



PUTTING SITES TO WORK

*How Superfund Redevelopment in Region 10
Is Making a Difference in Communities*



2018

Cover page photos:

*Bunker Hill Mining & Metallurgical Complex site (Idaho), Wyckoff Co./Eagle Harbor (Washington),
Reynolds Metals Company (Oregon), Oeser Co. (Washington)*

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Figure 1. One of the many businesses that operate at the Silver Mountain Resort at the Bunker Hill Mining & Metallurgical Complex site (Idaho).

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In May 2017, EPA established a task force to restore the Superfund program to its rightful place at the center of the Agency’s core mission to protect health and the environment.

epa.gov/superfund/superfund-task-force

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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 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.

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 10 – Alaska, Idaho, Oregon, Washington and 271 native tribes – is widely known for its remarkable scenery and deep ties to maritime industries, mining, metal refining, timber, and petroleum exploration and production. The region’s beauty, history and economic strength continue to attract new residents and visitors from across the country. Local governments, state agencies and diverse organizations in these western states work hard to help older, smaller communities remain vibrant while carefully planning for new growth in major cities and suburbs. A key part of this work focuses on finding new uses for old industrial, timber and mining sites, including Superfund sites. The Superfund program in EPA Region 10 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 10 helps communities reclaim cleaned-up Superfund sites. Factoring in future use of Superfund sites into the cleanup process promotes their safe redevelopment. In addition, EPA Region 10 works closely with state and local officials to remove barriers that have kept many Superfund sites underused. EPA Region 10 works to ensure that businesses on properties being cleaned up under Superfund can continue operating in a way that protects human health and the environment during site investigations and cleanup work. This continuity enables these businesses to remain open and serve as a source of jobs for communities.

Superfund sites across Region 10 are home to industrial parks, large port operations, resorts, public service providers and neighborhoods. Many sites continue to host industrial operations such as large-scale manufacturing facilities as well as military facilities. Others are now natural areas, parks and recreation facilities. On-site businesses and organizations at current and former Region 10 Superfund sites provide an estimated 10,320 jobs and contribute an estimated \$511 million in annual employment income. Cleaned-up sites in use in Region 10 generate \$3.9 million in annual property tax revenues for local governments.¹

Region 10 Sites in Reuse and Continued Use: Business and Job Highlights

Businesses:	572
Total Annual Sales:	\$3.2 billion
Number of People Employed:	10,320
Total Annual Employee Income:	\$511 million



Figure 2. Log lift used to remove bundled logs from the water at the Ketchikan Pulp Company site (Alaska).

¹ Business and property value tax figures represent only a subset of the beneficial effects of sites in reuse or continued use in Region 10. There are 46 Superfund sites in reuse or continued use in Region 10 for which EPA does not have business data, including 27 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 60 sites in reuse or continued use in Region 10 for which EPA does not have property value or tax data, including 27 NPL federal facilities.

This 2018 profile looks at how redevelopment activities at Superfund sites make a difference in communities across Region 10. 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 following cleanup 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 10.



Figure 3. Left: Industrial wood treating operations at the Oeser Co. site (Washington); Right: A restaurant at Silver Mountain Resort at the Bunker Hill Mining & Metallurgical Complex site (Idaho).

SUPPORT FOR SUPERFUND REDEVELOPMENT

EPA Region 10 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 10 partners with stakeholders to encourage redevelopment opportunities at Superfund sites. Region 10 helps communities and cleanup managers consider redevelopment during cleanup planning and evaluate remedies already in place to ensure appropriate redevelopment at cleaned-up sites. 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 10 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 10 communities and EPA find the right tools to move site redevelopment forward.
- Making efforts to help address communities' and developers' liability, safety and reuse concerns through development of educational materials, comfort letters, developer agreements and environmental status reports – known as Ready for Reuse Determinations – that provide information about the appropriate use of sites.
- Supporting partnerships with groups committed to putting Superfund sites back into use, such as the Rails-to-Trails Conservancy.
- 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 Region 10, 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 then 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 104 sites in Region 10 on the NPL.

Whenever possible, EPA seeks to integrate redevelopment priorities into site cleanup plans. In Region 10, 72 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. 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 10.

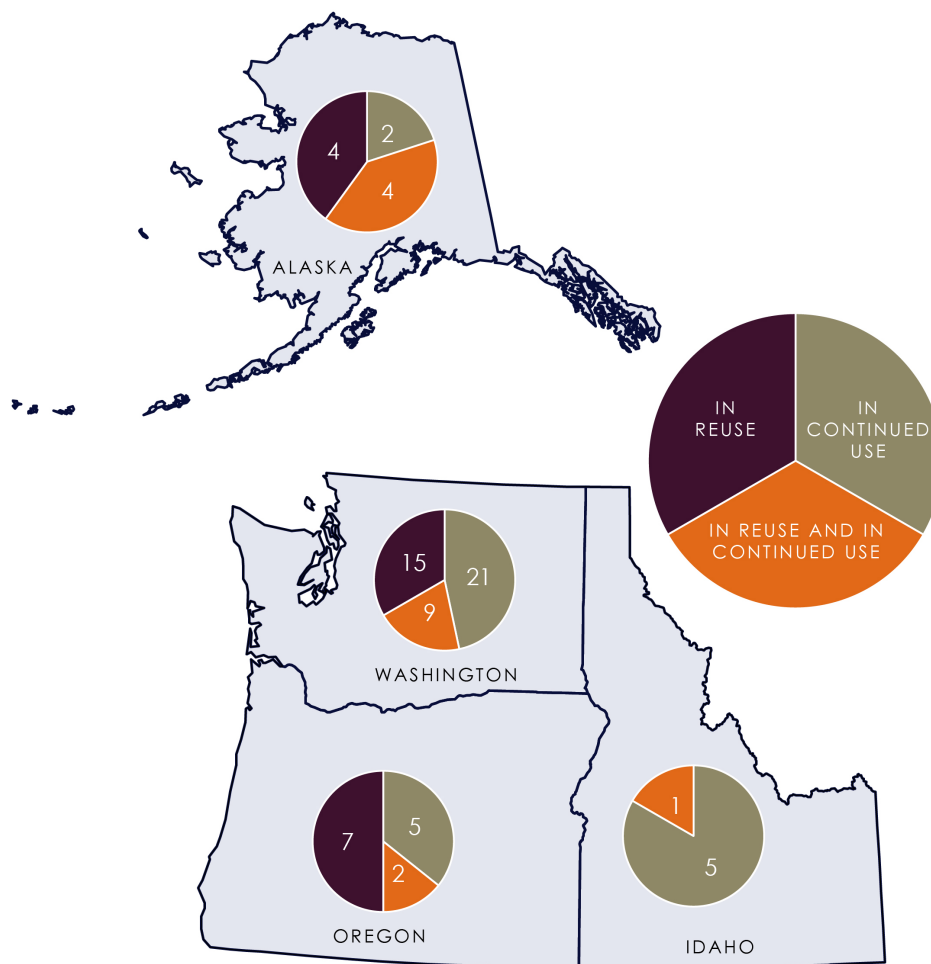


Figure 4. Sites in Reuse and Continued Use in Region 10

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

BENEFICIAL EFFECTS OF SUPERFUND SITE REDEVELOPMENT IN REGION 10

Businesses and Jobs

EPA has collected economic data for 572 businesses, government agencies and civic organizations operating on 28 NPL sites and one non-NPL site in reuse and continued use in Region 10.³ (See the State Redevelopment Profiles for each state's reuse details.) Businesses and organizations at these sites are part of several different sectors, including manufacturing, wholesale and retail trade, marine cargo handling, general freight trucking, and construction.

Businesses, facilities and organizations at these sites include courier and express delivery giant FedEx Ground, superstore Wal-Mart, the Port of Tacoma, the Oregon Department of Transportation, and the Silver Mountain Resort.

The businesses and organizations at these sites earn about \$3.2 billion in estimated annual sales and employ about 10,320 people, earning an estimated \$511 million in annual employment income. This income injects money into local economies and generates revenue through personal state income taxes. These businesses also help local economies through direct purchases of local supplies and services. On-site businesses that produce retail sales and services also generate tax revenues through the collection of sales taxes, which support state and local governments. More detailed information is presented in Table 1.⁴

Table 1. Site and Business Information for Region 10 Sites in Reuse and Continued Use (2017)

	Sites^a	Sites with Businesses^b	Businesses^c	Total Annual Sales^d	Total Employees	Total Annual Employee Income
<i>In Reuse</i>	26	9	31	\$101 million	431	\$22 million
<i>In Continued Use</i>	33	9	19	\$873 million	865	\$60 million
<i>In Reuse and in Continued Use</i>	16	11	522	\$2.2 billion	9,024	\$429 million
<i>Total</i>	75	29^e	572	\$3.2 billion	10,320	\$511 million

^a Twenty-seven 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.

³ See footnote 1, page 1.

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



Figure 5. Elemental phosphorus manufacturing facility at the Monsanto Chemical Co. (Soda Springs Plant) site (Idaho).

Sites in Reuse and Continued Use: A Closer Look

Reuse Type	Description	Region 10 Example
<i>In Reuse</i>	<i>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.</i>	<i>Joseph Forest Products (Oregon) – former wood-treating facility is now in agricultural reuse (livestock grazing).</i>
<i>In Continued Use</i>	<i>Historical uses at a site remain active; these uses were in place when the Superfund process started at the site.</i>	<i>Monsanto Chemical Co. (Soda Springs Plant) (Idaho) – Monsanto has operated an elemental phosphorus manufacturing facility on site since 1952.</i>
<i>In Reuse and Continued Use</i>	<i>Part of a site is in continued use and part of the site is in reuse.</i>	<i>Boomsnub/Airco (Washington) – companies have operated a compressed gas manufacturing plant on site since 1963. The location of a former chrome plating facility now supports commercial and industrial businesses, condominiums and Luke Jensen Sports Park.</i>

Property Values and Property Tax Revenues

Properties cleaned up under the Superfund program and returned to use have the potential to increase in value significantly. This increased value can boost property tax revenues, which help pay for local government operations, schools, transit systems and other public services. Site properties at the Northwest Pipe & Casing/Hall Process Company site in Oregon are now valued at over \$31 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 10 Sites in Reuse and Continued Use: Property Value and Tax Highlights

Total Property Value: \$574 million

Total Annual Property Taxes: \$3.9 million



Figure 6. Greenhouse at the Northwest Pipe & Casing/Hall Process Company site (Oregon).

EPA has collected property value and tax data for 15 Superfund sites in reuse and continued use in Region 10.⁵ These sites span 251 property parcels and 2,438 acres. They have a total property value of \$574 million. The average total property value per acre is \$235,000.

Land and improvement property value information is available for 15 sites. These properties have a total land value of \$350 million and a total improvement value of \$224 million.⁶

Property tax information is available for 15 sites. The properties generate a combined \$3.9 million in local property taxes annually.

Table 2. Property Value and Tax Information for Sites in Reuse and Continued Use in Region 10^a

Total Land Value (15 sites) ^b	Total Improvement Value ^c (15 sites)	Total Property Value (15 sites)	Total Property Value per Acre (15 sites) ^d	Total Annual Property Taxes (15 sites)
\$350 million	\$224 million	\$574 million	\$235,000	\$3.9 million

^a Results are based on an EPA Superfund Redevelopment Initiative effort in 2018 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 2017 to 2018. For additional information, see Sources.

^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 \$574 million divided by total acreage of 2,438.

5 There are 60 additional sites in reuse or continued use in Region 10 for which EPA does not have property value or tax data, including 27 NPL federal facilities. See footnote 1, page 1.

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

Beneficial Effects from Enhanced Recreational and Ecological Amenities

In addition to hosting commercial developments, retail centers and industrial facilities, many Region 10 sites in reuse and continued use provide recreational and ecological benefits. Greenspace and habitat reuses help attract visitors and residents and indirectly contribute to local economies.

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

Parks, natural areas and scenic landscapes also have great economic value – supporting regional economies through tourism, agriculture and other activities. Economic impacts of recreational activities can include outdoor recreation spending and reduced public costs related to healthcare and infrastructure. In 2012, outdoor recreation contributed \$646 billion to the U.S. economy, supporting 6.1 million jobs and generating \$39.9 billion in national tax revenue and \$39.7 billion in state and local tax revenue.⁷ Protected green space can also increase the property values of nearby homes by providing amenities that draw people to live and work in the community.

Many sites in Region 10 provide recreational and ecological benefits. The Wyckoff Co./Eagle Harbor site on Bainbridge Island in Washington has been transformed into Pritchard Park, a popular waterfront recreation area with hiking trails, a beach and incredible views of the Seattle skyline. To the west of the park, the Bainbridge Island Japanese American Exclusion Memorial includes footpaths, historical interpretation, and a 276-foot-long memorial wall. During cleanup of the McCormick & Baxter Creosoting Co. (Portland Plant) site in Portland, Oregon, erosion control measures included revegetating the former facility area with native plant species and the riverbanks with cottonwoods, willows and spirea, which provides ecological benefits for the habitat along the Willamette River. In Spokane, Washington, reuse of the Spokane Junkyard/Associated Properties site as multi-use sports complex serving thousands of area youth earned a national Phoenix Community Impact Award in 2004 for achievement of excellence in Superfund site reuse.



Figure 7. Kayaks on the beach at Pritchard Park, at the Wyckoff Co./Eagle Harbor site (Washington).

⁷ The Outdoor Recreation Economy. Outdoor Industry Association. Available at outdoorindustry.org/pdf/OIA_OutdoorRecEconomyReport2012.pdf.



Figure 8. Restored waterfowl habitat at the Bunker Hill Mining & Metallurgical Complex site (Idaho).

Why Are Wetlands Economically Important?

Superfund site reuse can support wetland habitat, as seen at several sites in Region 10. The Queen City Farms site in Maple Valley, Washington, includes wetlands and wooded wildlife habitat areas. Cleanup of the Bunker Hill Mining & Metallurgical Complex site in Idaho included converting nearly 400 acres of agricultural property to wetlands, which now provide habitat for a variety of birds, including swans and ducks. The restoration effort earned the site EPA Region 10's Howard Orlean Excellence in Site Reuse Award in 2015.

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*: nepis.epa.gov/Exe/ZyPDF.cgi/2000D2PF.PDF?Dockey=2000D2PF.PDF.
- EPA's *Why Are Wetlands Important?*: www.epa.gov/wetlands/why-are-wetlands-important.

Cleanup and Beneficial Reuse of Ports in Region 10

Seaports and marine cargo activity are key contributors to the Pacific Northwest's economy. The cleanup of coastal sites in EPA Region 10 has enabled the continued operation, expansion and development of several large ports in the region. These vital economic hubs enable businesses to export raw materials and manufactured goods overseas, allow the U.S. to receive imports from global markets, and support a wide range of businesses and organizations that employ thousands of workers nationwide. Ports also serve as transportation hubs, moving passengers along maritime routes and supporting industries such as railroad and trucking companies, logistics firms, shipping operations, and commercial fishing. According to the American Association of Port Authorities, seaport cargo activity supports the employment of more than 23 million people in the U.S. and accounts for 26 percent of the U.S. economy. In 2014, U.S. seaports generated nearly \$4.6 trillion in total economic activity and more than \$321 billion in federal, state and local taxes. To remain economically competitive in the global marketplace, the cleanup, continued use and beneficial reuse of ports at contaminated sites has never been more important.



Figure 9. View of the Fremont Bridge and surrounding industry along the Willamette River at the Portland Harbor site (Oregon).

Several efforts at Superfund sites in Region 10 have resulted in port modernization and expansions and the economic revitalization of port communities as well as the creation of new recreational amenities.

- The **Harbor Island (Lead)** site is an industrial island in Seattle's Elliott Bay. Built in the early 1900s, the 420-acre island supports commercial and industrial activities, including ocean and rail transport operations. In 1991, the Port of Seattle expressed interest in expanding Terminal 18, which lies on the east side of the island. Cleanup allowed the port to move ahead with a \$300-million, 90-acre expansion of Terminal 18. The expansion included a new dockside rail yard, two new truck gates, a larger container storage yard and other amenities to improve goods-handling capabilities. In 2004, site stakeholders received a Phoenix Award for achievement of excellence in Superfund site reuse. In 2017, businesses operating on site employed over 1,000 people and generated nearly \$780 million in combined sales revenue.
- The **Portland Harbor** site is located in Portland, Oregon and includes a 10-mile stretch of the lower Willamette River known as Portland Harbor as well as associated upland source properties. For over 150 years, Portland Harbor has served as an international port for commerce – it is Oregon's largest seaport. Operation of the port has continued through early cleanup efforts and will continue as the site's long-term cleanup plan is implemented. According to a 2015 Port of Portland economic impact study of the Portland Harbor, nearly 30,000 jobs are directly created by the businesses located within the harbor, and in 2015, harbor activity generated about \$413 million in state and local tax revenue. The cleanup of Portland Harbor will lead to redevelopment from existing and future investors.
- The 300-acre **Alcoa (Vancouver Smelter)** site is located next to the Columbia River in Vancouver, Washington. Following cleanup of the former aluminum smelter, EPA removed the site from the NPL in 1996. In 2009, the Port of Vancouver purchased about 218 acres of the site property. The purchase allowed the port to develop Terminal 5, its newest marine terminal. Less than a month after closing on the property, the port began handling wind energy cargo at its new terminal. In 2009, the U.S. Census Bureau declared the Port of Vancouver to be the nation's leading port for handling wind energy cargo. The port later went on to complete its Terminal 5 Unit Train Improvement project in 2010. Delivery of the loop track, which marked a major milestone of the port's ongoing West Vancouver Freight Access rail improvement project, added 35,000 feet of new rail capacity to the port's internal system.

REDEVELOPMENT IN ACTION

BUNKER HILL MINING & METALLURGICAL COMPLEX

Recreational and Commercial Amenities

The Coeur d'Alene Basin in northern Idaho is one of the largest historic mining districts in the world. Over 100 years of commercial mining, milling and smelting resulted in the widespread contamination of soil, sediment, groundwater and surface water in the area now known as the Bunker Hill Mining and Metallurgical Complex Superfund site. The site includes mining-contaminated areas in the Coeur d'Alene River corridor, adjacent floodplains, downstream water bodies, tributaries and fill areas as well as the 21-square-mile Bunker Hill Box, which surrounds the area of historic smelting operations. EPA added the site to the NPL in 1983.

EPA, the Idaho Department of Environmental Quality (IDEQ) and the Idaho Panhandle Health District (PHD) have been working at the site since the mid-1980s to remove lead-contaminated soil and gravel from residential properties, churches, schools, parks, businesses and rights-of-way. Cleanup has also included consolidation and capping of waste rock, mine tailings and contaminated soil and sediment, capture and treatment of mine drainage, creek reconstruction, demolition of abandoned milling and processing facilities, revegetation efforts, ecological restoration, and treatment of contaminated groundwater. One of the most unique components of the site's long-term remedy is its comprehensive Institutional Control Plan (ICP). The ICP plays a major role in protecting public health and helps convince local lenders to fund redevelopment projects. Through the ICP, the PHD educates local communities and visitors about the risks associated with site-related contamination and how to safely enjoy the natural environment. It also helps area communities maintain protective barriers and ensures the compatibility of future uses with the remedy.

In 1987, the city of Kellogg began to pursue redevelopment opportunities for cleaned-up parts of the site. The ICP addressed developer and lender concerns and helped facilitate site redevelopment. Today, the site supports a wide range of commercial, industrial and public service businesses and housing options. For example, Silver Mountain Resort – a year-round destination offering a wide range of recreation opportunities to locals and visitors of all ages – is located on site. In addition to skiing, snowboarding and snow tubing, the resort includes the Morning Star Lodge, Galena Ridge Golf Course, miles of bike trails and Silver Rapids, Idaho's largest indoor water park. Redevelopment projects such as Silver Mountain Resort have attracted people to the area. New arrivals invest in homes and start businesses, bolstering the economy. Businesses in the Bunker Hill Box employ over 2,900 people and provide nearly \$110 million in estimated annual employment income. In 2017, businesses in the Bunker Hill Box generated nearly \$337 million in estimated sales revenue.

Cleanup has also resulted in significant ecological benefits, including the successful revegetation of hillsides and the conversion of nearly 400 acres of agricultural land into thriving wetland habitat. The use of native plants and trees during revegetation efforts helped create habitat for wildlife and pollinators. A wide range of wildlife has returned to the site as a direct result of the cleanup. Cleanup of a former rail line in 2004 resulted in the creation of the Trail of the Coeur d'Alenes, a 72-mile paved bike trail that passes through the site. The Rails to Trails Conservancy named it one of the 25 top trails in the nation in 2012. In addition to recreation opportunities provided by Silver Mountain Resort and the Trail of the Coeur d'Alenes, the site offers a wide range of other recreation amenities, including playgrounds in restored residential areas and opportunities for fishing, boating and hiking.



Figure 10. View of the Silver Mountain Resort and the Kellogg skyline at the Bunker Hill Mining & Metallurgical Complex site (Idaho).

REDEVELOPMENT IN ACTION

PACIFIC SOUND RESOURCES

Port of Seattle Expansion and Jack Block Park

The 83-acre Pacific Sound Resources (PSR) Superfund site is located on the south shore of Elliott Bay on the Puget Sound in Seattle, Washington. From the turn of the century until 1994, a wood-treating facility was active on site. Its operations released hazardous wastes into the ground and the marine environment. EPA listed the site on the NPL in 1994. The Port of Seattle purchased the upland part of the site and included it as part of the Port's efforts to construct a modern container terminal facility in West Seattle. During this period, the Port implemented several early cleanup actions under EPA oversight to stabilize releases from the site and to prepare it for reuse.

The Port opened the expanded Terminal 5 facility on site in 1998 – it is now one of the Port's largest and most efficient container cargo shipment facilities. The expansion doubled the terminal's shipping capacity. The integration of rail into terminal cargo shipping operations also helped reduce the terminal's dependency on truck transport of ship cargo, improving air quality. During busy periods, nearly 500 workers support cargo transfer operations at the terminal. The Port is currently modernizing Terminal 5 to accommodate larger ships with deeper berths and bigger cranes.

The project also led to the creation of the 5.8-acre Jack Block Park on the northern part of the site. The public park provides trails, boating facilities, access to Elliott Bay, and dramatic views of the Seattle skyline and Puget Sound.



Figure 11. View of Jack Block Park and rail lines on the Pacific Sound Resources site (Washington).

REDEVELOPMENT IN ACTION

NORTHWEST PIPE & CASING/HALL PROCESS COMPANY Commercial, Government and Industrial Operations, and New Highway Infrastructure

Metal pipe manufacturing at the Northwest Pipe & Casing/Hall Process Company Superfund site in Clackamas, Oregon, took place from 1956 to 1985. Improper waste disposal activities at the 53-acre area contaminated soil and groundwater. EPA added the site to the NPL in 1992. Cleanup included demolition and removal of site structures, treatment and removal of highly contaminated soil, placement of a clean soil cap over remaining contaminated soil, land and groundwater use restrictions, and treatment of contaminated groundwater. EPA and state investigation and ongoing cleanup efforts have been compatible with continued uses, as well as new development at the site.

Following cleanup of the soil operable unit, the Oregon Department of Transportation (ODOT), Clackamas County Development Agency and local businesses showed interest in an array of redevelopment opportunities for the site. Today, the site hosts continued and new uses, including warehouse, light industrial, commercial and government office spaces, an equipment laydown yard, and ODOT's greenhouse and plant nursery. A streetcar test track, maintenance facility and 30.8-kilowatt solar array are also located on site. Together, site businesses employ about 230 people and contribute over \$12 million in estimated annual employment income. On-site properties also help generate property tax revenues that support local government and public services. Site properties have a combined value of over \$31 million and generate nearly \$253,000 in annual property tax revenue.

ODOT has also extended two roads across the capped area of the site. The highway project, which is part of the Sunrise Corridor Project, helps relieve regional traffic congestion. Minuteman Way, which runs along the western part of the site, has enhanced area infrastructure and includes bike lanes and sidewalks.

According to the 2011 Second Five Year Review and the 2016 Third Five Year Review, the site is currently protective of human health and the environment because of the land and ground water use controls and other actions that have been implemented at this site. However, in order for the site to remain protective for the long term, site-wide groundwater monitoring should continue to ensure concentrations of chlorinated solvents are not increasing. EPA will continue to provide oversight of site activities.



Figure 12. Streetcar test track at the Northwest Pipe & Casing/Hall Process Company site (Oregon).

REDEVELOPMENT IN ACTION

REYNOLDS METALS COMPANY

Port of Portland's Troutdale Reynolds Industrial Park

The Reynolds Metals Company Superfund site spans over 700 acres. It is located about 20 miles east of Portland, Oregon, and just over a mile north of the city of Troutdale. From the 1940s to 2000, the Reynolds Metals plant operated an aluminum smelting facility on 80 acres of the site. Smelting activities resulted in the contamination of groundwater, surface water, sediment and soil. EPA listed the site on the NPL in 1994. Alcoa purchased the property in 2000, began demolishing the plant in 2003 and sold the property to the Port of Portland (the Port) in 2007. The Port then developed a three-phase master plan for the area, now called the Troutdale Reynolds Industrial Park, or TRIP.

While the overall goal was to turn TRIP into an economic engine for the region, creating investment and employment opportunities, the plan also balanced development with open space and recreation opportunities. The plan preserves 350 acres of open space and includes an extension of a regional recreation trail. Between 2008 and 2010, the Port implemented Phase I of its plan, making 131 acres available for reuse. The Port leveled and raised the Phase I area's grade and put new infrastructure in place. In October 2008, FedEx Ground purchased 78 acres of property in the Phase I development area. In 2010, FedEx Ground completed construction of a 441,000-square-foot regional distribution facility. The \$200 million FedEx Ground distribution center employs about 1,000 people and provides nearly \$49 million in estimated annual employment income. On-site properties also help generate property tax revenues that support local government and public services. In 2017, site properties had a combined value of over \$157 million and generated over \$1.4 million in property tax revenue.

The Port, the city of Troutdale and other stakeholders are actively working to expand TRIP's tenant base. In early 2017, Amazon purchased 74 acres of the site property from the Port of Portland. Today, construction of a \$178 million Amazon fulfillment facility is underway at the site. The company expects to hire 1,500 people to fill, pack and ship orders by the time the center opens in the summer of 2018. In June 2017, the Port of Portland sold 19 acres of the site to a developer planning a 344,000-square-foot facility on site that could accommodate four industrial users for manufacturing and distribution services and office space. Once fully built out, the Port estimates that TRIP will generate 3,500 new jobs, \$141 million in annual income and \$46 million in annual state and local taxes.

In January 2018, EPA awarded the Port of Portland, Alcoa, the Oregon Department of Environmental Quality and several other site stakeholders with Region 10's Howard Orlean Excellence in Site Reuse Award. The award recognizes the innovative and collaborative work of site stakeholders to clean up and redevelop the site.



Figure 13. The FedEx Ground distribution facility at the Reynolds Metals Company site (Oregon).

REDEVELOPMENT ON THE HORIZON IN REGION 10

TRANSFORMING A FORMER CREOSOTE MANUFACTURING FACILITY INTO A MULTI-STORY MIXED USE WATERFRONT DEVELOPMENT

The 23-acre Quendall Terminal Superfund site in Renton, Washington, hosted creosote manufacturing operations for about 53 years, until 1969. From 1969 to 1978, operations stored diesel, crude and waste oils on site. Since 1977, a log sorting and storage yard has been located on site. EPA is working with the responsible party on cleanup plans for the site. EPA anticipates selecting the site's final long-term remedy by the spring of 2019.

EPA's Superfund Redevelopment Initiative supported a reuse suitability assessment for the site in 2014. It identified ways to ensure the compatibility of the proposed redevelopment project with different cleanup options. The site owner has plans to redevelop the waterfront property as part of a mixed-use development project. Plans call for 10 buildings with retail ground floors and residential units above. The site is on EPA's national Redevelopment Focus List of sites with major redevelopment potential.



Figure 14. Aerial view of the waterfront property of the Quendall Terminal site (Washington).

CONCLUSION

EPA works closely with its partners at Superfund sites across Region 10 to make sure sites can safely be reused or remain in continued use during and following cleanup. EPA also works with businesses and organizations at Superfund sites throughout the cleanup process to make sure they can remain open.

The businesses and organizations at these sites provide jobs and income for communities and generate local and state taxes. Cleanup and redevelopment also helps stabilize and boost property values. There are 72 NPL sites and three non-NPL Superfund sites in Region 10 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 10, including at least one site in each of the four Region 10 states. EPA remains committed to working with all stakeholders to support Superfund redevelopment opportunities in Region 10.



Figure 15. View of part of the Bainbridge Island WWII Nikkei Exclusion Memorial at the Wyckoff Co./Eagle Harbor site (Washington).

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

Across Region 10, 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 10 Superfund Redevelopment Initiative Coordinator
Kira Lynch | 206-553-2144 | lynch.kira@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

STATE REDEVELOPMENT PROFILES





ALASKA REDEVELOPMENT PROFILE

EPA partners with the Alaska Department of Environmental Conservation to oversee the investigation and cleanup of Superfund sites in Alaska. Alaska 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 and continued use in Alaska.

Businesses and Jobs

EPA has collected economic data for eight businesses and organizations operating on two sites in reuse and continued use in Alaska.

Table 3. Detailed Site and Business Information for Sites in Reuse and Continued Use in Alaska (2017)

	Sites ^a	Sites with Businesses	Businesses ^b	Total Annual Sales ^c	Total Employees	Total Annual Employee Income
<i>In Reuse</i>	4	0	0	\$0	0	\$0
<i>In Continued Use</i>	2	0	0	\$0	0	\$0
<i>In Reuse and in Continued Use</i>	4	2	8	\$3 million	62	\$4 million
Total	10	2	8	\$3 million	62	\$4 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.
^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

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



Figure 16. Log storage and sorting operations at the Ketchikan Pulp Company site.

Did You Know?

From 1954 to 2001, a pulp mill operated at the Ketchikan Pulp Company site in Ketchikan, Alaska. Following cleanup, site reuses include public services and commercial and industrial facilities. The Alaska Department of Transportation and the Alaska Marine Highway System use parts of the site for administrative and engineering buildings and the harbor for marine vessels. Commercial and industrial facilities at the site include freight transportation, waste treatment and disposal, and log storage operations.



IDAHO REDEVELOPMENT PROFILE

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

Businesses and Jobs

EPA has collected economic data for 294 businesses and organizations operating on four sites in reuse and continued use in Idaho.

Table 4. Detailed Site and Business Information for Sites in Reuse and Continued Use in Idaho (2017)

	Sites ^a	Sites with Businesses	Businesses ^b	Total Annual Sales	Total Employees	Total Annual Employee Income
<i>In Reuse</i>	0	0	0	\$0	0	\$0
<i>In Continued Use</i>	5	3	5	\$796 million	499	\$31 million
<i>In Reuse and in Continued Use</i>	1	1	289	\$337 million	2,966	\$109 million
Total	6	4	294	\$1.1 billion	3,465	\$140 million

^a Two sites are federal facilities. Federal facility sites are excluded from all other detailed site and business data presented above.

^b Business information is not available for all businesses on all Superfund sites in reuse or continued use.

Property Values and Property Tax Revenues

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



Figure 17. Aerial view of facilities at the Eastern Michaud Flats Contamination site.

Did You Know?

The Eastern Michaud Flats Contamination site is located in Pocatello, Idaho. Construction of a fertilizer distribution warehouse and retail center on site is underway. The facilities will employ 60 to 70 people. The J.R. Simplot Company also continues to operate on site. It generates over \$750 million in estimated annual sales and provides nearly \$6 million in estimated annual income.



OREGON REDEVELOPMENT PROFILE

EPA partners with the Oregon Department of Environmental Quality to oversee the investigation and cleanup of Superfund sites in Oregon. Oregon has 14 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 and continued use in Oregon.

Businesses and Jobs

EPA has collected economic data for 17 businesses and organizations operating on eight sites in reuse and continued use in Oregon.

Table 5. Detailed Site and Business Information for Sites in Reuse and Continued Use in Oregon (2017)

	Sites ^a	Sites with Businesses	Businesses ^b	Total Annual Sales ^c	Total Employees	Total Annual Employee Income
<i>In Reuse</i>	7	4	11	\$22 million	318	\$17 million
<i>In Continued Use</i>	5	3	5	\$67 million	172	\$18 million
<i>In Reuse and in Continued Use</i>	2	1	1	\$1 million	1,000	\$49 million
Total	14	8	17	\$90 million	1,490	\$84 million

^a One site is a 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 four Superfund sites in reuse and continued use in Oregon. These sites span 49 property parcels and 788 acres.

Table 6. Property Value and Tax Information for Sites in Reuse and Continued Use in Oregon^a

Total Land Value (4 sites)	Total Improvement Value (4 sites)	Total Property Value (4 sites)	Total Annual Property Taxes (4 sites)
\$100 million	\$94 million	\$194 million	\$2 million

^a The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which varied from 2017 to 2018.



Figure 18. American Petroleum Environmental Services' facilities at the Harbor Oil Inc. site.

Did You Know?

A 1979 fire destroyed a tanker truck cleaning and oil recycling facility at the Harbor Oil Inc. site in Portland, Oregon. The fire ruptured aboveground storage tanks, causing used oil and waste paint to flow into nearby wetlands and Force Lake. American Petroleum Environmental Services now operates on site. It recycles used oil.



WASHINGTON REDEVELOPMENT PROFILE

EPA partners with the Washington Department of Ecology to oversee the investigation and cleanup of Superfund sites in Washington. Washington has 45 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 and continued use in Washington.

Businesses and Jobs

EPA has collected economic data for 253 businesses and organizations operating on 15 sites in reuse and continued use in Washington.

Table 7. Detailed Site and Business Information for Sites in Reuse and Continued Use in Washington (2017)

	Sites ^a	Sites with Businesses	Businesses ^b	Total Annual Sales ^c	Total Employees	Total Annual Employee Income
<i>In Reuse</i>	15	5	20	\$79 million	113	\$5 million
<i>In Continued Use</i>	21	3	9	\$10 million	194	\$12 million
<i>In Reuse and in Continued Use</i>	9	7	224	\$1.9 billion	4,996	\$267 million
Total	45	15	253	\$2 billion	5,303	\$284 million

^a Eighteen 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 11 Superfund sites in reuse and continued use in Washington. These sites span 202 property parcels and 1,650 acres.

Table 8. Property Value and Tax Information for Sites in Reuse and Continued Use in Washington^a

Total Land Value (11 sites)	Total Improvement Value (11 sites)	Total Property Value (11 sites)	Total Annual Property Taxes (11 sites)
\$250 million	\$131 million	\$381 million	\$2 million

^a The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which varied from 2017 to 2018.



Figure 19. Composting facilities at the Queen City Farm site.

Did You Know?

The Queen City Farms site is located in Maple Valley, Washington. Past site uses include a pig farm, an airport, a chemical processing plant and a waste disposal area. Today, the site supports ecological uses and a regional composting business. Ecological reuse includes wetlands and wooded wildlife habitat areas. The composting business generates over \$9 million in estimated annual sales and provides nearly \$2 million in estimated annual income.

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SOURCES

BUSINESS, JOBS, SALES AND INCOME INFORMATION

Information on the number of employees and sales volume for on-site businesses comes from the Hoovers/Dun & Bradstreet (D&B) (www.dnb.com) database. EPA also gathers information on businesses and corporations from D&B. D&B maintains a database of more than 225 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 (resource.referenceusa.com). In cases where ReferenceUSA did not include employment and sales volume for on-site businesses, EPA used the Manta database (www.manta.com). The databases include data reported by businesses. Accordingly, some reported values might be underestimates or overestimates. In some instances, business and employment information came from local newspaper articles and discussions with local officials and business representatives. While sales values typically exceed estimated totals of annual income, sales can sometimes be lower than estimated income. This can be attributed to a number of business conditions and/or data reporting.

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

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

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

Business and employment data used for this profile were collected in 2017. Estimated annual employment income was calculated using 2017 jobs data and BLS average weekly wage data for those jobs from 2016 (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.

PROPERTY VALUE AND TAX INFORMATION

EPA collected on-site property values and property taxes included in this profile for a subset of Superfund sites by comparing available site boundary information with available parcel boundary information and gathering information for selected parcels from county assessor datasets. The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which typically varied from 2017 to 2018. All figures presented have been rounded for the convenience of the reader. 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

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Other Resources

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Back cover photos: Reynolds Metals Company (Oregon), Bunker Hill Mining & Metallurgical Complex site (Idaho), Taylor Lumber and Treating (Oregon)



United States Environmental Protection Agency

Region 10
1200 6th Avenue, Suite 900
Seattle, WA 98101

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