

Executive Summary

Once the location of an aluminum smelter plant, the Reynolds Metals Company Superfund site in Troutdale, Oregon is now home to a large-scale industrial park. As a result of collaborative efforts among many stakeholders, including the U.S. Environmental Protection Agency (EPA), the Oregon Department of Environmental Quality (DEQ), the Port of Portland, Alcoa, the City of Troutdale and others, Troutdale Reynolds Industrial Park now hosts a regional distribution hub for FedEx Ground that provides jobs and income to the community. It also serves to attract additional businesses and future investment. When fully developed, local officials estimate that the industrial park will support nearly 3,500 jobs.

Beneficial Effects

- The on-site FedEx Ground facility supports 1,100 workers, providing an estimated \$47.5 million in annual income to the local community.
- When fully developed, the on-site industrial park will support an estimated 3,500 new jobs, \$141 million in annual income and \$46 million in annual state and local taxes.
- The estimated value of on-site properties is over \$145 million.
- In 2014, site properties generated over \$1.2 million in property tax revenues.

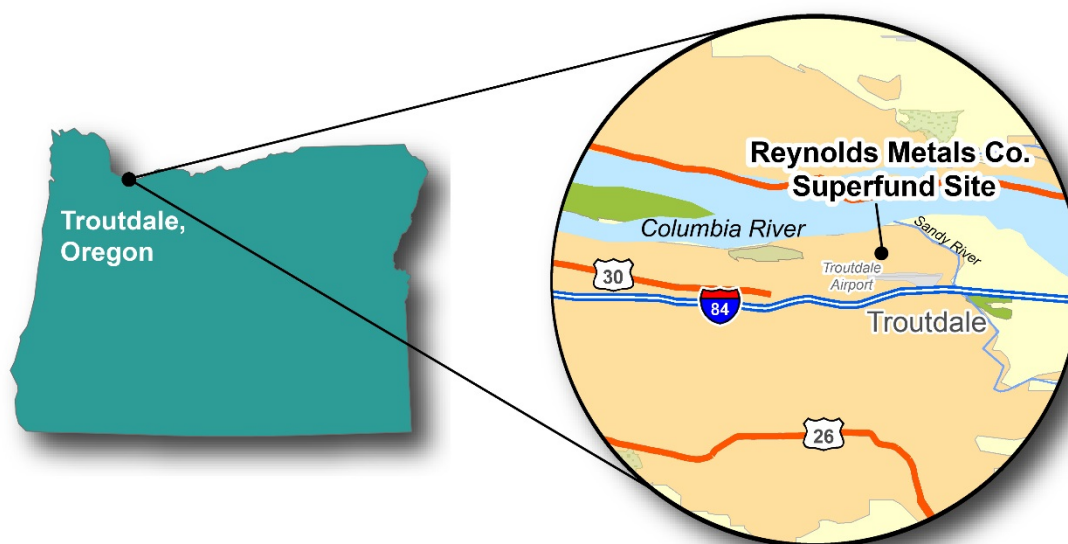


Figure 1. The site's location in Troutdale, Multnomah County, Oregon.

Introduction

Superfund cleanups restore value to properties and benefit surrounding communities. Once a property is ready for reuse, it can strengthen a local economy by supporting jobs, new businesses, tax revenues and spending. This case study captures the beneficial effects of new development at the Reynolds Metals Company Superfund site.



Figure 2. Downtown Troutdale, Oregon (2015).

The site is located about 20 miles east of Portland and about a mile north of downtown Troutdale in Multnomah County, Oregon. The site borders the Columbia River to the north and the Sandy River to the east; in total, it spans over 700 acres. The Reynolds Metals Plant covered around 100 acres of the site. A dike, which protected the former plant from floods, surrounds the former plant on its northern and eastern sides. Surrounding land uses include industrial areas, homes, natural areas and undeveloped open space. According to the 2010 Census, about 16,000 people live in Troutdale and about 735,000 people live in Multnomah County.



Figure 3. The Reynolds Metals Company site.

Site History

The United States government built the primary aluminum reduction plant in 1941 to produce aluminum for wartime operations. The Aluminum Company of America (now Alcoa) operated the plant for the federal government from about 1941 to 1946. Reynolds Metals Company then leased and later purchased the facility as well as several hundred surrounding acres. Aluminum production operations generated large quantities of wastes for decades.

EPA investigations at the plant in 1994 found contamination in several former waste disposal areas affecting groundwater and soil. Contaminants included fluoride, polyaromatic hydrocarbons, cyanide, aluminum and other metals and polychlorinated biphenyls. EPA added the site to the Superfund program's National Priorities List (NPL) in 1994.

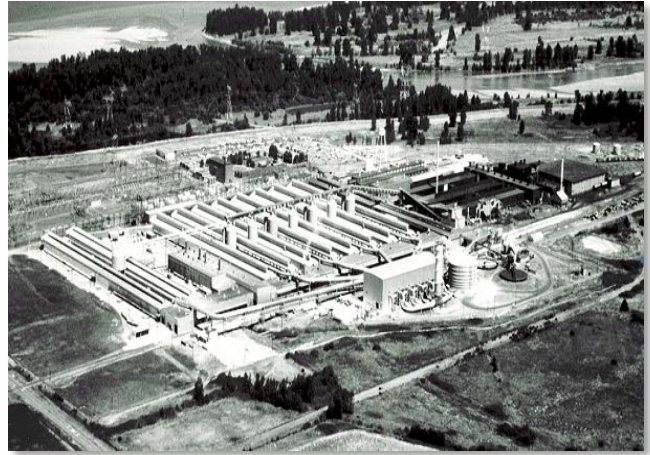


Figure 4. The Reynolds Metals aluminum reduction plant.
(Source: Port of Portland)

Site Cleanup

Reynolds Metals Company conducted an in-depth site investigation between 1996 and 2000. Findings indicated high levels of contamination in soil, waste and debris as well as in residue at the bottom of Company Lake, a nearby water body. The investigation also identified a large area of contaminated groundwater beneath the plant. Several short-term cleanup actions at the site between 1995 and 2002 removed high-concentration source areas of contamination, including contaminated soil and waste material.

Alcoa acquired Reynolds Metals Company in May 2000. Alcoa suspended plant operations in the fall that same year, and then ultimately chose to permanently close the plant. Alcoa, EPA and Oregon DEQ began meeting to discuss site reuse options. The site's acreage complicated cleanup planning. However, its size – as well as its location near road, rail and waterway networks – also presented an opportunity to transform the area into a substantial industrial and commercial hub. A key issue was whether to cap contamination in place, potentially limiting the site's ability to support commercial or industrial land uses, or to remove or treat most of the contamination.

The parties ultimately agreed on a plan that prioritized removal or treatment of areas with high concentrations of contamination, allowing about half of the property to be reused for industrial purposes. In 2002, EPA issued the interim cleanup plan to address additional source areas and contaminated groundwater, including the removal of contaminated soil and material from Company Lake, two landfills and a scrap yard. Alcoa completed these actions between 2003 and 2005. In addition, the company built and began operating a groundwater extraction system in 2005.

Alcoa demolished all plant buildings between 2003 and 2006, while most of these cleanup activities were underway. The company demolished more than 100 buildings covering over 1.5 million square feet. The company also recycled massive quantities of steel, aluminum, copper and concrete as part of the process. Although not required to do so, Alcoa conducted the demolition in a manner consistent with EPA's interim cleanup plan. The demolition provided an opportunity to complete additional investigation and cleanup of the area next to and beneath the plant. EPA and Oregon DEQ provided oversight of sampling, cleanup and disposal activities during site demolition.



Figure 5. The site during cleanup in the mid-2000s.

In September 2006, EPA issued the final cleanup plan for the site; it called for institutional controls to ensure the long-term protectiveness of the site's remedy. It also required the compatibility of future site uses, including restrictions on groundwater use, with the present cleanup levels attained. In addition, the plan called for continued operation of the groundwater extraction system, maintenance and monitoring of capped areas, and groundwater monitoring to evaluate the effectiveness of completed and ongoing cleanup actions. The extensive cleanup and demolition helped position the site so that it could host industrial uses in the future.

Establishing the Troutdale Reynolds Industrial Park

The Port of Portland became interested in the site property in the mid-2000s.¹ After selling off a large amount of industrial property and losing prospective tenants due to a limited number of available industrial sites, the Port prioritized opportunities for regional industrial growth. During this time, the City of Troutdale was also looking to expand its tax base and create local jobs. The City annexed the site property in early 2007 and established a state-approved enterprise zone to encourage businesses to buy or lease site property. The Port purchased the property later that year and developed a three-phase master plan for the area, now called the Troutdale Reynolds Industrial Park, or TRIP. While the overall goal of the Port, the City and other stakeholders was to turn TRIP into an economic engine for the region, creating investment and employment opportunities benefiting the City and Multnomah County, the plan also balanced development with open space and recreation opportunities. The plan preserved 350 acres of open space and included an extension of an extensive regional recreational trail.



Figure 6. New infrastructure built as part of the Port's Phase I site preparation efforts included roads and storm sewers.

¹ The Port of Portland is a regional port district with jurisdiction in and around the Portland area. The Port promotes the region's economy and quality of life by providing efficient cargo and air passenger access to national and global markets. The Port oversees operation of local airports, including the Portland International Airport, several marine cargo terminals and several properties, including business and industrial parks. More information on the Port is available at <http://www.portofportland.com>.

Between 2008 and 2010, the Port implemented Phase I of its plan, making 131 acres available for reuse. The Port leveled and raised the Phase I area's grade and put new infrastructure in place. In October 2008, FedEx Ground purchased 78 acres of property in the Phase I development area. In 2010, FedEx Ground completed construction of a new 441,000-square-foot regional distribution facility. The Port is currently completing Phase II. It includes the development of nine new lots on 178 acres. The first lots in this phase will be available in 2016. The Port will start Phase III following completion of Phase II. It will include the development of nearly 35 acres.

Throughout the process, the Port and the City's partnerships with civic organizations and government agencies have been pivotal in securing the resources, support and expertise necessary to successfully establish TRIP. For example, the Port secured an \$11.7 million financial assistance loan from the Oregon Business Development Department and a \$1 million grant from the Oregon Department of Transportation. Other key partners include the State's Regional Solutions Center for the Metro Region, which focused on regulatory agency approvals and transportation funding, and the East Metro Economic Alliance, which helped identify candidate businesses for TRIP. In the addition, the Port, the City and other parties have worked closely with U.S. Army Corps of Engineers, the National Marine Fisheries Service and the U.S. Fish and Wildlife on decisions regarding open space preservation and wetlands mitigation.

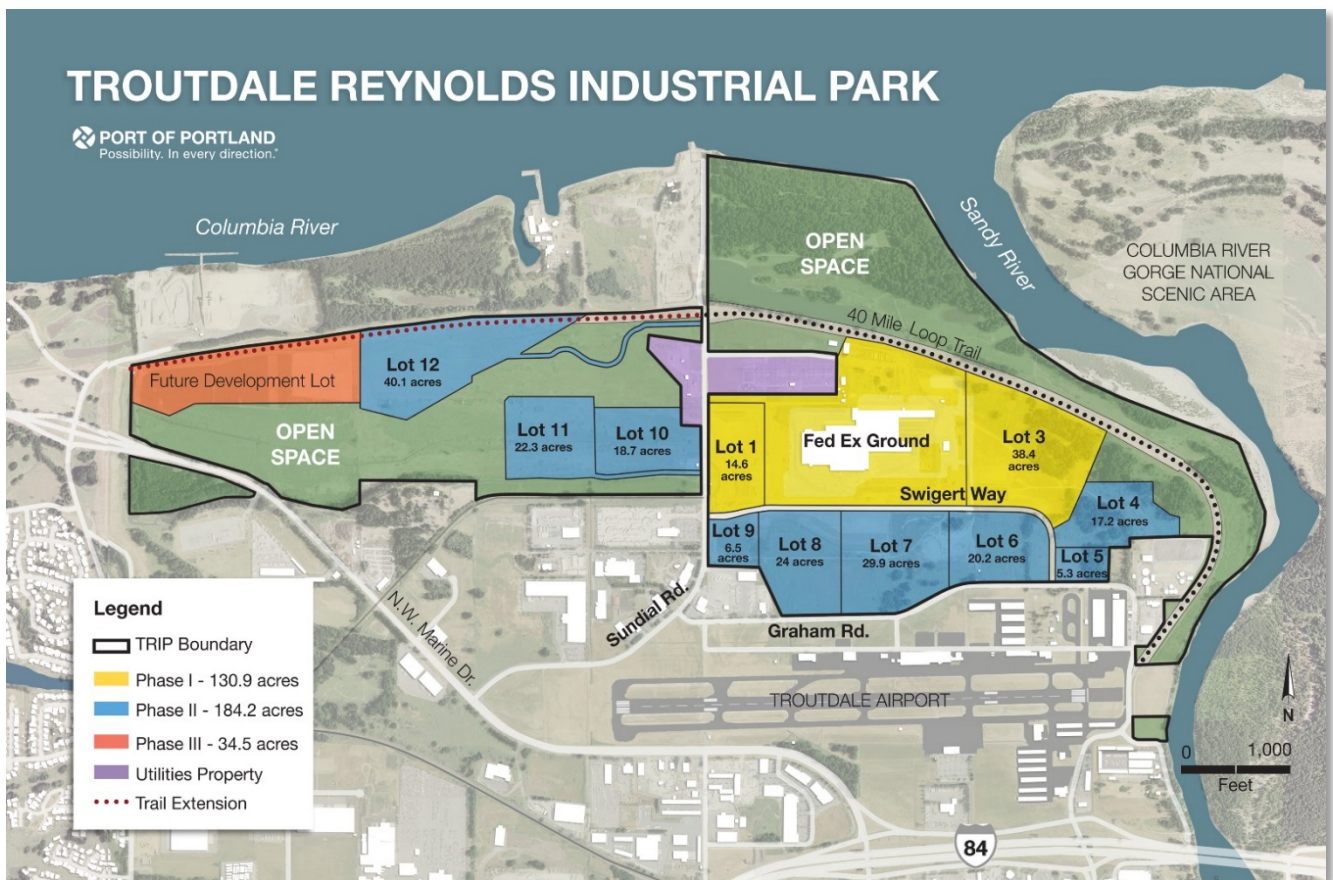


Figure 7. Troutdale Reynolds Industrial Park and its development phase boundaries. (Source: Port of Portland)

Beneficial Effects

Businesses and Jobs

Once fully built out, the Port estimates that TRIP will generate 3,500 new jobs supported by over 10 businesses, not including potential sub-leases. FedEx Ground began operating within TRIP in 2010 and is discussed more below.

FedEx Ground

FedEx Ground is a regional hub for the ground distribution of packages. Had TRIP's acreage not been available, the company might have relocated its existing facility on Swan Island in north Portland elsewhere, and potentially out of state.² The approximately 497,000 square-foot facility supports about 1,100 FedEx and vendor employees, generating about \$47.5 million in estimated annual employment income.³ Over \$200 million has been invested into the FedEx property so far. FedEx Ground has plans to expand its operations onto another nearby lot within TRIP.

Property Value and Tax Revenue

On-site properties help generate property tax revenues that support local government and public services. During the 2014-2015 fiscal year, on-site properties generated over \$1.2 million in local property taxes. The on-site parcels had a combined total estimated property value of over \$145 million. Local governments in Oregon benefit considerably from property tax revenues; there is no local sales tax in the state. In addition, FedEx Ground pays local taxes on business machinery and equipment.⁴



Figure 8. FedEx Ground facility on site.

Addressing Concerns about Environmental Liability

To address concerns regarding environmental liability from acquiring and later selling or leasing the site property, the Port undertook extensive due diligence to qualify for the innocent purchaser defense under the Superfund law. The Port also obtained a state prospective purchaser agreement to provide liability protection for future purchasers and tenants. In addition, the Port requires additional contaminated media management and worker safety procedures during construction. The Port also works with purchasers and tenants to make sure they follow required institutional controls.

² A FedEx operation remains on Swan Island but at a smaller-scale serving a more local market.

³ Doug Daoust. "Partnerships Make Industrial Park Work." *Local Focus: The Magazine of the Oregon League of Cities*. July 2015. <http://www.orcities.org/Portals/17/Publications/localfocus/July2015web.pdf>.

⁴ Ibid.

Ongoing Investment in TRIP and the Surrounding Area

As of 2015, state, regional and local governments have invested a total of \$27 million in TRIP and the nearby Interstate-84 Troutdale Interchange. The Port of Portland has invested \$37 million in TRIP. The Port plans to make a total investment of \$57 million over a 16-year period to firmly establish the industrial hub.⁵ Other project partners such as the Oregon Department of Transportation are also investing in the area, improving local roadways as well as funding the nearby interchange project. The improvements to local roadways and the highway interchange will help reduce congestion and improve safety.



Figure 9. Ongoing Port efforts to prepare other parts of TRIP for redevelopment, August 2015.
(Source: Port of Portland)

Recreational and Environmental Improvements

Site cleanup has resulted in a healthier environment for people and wildlife. In addition, the Port and other stakeholders incorporated important natural and recreational features into TRIP. To protect natural resources, TRIP includes a buffer zone between developable TRIP land and the adjacent Columbia and Sandy Rivers. The development also preserves natural and scenic areas along the Columbia and Sandy rivers, providing a community amenity and wildlife habitat. In addition, the Port of Portland extended 3.5 miles of walking trails across the site. They connect to an extensive regional trail system known as the 40-Mile Loop.



Figure 10. Natural areas and trails along the edge of TRIP.

Future Uses and Long-Term Beneficial Effects

The Port, the City of Troutdale and other stakeholders are actively working to expand the tenant base within TRIP. A \$680 million gas-powered electrical generating plant, known as the Troutdale Energy Center, is under consideration. If built, the project would support an estimated 26 permanent, high-paying jobs.⁶ Once fully built out, the Port estimates that TRIP will generate 3,500 new jobs, \$141 million in annual income and \$46 million in annual state and local taxes.⁷

⁵ Ibid.

⁶ Ibid.

⁷ Port of Portland. Press release. "Port moves forward on second phase of development at Troutdale Reynolds Industrial Park." http://www.portofportland.com/Notices/Prop_TRIP_Dvlpmnt_01_BLT.htm.

Conclusion

Through stakeholder negotiations, collaboration and innovative planning, EPA, Oregon DEQ, the Port of Portland, the City of Troutdale and other stakeholders have succeeded in transforming a once heavily contaminated aluminum smelter into a remarkable industrial park that sustains economic growth while also enhancing local natural resources. The redevelopment of part of the site into a regional shipping hub suggests that the area will continue to serve as a priority location for businesses seeking to develop new facilities or expand their operations in the future.



Figure 11. Views of the Fed-Ex Ground facility, part of the industrial park currently being developed and an area of the industrial park currently available for redevelopment.

*For more information about EPA's Superfund Redevelopment Initiative (SRI), visit:
<http://www.epa.gov/superfund-redevelopment-initiative>.*



www.epa.gov

Reuse and the Benefit to Community Reynolds Metals Company Site

Technical Appendix

Employment Information for On-site Jobs

Information on the number of employees and sales volume for on-site businesses came from the Hoovers/Dun & Bradstreet ([D&B](#)) database. EPA also gathered information on businesses and corporations from D&B. D&B maintains a database of over 225 million active and inactive businesses worldwide. Database data include public records, financials, private company insights, extensive global information, telephone numbers and physical addresses. The Data Universal Numbering System (DUNS) number is a unique nine-digit identification number assigned by D&B to each business and its location within the database for identifying each business. The Hoovers/D&B database includes data reported by businesses. In some instances, business and employment information came from local officials. While sales values typically exceed estimated totals of annual income, sales can sometimes be lower than income. This could be attributed to a number of business conditions and/or data reporting. Data included in this Technical Appendix are obtained directly from reputable sources, and reported as presented by those sources.

Wage and Income Information for On-site Jobs

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. Its mission is to collect, analyze and disseminate essential economic information to support public and private decision-making. All BLS data meets 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 businesses at the Reynolds Metals Company Superfund site. Average weekly wage data were identified by matching the North American Industry Classification System (NAICS) codes corresponding with each type of business with weekly wage data for corresponding businesses in Multnomah County. 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 determine the annual wages (mean annual) earned from jobs generated by each of the selected businesses at the Reynolds Metals Company Superfund site, 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.

Table 1. Reynolds Metals Company Superfund Site: Information for On-Site Organizations and Businesses

On-site Business	NAICS Code ^a	NAICS Title	Number of Employees ^b	Average Weekly Wage (2014) ^c	Annual Wage (Mean Annual) per Employee	Total Annual Wages ^d	Annual Sales (2014) ^e
FedEx Ground Portland	484121	General Freight Trucking, Long-Distance, Truckload	1,100	\$831	\$43,212	\$47,533,200	\$690,000 ^f
Total			1,100			\$47,533,200	\$690,000

^a NAICS code provided in the D&B database.

^b Number of employees for FedEx obtained from communications with Oregon DEQ and FedEx, May 2015.

^c Average weekly wage per employee based on BLS 2014 Average Weekly Wage data.

^d Total annual wage figures derived by multiplying “Number of Employees” by “Annual Wage (Mean Annual) per Employee.”

^e Annual sales obtained from the D&B database.

^f While sales values typically exceed estimated totals of annual employee wages, annual reported sales can sometimes be lower than estimated annual wages. This atypical condition of estimated wages exceeding sales can be a result of business conditions, estimated business wages not accurately reflecting actual wages for the site-specific business, annual sales being under-reported, a business loss for the year, or a combination of those factors. Fed Ex Ground is a distribution center tied into the Fed Ex network and may not routinely generate a high volume of sales.

Property Values and Local Tax Revenue Generated from Property Taxes

EPA obtained data on the most recently assessed values for property parcels at the Reynolds Metals Company Superfund site in July 2015 through property records accessible through Multnomah County’s online property appraisal database (<http://multcoproptax.org/search.asp>). EPA also obtained 2014 property tax information for the site parcels from this database.

Table 2. Property Value and Tax Summary for Taxes Payable in 2014

Parcel ID No.	Total Market Value of Land and Improvements (2014)	Total Property Tax (2014)
R320364	\$1,528,640 ^a	\$12,929
R320394	\$2,163,180	\$1,517
R320401	\$1,625,710	\$8,913
R320456	\$602,190	\$350
R556873	\$1,800,330	\$9,854
R642917	\$284,000	\$0
R642920	\$558,490	\$1,387
R642923	\$3,563,480	\$2,048
R642924	\$103,797,050	\$1,172,136
R642925	\$4,370,030	\$2,710
R642927	\$332,400	\$396
R642929	\$2,587,950	\$2,684
R652190	\$13,244,960	\$10,852
R652192	\$7,333,130	5,904
R320389	\$740,800	\$4,080
R642919	\$0 ^b	\$0
R642918	\$435,050	\$1,225
R642926	\$386,150	\$1,181
R642922	\$0	\$0
	\$145,353,540	\$1,238,166

Total market values and total property taxes are for the 2014-2015 tax year (July 1, 2014 to June 30, 2015).

Property tax amounts do not reflect potential discounts available through Multnomah County.

^a This property was assigned a "Special Use" value in the amount of \$52,230 that is included in the total market value figure.

^b Multnomah County reports the total market value for this property as \$0 even though it reports land value as \$275,300.