remedy also provides Tucson, Arizona, with 6.3 million gallons of treated groundwater each day. Based on local residential water use rates, this cleaned-up water is worth about \$4.7 million annually.



Regional Economic Reports

SRI also authors reuse reports that highlight major economic outcomes across each of the 10 EPA Regions. These reports document the impacts of businesses operating on current and former Superfund sites and associated changes in employment data, property values and property taxes. SRI updates these reports every two years.

Property Values and Tax Information

SRI collects and maintains property value and tax information for Superfund sites in reuse and continued use. Data collected includes parcel numbers, acreage, land use/zoning type, land value, improvement value and annual tax information. The information informs SRI's local beneficial effects case studies and regional economic reports as well as federal and congressional information requests. Property value and tax data are provided by local governments. To date, SRI has collected property value information for nearly 250 Superfund sites.



Ecological, Recreational and Public Service Benefits

Other site reuse benefits, while more difficult to quantify, are also significant. Benefits provided by ecological, recreational and public service reuses, for example, include infrastructure services, access to healthy food and health care, recreational and cultural amenities, wildlife habitat, and restored ecosystem services such as clean air and clean water. The table below highlights several leading examples of these reuse benefits at Superfund sites nationwide.

INFRASTRUCTURE, ECOLOGICAL, RECREATIONAL AND PUBLIC SERVICE REUSE BENEFIT HIGHLIGHTS

Pacific Sound Resources

Following cleanup of this wood-treating facility, the Port of Seattle opened an expanded Terminal 5 facility on site. Today, Terminal 5 is one of the Port's largest container handling and storage facilities. Site reuse also includes part of Jack Block Park. The 6-acre area includes native landscaping, bike trails, elevated walkways, piers and shoreline access.



Palmerton Zinc Pile

Innovative cleanup of this former zinc smelter saved billions of dollars and returned the area to productive use decades sooner than originally anticipated. The site now supports a thriving successional ecosystem. The Lehigh Gap Nature Center is a community hub for recreation and education opportunities.



Phoenix-Goodyear Airport Area

Cleanup has enabled the continued operation of one of the Southwest's major aviation and defense-related manufacturing hubs. Treated groundwater from the site provides billions of gallons of clean water to the surrounding community for various uses. Agricultural reuse on part of the site also helps stabilize and improve the soil while providing hay for livestock feed.



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