PUTTING SITES TO WORK

How Superfund Redevelopment in Region 8 Is Making a Difference in Communities

2022 DATA

REGION 8 ECONOMIC PROFILE

EPA

Cover page photos:

Midvale Slag (Utah), Utah Power Light American Barrel Co. (Utah), Mouat Industries (Montana), Central City Clear Creek (Colorado), Uravan Uranium Project (Colorado), Asarco inc. (Globe Plant) (Colorado).

Figure 1. Open landscape at the Basin Mining Area site (Montana).

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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 Program, the Agency contributes to these communities' economic vitality by supporting the return of sites to productive use.

EPA is focused on accelerating work and progress at all Superfund sites across the country, and supporting redevelopment and community revitalization. Using resources from the 2022 Bipartisan Infrastructure Law, EPA is providing necessary funding to enable delayed cleanup efforts at 49 Superfund sites to move forward. More than 60% of these sites are in historically underserved communities. EPA is leading the way to support the return of these and other once-contaminated sites 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's Region 8 office serves Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 28 Tribal Nations. Since the 1950s, the states in EPA Region 8 – the Mountains and Plains Region – have faced major changes in the manufacturing sector. Spurred by globalization, advances in technology and a transition to a service-based economy, these changes have contributed to significant job losses and substantial neighborhood and downtown declines in communities across the region. While continuing to emphasize manufacturing as an economic cornerstone and a source of jobs, state and local leaders are helping communities adjust to these large-scale economic changes. Much of this work centers on investing in workforce development, retaining existing businesses, encouraging new business development and repurposing old industrial land, including Superfund sites. The Superfund program in EPA Region 8 is proud to play a role in these efforts.

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

Region 8 Sites in Reuse and Continued Use: Business and Job Highlights

Businesses:	*2,644*
Total Annual Sales:	*$10.5 billion*
Number of People Employed:	*40,057*
Total Annual Employee Income:	*$2.4 billion*

Figure 2. A business front at the Denver Radium site (Colorado).

Through efforts such as the Superfund Redevelopment Program, EPA Region 8 helps communities reclaim cleaned-up Superfund sites. Factoring the reasonably anticipated future use of Superfund sites into the cleanup process promotes their safe redevelopment. In addition, EPA Region 8 works closely with state and local officials to remove barriers that have kept many Superfund sites vacant or underused. EPA Region 8 works to ensure that businesses on properties being cleaned up under Superfund can continue operating in a way that protects human health and the environment during site investigations and cleanup work. This continuity enables these businesses to remain open and serve as a source of jobs and income for local communities.

Superfund sites across Region 8 are home to commercial and industrial parks, retail centers, condominiums and single family homes. Many sites continue to host industrial operations, including large-scale manufacturing facilities. Some sites now support alternative energy projects. Others have been transformed into ecological preserves, parks and recreation complexes. On-site businesses and organizations at current and former Region 8 Superfund sites provide an estimated 40,057 jobs and contribute an estimated $2.4 billion in annual employment income. Sites in reuse and continued use in Region 8 generate $203 million in annual property tax revenues for local governments.[1]

1 Business and property value tax figures represent only a subset of the beneficial effects of sites in reuse or continued use in Region 8. There are 33 Superfund sites in reuse or continued use in Region 8 for which EPA does not have business data, including ten 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 36 sites in reuse or continued use in Region 8 for which EPA does not have property value or tax data, including ten NPL federal facilities.

This profile looks at how redevelopment activities at Superfund sites make a difference in communities across Region 8. In particular, it describes some of the beneficial effects of redevelopment and continued use of current and former Superfund sites. The profile also describes the land values and property taxes associated with Superfund sites returned to use and sites that have remained in use throughout the cleanup process. EPA updates these profiles periodically. The beneficial effects may increase or decrease over time due to changes in:

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

Figures presented represent only a subset of all Superfund sites in reuse or continued use in Region 8.

Figure 3. Left: One of the many industrial businesses at the Asarco Inc. (Globe Plant) site (Colorado). Right: An opera house in downtown Leadville at the California Gulch site (Colorado).

SUPPORT FOR SUPERFUND REDEVELOPMENT

EPA Region 8 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 8 partners with stakeholders to encourage redevelopment opportunities at Superfund sites. Region 8 helps communities and cleanup managers consider redevelopment during cleanup planning and evaluate remedies already in place to ensure appropriate redevelopment. In addition, EPA participates in partnerships with communities and encourages opportunities to support Superfund redevelopment projects that emphasize environmental and economic sustainability.

Specific redevelopment support efforts in EPA Region 8 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 8 communities and EPA find the right tools to move site redevelopment forward.
- Making efforts to help address communities' and developers' liability, safety and reuse concerns through development of educational materials, comfort letters, developer agreements and environmental status reports – known as Ready for Reuse Determinations – that provide information about the appropriate use of sites.
- Supporting partnerships with groups committed to returning Superfund sites to productive use, such as the U.S. Soccer Foundation, The Trust for Public Land and the Rails-to-Trails Conservancy.
- Developing reuse fact sheets, websites, webinars and reuse case studies to share opportunities and lessons associated with Superfund Redevelopment.

Figure 4. The Denver Coliseum hosts events and trade shows at the Vasquez Boulevard and I-70 site (Colorado).

These efforts have helped build expertise across Region 8, making it easier to both consider future use of Superfund sites prior to cleanup and to identify opportunities for removing reuse barriers. These efforts also help tribes, state agencies, local governments, communities, potentially responsible parties, site owners, developers, and other partners and stakeholders to better understand potential future uses for Superfund sites. This helps stakeholders engage early in the cleanup process, ensuring that Superfund sites are restored as productive assets for communities. Most importantly, these efforts lead to significant returns for communities, including jobs, annual income and tax revenues.

SUPERFUND REDEVELOPMENT: THE BIG PICTURE

EPA can take and oversee immediate action at contaminated sites through short-term cleanup actions, also called removal actions.[2] EPA refers sites warranting long-term cleanup to its remedial program or to state programs. EPA's National Priorities List (NPL) is a list of sites the Agency is targeting for further investigation and possible remediation through the Superfund program. Once EPA places a site on the NPL, the Agency studies the contamination, identifies technologies that could address the material and evaluates alternative cleanup approaches. EPA then proposes a cleanup plan and, after collecting public input, issues a final cleanup plan. The Agency then cleans up the site or oversees cleanup activities. EPA has placed 71 sites in Region 8 on the NPL.

Whenever possible, EPA seeks to integrate redevelopment priorities into site cleanup plans. In Region 8, 70 NPL sites and 15 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. Businesses and other organizations also use some site areas for memorials and parking areas. Many redeveloped sites support multiple uses and have the capacity to support additional uses and further redevelopment. The following sections take a closer look at the beneficial effects of businesses operating on current and former Superfund sites in Region 8.

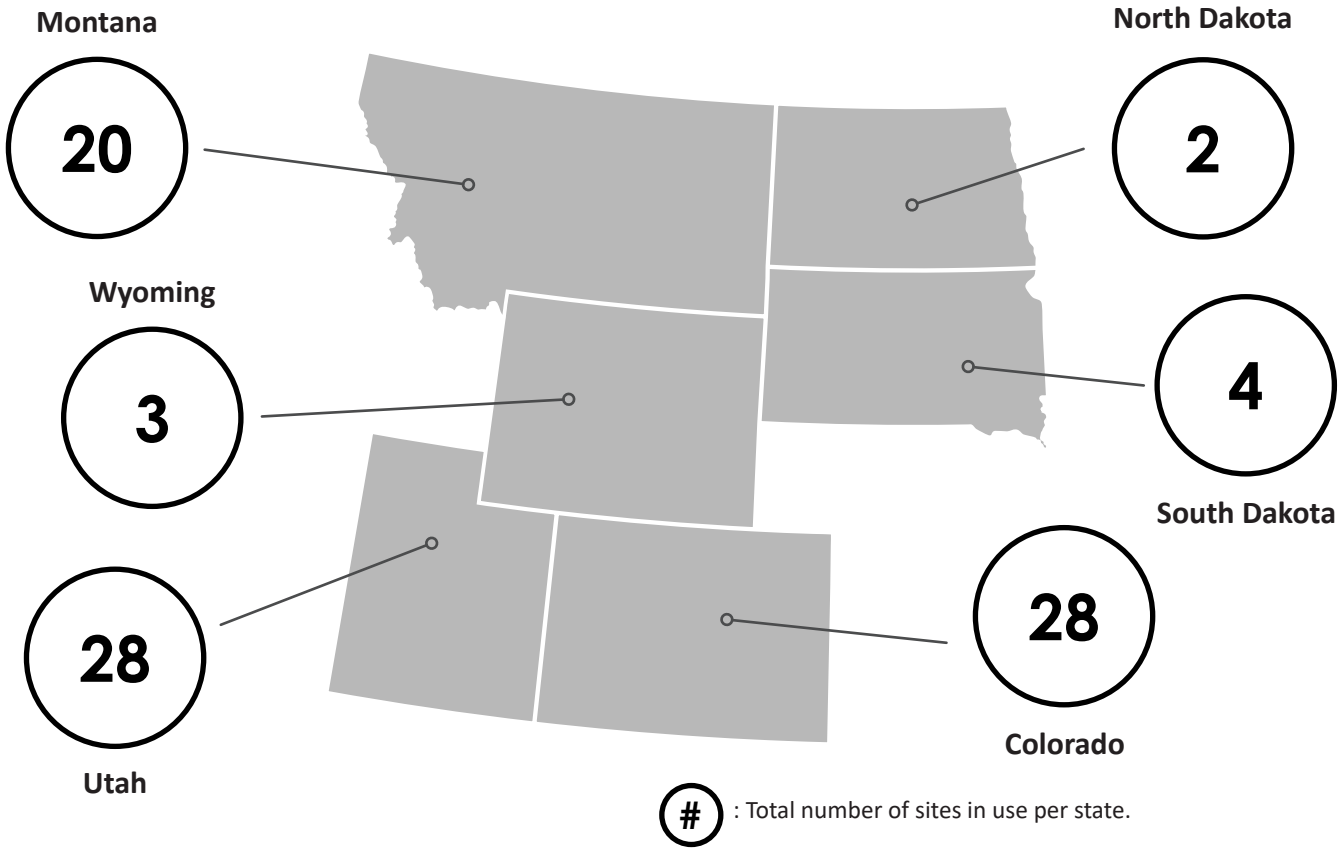


Figure 5. Sites in reuse and continued use in Region 8.

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

Figure 6. Large e-commerce company headquarters and other office buildings at the Midvale Slag site (Utah).

Sites in Reuse and Continued Use: A Closer Look

Reuse Type	Description	Region 8 Example
In Reuse	*Part or all of a site is being used in a new, different manner than before Superfund involvement. Or, the property was vacant and cleanup was designed to support a new, specific land use.*	*Billings PCE (Montana) – dry-cleaning operations resulted in soil and groundwater contamination; today, a church and commercial businesses are located at the former dry-cleaner properties.*
In Continued Use	*Historical uses at a site remain active, and/or the site is still used in the same general manner as when the Superfund process started at the site.*	*Williams Pipe Line Co. Disposal Pit (South Dakota) – a petroleum pipeline company built a facility on site in 1945; aboveground petroleum tanks remain in operation today.*
In Reuse and Continued Use	*Part of a site is in continued use and part of the site is in reuse.*	*International Smelting and Refining (Utah) - cleanup allowed for continued use of residential properties and a municipal golf course; new uses include a fire station and a museum.*

= 85 SITES IN USE

= 52 SITES WITH BUSINESSES

BENEFICIAL EFFECTS OF SUPERFUND SITE REDEVELOPMENT IN REGION 8

Businesses and Jobs

EPA has collected economic data for 2,644 businesses, government agencies and civic organizations operating on 44 NPL sites and eight non-NPL sites in reuse and continued use in Region 8. (See the State Redevelopment Profiles for each state's reuse details.) Businesses and organizations at these sites are part of several different sectors, including lodging, professional trade, industrial trade and health care services.

Businesses and organizations at Region 8 Superfund sites include hotels, schools, grocery stores, restaurants, civic and social organizations, freight transportation facilities, health care centers and manufacturing facilities.

Figure 7. Chopped firewood sits outside a bar at the California Gulch site (Colorado).

The businesses and organizations at these sites generate about $10.5 billion in estimated annual sales and employ about 40,057 people, earning an estimated $2.4 billion in annual employment income. This income injects money into local economies and generates revenue through personal state income taxes. These businesses also help local economies through direct purchases of local supplies and services. On-site businesses that produce retail sales and services also generate tax revenues through the collection of sales taxes, which support state and local governments. Table 1 provides more detailed information.

Table 1. Site and Business Information for Region 8 Sites in Reuse and Continued Use (2022)

	Sites[a]	Sites with Businesses	Businesses[b]	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	*20*	*13*	*421*	*$3.9 billion*	*15,070*	*$950 million*
In Continued Use	*9*	*2*	*2*	*$6 million*	*12*	*$1 million*
In Reuse and in Continued Use	*56*	*37*	*2,221*	*$6.6 billion*	*24,975*	*$1.4 billion*
Totals	***85***	***52***	***2,644***	***$10.5 billion***	***40,057***	***$2.4 billion***

[a] Ten 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. Business information is not available for all businesses on all Superfund sites in reuse or continued use. Throughout this report, sales and annual employee income may not sum exactly to the totals presented due to rounding.

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 Sand Creek Industrial site in Colorado, for example are now valued at nearly $260 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 8 Sites in Reuse and Continued Use: Property Value and Tax Highlights

Total Property Value: ***$34.5 billion***

Total Annual Property Taxes: ***$203 million***

Figure 8. A view of a new neighborhood at the Kennecott (South Zone) site (Utah).

EPA has collected property value and tax data for 49 Superfund sites in reuse and continued use in Region 8.[3] These sites span 67,667 property parcels and 300,948 acres. They have a total property value of $34.5 billion. The average total property value per acre is $115,000.

Land and improvement property value information is available for 43 sites. These properties have a total land value of $10.1 billion and a total improvement value of $24.3 billion.[4]

Property tax information is available for 45 sites. The properties generate a combined $203 million in local property taxes annually.

Table 2. Property Value and Tax Information for Sites in Reuse and Continued Use in Region 8[a]

Total Land Value (43 sites)	Total Improvement Value (43 sites)	Total Property Value (49 sites)	Total Property Value per Acre (49 sites)[b]	Total Annual Property Taxes (45 sites)
$10.1 billion	$24.3 billion	$34.5 billion	$115,000	$203 million

[a] Results are based on an EPA Superfund Redevelopment Program effort to collect on-site property values and property taxes for a subset of Superfund sites. The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which varied from 2018 to 2021. Throughout this report, property and tax values may not sum exactly to the totals presented due to rounding.

[b] Based on total property value amount of $34.5 billion divided by total acreage of 300,948.

3 There are 36 additional sites in reuse or continued use in Region 8 for which EPA does not have property value or tax data, including ten NPL federal facilities.

4 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 8 sites in reuse and continued use provide recreational and ecological benefits. Green space and habitat reuses help attract visitors and residents and indirectly contribute to local economies.

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

Figure 9. A park bench at the Smuggler Mountain site (Colorado).

Parks, natural areas and scenic landscapes also have great economic value – supporting regional economies through tourism, agriculture and other activities. Economic impacts of recreation activities can include outdoor recreation spending and reduced public costs related to healthcare and infrastructure. In 2021, outdoor recreation contributed $862 billion to the U.S. economy, supporting 4.5 million jobs and 1.9% of the total gross domestic product (GDP). Outdoor recreation's contribution to the GDP grew 18.9% compared to the overall economy that grew 5.9% in 2021.[5] 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 8 provide recreational and ecological benefits.

5 State of the Outdoor Market, Fall 2022. Outdoor Industry Association. Available at https://outdoorindustry.org/wp-content/uploads/2022/12/OIA-State-of-the-Outdoor-Market-Report-Fall-2022.pdf

BURLINGTON NORTHERN SOMERS PLANT
Cleanup Enables Public Access to Lake for Recreation, Supports Ecological Flyway

The 80-acre Burlington Northern (Somers Plant) site is in Somers, Flathead County, Montana. From 1901 to 1986, industrial operations on site included chemical treatment of railroad ties and other lumber products. These activities contaminated beach sediment about 150 feet into Flathead Lake as well as soil and groundwater. Cleanup included soil and groundwater treatment and replacement of wetlands. Cleanup also included a natural resource damages settlement.

Figure 10. The reinforced shoreline of Flathead Lake at the Burlington Northern (Somers Plant) Superfund site (Montana).

In 2018, BNSF Railway Company (BNSF) completed wetland restoration at the Swamp Pond. The project addressed concerns regarding shoreline erosion in the vicinity of the former Swamp Pond. The project consisted of an offshore gravel beach at the east-facing shoreline, a restored emergent wetland and an expanded riparian buffer.

BNSF also conveyed a perpetual wetland reserve easement to the U.S. Fish and Wildlife Service that administers the Flathead Lake Waterfowl Production Area as part of the remedial action. The north shore of Flathead Lake extends about 7 miles between Somers and the Flathead River and consists of a patchwork of mostly undeveloped shoreline and wetlands with views of the Swan Mountains. The area is considered an Important Bird Area by the National Audubon Society, providing a critical stopover for more than 229 species of migratory waterfowl and shorebirds. Efforts to prevent erosion along the north shore of Flathead Lake, which is used for recreation, are ongoing near the site to ensure the remedy's protectiveness and maintain public access to the lake.

FRENCH GULCH
Liability Protections and Consent Decree Facilitate 1,800 Acres of Recreational and Open Space

The French Gulch Superfund site is located along French Creek near Breckenridge, Colorado, about 2 miles upstream from where French Creek meets the Blue River. Extensive surface and underground mining took place in the French Gulch Valley from the 1850s to the 1970s. The site includes mine wastes and the flooded mine pool associated with the former Wellington-Oro Mine. EPA investigations in the 1980s found that the Wellington-Oro Mine was a major source of contamination in French Creek and Blue River. The U.S. Bureau of Reclamation identified several areas of contamination releases in the late 1980s and early 1990s. Under an agreement with EPA, B&B Mines consolidated and capped mining wastes and installed drainage ditches to reduce contamination getting into waterways. B&B Mines completed this work in 1999.

Figure 11. A biker on the multi-purpose recreation trail at the French Gulch Superfund site (Colorado).

EPA, the state of Colorado, Brynn Grey V, LLC and Wellington Neighborhood, LLC signed a Prospective Purchaser Agreement in 1999 for an 85-acre property next to the mine, which was developed into a neighborhood. The area provides affordable housing options for people working nearby. The agreement limits Wellington Neighborhood, LLC's liability for existing contamination. It also includes requirements for the group to complete the restoration of the Union Mill and the Neighborhood Fill and Cover Areas, and to ensure impacted soil remain properly covered in the future.

The town of Breckenridge and Summit County bought 1,800 acres of land from B&B Mines in 2001. This purchase included the Wellington-Oro Mine. Breckenridge and Summit County built a water treatment plant for the mine. The plant has been running since 2008. The part of the site acquired by the town Breckenridge and Summit County is now part of the Golden Horseshoe recreation and open space area.

Why Are Wetlands Economically Important?

Superfund site reuse can support wetland habitat, as seen at several sites in Region 8. At the Milltown Reservoir Sediments site in Montana, EPA and the state restored a contaminated floodplain to a naturally functioning, self-sustaining river ecosystem. Cleanup of the site is ongoing. Other site uses include a cattle ranch and a new state park along the Clark Fork River.

Figure 12. The Clark Fork River at the Milltown Reservoir Sediments site provides wetland habitat for a variety of fish and animals (Montana).

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.

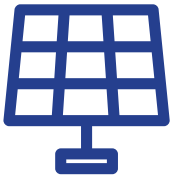
These benefits also have economic value. Replacing wetlands' water treatment services with manmade facilities, for example, would be expensive. Worldwide, wetlands provide an estimated $47.2 trillion in ecosystem services. To learn more, see:

- EPA's *Economic Benefits of Wetlands*: www.epa.gov/sites/default/files/2021-01/documents/economic_benefits_of_wetlands.pdf
- EPA's *Ecosystem Services at Superfund Sites: Reuse and the Benefit to Community:* https://semspub.epa.gov/src/document/HQ/100003256
- EPA's *Why Are Wetlands Important?*: www.epa.gov/wetlands/why-are-wetlands-important
- EPA's *Functions and Values of Wetlands*: www.epa.gov/sites/default/files/2021-01/documents/functions_values_of_wetlands.pdf

BENEFICIAL EFFECTS FROM ALTERNATIVE ENERGY PROJECTS

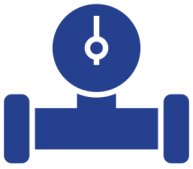
Alternative energy projects provide a range of beneficial effects. They support construction and operations jobs, spur local investment for manufacturing and materials, create benefits for landowners in the form of land lease and right-of-way payments, lower energy costs, and reduce greenhouse gas emissions.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

As of September 2022, EPA is tracking four alternative energy projects at four Superfund sites in Region 8. These projects have an installed capacity of about seven megawatts. Two of these projects offset on-site energy demands of cleanup efforts or directly power site-related cleanup activities.



1
Solar Project

1
Geothermal Facility



1
Landfill Gas Facility

1
Wind Project

Alternative energy projects tracked in **Region 8** generate an estimated **31,702 megawatt hours** each year.[6] This is equivalent to...

22,467 metric tons of carbon dioxide

2,832 homes' energy use for one year

5,000 gas-powered vehicles driven for one year

6 Equivalencies were calculated using power production. Production values were not available for one project in Region 8. Estimated power production for solar projects was calculated using facility capacity (megawatts) with the National Renewable Energy Laboratory's PVWatts Calculator pvwatts.nrel.gov. To learn more about equivalencies, visit www.epa.gov/energy/greenhouse-gas-equivalencies-calculator.

ENVIRONMENTAL JUSTICE AND ECONOMIC REVITALIZATION

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

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

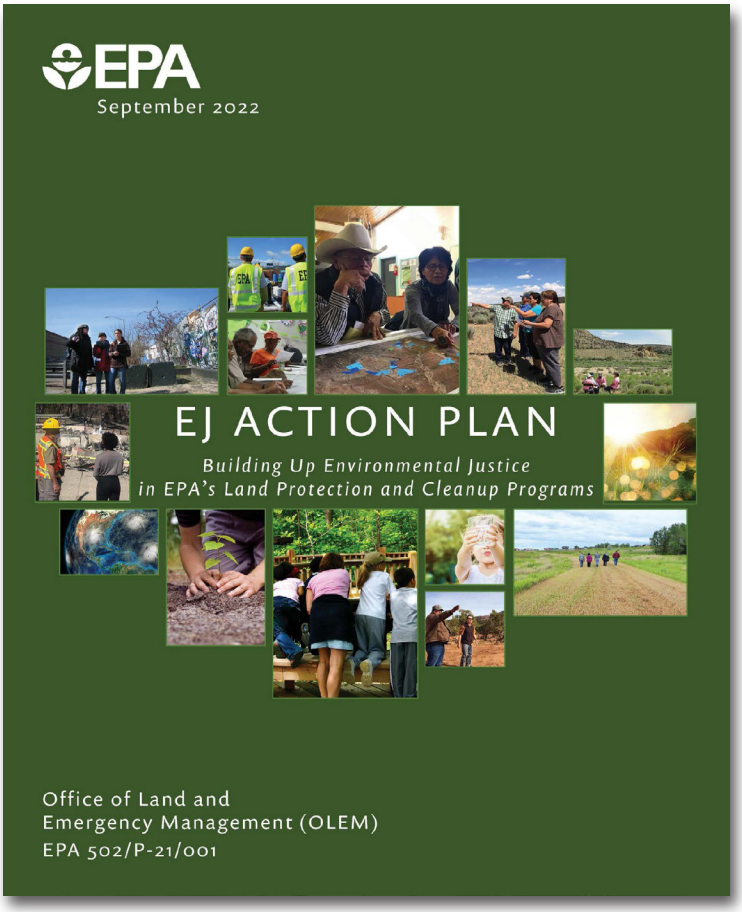


Figure 13. EPA's EJ Action Plan aims to address cleanup issues in overburdened communities across the country.

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

In addition, EPA is using a $1 billion investment from the Bipartisan Infrastructure Law to fund new cleanup projects at 49 Superfund sites across the country. Many of these sites have been part of a backlog of Superfund sites awaiting funding for cleanup, some of which have been waiting for over four years. This historic investment will finance cleanup at one site in Region 8.

CLIMATE ADAPTATION AT SUPERFUND SITES

Remedies at contaminated sites may be vulnerable to the impacts of climate change and extreme weather events. EPA's Superfund program has developed an approach that raises awareness of these vulnerabilities and applies climate change and weather science as a standard operating practice in cleanup projects. The approach involves periodic screening of Superfund remedy vulnerabilities, prioritizing the Superfund program's steps to adapt to a changing climate, and identifying measures to assure the climate resilience of Superfund sites. EPA is working to ensure that its programs, policies, rulemaking processes, enforcement and compliance assurance activities, and operations consider the current and future impacts of climate change and how those impacts may disproportionately affect overburdened and underserved communities.

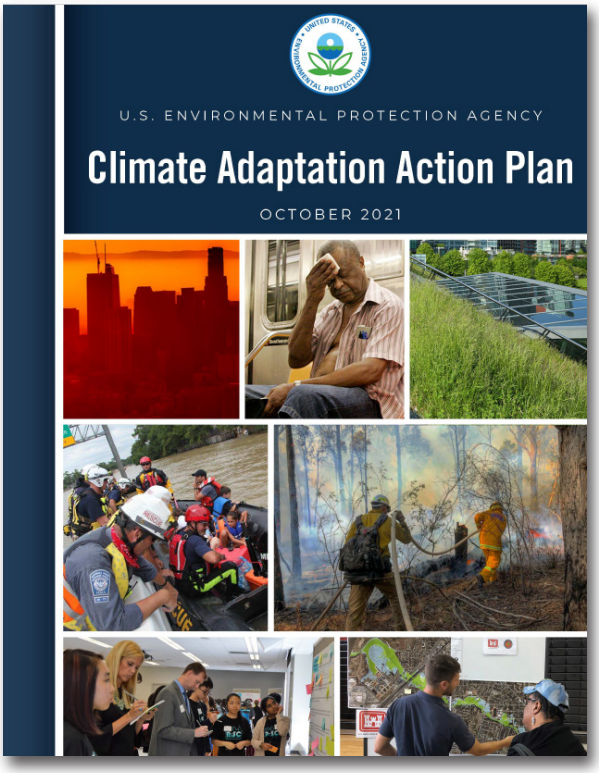


Figure 14. In January 2021, President Biden signed Executive Order 14008, requiring federal agencies to develop climate action plans that describe their climate vulnerabilities and steps to increase resilience to the impacts of climate change. In October 2021, EPA released its updated Climate Adaptation Action Plan, which includes five climate adaptation priority actions that the Agency is taking to increase human and ecosystem resilience as disruptive impacts associated with climate change increase.

EPA's Superfund program has done studies to identify potential vulnerabilities of cleanup actions and evaluate strategies to mitigate these vulnerabilities. In 2012, EPA did a preliminary vulnerability assessment of all NPL sites. EPA found that a significant number of the sites were susceptible to flooding associated with sea-level risk or floodplain proximity. A 2018 EPA study assessed the status of remedies in place at 251 Superfund sites in EPA Regions 2, 4 and 6 that were exposed to tropical-force winds or flooding associated with three major hurricane events the previous year. It found that climate resiliencies built into the remedies implemented at these sites were critical to successfully maintaining long-term protectiveness. These studies have helped inform climate adaptation planning for the Superfund program.

Strategies for mitigating vulnerabilities and increasing remedy resilience in light of climate change may apply to existing or planned remediation systems. The strategies also may be applied to cleanups conducted under other regulatory programs or through voluntary efforts to increase remedy resilience to the potential effects of climate change.

Examples of climate adaptation measures that increase resiliency include:

- Vegetating landfill cap covers with native plants provides a ground cover that is tolerant of local seasonal temperature and precipitation extremes and minimizes the need for maintenance, such as mowing and watering.
- Designing and constructing capping systems to withstand significant storm and flood events.
- Raising the elevation of critical electrical instrumentation for remedial components and using water-tight materials to construct and protect remedial components.
- Restoring wetlands to reduce wave action in floodplain and intertidal zones to minimize erosion from storm events.
- Integrating specifications regarding tolerance of extreme weather and other natural hazards into building and remedial infrastructure designs.
- Routinely reassessing site vulnerability to wildfires and implementing resilience measures as recommended by firefighting agencies.

OPPORTUNITY ZONE TAX INCENTIVES AS SUPERFUND REDEVELOPMENT TOOLS

Opportunity Zones are a powerful tool to encourage economic revitalization in distressed communities by incentivizing long-term, sustainable investment in redevelopment and stimulating economic growth. State governors have designated 8,764 Opportunity Zones across the country in geographic areas that suffer double the national poverty rate. Socio-economic metrics show that Opportunity Zones are among the highest-need communities in the nation. The U.S. Department of the Treasury estimates that Opportunity Zones may attract up to $100 billion in investments, which strengthens the financial viability of redevelopment projects at Superfund sites located in Opportunity Zones.

Redevelopment of current or former Superfund sites may qualify for Opportunity Zone tax benefits. Nationally, there are 343 NPL sites located entirely or partially in Opportunity Zones. Estimates indicate there are thousands of Superfund removal sites in Opportunity Zones across the nation. In Region 8, there are 13 NPL sites located entirely or partially in an Opportunity Zone. Redevelopment investments that meet appropriate qualifying criteria may be eligible for Opportunity Zone tax benefits. EPA and the U.S. Department of Housing and Urban Development (HUD) have tools and resources to help local leaders achieve equitable outcomes in Opportunity Zone development projects.

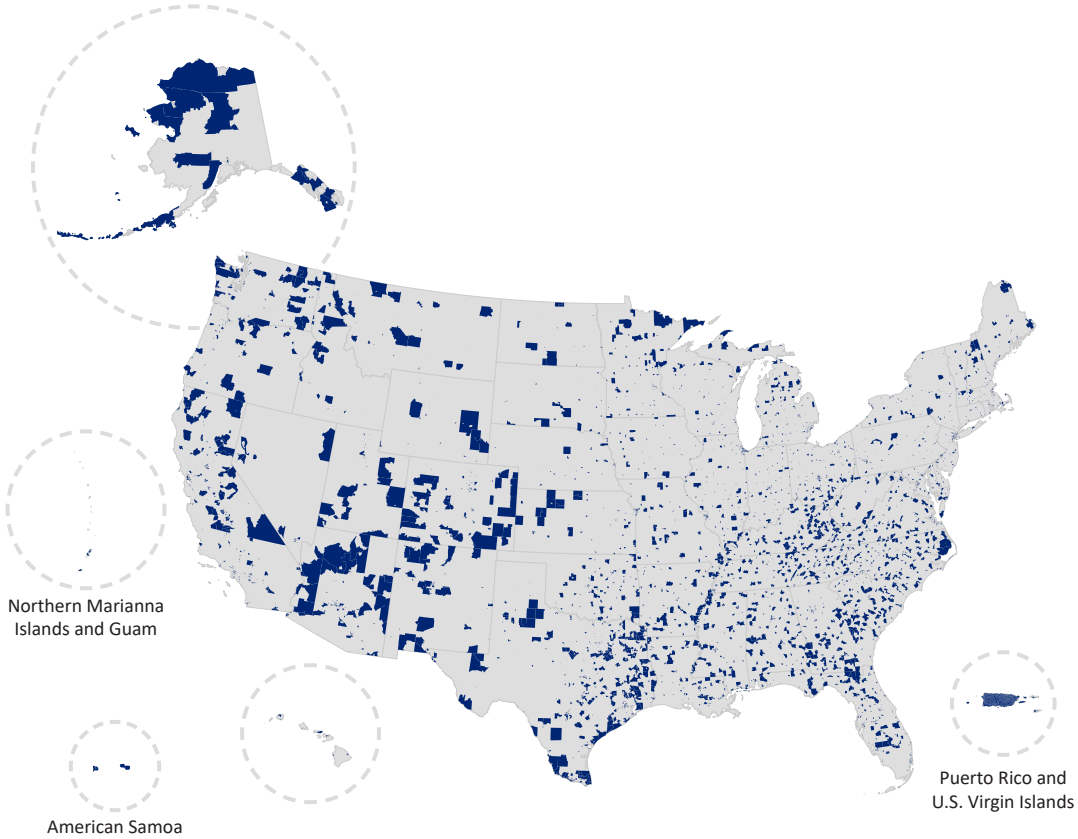


Figure 15. About 8,764 Opportunity Zones were established in all 50 states, the District of Columbia, and the five U.S. territories.

REDEVELOPMENT IN ACTION

DENVER RADIUM
Cleanup Enables Continued Industrial Use and New Commercial and Residential Growth

The Denver Radium Superfund site in Denver, Colorado, consists of over 65 properties along the South Platte River Valley. In the early 1900s, ore-processing facilities in Denver provided a local source of radium for area businesses. After the collapse of the radium industry in the 1920s, radioactive substances remained in locations across Denver. People often used this contaminated soil as fill or for paving materials, inadvertently posing a health risk to exposure to the low-level radioactive waste materials. EPA listed the site on the NPL in 1983. Cleanup included excavation and off-site disposal of contaminated soil, demolition of contaminated buildings, capping of some metals-contaminated soil, installation of ventilation systems to mitigate radon gas, natural attenuation of groundwater contamination and institutional controls. Cleanup finished in 2006.

EPA worked with stakeholders during the cleanup to facilitate the safe and appropriate reuse of site properties. For example, in 1995, Home Depot USA, Inc. (Home Depot) partnered with EPA to help clean up contaminated soil in exchange for liability protections. EPA consolidated the soil on site and Home Depot placed a protective cap over it. Under the agreement, Home Depot is responsible for maintaining the cap, making sure the property is not used for residential purposes, and making sure groundwater is not used for drinking water. By the end of 1996, Home Depot was open for business. Today, the business employs about 200 people on site.

Cleanup also provided an opportunity for on-site businesses to help address site-related contamination and remain open. Atlas Metal & Iron, a metal sales company, is located on the former DuWald property, where contamination was excavated. The remedy capped residual contamination in place, under a parking lot used by the company. Atlas Metal & Iron and EPA signed an Administrative Order on Consent in August 2005. It required that the company conduct radon sampling in occupied buildings and monitor and repair capped areas. The company's operation and maintenance activities are ongoing.

Cleanup also enabled the redevelopment of another part of the site, known as the Shattuck property. After the cleanup of radioactive materials, a developer purchased the property and broke ground on a 224-unit apartment complex in 2017. Today, this once-contaminated property is home to Encore Evans Station – a luxury apartment community. Amenities include a fitness center, a resort-style pool and spa, an outdoor lounge and firepit, a dog park, a pedestrian and bike plaza, and a business center.

Figure 16. Commercial businesses in operation at the Denver Radium Superfund site (Colorado).

MURRAY SMELTER
Cleanup Clears the Path for a Flagship Medical Facility and Mixed Uses

The 142-acre Murray Smelter Superfund site in Murray City, Salt Lake County, Utah, once hosted the largest lead smelter in the country. The smelter and refinery were active from 1872 to 1949. After the smelter's closure in 1949, most smelter structures were demolished. Materials were taken off site for disposal and slag was used to cover the debris. In 1992, investigations by the Utah Department of Environmental Quality (UDEQ) found soil, sediment and groundwater in the area was contaminated with lead, arsenic and other heavy metals. EPA proposed the site for listing on the NPL in 1994.

EPA never finalized the site's listing on the NPL. Instead, EPA and ASARCO, the site's potentially responsible party, entered into settlement agreements for investigations and cleanup. EPA and Murray City also entered into a unique agreement that enabled the locality to play a formal role in the Superfund process. EPA hosted collaborative problem-solving meetings with ASARCO, UDEQ, Murray City, and site property and business owners to discuss cleanup options and gather input about possible future land-use scenarios. Murray City emphasized the site's strong redevelopment potential – its size, utility infrastructure, location and visibility in the community, access to major roadways, and future light rail access. Murray City received a Brownfields assessment grant to develop a plan focused on local needs and site reuse priorities.

Cleanup activities took the most-contaminated waste off site for disposal. Less-contaminated materials were consolidated and capped in a repository on site. EPA and Murray City coordinated with ASARCO on the design of the repository so that it could be placed under a new roadway crossing the site. Cleanup also included demolition of the two smelter smokestacks on site. ASARCO sped up cleanup activities to support redevelopment, paying for most of the site's cleanup costs and compensating Murray City for operation and maintenance activities at the site for five years. Murray City created a Smelter Site Overlay District to enforce institutional controls established to protect the remedy and regulate redevelopment. This collaborative effort resulted in a lower-cost remedy that enabled reuse of the entire site property. Monitored natural attenuation of groundwater is ongoing.

Today, site reuses include Intermountain Health Care's (IHC's) flagship hospital, the city's largest employer and the largest medical facility in Utah, and a thriving mixed-use district. The hospital opened in 2007. Its construction incorporated sustainable building practices, including the reuse of the demolished smokestacks as foundation materials instead of landfilling them. The hospital includes five interconnected centers for outpatient, maternity, cancer, trauma, and cardiovascular and pulmonary care. It was the first medical facility in Utah to treat a COVID-19 patient, in an advanced unit designed for high-level isolation.

Figure 17. The Costco warehouse club store and parking lot at the Murray Smelter site (Utah).

Other site uses include a Utah Transit Authority (UTA) light rail station with a 300-space parking lot. The station has improved commuter access to Salt Lake City and reduced traffic congestion, providing an estimated 1.1 million rides to rail passengers and over 480,000 rides to bus passengers in 2021. A connector road provides easy access to Salt Lake City International Airport. Commercial and industrial businesses and a police training facility are active on site. A Costco warehouse club store, restaurants, a bank and some retail stores are also on site. The Murray City Police Department runs a multi-function facility on site. Other local police departments and area colleges and community classes also use the facility. Finally, a memorial garden now grows where the largest smokestack was once located. To date, the site's successful redevelopment has been recognized by a Phoenix Award and a State Excellence in Supporting Reuse Award.

PORTLAND CEMENT (KILN DUST 2 & 3)
Former Waste Disposal Area Now Hosts Commercial and Industrial Uses

The 71-acre Portland Cement (Kiln Dust 2 & 3) site is in Salt Lake City, Utah. From 1963 to 1983, about 500,000 cubic yards of cement kiln dust (CKD) from the Portland Cement Plant, later purchased by Lone Star Industries (LSI), in Salt Lake City, were deposited as fill material at the site, in addition to a few hundred tons of chromium-bearing bricks. CKD contains several heavy metals, including arsenic, chromium, cadmium and molybdenum. The disposal activities contaminated groundwater, soil and air with heavy metals.

In response to complaints from area residents concerned about windblown CKD, EPA did a preliminary assessment in 1984. LSI began follow-up investigations in 1986. EPA placed the site on the NPL in 1986. From 1995 to 1998, cleanup activities included excavation and off-site disposal of CKD, removal, treatment and off-site disposal of chromium-bearing bricks, and groundwater monitoring. It also included excavation and solidification of lead-contaminated soil, use of clean fill across the site, reuse of non-hazardous debris as fill material, natural attenuation of groundwater contaminants, and institutional controls. Groundwater monitoring is ongoing.

As Salt Lake City expanded and land for development grew scarce in the region, two developers saw an opportunity at the site. They began discussions with the property owners and EPA and UDEQ staff about purchasing and reusing the site properties for industrial uses. In 2000, the developers purchased the properties. They then took steps to address city concerns about the compatibility of the site's remedy with redevelopment. The developers increased the grade of proposed development areas by 5 feet, priming the property for "slab on grade" development and eliminating the need for soil restrictions across most of the site. Impermeable surfaces at the site would direct overland flow into stormwater outfalls. Landscaping and vegetating undeveloped areas would prevent erosion. The developers received building permits from the city in 2003.

Today, the site hosts a variety of uses. The Riverbend Sports Complex is an indoor sports and event complex spanning two large buildings that accommodates up to five indoor fields. In addition to hosting sports tournaments, practices and league games, the complex also hosts concerts and private events. It includes a full kitchen and offers event catering. Big City Recycling is a waste-service company that provides recycling services to residential, commercial and industrial clients. It runs its recycling center on site, providing public drop-off services for residents and businesses five days a week. The Wallace Stegner Academy, a public charter school established in 2016, serves students in kindergarten through eighth grade. Redevelopment activities are ongoing – the Redwood Depot warehouse project will offer 130,000 square feet of warehouse space for commercial and industrial businesses in the future.

Figure 18. The Redwood Depot warehouse project underway at the Portland Cement (Kiln Dust 2 & 3) Superfund site (Utah).

SHARON STEEL CORP. (MIDVALE TAILINGS)
Former Community Eyesore Becomes a Hub of Mixed-Use Revitalization

The 470-acre Sharon Steel Corp. (Midvale Tailings) Superfund site is in Midvale, Utah. A smelting and ore-milling facility produced lead, copper, zinc and other metals on site from 1906 to 1971. The facility supported smelter activities at the adjacent Midvale Slag Superfund site. Tailings from the milling facility were put in ponds next to and below the mill, contaminating soil and groundwater with heavy metals. EPA added the site to the NPL in 1990.

EPA selected a soil cleanup plan in 1990 and a groundwater cleanup plan in 1993. EPA and the Utah Department of Environmental Quality's (UDEQ's) cleanup included riverbank stabilization, dust control, building removal, waste capping, groundwater monitoring and removal of contaminated soil, with dug-up areas backfilled with clean soil. Soil cleanup allowed for continued residential and commercial use of several properties on site. Cleanup finished in 1999. In 2004, EPA took the site off the NPL. EPA also issued a Ready for Reuse (RfR) Determination in 2004, stating that the site was ready for residential and mixed use. Midvale City incorporated the engineering and institutional control components of the remedy into the city code in 2007.

In 2010, SRP and EPA Region 8 developed a document to clarify the uses compatible with the capped part of the site. The site's zoning for mixed-use development and its location near downtown Midvale, highways and Utah Transit Authority light rail made it attractive for redevelopment. EPA issued a reasonable steps comfort letter for part of the site in 2017, documenting site conditions and reiterating the area's compatibility with redevelopment. The KC Gardner Company, the developer of the mixed-use Bingham Junction project on the adjacent Midvale Slag Superfund site, purchased the site property in November 2017. EPA, UDEQ and Midvale City approved a design plan for site infrastructure and roadways in March 2018. KC Gardner and the Wasatch Group, another company with redevelopment experience at Superfund sites, began work on a 265-acre mixed-use project called Jordan Bluffs at the site in October 2018.

Today, the development of Jordan Bluffs is underway; it is the second phase of the View 72 development at the adjacent Midvale Slag Superfund site. Construction will add more than 1 million square feet of new office and commercial space to Midvale City, along with thousands of apartments and townhomes, all extending along a mile-long park that will run parallel to the Jordan River. The project also includes infrastructure improvements, including expansion of clean utility corridors, sewer system upgrades and the extension of Bingham Junction Boulevard. The extension of the boulevard connects Jordan Bluffs and Bingham Junction, providing residents with easy access to shopping and health care facilities while alleviating traffic on Main Street.

In 2020, Zions Bank began work on a 400,000-square foot technology campus on site. Construction finished in July 2022. The Platinum LEED-certified campus replaces 11 separate buildings that the bank owned or leased in Salt Lake Valley, lowering its energy use by 15%. The campus includes 2,000 solar panels that provide 75% of the electricity used on campus, and provides 181 electric vehicle charging stations for employees' use at no cost. The company also provides other amenities, including bike lockers, shareable e-bikes, pickleball and basketball courts, and a community garden. Zions Bank's campus abuts the Jordan River Parkway trail, which runs along the site's western edge and supports a variety of non-motorized recreational uses.

Figure 19. Left: The Jordan River Trail runs across the Sharon Steel (Midvale Tailings) Superfund site (Utah); Right: Solar panels at the Zions Bank technology campus.

REDEVELOPMENT ON THE HORIZON IN REGION 8

NELSON TUNNEL/COMMODORE WASTE ROCK
Strengthening a Sustainable Economy, Preserving an Iconic Mining Legacy

The Nelson Tunnel/Commodore Waste Rock Superfund site is a mile north of Creede, Colorado. Mining activities produced silver, gold and other metals from the 1890s to 1976. Acid mine drainage from the tunnel and waste rock pile are contaminating West Willow Creek with heavy metals. West Willow Creek joins East Willow Creek to form Willow Creek, which is a tributary of the Rio Grande River, a state-designated Gold Medal fishery. EPA added the site to the NPL in 2008. In 2008 and 2009, EPA led a removal action to stabilize the Commodore Waste Rock Pile. In 2021, EPA selected an interim remedy for the Nelson Tunnel. It focuses on installing flow-control structures in the Nelson Tunnel and the Commodore 5 level to prevent sudden large releases of water.

Over time, as mining declined in the area, tourism and recreation have become the town's economic backbone. Fishing in the Rio Grande River is an important part of recreation for visitors and locals. Recreation activities take place on a part of the site where the Bachelor Loop Historic Tour, a 17-mile driving tour, allows visitors to learn about the historic mining district above Creede. When Commodore mining operations ended in 1985, aboveground structures were abandoned in place and have deteriorated over time. Locals have raised concerns about the need to stabilize and preserve the structures for public safety and to maintain this unique example of local mining heritage. Several Commodore structures, including the ore house and tram building, are next to U.S. Forest Service Road 503 (jointly maintained by Mineral County through a cooperative agreement). They pose a potential safety risk, if parts of the structures fell onto the roadway, which is a visitor attraction and provides access to public lands and homes.

SRP and Region 8 supported a reuse situation assessment for the site in 2019. It included an analysis of potential future site uses that could leverage tourism opportunities and support economic development. Further SRP and Region 8 support in 2020 compiled information about historic mining structures at the site, supported community engagement and developed a Watershed Planning Report to inform Superfund cleanup activities and guide the Willow Creek Comprehensive Watershed Planning effort in conjunction with local watershed group, Headwaters Alliance. Community members involved in the project emphasized that Commodore Mine structures should be preserved, recognizing their iconic status as part of the area's mining heritage. The historic structure research helped facilitate the site's listing on the National Register of Historic Places in July 2021. The designation opens the door to new funding opportunities. Mineral County plans to restore the entire site using grant funding and other sources of funding. The preservation of the site's iconic mining history is expected to attract more visitors to the area.

Figure 20. The Commodore Ore House, seen on the Bachelor Loop Historic Tour at the Nelson Tunnel/Commodore Waste Rock Superfund site (Colorado).

SILVER BOW CREEK/BUTTE AREA
Community Input Advances Cleanup and Achieves Recreation Goals

The Silver Bow Creek/Butte Area Superfund site is in and around Butte, Montana. It consists of the Berkeley Pit and the underground mine workings of the historic Butte Mining District (Butte Hill), the urban centers of Butte and Walkerville, rural areas outside of Butte where mining took place, and treatment/settling ponds at the Warm Springs Ponds. It also includes 26 miles of stream and streamside habitat downstream from Butte. Since the late 1800s, mining operators dumped mining wastes into areas in and around Butte. Operators also dumped wastes into streams and wetlands near mining operations. Emissions from mining operations and improper waste disposal activities contaminated soil, groundwater and surface water with heavy metals. EPA added the Silver Bow Creek site to the NPL in 1983 and added the Butte Area to the site in 1987.

Since 1988, EPA has completed several cleanup actions to address immediate and long-term threats to human health and the environment. They include addressing areas around former smelter sites, mine waste dumps, railroad beds, stream banks and channels, and residential yards and interior in Butte and Walkerville. Cleanup of the Silver Bow Creek area included off-site disposal of contaminated sediment and restoration of stream banks and flood plains. The 26-mile stream habitat is now home to native fish, insects, hundreds of bird species and wetlands. The Warm Spring Ponds area is a designated wildlife management area administered by the Montana Department of Fish, Wildlife and Parks. It offers vital habitat as well as recreation opportunities. The Berkeley Pit area includes the waters in the 475-acre Berkeley Pit, underground mine workings and associated aquifers. Cleanup has included diverting runoff to the pit, treating groundwater and discharging to Silver Bow Creek, hazing efforts to keep migratory birds away from the pit and a community education campaign. Mining is ongoing in the nearby Continental Pit.

In 2020, a Consent Decree for the Butte Priority Soils Operable Unit (BPSOU) secured more than $150 million from responsible party Atlantic Richfield to complete final cleanup actions at the BPSOU. The actions include treating stormwater and groundwater, capping mine waste areas, and removing more mine waste along Silver Bow and Blacktail Creek. Through workshops and a visioning process, Atlantic Richfield and Butte Silver Bow County engaged with the community regarding future land uses in areas of upcoming cleanups. The community wanted the remedy to fit more organically with the landscape and to provide new opportunities for recreational and ecological uses. The Consent Decree reflected the community's input, setting aside 120 acres for connected greenways in Butte – natural park spaces with reconstructed wetlands, flowing water, abundant native plants, wildlife habitat, play areas and interpretive features. Nearly 8 miles of trails and boardwalks will allow all-season access to these areas.

Figure 21. Renderings from the Silver Bow Creek Conservation Area Master Plan for an area of former mine waste at the Silver Bow Creek/Butte Area Superfund site (Montana). Images from Stacey Robinson with permission of Land Design, Inc.

CONCLUSION

EPA works closely with its partners at Superfund sites across Region 8 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 70 NPL sites and 15 non-NPL Superfund sites in Region 8 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 8. EPA remains committed to working with all stakeholders to support Superfund redevelopment opportunities in Region 8.

Figure 22. Bountiful Woods Cross PCE Plume (Utah).

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 8, 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 Redevelopment Resources

EPA 8 Superfund Redevelopment Coordinator
Fran Costanzi | (303) 312-6571 | costanzi.frances@epa.gov

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

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

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

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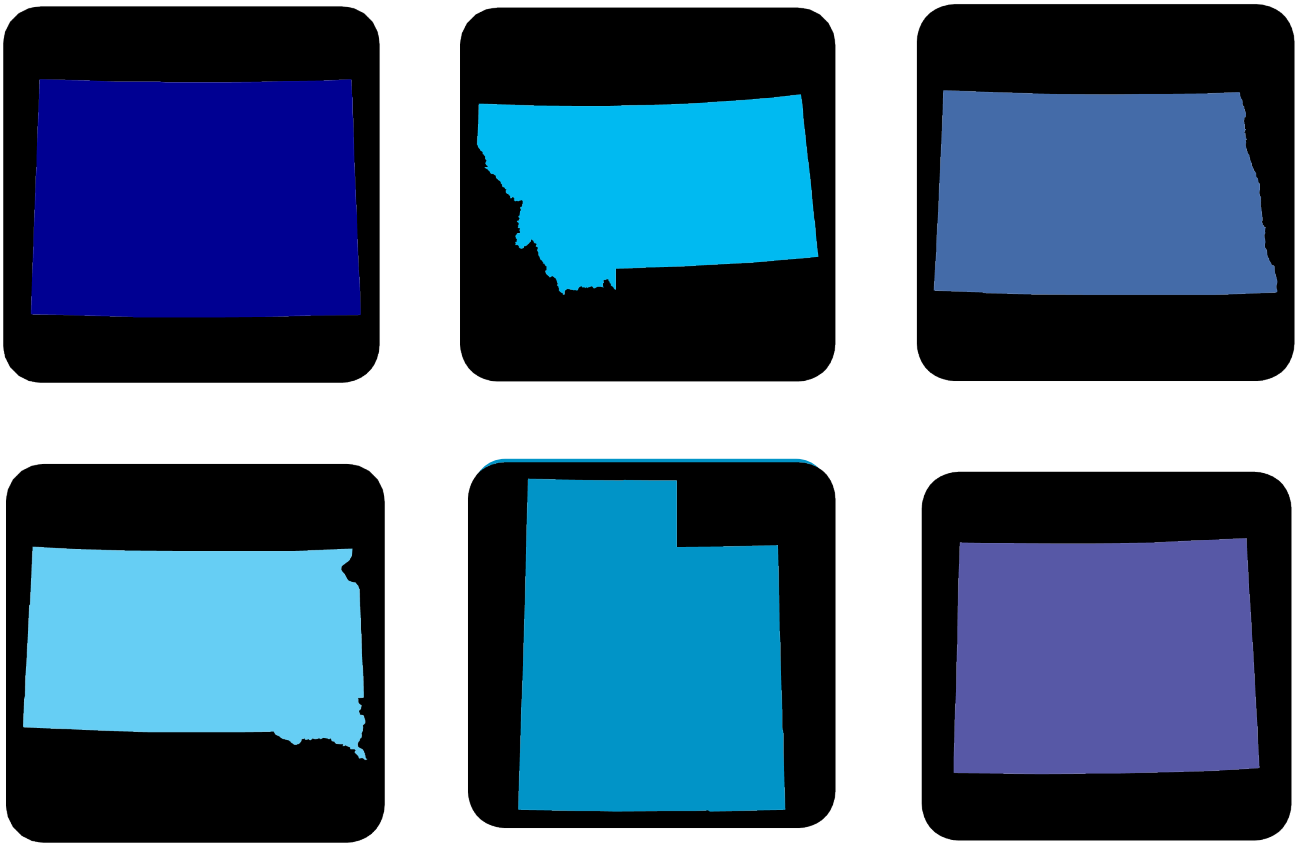
STATE REDEVELOPMENT PROFILES



COLORADO REDEVELOPMENT PROFILE

EPA partners with the Colorado Department of Public Health & Environment to oversee the investigation and cleanup of Superfund sites in Colorado. Colorado has 28 Superfund sites with either new uses in place or uses that have remained in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse or continued use in Colorado.

Businesses and Jobs

EPA has collected economic data for 824 businesses and organizations operating on 14 sites in reuse or continued use in Colorado.

Table 3. Detailed Site and Business Information for Sites in Reuse and Continued Use in Colorado (2022)

	Sites[a]	Sites with Businesses	Businesses	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	*6*	*2*	*2*	*$7 million*	*5*	*$416,000*
In Continued Use	*3*	*0*	*-*	*-*	*-*	*-*
In Reuse and in Continued Use	*19*	*12*	*822*	*$2.5 billion*	*10,046*	*$623 million*
Totals	***28***	***14***	***824***	***$2.5 billion***	***10,051***	***$624 million***

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

Property Values and Property Tax Revenues

EPA has collected property value data for 15 Superfund sites in reuse or continued use in Colorado. These sites span 12,569 property parcels and 18,212 acres.

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

Total Land Value (15 sites)	Total Improvement Value (15 sites)	Total Property Value (15 sites)	Total Annual Property Taxes (15 sites)
$2 billion	*$3.7 billion*	*$5.7 billion*	*$41 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 2021 to 2022 for all data collected.

Figure 23. Asarco, Inc. (Globe Plant) (Colorado).

Did You Know?

Cleanup of the ASARCO, Inc. (Globe Plant) site in Denver, Colorado, finished in 2015. Following cleanup, Crossroads Commerce Park opened in 2016. The business park includes warehousing, distribution and light industrial businesses. The facility provides about 1 million square feet of space. Cleanup also allowed surrounding commercial and industrial businesses to continue to operate. In total, these businesses employ nearly 4,000 people. They provide over $244 million in estimated annual employee income and generate over $1.2 billion in estimated annual sales.

MONTANA REDEVELOPMENT PROFILE

EPA partners with the Montana Department of Environmental Quality to oversee the investigation and cleanup of Superfund sites in Montana. Montana has 20 Superfund sites with either new uses in place or uses that have remained in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse or continued use in Montana.

Businesses and Jobs

EPA has collected economic data for 1,044 businesses and organizations operating on 14 sites in reuse or continued use in Montana.

Table 5. Detailed Site and Business Information for Sites in Reuse and Continued Use in Montana (2022)

	Sites	Sites with Businesses	Businesses	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	*3*	*3*	*314*	*$619 million*	*4,331*	*$239 million*
In Continued Use	*3*	*0*	*-*	*-*	*-*	*-*
In Reuse and in Continued Use	*14*	*11*	*730*	*$707 million*	*5,644*	*$250 million*
Totals	***20***	***14***	***1,044***	***$1.3 billion***	***9,975***	***$489 million***

Property Values and Property Tax Revenues

EPA has collected property value data for 13 Superfund sites in reuse or continued use in Montana. These sites span 12,731 property parcels and 187,677 acres.

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

Total Land Value (13 sites)	Total Improvement Value (13 sites)	Total Property Value (13 sites)	Total Annual Property Taxes (9 sites)
$345 million	*$1.2 billion*	*$1.6 billion*	*$1 million*

[a] The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which varied from 2021 to 2022 for all data collected.

Figure 24. Mouat Industries (Montana).

Did You Know?

Manufacturing operations at the Mouat Industries site in Columbus, Montana, contaminated soil and groundwater. Cleanup construction finished in 1996. In 2011, the town of Columbus built a new public works building on site. Wood manufacturing operations took place on part of the site, but operations ceased in 2015. EPA is working with the new property owners to make sure the area's redevelopment is compatible with the site's remedy.

NORTH DAKOTA REDEVELOPMENT PROFILE

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

Businesses and Jobs

EPA has collected economic data for two businesses operating on two sites in reuse or continued use in North Dakota.

Table 7. Detailed Site and Business Information for Sites in Reuse and Continued Use in North Dakota (2022)

	Sites[a]	Sites with Businesses	Businesses	Total Annual Sales[b]	Total Employees	Total Annual Employee Income
In Reuse	*1*	*1*	*1*	*$0*	*0*	*$0*
In Continued Use	*0*	*-*	*-*	*-*	*-*	*-*
In Reuse and in Continued Use	*1*	*1*	*1*	*$3 million*	*13*	*$884,000*
Totals	***2***	***2***	***2***	***$3 million***	***13***	***$884,000***

Property Values and Property Tax Revenues

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

Figure 25. Arsenic Trioxide (North Dakota).

Did You Know?

The Arsenic Trioxide site in Ransom, Richland and Sargent counties, North Dakota, spans about 568 square miles. Today, the site remains primarily in agricultural use. It also includes a few small cities with residential uses. In addition, the Southeast Water Users District operates on site; it provides potable water for surrounding communities. Its building includes a geothermal heating and cooling system, which reduces the facility's use of fossil fuels and lowers operation and maintenance costs.

SOUTH DAKOTA REDEVELOPMENT PROFILE

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

Businesses and Jobs

EPA has collected economic data for one business operating at one site in continued use in South Dakota.

Table 8. Detailed Site and Business Information for Sites in Reuse and Continued Use in South Dakota (2022)

	Sites[a]	Sites with Businesses	Businesses	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	*0*	-	-	-	-	-
In Continued Use	*1*	*1*	*1*	*$6 million*	*10*	*$1 million*
In Reuse and in Continued Use	*3*	*0*	-	-	-	-
Total	***4***	***1***	***1***	***$6 million***	***10***	***$1 million***

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

Property Values and Property Tax Revenues

EPA has collected property value data for one Superfund site in continued use in South Dakota. This site spans two property parcels and 55 acres.

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

Total Land Value (1 site)	Total Improvement Value (1 site)	Total Property Value (1 site)	Total Annual Property Taxes (1 site)
$2 million	*$0*	*$2 million*	*$46,000*

[a] The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which was 2022 for all data collected.

Figure 26. Whitewood Creek (South Dakota).

Did You Know?

At the Whitewood Creek site in Lawrence, Meade and Butte counties, South Dakota, gold mining operations discharged millions of tons of mine tailings into Whitewood Creek, contaminating soil, groundwater and surface water. Today, cleanup has allowed continued agricultural and residential uses. Native woodlands and wildlife habitats are still present on site and area residents use Whitewood Creek for recreational purposes.

UTAH REDEVELOPMENT PROFILE

EPA partners with the Utah Department of Environmental Quality to oversee the investigation and cleanup of Superfund sites in Utah. Utah has 28 Superfund sites with either new uses in place or uses that have remained in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse or continued use in Utah.

Businesses and Jobs

EPA has collected economic data for 771 businesses and organizations operating on 20 sites in reuse or continued use in Utah.

Table 10. Detailed Site and Business Information for Sites in Reuse and Continued Use in Utah (2022)

	Sites[a]	Sites with Businesses	Businesses	Total Annual Sales[b]	Total Employees	Total Annual Employee Income
In Reuse	*10*	*7*	*104*	*$3.3 billion*	*10,734*	*$711 million*
In Continued Use	*2*	*1*	*1*	*$231,000*	*2*	*$41,000*
In Reuse and in Continued Use	*16*	*12*	*666*	*$3.4 billion*	*9,241*	*$561 million*
Total	***28***	***20***	***771***	***$6.7 billion***	***19,977***	***$1.3 billion***

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

Property Values and Property Tax Revenues

EPA has collected property value data for 19 Superfund sites in reuse or continued use in Utah. These sites span 42,360 property parcels and 94,973 acres.

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

Total Land Value (14 sites)	Total Improvement Value (14 sites)	Total Property Value (19 sites)	Total Annual Property Taxes (19 sites)
$7.8 billion	*$19.4 billion*	*$27.3 billion*	*$160 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 2021 to 2023 for all data collected.

Figure 27. Kennecott (South Zone) (Utah).

Did You Know?

Since the 1860s, the Kennecott (South Zone) site in Copperton, Utah, has been used to process and mine various metals, including copper and lead. Today, a mixed-use development with about 14,000 homes and 9.1 million square feet of commercial building space is on site. The businesses generate over $2.8 billion in estimated annual sales, and provide over $333 million in estimated annual income.

WYOMING REDEVELOPMENT PROFILE

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

Businesses and Jobs

EPA has collected economic data for two businesses operating on one site in reuse or continued use in Wyoming.

Table 12. Detailed Site and Business Information for Sites in Reuse and Continued Use in Wyoming (2022)

	Sites[a]	Sites with Businesses	Businesses	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	*0*	-	-	-	-	-
In Continued Use	*0*	-	-	-	-	-
In Reuse and in Continued Use	*3*	*1*	*2*	*$27 million*	*31*	*$3 million*
Total	***3***	***1***	***2***	***$27 million***	***31***	***$3 million***

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

Property Values and Property Tax Revenues

EPA has collected property value data for one Superfund site in continued use in Wyoming. This site spans five property parcels and 31 acres.

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

Total Land Value (0 sites)	Total Improvement Value (0 sites)	Total Property Value (1 site)	Total Annual Property Taxes (1 site)
-	-	*$1.7 million*	*$6,000*

[a] The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which was 2022 for all data collected.

Figure 28. Mystery Bridge Road/U.S. Highway 20 (Wyoming).

Did You Know?

Past industrial activities at the Mystery Bridge Road/U.S. Highway 20 site in Evansville, Wyoming, contaminated soil and groundwater with solvents and oils. Two industrial businesses remain on site. The businesses generate over $27 million in estimated annual sales, and provide over $3 million in estimated annual income. An active railroad line also crosses the site.

REUSE INFORMATION SOURCES

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

EPA Resources

Burlington Northern (Somers Plant). 2022. Sixth Five-Year Review Report. semspub.epa.gov/src/document/08/100011824

Denver Radium. EPA Site Profile. www.epa.gov/superfund/denver-radium

Denver Radium. 2018. Fifth Five-Year Review Report. semspub.epa.gov/src/document/08/100005517

French Gulch. 2020. Second Five-Year Review Report. semspub.epa.gov/src/document/08/100008602

Murray Smelter. EPA Site Profile. www.epa.gov/superfund/murray-smelter

Murray Smelter. 2012. Beneficial Effects Economic Case Study. http://semspub.epa.gov/src/document/08/100000259

Nelson Tunnel/Commodore Waste Rock. EPA Site Profile. www.epa.gov/superfund/nelson-tunnel

Nelson Tunnel/Commodore Waste Rock. 2019. Reuse Situation Assessment. semspub.epa.gov/src/document/08/100006891

Nelson Tunnel/Commodore Waste Rock. 2021. Early Interim Action Record of Decision Operable Unit 2. semspub.epa.gov/src/document/08/100010319

Portland Cement (Kiln Dust 2 & 3). EPA Site Profile. www.epa.gov/superfund/portland-cement

Portland Cement (Kiln Dust 2 & 3). 2019. Beneficial Effects Economic Case Study. semspub.epa.gov/src/document/HQ/100002521.

Portland Cement (Kiln Dust 2 & 3). 2022. Fifth Five-Year Review Report. semspub.epa.gov/src/document/08/100012080

Sharon Steel Corp. (Midvale Tailings). EPA Site Profile. www.epa.gov/superfund/sharon-steel

Sharon Steel Corp. (Midvale Tailings). 2019. Fifth Five-Year Review Report. semspub.epa.gov/src/document/08/100006809

Silver Bow Creek/Butte Area. EPA Site Profile. www.epa.gov/superfund/silver-bow-butte

Silver Bow Creek/Butte Area. 2020. Court Approves Consent Decree Allowing EPA to Move Forward with Butte Cleanup. epa.gov/newsreleases/court-approves-consent-decree-allowing-epa-move-forward-butte-cleanup

Silver Bow Creek/Butte Area. 2020. Record of Decision Amendment for the Butte Priority Soils Operable Unit. semspub.epa.gov/src/document/08/100007291

Other Resources

Burlington Northern (Somers Plant). 2015. Protecting a Gem - The North Shore of Flathead Lake. www.flatheadlandtrust.org/places-we-protect/feature-projects/protecting-a-gem-the-north-shore-of-flathead-lake/

Nelson Tunnel/Commodore Waste Rock. 2021. Helping Historic Mining Structures Stay Upright. alamosanews.com/article/helping-historic-mining-structures-stay-upright

Sharon Steel Corp. (Midvale Tailings). New Zions Campus Raises the Bar on Sustainable Architecture in Utah. www.sltrib.com/news/2022/07/16/new-zions-campus-raises-bar/

Silver Bow Creek/Butte Area. 2020. BPSOU Consent Decree and Allocation Agreement. www.co.silverbow.mt.us/2161/BPSOU-Consent-Decree-and-Allocation-Agre

BUSINESS, JOBS, SALES AND INCOME INFORMATION

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

When Hoovers/D&B research was unable to identify employment and sales volume for on-site businesses, EPA used the ReferenceSolutions database (www.thereferencegroup.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 2022. Estimated annual employment income was calculated using 2022 jobs data and BLS average weekly wage data for those jobs from 2021 (the latest available wage data at the time of this profile). Federal facility sites are included in calculations of total sites in reuse or continued use only. Federal facility sites are excluded from all other calculations (i.e., number of sites with businesses, number of businesses, total jobs, total income and total annual sales). All sales and income figures presented have been rounded for the convenience of the reader. Throughout this report, sales and annual employee income may not sum exactly to the totals presented due to rounding.

PROPERTY VALUE AND TAX INFORMATION

EPA collected on-site property values and property taxes included in this profile for a subset of Superfund sites by comparing available site boundary information with available parcel boundary information and gathering information for selected parcels from county assessor datasets. The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which varied from 2021 to 2023. Throughout this report, property and tax values may not sum exactly to the totals presented due to rounding.

Back cover page photos: Whitewood Creek (South Dakota), Midvale Slag (Utah), California Gulch (Colorado), Millltown Reservoir Sediments (Montana), Utah Power Light American Barrel Co. (Utah).

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