



PUTTING SITES TO WORK

*How Superfund Redevelopment in the Pacific Southwest Region
Is Making a Difference in Communities*



2018

Cover page photos:

*Aerojet General Corp. (California), Tucson International Airport Area (Arizona), Del Amo (California),
Indian Bend Wash Area (Arizona), Phoenix Goodyear Airport Area (Arizona)*

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Figure 1. Del Amo site
(California).

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

epa.gov/superfund/superfund-task-force

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PREFACE

EPA's Superfund program is a cornerstone of the work that the Agency performs for citizens and communities across the country. The revitalization of places affected by contaminated lands is a key part of Superfund's mission, meeting community needs for thriving economies and improved environmental and public health outcomes. Through EPA's Superfund Redevelopment Initiative, the Agency contributes to these communities' economic vitality by supporting the return of sites to productive use.

EPA has established a renewed focus on accelerating work and progress at all Superfund sites across the country and has created the Superfund Task Force whose work includes promoting redevelopment and community revitalization. Working closely with communities, developers and property owners, EPA is leading the way to return these once-contaminated sites back to productive use.

These regional profiles highlight community-led efforts as EPA expedites cleanup and remediation and engages with partners and stakeholders to support redevelopment and community revitalization.

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INTRODUCTION

EPA Region 9 states and U.S. Pacific territories – Arizona, California, Hawaii, Nevada, American Samoa, Guam and the Northern Mariana Islands – are diverse. While the Pacific Southwest Region is known for its scenic travel destinations and high-tech industry, manufacturing, agriculture and commercial trade are also thriving. Local governments, state agencies and organizations across the region work hard to help smaller communities remain vibrant while carefully planning for new growth in major cities and suburbs. A key part of this work focuses on finding new uses for former industrial sites, including Superfund sites. The Superfund program in EPA Region 9 is proud to play a role in these efforts.

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

Through programs like the Superfund Redevelopment Initiative, EPA Region 9 helps communities reclaim cleaned-up Superfund sites. Factoring in future use of Superfund sites into the cleanup process promotes their safe redevelopment. In addition, EPA Region 9 works closely with state and local officials to remove barriers that have kept many Superfund sites underused. EPA Region 9 works to ensure that businesses on properties being cleaned up under Superfund can continue operating in a way that protects human health and the environment during site investigations and cleanup work. This continuity enables these businesses to remain open and serve as a source of jobs for communities.

Superfund sites across Region 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 Region 9 Superfund sites provide an estimated 34,230 jobs and contribute an estimated \$3.5 billion in annual employment income. Cleaned-up sites in use in Region 9 generate \$25 million in annual property tax revenues for local governments.¹

Region 9 Sites in Reuse and Continued Use: Business and Job Highlights

<i>Businesses:</i>	<i>1,114</i>
<i>Total Annual Sales:</i>	<i>\$8.5 billion</i>
<i>Number of People Employed:</i>	<i>34,230</i>
<i>Total Annual Employee Income:</i>	<i>\$3.5 billion</i>



Figure 2. Commercial reuse at the Del Amo site (California).

¹ Business and property value tax figures represent only a subset of the beneficial effects of sites in reuse or continued use in Region 9. There are 44 Superfund sites in reuse or continued use in Region 9 for which EPA does not have business data, including 28 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 71 sites in reuse or continued use in Region 9 for which EPA does not have property value or tax data, including 28 NPL federal facilities.

This 2018 profile looks at how redevelopment activities at Superfund sites make a difference in communities across Region 9. In particular, it describes some of the beneficial effects of redevelopment and continued use of current and former Superfund sites. The profile also describes the land values and property taxes associated with Superfund sites returned to use following cleanup and sites that have remained in use throughout the cleanup process. EPA updates these profiles periodically. The beneficial effects may increase or decrease over time due to changes in:

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

Figures presented represent only a subset of all Superfund sites in reuse or continued use in Region 9.



Figure 3. Left: Flextronics' U.S. corporate headquarters at the South Bay Asbestos Area site (California); Right: Airport facility at the Phoenix-Goodyear Airport Area site (Arizona).

SUPPORT FOR SUPERFUND REDEVELOPMENT

EPA Region 9 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 9 partners with stakeholders to encourage redevelopment opportunities at Superfund sites. Region 9 helps communities and cleanup managers consider redevelopment during cleanup planning and evaluate remedies already in place to ensure appropriate redevelopment at cleaned-up sites. In addition, EPA participates in partnerships with communities and encourages opportunities to support Superfund Redevelopment projects that emphasize environmental and economic sustainability.

Specific redevelopment support efforts in EPA Region 9 include:

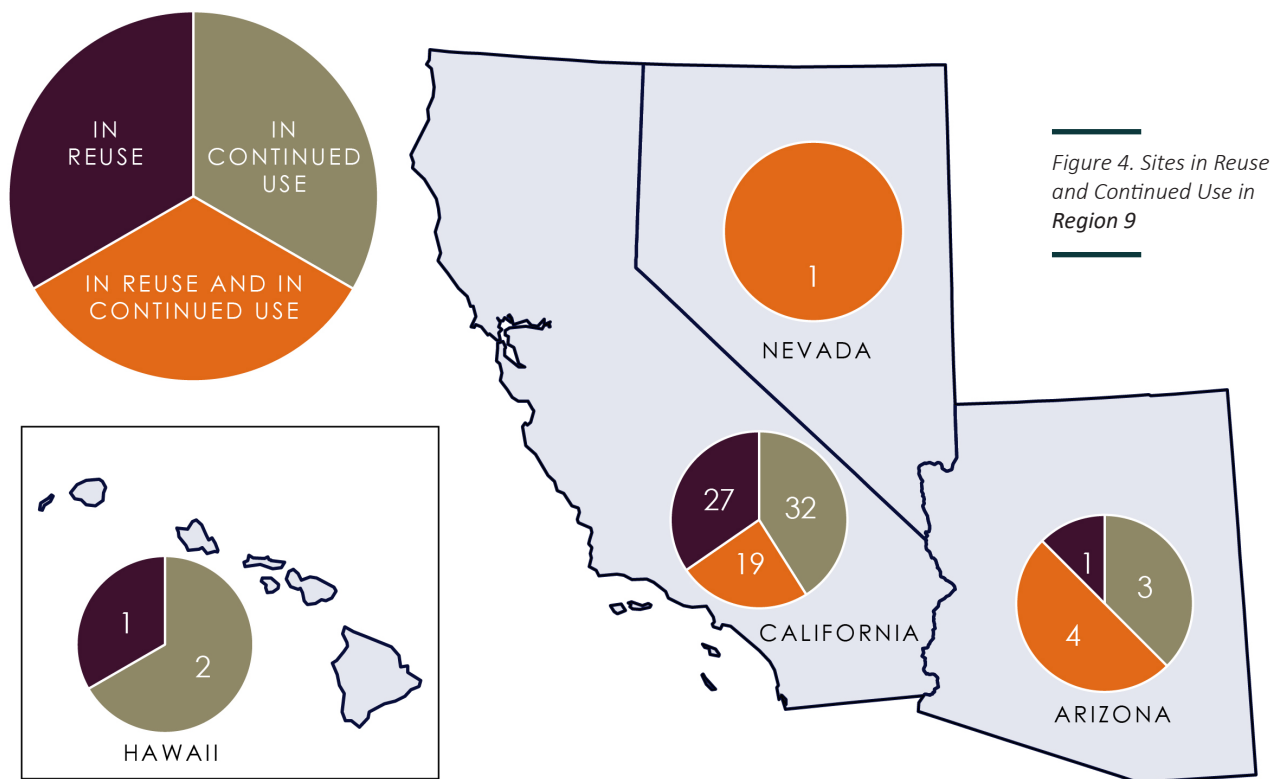
- Identifying and evaluating local land use priorities to align with site cleanup plans through the redevelopment planning process.
- Facilitating cleanup and redevelopment discussions to help resolve key issues between parties interested in site redevelopment.
- Supporting targeted projects intended to help Region 9 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 Trust for Public Land.
- Developing reuse fact sheets, websites, webinars and reuse case studies to share opportunities and lessons associated with Superfund Redevelopment.

These efforts have helped build expertise across Region 9, making it easier to both consider future use of Superfund sites prior to cleanup and to identify opportunities for removing reuse barriers. These efforts also help tribes, state agencies, local governments, communities, potentially responsible parties, site owners, developers, and other partners and stakeholders to better understand potential future uses for Superfund sites. This helps stakeholders engage early in the cleanup process, ensuring that Superfund sites are restored as productive assets for communities. Most importantly, these efforts lead to significant returns for communities, including jobs, annual income and tax revenues.

SUPERFUND REDEVELOPMENT: THE BIG PICTURE

EPA can take and oversee immediate action at contaminated sites through short-term cleanup actions, also called removal actions.² EPA then refers sites warranting long-term cleanup to its remedial program or to state programs. EPA's National Priorities List (NPL) is a list of sites the Agency is targeting for further investigation and possible remediation through the Superfund program. Once EPA places a site on the NPL, the Agency studies the contamination, identifies technologies that could address the material and evaluates alternative cleanup approaches. EPA then proposes a cleanup plan and, after collecting public input, issues a final cleanup plan. The Agency then cleans up the site or oversees cleanup activities. EPA has placed 133 sites in Region 9 on the NPL.

Whenever possible, EPA seeks to integrate redevelopment priorities into site cleanup plans. In Region 9, 88 NPL sites and three non-NPL Superfund sites are in use. These sites have either new uses in place or uses that remain in place from before cleanup. Many of these sites have been redeveloped for commercial, industrial and residential purposes. Others have been redeveloped for recreational, ecological and agricultural uses. Many redeveloped sites support multiple uses and have the capacity to support additional uses and further redevelopment. The following sections take a closer look at the beneficial effects of businesses operating on current and former Superfund sites in Region 9.



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

BENEFICIAL EFFECTS OF SUPERFUND SITE REDEVELOPMENT IN REGION 9

Businesses and Jobs

EPA has collected economic data for 1,114 businesses, government agencies and civic organizations operating on 45 NPL sites and two non-NPL sites in reuse and continued use in Region 9.³ (See the State Redevelopment Profiles for each state's reuse details.) Businesses and organizations at these sites are part of several different sectors, including professional, scientific and technical services, transportation, wholesale and retail trade, manufacturing, health care and social services, and finance and insurance.

Businesses, facilities and organizations at these sites include semiconductor manufacturers, aircraft manufacturers, health care providers, a Lowe's home improvement center, a Coca-Cola bottling facility, a Holiday Inn hotel, and a Staples office supply store.

The businesses and organizations at these sites earn about \$8.5 billion in estimated annual sales and employ about 34,230 people, earning an estimated \$3.5 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. More detailed information is presented in Table 1.⁴

Table 1. Site and Business Information for Region 9 Sites in Reuse and Continued Use (2017)

	Sites ^a	Sites with Businesses ^b	Businesses ^c	Total Annual Sales ^d	Total Employees	Total Annual Employee Income
<i>In Reuse</i>	29	16	120	\$1.2 billion	5,102	\$523 million
<i>In Continued Use</i>	38	14	410	\$1.3 billion	5,317	\$741 million
<i>In Reuse and in Continued Use</i>	24	17	584	\$6 billion	23,811	\$2.3 billion
Total	91	47^e	1,114	\$8.5 billion	34,230	\$3.5 billion

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

^b Also includes other organizations such as government agencies, nonprofit organizations and civic institutions.

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

^d For information on the collection of business, jobs and sales data, see Sources.

^e See footnote 1, page 1.

³ See footnote 1, page 1.

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



Figure 5. Left: The Los Coyotes Country Club golf course at the McColl site (California). Right: Headquarters offices for a semiconductor manufacturing company at the Motorola, Inc. (52nd Street Plant) site (Arizona).

Sites in Reuse and Continued Use: A Closer Look

Reuse Type	Description	Region 9 Example
<i>In Reuse</i>	<i>There is a new land use or uses on all or part of a site. This is because either the land use has changed (e.g., from industrial use to commercial use) or the site is now in use after being vacant.</i>	<i>McColl (California) – a former waste oil dump is now part of the Los Coyotes Country Club. The area includes three championship holes of golf.</i>
<i>In Continued Use</i>	<i>Historical uses at a site remain active; these uses were in place when the Superfund process started at the site.</i>	<i>Motorola, Inc. (52nd Street Plant) (Arizona) – contamination has impacted a large area of groundwater underneath a residential, commercial and industrial area. Source areas remain in use as aerospace manufacturing and semiconductor manufacturing support facilities.</i>
<i>In Reuse and Continued Use</i>	<i>Part of a site is in continued use and part of the site is in reuse.</i>	<i>Carson River Mercury (Nevada) – agricultural uses such as farming and ranching are ongoing. Comstock Mining Company recently resumed gold and silver exploration activities at the site. Other site reuses include residential and retail development.</i>

Property Values and Property Tax Revenues

Properties cleaned up under the Superfund program and returned to use have the potential to increase in value significantly. This increased value can boost property tax revenues, which help pay for local government operations, schools, transit systems and other public services. Site properties at the Raytheon Corp. site in California are now valued at over \$150 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 9 Sites in Reuse and Continued Use: Property Value and Tax Highlights

Total Property Value: \$2.3 billion

Total Annual Property Taxes: \$25 million



Figure 6. Residential use at the Indian Bend Wash Area site (Arizona).

EPA has collected property value and tax data for 20 Superfund sites in reuse and continued use in Region 9.⁵ These sites span 481 property parcels and 8,522 acres. They have a total property value of \$2.3 billion. The average total property value per acre is \$273,000.

Land and improvement property value information is available for 19 sites. These properties have a total land value of \$939 million and a total improvement value of \$1.3 billion.⁶

Property tax information is available for 20 sites. The properties generate a combined \$25 million in local property taxes annually.

Table 2. Property Value and Tax Information for Sites in Reuse and Continued Use in Region 9^a

Total Land Value (19 sites) ^b	Total Improvement Value ^c (19 sites)	Total Property Value (20 sites)	Total Property Value per Acre (20 sites) ^d	Total Annual Property Taxes (20 sites)
\$939 million	\$1.3 billion	\$2.3 billion	\$270,000	\$25 million

^a Results are based on an EPA Superfund Redevelopment Initiative effort in 2018 to collect on-site property values and property taxes for a subset of Superfund sites. The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which varied from 2017 to 2018. For additional information, see Sources.

^b Detailed (land and improvement) property value data as well as tax data were not available for every site.

^c Land and improvement value for two of the sites is listed as \$0.

^d Based on total property value amount of \$2.3 billion divided by total acreage of 8,522.

5 There are 71 additional sites in reuse or continued use in Region 9 for which EPA does not have property value or tax data, including 28 NPL federal facilities. See footnote 1, page 1.

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

Beneficial Effects from Enhanced Recreational and Ecological Amenities

In addition to hosting commercial developments, retail centers and industrial facilities, many Region 9 sites in reuse and continued use provide recreational and ecological benefits. Greenspace and habitat reuses help attract visitors and residents and indirectly contribute to local economies.

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

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

Many sites in Region 9 provide recreational and ecological benefits. The city of Fresno, California, redeveloped part of the Fresno Municipal Sanitary Landfill into the Fresno Regional Sports Complex, which features soccer and softball fields and a playground. The city of Maywood, California, and The Trust for Public Land transformed the Pemaco Maywood site into Maywood Riverfront Park, which features soccer fields, basketball courts, a play area, native plant landscaping and picnic areas. Part of the Jibboom Junkyard in Sacramento, California, now supports Robert T. Matsui Waterfront Park, which includes a pedestrian walkway, a fountain plaza, a river overlook, and an open green space area planted with native grasses, trees and vegetation.



Figure 7. Baseball field at the Fresno Municipal Sanitary Landfill site (California).

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



Figure 8. The wetlands treatment system at the Apache Powder Co. site (Arizona).

Why Are Wetlands Economically Important?

Superfund site reuse can support wetland habitat. At the Apache Powder Co. site in Benson, Arizona, cleanup included construction of an innovative wetlands treatment system to biodegrade contamination. The wetlands now provide a valuable habitat for area wildlife.

Wetlands provide a variety of benefits. The combination of shallow water, high levels of nutrients and primary productivity is ideal for organisms that form the base of the food web and feed many species of fish, amphibians, shellfish and insects. Wetlands are extremely effective in removing pollutants from water and acting as filters for future drinking water. Wetlands play a role in reducing the frequency and intensity of floods. They can store large amounts of carbon. They also provide recreational amenities.

These benefits also have economic value. Replacing wetlands' water treatment services with manmade facilities, for example, would be expensive. Worldwide, wetlands provide an estimated \$14.9 trillion in ecosystem services. To learn more, see:

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

Benefits of Groundwater Reuse in Region 9

In recent years, EPA has made it a priority to reuse and recycle treated wastewater or groundwater for beneficial purposes at Superfund sites and other contaminated lands. These uses include agricultural and landscape irrigation, industrial processes, household utilities, and drinking water. Reusing treated water for drinking water is especially important in Region 9, where states are facing some of the worst droughts in U.S. history and populations continue to grow rapidly. From 1990 to 2010, for example, Arizona's population increased 74 percent, California's population increased 25 percent and Nevada's population increased nearly 125 percent. These states are also some of the driest in the United States, ranked 47th, 40th and 50th nationally, respectively, in terms of average annual precipitation. Thus, treated wastewater and groundwater at Superfund sites provide localities with access to additional water resources and also help reduce the need to divert water from sensitive ecosystems. Finally, having these water supplies available locally means that water does not need to be transported over long distances, reducing energy costs.

The San Gabriel Valley (Area 2) Superfund site is located in the Los Angeles metropolitan area. Treated groundwater from the Baldwin Park part of the San Gabriel Valley (Area 2) Superfund site was available for public consumption as of 2002. The system includes five separate groundwater pump-and-treat systems. The systems can treat up to 43 million gallons of water a day.

The Newmark Ground Water Contamination Superfund site is located in San Bernardino, California. The site includes two major groundwater plumes. Treatment systems made groundwater available for public consumption in 1998. The systems can treat up to 29 million gallons of water a day.

The Indian Bend Wash Area Superfund site is located in Scottsdale, Arizona. Industrial facilities contaminated groundwater with volatile organic compounds. The site's central groundwater treatment facility began operation in 1994, with treated groundwater available for public consumption the same year. The facility uses air stripping technology and can treat up to 11.3 million gallons of water a day.

Table 3 shows the estimated daily treated water value by site. In total, over \$330,000 worth of contaminated groundwater is treated each day. This water supply is worth more than \$100 million each year. Treated groundwater at each site is made available for public consumption by the local water providers listed below.



Figure 9. Entrance to the groundwater treatment plant at the San Gabriel Valley (Area 2) site (California).



Figure 10. Treated water discharge at the Indian Bend Wash Area site (Arizona).

Table 3. Estimated Daily Treated Water Value by Site

Site Name	Daily Water Treatment Capacity (MGD) ^a	Local Water Provider	Estimated Daily Treated Water Value ^b
San Gabriel Valley (Baldwin Park)	43	Valley County Water District	\$66,680
Newmark Ground Water Contamination	29	San Bernardino Water Authority	\$44,582
San Gabriel Valley (South El Monte)	18	San Gabriel Valley Water Company	\$76,471
San Gabriel Valley (Whittier Narrows)	16	San Gabriel Valley Water Company	\$67,974
Indian Bend Wash Area	11.3	City of Scottsdale Water Department	\$18,645
San Fernando Valley (Burbank)	8.6	City of Burbank Water and Power	\$14,842
San Fernando Valley (Glendale)	7.2	Glendale Water and Power	\$24,736
Tucson International Airport Area	6.25	Tucson Water Department	\$14,454
San Fernando Valley (North Hollywood)	1	City of Burbank Water and Power	\$1,726
Total:	140.35		\$330,110

^a MGD refers to millions of gallons per day.

^b Based on the local water provider's residential water use rate multiplied by the daily water treatment capacity at each site.

REDEVELOPMENT IN ACTION

SOLA OPTICAL USA, INC.

The Cader Corporate Center

The 35-acre Sola Optical USA, Inc. (Sola Optical) Superfund site is located in Petaluma, California, about 30 miles north of San Francisco. From 1978 to 2001, Sola Optical made eyeglass lenses at the site. The company used solvents in its manufacturing operations and stored the solvents in underground storage tanks. In 1982, the company discovered that solvents had contaminated soil and groundwater near the tanks. Early cleanup efforts in 1985 included removing the tanks and contaminated soil, and installation of a groundwater treatment system. EPA added the site to the NPL in 1990.

The site's long-term remedy included continued groundwater treatment and groundwater use restrictions. Sola Optical treated groundwater at the site from 1988 to 1997 and continued to monitor groundwater until 2012, when EPA confirmed that groundwater had achieved cleanup standards. EPA took the site off the NPL in 2013. At that time, the site was in reuse and commercial tenants occupied the original site buildings.

Today, the site is divided into two parcels. The 24-acre former Sola Manufacturing property is owned by Kland, LLC. Petaluma Poultry leases the 107,000-square-foot former Sola Optical building for its administrative offices and truck parking. In 2000, RNM Cader bought 11 previously undeveloped acres in the southwest part of the site for development. The developer improved the site in 2005, adding building pads and parking lots to accommodate office space. However, soon thereafter, the recession halted redevelopment.

In 2014, New York Life Investments acquired the partially developed property with plans for light industrial use. The 11-acre parcel was redeveloped as the Cader Corporate Center in the fall of 2016. The Center consists of three buildings that provide over 268,000 square feet of light industrial, manufacturing, storage and distribution, and office space. The vacancy rate for warehouse space in Sonoma County is low, about 7 percent. The site's redevelopment has helped address this demand, supporting some of the highest leasing rates in the county. Today, businesses operating at the Cader Corporate Center include Scott Laboratories, Clover Stornetta Farms, Hydrofarm and Cowgirl Creamery. Together, site businesses employ 520 people and provide nearly \$30 million in estimated annual employment income. In 2017, site businesses generated an estimated \$82 million in sales revenue. As of 2018, site properties have a combined value of \$41 million. In 2017, site properties generated \$475,000 in property tax revenue.



Figure 11. The Cader Corporate Center at the Sola Optical USA, Inc. site (California).

REDEVELOPMENT IN ACTION

OPERATING INDUSTRIES, INC., LANDFILL

Market Place Shopping Center

The Operating Industries, Inc., Landfill Superfund site in Monterey Park, California, is located about 10 miles east of downtown Los Angeles. The site covers 190 acres; the Pomona Freeway separates the area into a North Parcel and a South Parcel. Monterey Park Disposal Company began operating a landfill at the site in 1948. Operating Industries purchased the area in the 1950s and continued landfilling until 1984. The landfill received millions of gallons of commercial, residential and industrial wastes. These wastes contaminated the air, groundwater and soil, and posed fire and health risks for nearby residents.

In 1984, the State of California placed the landfill on the California Hazardous Waste Priority List. The landfill closed later that year. EPA listed the site on the NPL in 1986. Cleanup actions covered the landfill, controlled landfill gas and managed leachate. Monitoring and maintenance activities are ongoing. An innovative landfill gas treatment system converted landfill gas into electricity, meeting more than half the cleanup's energy requirements. During its operation, the system generated more than 15,000 megawatt hours of electricity, equivalent to an energy cost savings of about \$1.75 million over seven years of operation.

Today, development of Monterey Park Market Place Shopping Center, a 577,000-square-foot retail facility, is underway on the site's North Parcel. The city of Monterey Park and the property developer celebrated the project with a groundbreaking ceremony in November 2016. The shopping center will feature a Costco Warehouse and Gas Station, a Home Depot and Garden Center, and two restaurants – an In-N-Out-Burger and a Chick-fil-A. The Costco opened in May 2018; the Home Depot opened in June 2018. Additional redevelopment opportunities at the site include solar development potential on the South Parcel.



Figure 12. Bird's-eye view of development at the Operating Industries, Inc., Landfill site (California).

REDEVELOPMENT IN ACTION

DEL MONTE CORP. (OAHU PLANTATION)

Small-scale Farming and Small Businesses

The Del Monte Corp. (Oahu Plantation) Superfund site is located near Kunia Village in Honolulu County, Hawaii. A 6,000-acre pineapple plantation operated on the site from about 1946 to 2006. The Del Monte Corporation used pesticides to control pests that attack pineapple roots. In 1977, 500 gallons of pesticide accidentally spilled next to the Kunia drinking water supply well. EPA added the site to the NPL in 1994. The remedy included removal of contaminated soil, the use of plants to treat contaminated groundwater, extraction and treatment of deeper contaminated groundwater, a vegetated soil cap, soil vapor extraction, land and groundwater use restrictions, and groundwater monitoring.

Del Monte closed the plantation in 2006 and returned the leased property to the property owner, the James Campbell Company. In 2007, EPA issued a Consent Decree focused on institutional controls to make sure any new development would be compatible with the site's remedy. EPA agreed to provide oversight and guidance for redevelopment activities. The Consent Decree helped inform stakeholders' reuse plans. Following closure of the plantation, the James Campbell Company sold more than half of the site property to Kunia Loa Ridge Farmlands, an organization that encourages affordable, small-scale sustainable farms. Kunia Loa Ridge Farmlands resells small plots to farmers to grow tropical fruits and raise livestock.

In 2004, EPA delisted the 3,000-acre Puamoho portion of the site. Several businesses and organizations are located in this area. For example, Oils of Aloha, which makes lotions and beauty products, moved its headquarters and manufacturing operations to a 10,000-square-foot facility on site in 2011. Today, site businesses employ about 160 people and generate over \$12 million in estimated annual sales revenue. The U.S. Army also purchased a part of the site property to expand housing for the Schofield Barracks. As of 2018, site properties have a combined value of nearly \$86 million.



Figure 13. Pineapple growing on Oahu (Hawaii).⁸

8. Dole Plantation (2008) available at [https://commons.wikimedia.org/wiki/File:Dole_Plantation_\(2008\)_02.JPG](https://commons.wikimedia.org/wiki/File:Dole_Plantation_(2008)_02.JPG). CC BY-SA 3.0 available at <https://creativecommons.org/licenses/by-sa/3.0/>.

REDEVELOPMENT IN ACTION

SOUTH BAY ASBESTOS AREA

Commercial Development and Recreational Opportunities

The 550-acre South Bay Asbestos Area Superfund site is located in San Jose's Alviso neighborhood, in the heart of California's Silicon Valley. EPA investigations found asbestos in multiple locations. Decades ago, a ring levee was constructed for flood protection in Alviso using asbestos-containing rock. Nearby truck yards were contaminated with asbestos. Two landfills in the area received asbestos waste from a nearby cement pipe manufacturing plant.

EPA placed the site on the NPL in 1986. Cleanup actions included paving asbestos contaminated lots, removing asbestos debris and soil, removing the ring levee, covering landfills, creating land use restrictions, and restoring wetlands under the former ring levee. Cleanup is complete and the landowners conduct long-term maintenance and regular inspection of the landfill covers.

EPA worked with developers to address liability concerns and ensure the long-term protectiveness of the remedy. Today, there are two robust business parks in the Alviso neighborhood. The 70-acre America Center offers office space in LEED-certified green buildings located on the former Marshland Landfill. Current America Center tenants include circuit board manufacturer Flextronics International U.S.A. and videoconferencing company Polycom. Gold Street Tech Center business park, located on part of the former Santos Landfill, provides commercial and office space for several businesses, including TiVo's headquarters and an Aloft Hotel. Together, site businesses provide 1,445 jobs and nearly \$167 million in estimated annual employment income. In 2017, site businesses generated over \$698 million in estimated annual sales revenue. On-site properties also generate property tax revenues that support local government and public services. In 2017, site properties had a combined value of over \$330 million and generated \$4 million in property tax revenue.

In addition to opportunities for commercial development, the site includes open space, trails, volleyball and basketball courts, and wildlife habitat. The developer of the America Center, Legacy Partners, created a burrowing owl habitat at the America Center in 2002. The habitat includes 25.3 acres of open space managed as foraging habitat and 6.5 acres set aside for use as burrowing owl breeding habitat.



Figure 14. Flextronics' U.S. corporate headquarters at the South Bay Asbestos Area site (California).

REDEVELOPMENT IN ACTION

TUCSON INTERNATIONAL AIRPORT AREA

Continued Public Service, Commercial and Industrial Uses

The 10-square-mile Tucson International Airport (TIA) Area Superfund site is located in Tucson, Arizona. The site includes TIA, parts of the Tohono O’odham Indian Reservation, residential areas in Tucson and South Tucson, and the Air Force Plant #44 Raytheon Missile Systems Company (AFP44). Several facilities have operated on site since 1942. Site activities have included parts degreasing, electroplating, metal plating and circuit board manufacturing. Improper waste disposal in unlined pits and landfills contributed to soil and groundwater contamination on the airport property and in the surrounding community. EPA placed the site on the NPL in 1983.

Cleanup includes removing source materials and monitoring and treating contaminated groundwater. Over the last 30 years, EPA has treated more than 6.6 billion gallons of groundwater and removed 130,000 pounds of volatile organic compounds, 100,000 tons of metals and 10,000 tons of polychlorinated biphenyls (PCBs) from soil and groundwater. Cleanup and groundwater treatment and monitoring are ongoing. Treated water is returned to the municipal water supply for use as drinking water. Tucson International Airport remains operational.

Throughout the cleanup, businesses have remained open. In many cases, cleanup activities were planned to minimize disruptions to ongoing business operations. Today, industrial and commercial activities at the site include airport-related businesses as well as aerospace- and defense-related design and manufacturing, educational services, and other businesses. At least 100 businesses operate on site, employing about 4,000 people and generating an estimated \$273 million in annual employment income. In 2017, site businesses generated nearly \$403 million in estimated sales revenue. Site properties had a combined value of nearly \$194 million.

In 2013, TIA started construction of a three-phase solar project to cover airport parking lots with solar array canopies. In December 2017, the Tucson Airport Authority celebrated the project’s completion with a ribbon-cutting ceremony. The solar canopies provide shade and generate up to half of the electricity needed to power the airport terminal and concourses. The \$14.3 million project is expected to generate 411,800 kilowatt hours a month, resulting in monthly savings of \$35,000 for the airport. Grants from the Federal Aviation Administration and the Arizona Department of Transportation funded the project. The design also includes “green walls” vegetated with plants that provide cool climate conditions under the solar panel installation.



Figure 15. TIA’s passenger terminal entrance at the Tucson International Airport Area site (Arizona).

REDEVELOPMENT ON THE HORIZON IN REGION 9

TRANSFORMING PORTIONS OF A ROCKET ENGINE MANUFACTURING FACILITY INTO A RESIDENTIAL AND COMMERCIAL TRANSIT-ORIENTED DEVELOPMENT

The Aerojet General Corp. Superfund site is located near Rancho Cordova, 15 miles east of Sacramento, California. Gold mining using dredges took place on the site from the late 1800s into the 20th century. Aerojet and its subsidiaries have researched, designed, and made rocket engines and chemicals on site since 1953. Aerojet's early disposal and operating practices led to soil and groundwater contamination.

While Aerojet investigates the extent of source area contamination in soil and groundwater and examines cleanup alternatives, they continue to pump and treat contaminated groundwater to prevent it from spreading to nearby areas. In 2010, Aerojet built a large-scale solar facility on site that generates 6 megawatts of electricity and powers 20 percent of the site's groundwater treatment system. The solar panels also reduce the company's carbon footprint. Aerojet continues to operate on the site, and Aerojet's tenants use the site for office, commercial and industrial activities.

The active aerospace facility footprint at the Aerojet Superfund site is shrinking. Future reuse plans for perimeter areas of the Aerojet site include mixed-use development with residential, commercial and industrial areas. The Easton master-planned community will include residential and commercial areas, open/green space and conservation areas as well as mass transit resources and pedestrian-friendly access. The site is on EPA's national Redevelopment Focus List of sites with major redevelopment potential.

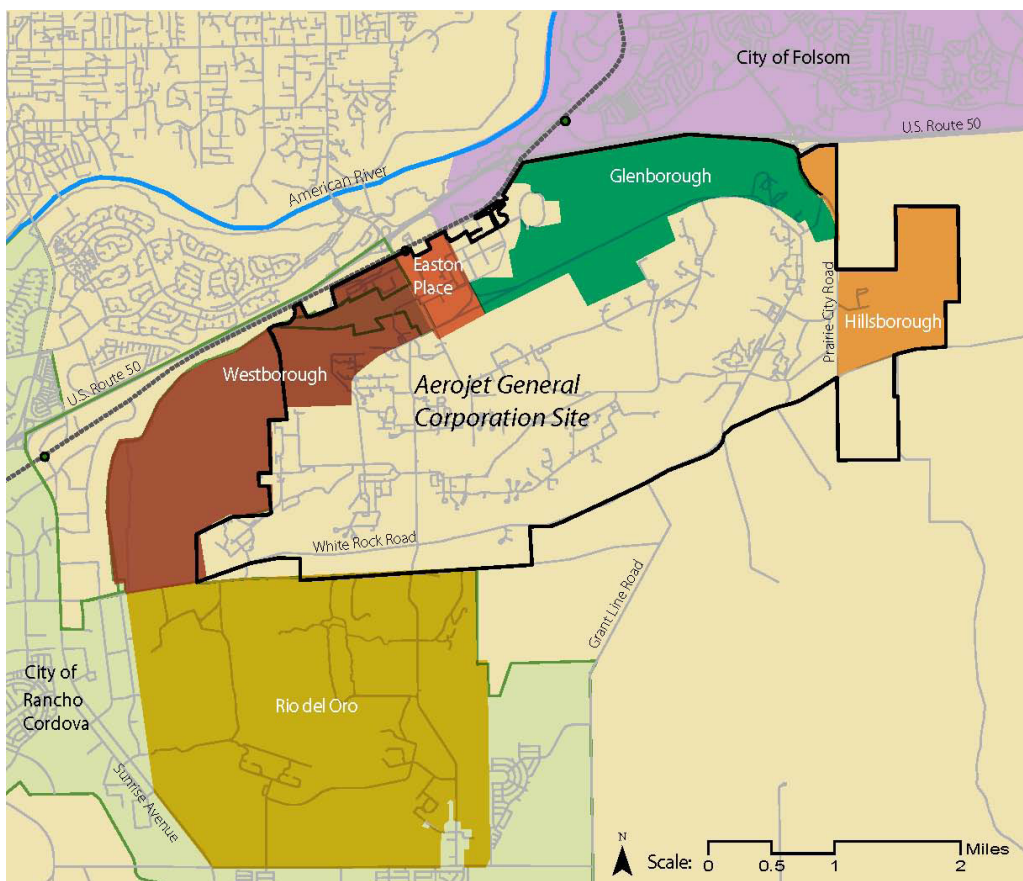


Figure 16. Map showing the Aerojet General Corp. Superfund site and divisions into proposed redevelopment "boroughs," including the Easton master-planned community area (California).

CONCLUSION

EPA works closely with its partners at Superfund sites across Region 9 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 88 NPL sites and three non-NPL Superfund sites in Region 9 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 9. EPA remains committed to working with all stakeholders to support Superfund redevelopment opportunities in Region 9.

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 9, Superfund sites are now home to major commercial and industrial facilities, mid-size developments and small businesses providing services to surrounding communities. EPA is committed to working with all stakeholders to support the restoration and renewal of these sites as long-term assets.

EPA Superfund Site Redevelopment Resources

EPA Region 9 Superfund Redevelopment Initiative Coordinator

Grace Ma | 415-947-4212 | ma.grace@epa.gov

Superfund Sites in Reuse: find more information about Superfund sites in reuse

www.epa.gov/superfund-redevelopment-initiative/find-sites-reuse

Superfund Redevelopment Initiative Website: tools, resources and more information about Superfund site reuse

www.epa.gov/superfund-redevelopment-initiative

EPA Office of Site Remediation Enforcement Website: tools that address landowner liability concerns

www.epa.gov/enforcement/landowner-liability-protections



Figure 17. Airport transportation facility at the Tucson International Airport Area site (Arizona).

STATE REDEVELOPMENT PROFILES





ARIZONA REDEVELOPMENT PROFILE

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

Businesses and Jobs

EPA has collected economic data for 236 businesses and organizations operating on five sites in reuse and continued use in Arizona.

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

	Sites ^a	Sites with Businesses	Businesses ^b	Total Annual Sales	Total Employees	Total Annual Employee Income
<i>In Reuse</i>	1	0	0	\$0	0	\$0
<i>In Continued Use</i>	3	1	17	\$249 million	1,124	\$94 million
<i>In Reuse and in Continued Use</i>	4	4	219	\$2 billion	9,704	\$761 million
Total	8	5	236	\$2.3 billion	10,828	\$855 million

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

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

Property Values and Property Tax Revenues

EPA has collected property value data for two Superfund sites in reuse and continued use in Arizona. These sites span 46 property parcels and 4,549 acres.

Table 5. Property Value and Tax Information for Sites in Reuse and Continued Use in Arizona^a

Total Land Value (1 site)	Total Improvement Value (1 site)	Total Property Value (2 sites)	Total Annual Property Taxes (2 sites)
\$81 million	\$112 million	\$255 million	\$640,000

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



Figure 18. A shopping center at the Indian Bend Wash Area site.

Did You Know?

The Indian Bend Wash Area site in Scottsdale and Tempe, Arizona, spans several square miles. Cleanup is ongoing. The site remains in continued use – residential, recreational, commercial and industrial areas are located on site. In total, businesses at the site employ close to 4,500 people. They provide over \$430 million in estimated annual income and generate nearly \$1.5 billion in estimated annual sales.



CALIFORNIA REDEVELOPMENT PROFILE

EPA partners with the California Department of Toxic Substances Control to oversee the investigation and cleanup of Superfund sites in California. California has 78 Superfund sites with either new uses in place or uses that have remained in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse and continued use in California.

Businesses and Jobs

EPA has collected economic data for 862 businesses and organizations operating on 40 sites in reuse and continued use in California.

Table 6. Detailed Site and Business Information for Sites in Reuse and Continued Use in California (2017)

	Sites ^a	Sites with Businesses	Businesses ^b	Total Annual Sales	Total Employees	Total Annual Employee Income
<i>In Reuse</i>	27	15	106	\$1.2 billion	4,943	\$512 million
<i>In Continued Use</i>	32	13	393	\$1 billion	4,193	\$647 million
<i>In Reuse and in Continued Use</i>	19	12	363	\$4 billion	14,041	\$1.5 billion
Total	78	40	862	\$6.2 billion	23,177	\$2.7 billion

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

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

Property Values and Property Tax Revenues

EPA has collected property value data for 17 Superfund sites in reuse and continued use in California. These sites span 415 property parcels and 1,024 acres.

Table 7. Property Value and Tax Information for Sites in Reuse and Continued Use in California^a

Total Land Value (17 sites)	Total Improvement Value (17 sites)	Total Property Value (17 sites)	Total Annual Property Taxes (17 sites)
\$779 million	\$1.2 billion	\$2 billion	\$24 million

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



Figure 19. Symantec's headquarters at the Raytheon Corp. site.

Did You Know?

Raytheon made semiconductors at the Raytheon Corp. site in Mountain View, California, in the 1960s and 1970s. Now, several technology and industrial companies are active on site. These companies employ over 1,000 people and generate nearly \$290 million in estimated annual sales.

HAWAII REDEVELOPMENT PROFILE

EPA partners with the Hawaii State Department of Health to oversee the investigation and cleanup of Superfund sites in Hawaii. Hawaii 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 and continued use in Hawaii.

Businesses and Jobs

EPA has collected economic data for 14 businesses and organizations operating on one site in reuse in Hawaii.

Table 8. Detailed Site and Business Information for Sites in Reuse and Continued Use in Hawaii (2017)

	Sites ^a	Sites with Businesses	Businesses ^b	Total Annual Sales	Total Employees	Total Annual Employee Income
<i>In Reuse</i>	1	1	14	\$12 million	159	\$10 million
<i>In Continued Use</i>	2	0	0	\$0	0	\$0
<i>In Reuse and in Continued Use</i>	0	0	0	\$0	0	\$0
Total	3	1	14	\$12 million	159	\$10 million

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

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

Property Values and Property Tax Revenues

EPA has collected property value data for one Superfund site in reuse in Hawaii. The site spans 20 property parcels and 2,949 acres.

Table 9. Property Value and Tax Information for Sites in Reuse and Continued Use in Hawaii^a

Total Land Value (1 site)	Total Improvement Value (1 site)	Total Property Value (1 site)	Total Annual Property Taxes (1 site)
\$79 million	\$7 million	\$86 million	\$121,000

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



Figure 20. Aerial view of pineapple farms in Hawaii.⁹

Did You Know?

From 1946 to 2006, the Del Monte Corporation grew and processed pineapples at the Del Monte Corp. (Oahu Plantation) site in Kunia Village, Hawaii. Kunia Loa Ridge Farmlands now owns more than half of the site and resells small plots to farmers to grow tropical fruits and raise livestock. Seed corn production also takes place on part of the site. In 2011, a beauty products company moved its headquarters and manufacturing operations on site. Part of the U.S. Army's Schofield Barracks are also located on site.

9. Aerial View of Pineapple Farms, Hawaii by Carol M. Highsmith available at https://commons.wikimedia.org/wiki/File:Aerial_view_of_pineapple_farms,_Hawaii_LCCN2010630469.tif. CC BY-SA 3.0 available at <https://creativecommons.org/licenses/by-sa/3.0/>.



NEVADA REDEVELOPMENT PROFILE

EPA partners with the Nevada Division of Environmental Protection to oversee the investigation and cleanup of Superfund sites in Nevada. Nevada has one Superfund site, the Carson River Mercury site, with new uses in place and uses that have remained in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse and continued use in Nevada.

Businesses and Jobs

EPA has collected economic data for two businesses and organizations operating on one site in reuse in Nevada.

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

	Sites	Sites with Businesses	Businesses ^a	Total Annual Sales	Total Employees	Total Annual Employee Income
<i>In Reuse</i>	0	0	0	\$0	0	\$0
<i>In Continued Use</i>	0	0	0	\$0	0	\$0
<i>In Reuse and in Continued Use</i>	1	1	2	\$2 million	66	\$1 million
Total	1	1	2	\$2 million	66	\$1 million

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

Property Values and Property Tax Revenues

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



Figure 21. The Carson River in Nevada.¹⁰

Did You Know?

Gold and silver mining contaminated soils, sediments and surface water at the Carson River Mercury site in Dayton, Nevada. Site investigations and cleanup are ongoing. The site remains in continued industrial, commercial, agricultural and residential use. Site businesses generate \$2.2 million in estimated annual sales and provide nearly \$1.2 million in estimated annual income.

10. Carson River available at [https://commons.wikimedia.org/wiki/File:Carson_River_\(19790865250\).jpg](https://commons.wikimedia.org/wiki/File:Carson_River_(19790865250).jpg). CC BY-2.0 available at <https://creativecommons.org/licenses/by/2.0/>.



GUAM REDEVELOPMENT PROFILE

EPA partners with the Guam Environmental Protection Agency to oversee the investigation and cleanup of Superfund sites in Guam. Guam has one Superfund site, the Anderson Air Force Base site, with uses that have remained in place since before cleanup. EPA has not collected economic data or property value data for this site; it is a federal facility in continued military use.



Did You Know?

Starting in 1940, the Andersen Air Force Base site served as a support facility for U.S. Strategic Air Command operations in Yigo, Guam. The site remains an active U.S. Air Force base. Parts of the base are designated wildlife and marine preserves that protect about 23 endangered species.

Figure 22. Aerial view of the Andersen Air Force Base site.¹¹

11. Aerial View of Andersen AFB available at https://commons.wikimedia.org/wiki/File:Aerial_view_of_Andersen_AFB.jpg. CC BY-SA 3.0 available at <https://creativecommons.org/licenses/by-sa/3.0/>.

SOURCES

BUSINESS, JOBS, SALES AND INCOME INFORMATION

Information on the number of employees and sales volume for on-site businesses comes from the Hoovers/Dun & Bradstreet (D&B) (www.dnb.com) database. EPA also gathers information on businesses and corporations from D&B. D&B maintains a database of more than 225 million active and inactive businesses worldwide.

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

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

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

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

Business and employment data used for this profile were collected in 2017. Estimated annual employment income was calculated using 2017 jobs data and BLS average weekly wage data for those jobs from 2016 (the latest available wage data at the time of this profile). Federal facility sites are included in calculations of total sites in reuse or continued use only. Federal facility sites are excluded from all other calculations (i.e., number of sites with businesses, number of businesses, total jobs, total income and total annual sales). All sales and income figures presented have been rounded for the convenience of the reader.

PROPERTY VALUE AND TAX INFORMATION

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

REUSE INFORMATION SOURCES

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

EPA Resources

Sola Optical USA, Inc. 2016. Reuse and the Benefit to the Community, Sola Optical USA, Inc. semspub.epa.gov/src/document/HQ/196755.

South Bay Asbestos Area. 2015. Reuse and the Benefit to the Community, South Bay Asbestos Area. semspub.epa.gov/src/document/09/1156530.

Tucson International Airport Area. 2016. Reuse and the Benefit to the Community, Tucson International Airport Area. semspub.epa.gov/src/document/09/1164550.

Other Resources

"TAA Celebrates Completion of TUS Solar Project." Tucson Airport Authority. Updated December 7, 2017. www.flytucson.com/articles/taa-celebrates-completion-of-tus-solar-project/.

The Greater Monterey Park Chamber of Commerce & Visitor Center. More Shopping Opportunities Coming to Monterey Park: Market Place Commercial Center Breaks Ground. November 16, 2016.

Back cover photos: South Bay Asbestos Area (California), Phoenix Goodyear Airport Area (Arizona)

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