

Superfund Redevelopment Economics Notebook

Economic Information Collection Overview

This Notebook provides a general overview of EPA's efforts to quantify some of the economic benefits associated with the cleanup and reuse of Superfund sites. EPA's Superfund Redevelopment Program (SRP) quantifies some of the beneficial effects of reuse at Superfund sites by collecting economic information for businesses operating at those sites. The information includes the number of on-site jobs, estimated annual employment income and sales revenue generated by on-site businesses, on-site property values, local property tax revenues, and other beneficial effects unique to individual sites.

EPA shares these beneficial effects in four primary ways:

1. **National economic information summaries** track the numbers of businesses and on-site jobs, employment income from jobs, and sales revenue information for many sites in reuse. This information provides a nationwide overview of the beneficial effects associated with Superfund site reuse.
2. **Regional economic reports** profile economic and community benefits by EPA Region.
3. **Beneficial effects economic case studies** highlight detailed reuse, employment and other beneficial effects at the site and community level.
4. **In-depth reuse case studies** document more site-specific economic information. Sometimes, communities provide this additional information during case study development.

Number of Sites

SRP tracks hundreds of Superfund sites in planned and active reuse, as well as Superfund sites in continued use. For some of these sites, SRP also collects economic information associated with businesses at these sites (Table 1). These businesses represent a subset of the beneficial effects of sites in reuse or continued use nationwide. In 2022, SRP gathered economic information for 671 sites in reuse (Table 1). As of the end of 2022, there were about 372 non-federal facility Superfund sites in reuse for which EPA does not have business information. Those sites are not expected to have uses that support on-site businesses, provide jobs or generate sales revenue. Not all sites in reuse involve an on-site business or other land use that employs people. Many sites in reuse without businesses have beneficial effects that are not easily quantified, such as properties providing ecological or recreational benefits (parks, wetlands, ecological habitat, sports fields, open space). Not all sites in reuse are well suited for revenue-generating uses. If a site is in an area that cannot support commercial or industrial uses, redevelopment projects that support jobs may not be a realistic option.

SRP regularly conducts research to identify new sites in reuse that might support new revenue-generating businesses, and to identify previously unknown revenue-generating businesses at sites. Examples of these efforts include:

- **Five-Year Review Site Inspections:** The site inspection process conducted as part of the Five-Year Review process offers an opportunity to inventory site reuse types and document revenue-generating businesses. Economic information for identified businesses is captured as part of SRP's Annual National Economic Information Update (see next bullet).

- **Annual National Economic Information Update:** This annual process systematically reviews sites in reuse without economic information that may now support revenue-generating businesses.
- **New Economic Data Source Identification:** SRP researches online resources to identify new sources and databases that could help capture more economic information. The Reference Solutions (previously ReferenceUSA) database, added as a new information source in 2016, is one example.
- **SRP Reuse Snapshot Updates:** Reuse snapshots are one-to-two paragraph summaries of Superfund sites that highlight reuse and briefly describe site history and cleanup. Snapshots are organized by EPA Region and state on the SRP website and provide the public with concise summaries of site reuses. Updates to reuse snapshots often identify sites that support revenue-generating businesses that were previously unidentified. These updates can also identify new businesses at sites in reuse.
- **SRP Reuse Inventory:** The goal of SRP reuse inventory research is to identify on-site uses at Superfund sites where no on-site use has previously been identified. This research can identify additional sites in reuse that may support previously unknown businesses.

National Economic Information

Each year, SRP collects the following types of economic information for site businesses: the names of businesses operating at sites, the number of people employed at site businesses, wage and income information, and annual business sales. During each update, referred to as the Annual National Economic Information Update, SRP gathers economic information from high-quality, online economic databases. Economic information also comes from site stakeholders and businesses, local media and online resources. Wage values come from the U.S. [Bureau of Labor Statistics' Quarterly Census of Employment and Wages](#). SRP uses those wage values to calculate estimated annual income for each site business based on North American Industrial Classification System (NAICS) codes.

To identify new sites that may potentially support revenue-generating businesses, the annual update includes a review of sites in commercial, industrial, recreational, agricultural and residential reuse, as well as sites in planned reuse. SRP uses the information from the Annual National Economic Information Update to track progress in returning sites to beneficial use and to respond to federal and Congressional information requests. At the end of each Annual National Economic Information Update, SRP compiles all site-level economic information and calculates the estimated beneficial effects of site reuse at the national level (Table 1). In 2022, SRP gathered economic information for 671 sites in reuse. In total, 10,253 businesses at these sites generated \$74.1 billion in estimated annual sales and employed over 236,000 people (Table 1).

Table 1. National Economic Information for Superfund Sites in Reuse Since 2011¹

Year	Sites in Reuse with Economic Data ^a	Number of Businesses	Actual Annual Sales	Adjusted Annual Sales ^b	Jobs	Actual Annual Employment Income	Adjusted Annual Employment Income ^b
2011	135	271	\$8.8 billion	\$11.5 billion	24,308	\$1.6 billion	\$2.1 billion
2012	276	972	\$20.0 billion	\$25.4 billion	46,475	\$3.3 billion	\$4.2 billion
2013	363	2,216	\$32.6 billion	\$41.0 billion	70,270	\$4.9 billion	\$6.1 billion
2014	450	3,474	\$31.5 billion	\$38.9 billion	89,646	\$6.0 billion	\$7.4 billion
2015	454	3,908	\$29.0 billion	\$35.9 billion	108,445	\$7.8 billion	\$9.6 billion
2016	458	4,720	\$34.0 billion	\$41.5 billion	131,635	\$9.2 billion	\$11.2 billion
2017	487	6,622	\$43.6 billion	\$52.0 billion	156,352	\$11.2 billion	\$13.3 billion
2018	529	8,690	\$52.4 billion	\$61.1 billion	195,465	\$13.3 billion	\$15.5 billion
2019	602	9,188	\$58.3 billion	\$66.7 billion	208,468	\$14.4 billion	\$16.5 billion
2020	632	9,902	\$63.3 billion	\$71.6 billion	227,769	\$16.3 billion	\$18.4 billion
2021	650	10,230	\$65.8 billion	\$71.1 billion	246,178	\$18.6 billion	\$20.0 billion
2022	671	10,253	\$74.1 billion	\$74.1 billion	236,802	\$18.6 billion	\$18.6 billion

Notes:

- Does not include sites designated as federal facilities. However, economic information associated with businesses operating at the Former Nebraska Ordnance Plant and St. Louis Airport/Hazelwood Interim Storage/Futura Coatings Co. sites is highlighted by both EPA's Superfund Redevelopment Program (SRP) and EPA's Federal Facilities Restoration and Reuse Office (FFRRO). As of October 2022, EPA's Superfund Enterprise Management System (SEMS) database does not categorize the sites as federal facilities. However, FFRRO considers them "hybrid" sites because there are federal and non-federal responsible parties for each site. In 2022, and in prior years, economic research was performed for the two sites as part of SRP's National Economic Information Update. The economic totals for the sites are included in the 2022 national economic totals in the table above and are also highlighted by FFRRO.
- Adjusted to 2022 U.S. dollars (USD) using the Consumer Price Index (CUUR0000SA0, not seasonally adjusted, U.S. city annual average).

All economic information undergoes a thorough, multi-step quality assurance/quality control (QA/QC) review prior to finalization. Unexpectedly high numbers of employees or sales revenue for businesses are reviewed and omitted if the figures cannot be verified. Sources for all economic information are noted for reference. Copies of economic information obtained from databases are maintained to support and verify the information and associated calculations.

Looking forward, SRP is focused on tracking sites that move into reuse each year, updating information for existing sites as business information and economic factors change over time, and updating jobs, income and sales information for known businesses at sites on an annual basis.

¹ This information is posted on SRP's [Redevelopment Economics at Superfund Sites](#) webpage. Superfund Redevelopment Economics Notebook (*updated in April 2023*)

Regional Economic Information

Regional economic reports provide an opportunity to highlight reuse outcomes in each of the 10 EPA Regions. The reports summarize and synthesize economic information collected for Superfund sites in each Region. They also emphasize the efforts of the Superfund program and share the positive impacts of reuse and continued use of Superfund sites in each Region. They highlight the impacts of businesses operating at current and former Superfund sites as well as property values and property taxes associated with sites that have been cleaned up and returned to use. The reports help document reuse outcomes for EPA Regions and identify and highlight reuse success stories. Economic data are updated annually; regions receive a full regional economic report or a data supplement on alternate years (Table 2).

Table 2. Regional Economic Reports²

EPA Region	Most Recent Published Report/Supplement	Planned Update ³
1	REGION 1 ECONOMIC PROFILE (2021 DATA)	2023
2	REGION 2 ECONOMIC PROFILE (2021 DATA)	2023
3	REGION 3 ECONOMIC PROFILE (2021 DATA)	2023
4	REGION 4 ECONOMIC PROFILE (2021 DATA)	2023
5	REGION 5 ECONOMIC PROFILE (2021 DATA)	2023
6	REGION 6 ECONOMIC PROFILE – DATA SUPPLEMENT (2021 DATA)	2023
7	REGION 7 ECONOMIC PROFILE – DATA SUPPLEMENT (2021 DATA)	2023
8	REGION 8 ECONOMIC PROFILE – DATA SUPPLEMENT (2021 DATA) ⁴	2023
9	REGION 9 ECONOMIC PROFILE – DATA SUPPLEMENT (2021 DATA) ⁴	2023
10	REGION 10 ECONOMIC PROFILE – DATA SUPPLEMENT (2021 DATA)	2023

Methodology

To develop regional economic reports, SRP analyzes, reviews and updates available site reuse information, including information from beneficial effects economic case studies and in-depth case studies. Development of the regional economic reports also includes evaluating and updating property value and tax data for sites in each EPA Region. QA/QC review procedures make sure all aggregated information is well integrated and presented accurately. In some cases, sites highlighted in a regional economic report may not have extensive prior documentation. In these cases, SRP conducts more research and develops new highlight content for the report.

² Current regional economic reports are available on SRP's [Redevelopment Economics at Superfund Sites](#) webpage.

³ In 2022, SRP updated full regional economic reports for EPA Regions 1 to 5. These updates cover economic and property data from 2021, site photos and other content. In 2022, SRP also created data supplements for 2021 economic and property information for EPA Regions 6 to 10. These supplements accompany the regional economic reports that include 2020 economic and property data. In 2023, using the final 2022 economic information, SRP will update the full regional economic reports for EPA Regions 6 to 10 and develop data supplements for EPA Regions 1 to 5.

⁴ The Economic Profile Data Supplements for EPA Regions 8 and 9 are still being finalized at the time of this Notebook update; therefore, updated document links are not yet available.

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Regional Summaries⁵

EPA Region 1

Superfund sites across Region 1 now host office and business parks, shopping centers, supermarkets, restaurants, homes, condominiums, apartments and hotels. Other sites support public uses, including a commuter train and bus station. Many sites continue to host industrial operations, including manufacturing facilities. Some sites now support energy projects. Other sites host soccer fields, hiking trails, an ice-skating arena and a model airplane flying field. On-site businesses and organizations at current and former Superfund sites in Region 1 provide an estimated 10,501 jobs and contribute an estimated \$893 million in annual employment income.

EPA Region 2

Superfund sites across Region 2 are now industrial facilities, shopping centers, medical facilities and neighborhoods. Many sites host large-scale retail centers and department stores. Other sites are home to natural areas, train lines and recreation facilities. On-site businesses and organizations at current and former Superfund sites in Region 2 provide an estimated 16,081 jobs and contribute an estimated \$1 billion in annual employment income.

EPA Region 3

Superfund sites across Region 3 are now the location of business parks, shops and public-service facilities. Many sites continue to include industrial operations such as large-scale manufacturing facilities and warehouses. Other sites support natural areas, recreation trails and athletic fields. On-site businesses and organizations at current and former Superfund sites in Region 3 provide an estimated 13,903 jobs and contribute an estimated \$1 billion in annual employment income.

EPA Region 4

Superfund sites across Region 4 are home to industrial and commercial parks, retail centers, car dealerships, government offices and neighborhoods. Many sites continue to host industrial operations such as large-scale manufacturing facilities. Other sites support natural areas, parks and recreation facilities. On-site businesses and organizations at current and former Superfund sites in Region 4 provide an estimated 20,047 jobs and contribute an estimated \$1.4 billion in annual employment income.

EPA Region 5

Superfund sites across Region 5 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 Superfund sites in Region 5 provide an estimated 17,909 jobs and contribute an estimated \$1.5 billion in annual employment income.

EPA Region 6

Superfund sites across Region 6 are home to manufacturers, financial service providers, computer system specialists, freight transportation logistics companies, restaurants, hotels and a range of other

⁵ Regional summaries are gathered from draft 2023 regional economic reports and include final 2022 economic information.

uses. Public services at Superfund sites in Region 6 offer housing assistance, recycling facilities, public health assistance, sanitation support and safety training. One site supports a plant that converts landfill gas into clean-burning diesel fuel and other products. Another site hosts a state-of-the-art municipal marina. Sites also host ecological preserves and wildlife habitat. On-site businesses and organizations at current and former Superfund sites in Region 6 provide an estimated 4,615 jobs and contribute an estimated \$240 million in annual employment income.

EPA Region 7

Superfund sites across Region 7 support industrial parks, shopping centers and agricultural operations such as manufacturing facilities, grain storage facilities and crop cultivation. Others are now home to natural areas, parks and recreation facilities. One site hosts an upscale apartment complex. On-site businesses and organizations at current and former Superfund sites in Region 7 provide an estimated 39,322 jobs and contribute an estimated \$2.5 billion in annual employment income.

EPA Region 8

Superfund sites across the Rocky Mountain and Plains Region are now industrial parks, shopping centers, hospitals and neighborhoods. Many sites continue to host industrial operations such as large-scale manufacturing facilities. Others are ecological preserves, parks and recreation complexes. On-site businesses and organizations at current and former Superfund sites in Region 8 provide an estimated 40,057 jobs and contribute an estimated \$2.4 billion in annual employment income.

EPA Region 9

Superfund sites across Region 9 are now home to industrial parks, shopping centers, office buildings and neighborhoods. Many sites continue to host industrial operations such as large-scale manufacturing facilities. Some sites continue to host military facilities. Others are now parks and recreation areas. On-site businesses and organizations at current and former Superfund sites in Region 9 provide an estimated 41,021 jobs and contribute an estimated \$5.4 billion in annual employment income.

EPA Region 10

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 natural areas, parks and recreation facilities. On-site businesses and organizations at current and former Superfund sites in Region 10 provide an estimated 33,346 jobs and contribute an estimated \$2.3 billion in annual employment income.

Local Economic Information

SRP's beneficial effects economic case studies gather highly detailed information related to reuse, employment and other beneficial effects at individual sites. SRP also highlights economic information provided by communities during the development of in-depth reuse case studies. These case studies include economic information about companies operating at sites and capture unique economic benefits provided by particular uses, such as alternative energy facilities. As of April 2023, SRP has published 90 beneficial effects economic case studies (Table 3). Additional case study candidates for development in 2023 and beyond are under consideration.

SRP works with EPA Regions and site teams to identify contacts, obtain site photos and capture site details that may not be otherwise available. Regional and site team involvement with site selection and initial information collection helps ensure that the case studies are high quality and comprehensive.

Research may include a site visit to more fully document site businesses, interview stakeholders, research county deed records, photograph site facilities, and facilitate the development of site and vicinity maps.

Table 3. Beneficial Economic Effects Case Studies Published to Date⁶

Site	Year
Abex Corporation	2011
Aidex Corporation	2015
Airco Plating	2016
American Cyanamid Co.	2018
Benfield Industries	2012
Big River Mine Tailings/St. Joe Minerals Corp.	2018
Blackburn & Union Privileges	2019
BMI-Textron and Trans Circuits, Inc.	2014
Boise Cascade/Onan Corp./Medtronics	2017
Brown's Dump	2022
Brunswick Naval Air Station	2019
Buckbee-Mears Co.	2023
Bunker Hill Mining and Metallurgical Complex	2017
Calhoun Park Area	2020
California Gulch	2014
Cherokee County	2019
Coalinga Asbestos Mine	2015
Colorado Smelter	2020
Davie Landfill	2014
Davisville Naval Construction Battalion Center	2018
Del Amo	2013
Delaware City PVC Plant	2022
Denver Radium	2019
Eastland Woolen Mill	2019
Ecosystem Services at Superfund Sites	2017
E.I. du Pont de Nemours & Co., Inc. (Newport Pigment Plant Landfill)	2014
Flat Creek IMM	2019
FMC Corp. (Yakima Pit)	2014
Fort Devens	2018
General Electric Co./Shepherd Farm	2017
General Mills/Henkel Corp.	2014
Goldisc Recordings, Inc.	2015

⁶ Case studies available on SRP's [Redevelopment Economics at Superfund Sites](#) webpage as of April 2023. Superfund Redevelopment Economics Notebook (*updated in April 2023*)

Site	Year
Havertown PCP	2017
Highway 71/72 Refinery	2015
Industri-Plex	2014
Iron Horse Park	2017
Joslyn Manufacturing & Supply Co.	2016
Kansas City Structural Steel	2015
Kearsarge Metallurgical Corp.	2016
Kennecott (South Zone)	2017
Koppers Coke	2012
Lexington County Landfill	2014
Liberty Industrial Finishing	2014
Lindsay Manufacturing Co.	2017
Lipari Landfill	2020
Loring Air Force Base	2018
Macalloy Corporation	2012
Martin-Marietta, Sodyeco, Inc.	2018
Materials Technology Laboratory (US Army)	2018
Midvale Slag	2015
Murray Smelter	2012
Naval Industrial Reserve Ordnance Plant	2020
North Penn Area 12	2014
North Ridge Estates	2018
Northwest Pipe & Casing/Hall Process Company	2015
Onondaga Lake	2018
Operating Industries, Inc. Landfill	2020
Pacific Sound Resources	2013
Pease Air Force Base	2018
Peterson/Puritan, Inc.	2014
Phoenix-Goodyear Airport Area	2015
PJP Landfill	2016
PMC Groundwater	2014
Portland Cement (Kiln Dust 2 & 3)	2019
Raymark Industries, Inc.	2016
Recreational Redevelopment at Superfund Sites	2020
Reynolds Metals Company	2019
Roebbing Steel Company	2016
RSR Corporation	2015
San Fernando Valley (Area 1)	2018
Sherwood Medical Co.	2015
SMS Instruments, Inc.	2014
Sola Optical USA, Inc.	2016
Solitron Microwave	2012

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Site	Year
South Andover	2011
South Bay Asbestos Area	2021
South Point Plant	2020
Southside Sanitary Landfill	2011
State Marine of Port Arthur/Palmer Barge Line	2017
Strother Field Industrial Park	2015
Tucson International Airport Area	2016
Universal Oil Products (Chemical Division)	2020
Vasquez Boulevard and I-70	2017
Ventron/Velsicol	2021
Vertac, Inc.	2012
Waite Park Wells	2018
Waste Disposal, Inc.	2014
Wells G&H	2018
Welsbach and General Gas Mantle	2020
Whitmoyer Laboratories	2020

Additional Economic Efforts

General Economic Support

SRP often responds to quick turnaround requests from EPA management and EPA Regions for information related to the economics of remediating and reusing Superfund sites. These urgent requests are often related to policy and budget discussions. General economic support also includes the collection of additional economic information for sites in reuse and the support of other opportunities to investigate and share the beneficial effects of Superfund site reuse.

Property Values

SRP collects and maintains property value and tax information for a subset of Superfund sites in reuse and continued use. The primary information collected includes parcel numbers, acreage, land use/zoning type, land value, improvement value, total property value and annual tax information. The information informs SRP's regional economic reports and beneficial effects economic case studies as well as responses to federal and congressional information requests. Local governments provide property value and tax information. SRP uses the information gathered to examine the beneficial effects of returning sites to productive use. As of 2022, SRP had collected property value and/or property tax information for 544 Superfund sites (Table 4).

Table 4. Property Value Information⁷

EPA Region	Information Source	Sites with Property Value and/or Property Tax Information	Total Property Value	Total Annual Taxes ⁸
1	REGION 1 ECONOMIC PROFILE (2021 DATA)	42	\$1.3 billion	\$26.3 million
2	REGION 2 ECONOMIC PROFILE (2021 DATA)	69	\$1.6 billion	\$27.4 million
3	REGION 3 ECONOMIC PROFILE (2021 DATA)	85	\$860 million	\$14.2 million
4	REGION 4 ECONOMIC PROFILE (2021 DATA)	94	\$1.4 billion	\$17.1 million
5	REGION 5 ECONOMIC PROFILE (2021 DATA)	82	\$796 million	\$27.1 million
6	REGION 6 ECONOMIC PROFILE – DATA SUPPLEMENT (2021 DATA)	33	\$733 million	\$7.7 million
7	REGION 7 ECONOMIC PROFILE – DATA SUPPLEMENT (2021 DATA)	24	\$4.2 billion	\$53.3 million
8	REGION 8 ECONOMIC PROFILE – DATA SUPPLEMENT (2021 DATA) ⁹	48	\$23.9 billion	\$161.4 million
9	REGION 9 ECONOMIC PROFILE – DATA SUPPLEMENT (2021 DATA) ⁹	27	\$4.7 billion	\$50.7 million
10	REGION 10 ECONOMIC PROFILE – DATA SUPPLEMENT (2021 DATA)	40	\$2.4 billion	\$16.5 million
Totals:		544	\$41.9 billion	\$401.7 million

⁷ Property value information gathered from regional reports accessed on SRP's [Redevelopment Economics at Superfund Sites](#) webpage in April 2023. These totals do not include data for federal facility sites.

⁸ Property tax information was not available for all sites with property value information.

⁹ The Economic Profile Data Supplements for EPA Regions 8 and 9 are still being finalized at the time of this Notebook update; therefore, updated document links are not yet available. The information in Table 4 associated with EPA Regions 8 and 9 is final.

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