

Superfund Redevelopment Economics Notebook

Economic Information Collection Overview

EPA quantifies the beneficial effects of reuse at Superfund sites. Information collected 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 that are unique to individual sites.

EPA shares these beneficial effects in four primary ways:

1. **National economic information summaries** that 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** that profile economic and community benefits by EPA Region.
3. **Local beneficial effects case studies** that highlight detailed reuse, employment and other beneficial effects at the site and community level.
4. **In-depth reuse case studies** that document additional site-specific economic information. Sometimes, this additional detailed information is provided by communities during case study development.

Number of Sites

EPA's Superfund Redevelopment Initiative (SRI) tracks hundreds of Superfund sites in planned and active reuse, as well as Superfund sites in continued use (Table 1). For some of these sites, SRI also collects economic information associated with businesses operating at these sites. These businesses represent a subset of the beneficial effects of sites in reuse or continued use nationwide. There are 277 non-federal facility Superfund sites in reuse or continued use for which EPA does not have business information (Table 1). Some of 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 would employ 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 located in an area that cannot support commercial or industrial uses, redevelopment projects that will support jobs may not be a realistic option. SRI 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 include an inventory of reuse types and documents revenue-generating businesses. Economic information for identified businesses is captured as part of the Annual National Economic Information Update.
- *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*: SRI researches online resources to identify new sources and databases that could help capture additional economic information. The ReferenceUSA database, which was added as a new information source in 2016, is one example.
- *SRI Snapshot Updates*: SRI snapshot updates often identify sites that support revenue-generating businesses that were previously unidentified. These updates also often identify new businesses operating on sites in reuse.

Table 1. Economic Information Availability for Superfund Sites in Reuse as of December 2017

Sites in Reuse	764 ¹
Sites in Reuse with Economic Information	487 ²
Sites without Economic Information	277
<ul style="list-style-type: none"> • Sites in reuse that may generate economic activity (in industrial, commercial, residential, public services, military, and/or federal reuse) 	175 ³
<ul style="list-style-type: none"> • Sites in recreational or ecological reuse 	102 ⁴

National Economic Information

SRI collects and maintains economic information for a subset of Superfund sites in reuse and continued use. This subset includes sites where SRI has identified active businesses. Information collected includes the names of businesses operating at sites, the number of people employed at site businesses, wage and income information, and annual business sales. This economic information is stored in the SUp erfund REdevelopment (SURE) information library and updated annually. During each update, referred to as the Annual National Economic Information Update, SRI gathers economic information from high-quality economic databases online that verify their information before posting. 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 (<http://www.bls.gov/cew>). Those wage values are used 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. SRI uses the information gathered during 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, SRI compiles all site-level economic information to calculate an estimate of the beneficial effects of site reuse at the national level (Table 2). In 2017, SRI gathered economic information for 487 sites in reuse;

¹ The query included sites of all NPL status as of December 2017. It did not include federal facilities. Reuse status included reused and in continued use. Reuse type included all types of reuse.

² 2017 SUp erfund REdevelopment (SURE) information library economic update summary.

³ This query of December 2017 SURE information library information removed sites with economic information in the 2017 SURE update. It includes only sites with industrial, commercial, residential, public services, military, and/or federal reuse types.

⁴ This query of December 2017 SURE information library information removed sites with economic information in the 2017 SURE update. It includes only sites with recreational and ecological reuse types.

6,622 businesses at these sites generated \$43.6 billion in estimated annual sales and employed over 156,000 people (Table 2).

Table 2. National Economic Information for Superfund Sites in Reuse Since 2011⁵

Year	Sites in Reuse with Economic Information	Number of Businesses	Actual Annual Sales	Adjusted Annual Sales*	Jobs	Actual Annual Employment Income	Adjusted Annual Employment Income*
2011	135	271	\$8.8 billion	\$9.6 billion	24,308	\$1.6 billion	\$1.8 billion
2012	276	972	\$20.0 billion	\$21.3 billion	46,475	\$3.3 billion	\$3.5 billion
2013	363	2,216	\$32.6 billion	\$34.3 billion	70,270	\$4.9 billion	\$5.1 billion
2014	450	3,474	\$31.5 billion	\$32.6 billion	89,646	\$6.0 billion	\$6.2 billion
2015	454	3,908	\$29.0 billion	\$30.0 billion	108,445	\$7.8 billion	\$8.1 billion
2016	458	4,720	\$34.0 billion	\$34.7 billion	131,635	\$9.2 billion	\$9.4 billion
2017	487	6,622	\$43.6 billion	\$43.6 billion	156,352	\$11.2 billion	\$11.2 billion

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

All economic information undergoes a thorough, multi-step QA/QC review prior to finalization. Unexpectedly high numbers of employees or sales revenue for businesses are reviewed and removed from the SURE information library if the figures cannot be verified. Sources for all economic information are provided in the information library. Copies of economic information obtained from databases are maintained to support and verify the information and associated calculations.

Looking forward, SRI is focused on tracking the 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.

Regional Economic Information

Regional economic reports provide an opportunity to highlight reuse outcomes in each of the ten EPA Regions. The reports summarize and synthesize economic information collected for Superfund sites in each Region. They 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 and changes in 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 success stories to highlight for SRI anniversaries. SRI updates these reports periodically (Table 3).

⁵ This information is available in the SURE information library and posted on SRI's Redevelopment Economics at Superfund Sites webpage.

Table 3. Regional Economic Reports⁶

Region	Current Report	Planned Update
Region 1	September 2017	2018
Region 2	August 2017 ⁷	2018
Region 3	August 2016	2018
Region 4	August 2017	2018
Region 5	September 2017	2018
Region 6	August 2017	2018
Region 7	June 2016	2018
Region 8	June 2016	2018
Region 9	August 2016	2018
Region 10	July 2016	2018

Methodology

To develop these reports, SRI extracts, analyzes, reviews and updates details in the SURE information library. SRI also reviews recent local beneficial effects case studies and in-depth case studies for additional information. Property values for each Region are evaluated and updated. QA/QC procedures ensure that 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, SRI conducts additional research and develops new highlight content for the report.

Key Findings⁸

Region 1

Superfund sites across Region 1 are now the locations of office and business parks, retail shopping centers, single-family homes, condominiums, apartments and a hotel. Others support manufacturing or public uses, including a building for truck body assembly, a commuter train and bus station, and a wastewater treatment facility. Many sites continue to host industrial operations, including manufacturing facilities. Some are now locations for alternative energy projects. Others host soccer fields, hiking trails, an ice-skating arena and a model airplane flying field. As of September 2017, on-site businesses and organizations at current and former Region 1 Superfund sites provided an estimated 6,210 jobs and contributed an estimated \$355 million in annual employment income. Cleaned-up sites in use in Region 1 generated \$3 million in annual property tax revenues for local governments.

Region 2

Superfund sites across Region 2 are now industrial facilities, shopping centers, hospitals and neighborhoods. Many sites host large-scale retail centers and department stores. Others are now home to nature preserves, train lines and recreation facilities. As of August 2017, on-site businesses and organizations at current and former Region 2 Superfund sites provided an estimated 13,636 jobs and contributed an estimated \$707 million in annual employment income. Cleaned-up sites in use in Region 2 generated \$24 million in annual property tax revenues for local governments.

⁶ Current regional economic reports are available on SRI's [Redevelopment Economics at Superfund Sites](#) web page.

⁷ Document link is not yet available as of January 16, 2018.

⁸ Regional summaries gathered from regional economic reports accessed on SRI's [Redevelopment Economics at Superfund Sites](#) web page in January 2018.

Region 3

Superfund sites across Region 3 are now the location of business parks, retail shops and public service facilities. Many sites continue to host industrial operations such as large-scale manufacturing facilities and warehouses. Others are now nature preserves, recreational trails and athletic fields. As of August 2016, on-site businesses and organizations at current and former Region 3 Superfund sites provided nearly 11,000 jobs and contributed an estimated \$785 million in annual employment income for residents. Cleaned-up sites in use generated over \$1 million in annual property tax revenues for local governments.

Region 4

Superfund sites across Region 4 are home to industrial and commercial parks, retail centers, government offices, and neighborhoods. Many sites continue to host industrial operations such as large-scale manufacturing facilities. Others are now nature preserves, parks and recreation facilities. As of August 2017, on-site businesses and organizations at current and former Region 4 Superfund sites provided an estimated 14,868 jobs and contributed an estimated \$848 million in annual employment income. Cleaned-up sites in use in Region 4 generated \$8 million in annual property tax revenues for local governments.

Region 5

Superfund sites across Region 5 are home to top-tier industrial and commercial parks, retail centers, condominiums and single-family residences. Many sites continue to host industrial operations, including large-scale manufacturing facilities. Some are now locations for alternative energy projects. Others have been transformed into ecological preserves, parks and recreation complexes. As of September 2017, on-site businesses and organizations at current and former Region 5 Superfund sites provided an estimated 10,237 jobs and contributed an estimated \$626 million in annual employment income. Cleaned-up sites in use in Region 5 generated \$ 11 million in annual property tax revenues for local governments.

Region 6

Superfund sites across Region 6 are home to manufacturers, financial service providers, computer systems specialists, freight transportation logistics companies, restaurants, hotels and a range of other uses. Public services at current and former Superfund sites in Region 6 offer housing assistance, recycling services, public health services, sanitation and safety training. A municipal airport is located at one site. People live in single-family homes and apartments on several sites; one apartment complex is green building-certified for its sustainability by Enterprise Community Partners, a national non-profit organization focused on affordable housing. One site is part of an innovative pilot project that converts landfill gas into liquid fuel and other products. Other sites host ecological preserves, wildlife habitat and a riverfront walkway. As of August 2017, on-site businesses and organizations at current and former Region 6 Superfund sites provided an estimated 2,533 jobs and contributed an estimated \$112 million in annual employment income. Cleaned-up sites in use in Region 6 generated \$3 million in annual property tax revenues for local governments.

Region 7

Superfund sites across Region 7 are now the locations of industrial parks, shopping centers and neighborhoods. Many sites continue to support industrial, commercial and agricultural operations such as manufacturing facilities, grain storage facilities and crop cultivation. Others are now home to nature preserves, parks and recreation facilities. As of June 2016, the on-site businesses and organizations at current and former Region 7 Superfund sites provided an estimated 6,425 jobs and contributed an estimated \$334 million in annual employment income for Region 7 residents. Cleaned-up sites in use in Region 7 generated over \$1 million in annual property tax revenues for local governments.

Region 8

Superfund sites across the Rocky Mountain and Plains Region are now the location of industrial parks, shopping centers, hospitals and neighborhoods. Many sites continue to host industrial operations such as large-scale manufacturing facilities. Others are now ecological preserves, parks and recreation complexes. As of June 2016, the on-site businesses and organizations at current and former Region 8 Superfund sites provided an estimated 14,870 jobs and contributed \$861 million in annual employment income for Region 8 residents. Cleaned-up sites in use in Region 8 generated an estimated \$33 million in annual property tax revenues for local governments.

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 active military facilities. Others are now parks and recreation areas. As of August 2016, on-site businesses and organizations at current and former Region 9 Superfund sites provided an estimated 31,000 jobs and contributed an estimated \$3.2 billion in annual employment income for Region 9 residents. Cleaned-up sites in use generated an estimated \$23 million in annual property tax revenues for local governments.

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 operations. Others are now nature preserves, parks and recreation facilities. As of July 2016, on-site businesses and organizations at current and former Region 10 Superfund sites provided an estimated 6,456 jobs and contributed an estimated \$491 million in annual employment income for Region 10 residents. Cleaned-up sites in use in Region 10 generated \$3.5 million in annual property tax revenues for local governments.

Local Economic Information

SRI's local beneficial effects case studies gather highly detailed information related to reuse, employment and other beneficial effects at individual sites. SRI also highlights economic information provided by communities during the development of in-depth reuse case studies. Local beneficial effects 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 December 2017, SRI has published 60 case studies (Table 4); another three case studies are currently in development (Table 5). Additional case study candidates for development in 2018 and beyond are currently under consideration.

SRI works with the Regions and EPA site teams to identify contacts, obtain site photos and capture site details that may not be otherwise available. Time commitments for Regional staff are kept to a minimum – their 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 4. Local Beneficial Effects Case Studies Published to Date⁹

Site	Year
Abex Corporation	2011
Aidex Corporation	2015
Airco Plating	2016
Benfield Industries	2012
BMI-Textron and Trans Circuits, Inc.	2014
Boise Cascade/Onan Corp./Medtronics	2017
Calhoun Park Area	2014
California Gulch	2014
Coalinga Asbestos Mine	2015
Davie Landfill	2014
Del Amo	2013
E.I. du Pont de Nemours & Co., Inc. (Newport Pigment Plant Landfill)	2014
Ecosystem Services at Superfund Sites	2017
FMC Corp. (Yakima Pit)	2014
General Mills/Henkel Corp.	2014
Goldisc Recordings, Inc.	2015
Havertown PCP	2017
Highway 71/72 Refinery	2015
Industri-Plex (2014)	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
Macalloy Corporation	2012
Midvale Slag	2015
Murray Smelter	2012
Naval Industrial Reserve Ordnance Plant (NIROP)/FMC Corp. (Fridley Plant)	2016
North Penn Area 12	2014
Northwest Pipe & Casing/Hall Process Company	2015
Pacific Sound Resources	2013
Peterson/Puritan, Inc.	2014
Phoenix-Goodyear Airport Area	2015
PJP Landfill	2016
PMC Groundwater	2014

⁹ Reports available on SRI's [Redevelopment Economics at Superfund Sites](#) web page as of December 2017.

Site	Year
Raymark Industries, Inc.	2016
Reynolds Metals Company	2015
Roebing Steel Company	2016
RSR Corporation	2015
Sherwood Medical Co.	2015
SMS Instruments, Inc.	2014
Sola Optical USA, Inc.	2016
Solitron Microwave	2012
South Andover	2011
South Bay Asbestos Area	2015
South Point Plant	Updated in 2014
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)	2013
Vasquez Boulevard/I-70	Updated in 2017
Vertac, Inc.	2012
Waste Disposal, Inc.	2014
Wells G&H	2011
Welsbach and General Gas Mantle	2015

Table 5. Local Beneficial Effects Case Studies in Development

Site	Development Year	Status
Bunker Hill Mining & Metallurgical Complex	2017	In development
General Electric Co./Shepherd Farm	2017	In development
Wells G&H	2017	In development

Additional Economic Efforts

General Economic Support

SRI 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. In addition, 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

SRI 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 and annual tax information. The information informs

SRI’s regional economic reports and local beneficial effects case studies as well as responses to federal and congressional information requests. Local governments provide the property value and tax information. SRI uses the information gathered to examine the beneficial effects of returning sites to productive use. To date, SRI has collected property value information for 280 Superfund sites (Table 7).

Table 7. Property Value Information¹⁰

Region	Information Date	Sites with Property Value and/or Property Tax Information	Total Property Value	Total Annual Taxes ¹¹
1	September 2017	18	\$643 million	\$3 million
2	August 2017 ¹²	39	\$822 million	\$24 million
3	August 2016	30	\$59 million	\$1.1 million
4	August 2017	67	\$605 million	\$8 million
5	September 2017	55	\$406 million	\$11 million
6	August 2017	12	\$334 million	\$3 million
7	June 2016	12	\$48 million	\$1 million
8	June 2016	14	\$3.1 billion	\$33 million
9	August 2016	18	\$1.7 billion	\$23 million
10	July 2016	15	\$562 million	\$3.5 million

¹⁰ Property value information gathered from regional reports accessed on SRI’s [Redevelopment Economics at Superfund Sites](#) web page in January 2018. These totals do not include data for federal facilities sites.

¹¹ Property tax information was not available for all sites with property value information.

¹² Document link is not yet available as of January 16, 2018.