

## Introduction

Once an aluminum smelter, the Reynolds Metals Company Superfund site in Troutdale, Oregon, is now home to a large industrial park as well as natural areas and cultural education and recreation resources. Following 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 (TRIP) now hosts a regional distribution hub for FedEx Ground and a fulfillment center for Amazon that provide jobs and employment income in the community. It also serves to attract additional businesses and future investment. When fully developed, local officials estimate that the facility will support nearly 3,500 jobs. Remediation efforts also protect the area’s natural habitat and rich cultural significance and are compatible with open space and recreation opportunities on site.

Superfund site restoration and reuse can revitalize local economies with jobs, new businesses, tax revenues and local spending. This case study explores the cleanup and reuse of the Reynolds Metals Company site, illustrating the beneficial effects of Superfund redevelopment.

## Beneficial Effects

Site businesses employ about 3,500 people, providing estimated annual employment income of over \$176 million and generating over \$840 million in annual sales revenue.

Site properties are currently valued at over \$238 million and generate over \$1.5 million in annual property tax revenue.

Site preserves 350 acres of open space, has access to a loop trail and includes interpretive signage commemorating the history and cultural significance of the Chinookan people of the area.

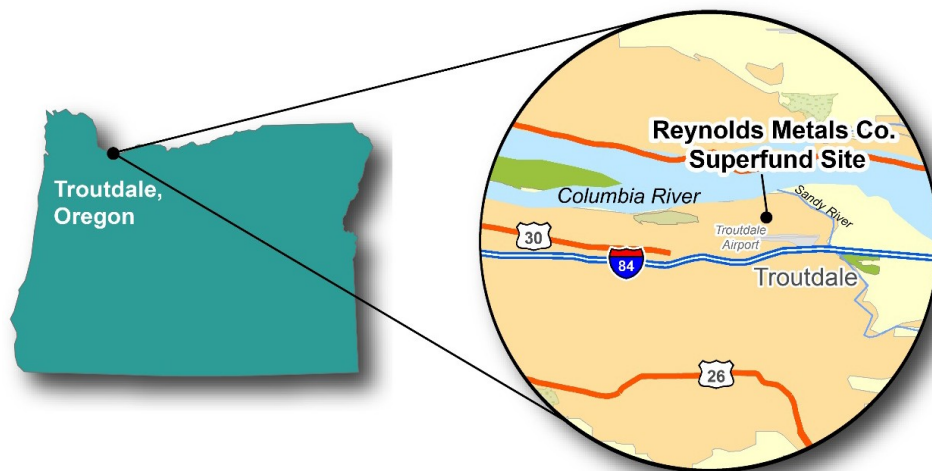


Figure 1. The site’s location in Troutdale, Multnomah County, Oregon.

## 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.

## Site Cleanup and Transformation

Reynolds Metals Company conducted an in-depth site investigation from 1996 to 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 shut the plant down permanently. Alcoa, EPA and Oregon DEQ began meeting to discuss site reuse options. The large size of the site complicated cleanup planning. However, its size – as well as its proximity to road, rail and waterway networks – also presented an opportunity to transform the area into a major 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 an 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. Portions of the landfill and Company Lake were capped to prevent direct contact. Alcoa completed these actions between 2003 and 2005. The company also built and began operating a groundwater extraction system in 2005. Groundwater extraction efforts are ongoing.

Alcoa demolished all plant buildings between 2003 and 2006, while 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. Alcoa voluntarily conducted



Figure 2. Educational environmental signage at the site.

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.

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 remedy. It also required the compatibility of future site uses, including restrictions on groundwater use, with site cleanup. 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 redevelopment and ongoing cleanup helped position the site so that it could host industrial uses in the future.

### **Establishing Troutdale Reynolds Industrial Park (TRIP)**

The Port of Portland became interested in the site property in the mid-2000s.<sup>1</sup> 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 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 a regional recreation trail.

Between 2008 and 2010, the port implemented Phase I of its three-phase 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 633,000-square-foot regional distribution facility. As of 2019, all lots of Phase I have been sold



**Figure 3. View of Troutdale Reynolds Industrial Park.**



**Figure 4. Land for lease at TRIP.**

<sup>1</sup> 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 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>.

and all but three lots of Phase II have been sold. The port has begun development of Phase III, which includes a 35-acre lot.

Between 2017 and 2018, a 74-acre Amazon fulfillment center was built just south of the FedEx Ground hub, in Phase 2. The facility has nearly 2.4 million square feet of workspace on three floors and was developed by Tramwell Crow Company and its capital partner Clarion Partners. The center's development required nearly 2,500 auto and 275 trailer parking stalls. The project was recognized with

the Industrial Development of the Year Award at the Night of Excellence in Commercial Real Estate hosted by the Commercial Association of Brokers, the National Association for Industrial and Office Parks Portland Chapter, the Society of Industrial and Office Realtors, and the Portland Business Journal.<sup>2</sup> Since its opening, it has provided local and regional economic benefits to the city of Troutdale and the state of Oregon.



Figure 5. Development of a new lot underway at TRIP.

Throughout the process, the port and the city's partnerships with civic organizations and government agencies have helped secure the resources, support and expertise needed for TRIP's successful planning and development. 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. In the addition, the port, the city and other parties worked closely with U.S. Army Corps of Engineers, the National Marine Fisheries Service, and the U.S. Fish and Wildlife Service on decisions regarding open-space preservation.

As of 2019, most lots at TRIP have been sold; only three lots remain. Some of the sold lots will provide expansion space for existing facilities, while others will host new businesses. TRIP remains a major attraction for businesses and developers due to its large and seller-ready industrial lots, the skilled workforce of Multnomah County and the surrounding region, and its proximity to rail, road and waterway networks. The Reynolds Metals Company employed 1,000 workers at its peak; the industrial park currently employs about 3,500 people and is expected to provide more employment opportunities as remaining lots are developed.

## Beneficial Effects

Site businesses bolster the local economy and help generate local and state tax revenues. Once fully built out, the port estimates that TRIP will support more than 10 businesses, not including potential sub-leases. The site also provides recreational and cultural amenities. This section describes some of the beneficial effects of reuse at the site.

*"No matter how hard things are with your site, if you have great partnerships with the landowner and local, state and federal agencies, you really can work through any of the issues that arise and work to redevelop your site in a way that is beneficial."*

– Ray Young, City Manager, City of Troutdale

<sup>2</sup> "Amazon Troutdale and Tualatin Distribution Center win big at the CAB Night of Excellence Awards." *Sierra Construction Company Inc.* <http://www.sierraind.com/amazon-troutdale-and-tualatin-distribution-center-win-big-at-the-cab-night-of-excellence-awards>.

## Economic Benefits

### ***FedEx Ground***

This regional hub focuses on the ground distribution of packages. In addition to delivering packages, FedEx also seeks to improve communities through its FedEx Cares program. FedEx plans to positively impact 50 million people around the world by their 50<sup>th</sup> anniversary in 2023. The 633,000-square-foot facility at TRIP supports 2,000 FedEx and vendor employees. FedEx Ground, in collaboration with Alcoa and the Port of Portland, won the 2010 National Phoenix Brownfield Award for the development of this regional hub. The company has invested over \$200 million at the property to date.

### ***Amazon Fulfillment Center PDX9***

This facility fulfills Amazon orders across the Oregon-Washington region. In addition to supporting the economy, Amazon also gives back to the community through charitable programs such as AmazonSmile and working directly with other charities nationwide. Amazon also contributes to the local government through the Portland Enterprise Zone Program; Amazon receives a five-year tax abatement while paying a \$500,000-per-year community service fee to the city's general fund. The center's opening resulted in an influx of employees to TRIP; work shifts had to be staggered to accommodate increased parking needs. The fulfillment center provides about 1,500 jobs, depending on the season, and generates nearly \$538 million in estimated annual sales revenue.

## Recreational and Cultural Benefits

### ***Open Space, Wetland Mitigation and Chinookan Cultural Significance***

TRIP's Master Plan preserved 350 acres of open space on site. It also included a wetland mitigation project spanning the northeast area of the site, between the FedEx facility and the Sandy River. The wetlands are now well established; a turtle hatching recently occurred there. A 40-mile loop trail will soon run the length of the open space and industrial park, providing workers with recreation and exercise opportunities. The trail also includes interpretive signage commemorating the rich natural history and tribal cultural significance of the area for the Chinookan people. The Chinookan people included various groups of indigenous people from across the Pacific Northwest. The signage, located at the loop's trailhead, reflects extensive collaboration between TRIP, the city of Troutdale and the Chinookan people. The open space, trail loop and interpretive signage will help celebrate the area's ecological and cultural significance while also serving as a vibrant recreation resource.



Figure 6. The FedEx Ground facility.



Figure 7. The Amazon Fulfillment Center.



Figure 8. Recent turtle hatching at the wetland mitigation area. *Image used with permission of the Port of Portland.*

## Property Values and Tax Revenues

On-site properties help generate property tax revenues that support local government and public services. Today, site properties have a combined value of over \$238 million. In 2018, site properties generated over \$1.5 million in total property tax revenue.<sup>3</sup>

## Conclusion

Through stakeholder negotiations, extensive collaboration and innovative planning, EPA, Oregon DEQ, the Port of Portland, the city of Troutdale and other stakeholders such as Alcoa have enabled the site's ongoing cleanup and redevelopment. A heavily contaminated aluminum smelter has been replaced by a bustling, growing industrial park that also preserves and honors the area's rich natural and cultural significance and provides recreation opportunities. Looking forward, 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 and expand their operations in the future.

This once-contaminated area now supports businesses that provide jobs and services to the community while supporting ecological, recreational and cultural uses. Today, on-site businesses support local economic growth, providing about 3,500 jobs and over \$176 million in estimated annual employee income. In 2018, on-site businesses generated over \$840 million in sales revenue.



**Figure 9. A new bus stop at TRIP enhances commuter access in the area.**

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

*Any mention of trade names, manufacturers or products in this document and its appendices does not constitute an endorsement by the United States Government or the U.S. Environmental Protection Agency. EPA and its employees do not endorse any commercial products, services or entities.*

<sup>3</sup> The state of Oregon has no sales tax. There are no state or county sales taxes in Multnomah. For more information, see <https://www.avalara.com/taxrates/en/state-rates/oregon/cities/troutdale>.



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## Reuse and the Benefit to Community Beneficial Effects Economic Case Study for the Reynolds Metals Company Superfund Site



### Technical Appendix

#### Employment Information for On-Site Jobs

EPA obtained the data included in this appendix directly from reputable sources and reported the data as presented by those sources. Information on the number of employees and sales volume for on-site businesses came from the Hoovers/Dun & Bradstreet (D&B) database.<sup>1</sup> D&B maintains a database of 300 million businesses worldwide.

When Hoovers/D&B database research was unable to identify employment and sales volume for on-site businesses, EPA used the ReferenceUSA database.<sup>2</sup> These databases include data reported by businesses. Accordingly, some reported values might be underestimates or overestimates. In some instances, business and employment information came from discussions with business representatives.

#### 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. 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 businesses at the Reynolds Metals Company Superfund site. 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 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.

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<sup>1</sup> <http://www.dnb.com>.

<sup>2</sup> <http://resource.referenceusa.com>.

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

On-Site Business	NAICS Code <sup>a</sup>	NAICS Title	Number of Employees	Average Weekly Wage (2017) <sup>c</sup>	Annual Wage (Mean Annual) per Employee	Total Annual Employee Income <sup>d</sup>	Annual Sales (2018)
Amazon Fulfillment Center	493110	General Warehouse and Storage	1,500 <sup>b</sup>	\$932	\$48,464	\$72,696,000	\$537,867,079 <sup>e</sup>
FedEx Ground Portland	484121	General Freight Trucking, Long-Distance, Truckload	2,000 <sup>f</sup>	\$996	\$51,792	\$103,584,000	\$303,030,303 <sup>e</sup>
<b>Totals</b>			3,500			\$176,280,000	\$840,897,382

<sup>a</sup> NAICS code provided in the D&B database.

<sup>b</sup> Employee number provided by port of Portland representatives Joe Mollusky and Kenneth Anderton during a May 2019 interview.

<sup>c</sup> Average weekly wage per employee based on BLS 2017 Average Weekly Wage data.

<sup>d</sup> Total annual employee income figures derived by multiplying “Number of Employees” by “Annual Wage (Mean Annual) per Employee”.

<sup>e</sup> Annual sales value calculated using the “Sales Per Employee” method. In cases where information sources did not provide appropriate annual sales data, an estimated annual sales value was calculated using the “Sales Per Employee Method”. This method involves dividing the company-wide sales value by the number of employees that work at all branches of the business. That value equals an estimated business sales value per employee for the entire company. That value is then multiplied by the number of employees at the on-site business location to calculate an estimated annual sales value for the site-specific business location.

<sup>f</sup> Employee number provided by FedEx on 11/13/2019.



### 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 May 2019 through property records accessible through Multnomah County's online property appraisal database.<sup>3</sup> EPA also obtained 2018 property tax information for the site parcels.

**Table 2. Property Value and Tax Summary**

Parcel ID No.	Total Market Value of Land and Improvements (2018)	Total Property Tax (2018) <sup>a</sup>
R642917	\$283,990.00	\$0.00
R320364	\$2,906,570.00	\$51,112.98
R320394	\$2,098,200.00	\$6,435.08
R682351	\$7,274,980.00	\$26,796.49
R682354	\$1,944,220.00	\$8,353.96
R682355	\$5,268,790.00	\$22,533.78
R642918	\$453,260.00	\$5,000.07
R642919	\$275,280.00	\$0.00
R642920	\$541,730.00	\$6,369.89
R642922	\$0.00	\$0.00
R642923	\$3,456,740.00	\$44,427.10
R642924	\$111,585,600.00	\$1,124,104.79
R642925	\$4,238,960.00	\$11,490.15
R680564	\$0.00	\$0.00
R680568	\$5,447,730.00	\$52,789.14
R680569	\$43,283,850.00	\$74,127.85
R680570	\$29,638,670.00	\$50,626.49
R680571	\$1,186,790.00	\$3,900.51
R682347	\$511,740.00	\$2,063.36

<sup>3</sup> The Multnomah Co. Department of Assessment and Taxation: <https://multco.us/assessment-taxation>.

Parcel ID No.	Total Market Value of Land and Improvements (2018)	Total Property Tax (2018) <sup>a</sup>
R682348	\$1,234,010.00	\$4,545.55
R682349	\$2,876,740.00	\$10,607.70
R682352	\$2,593,020.00	\$28,745.61
R682353	\$1,337,070.00	\$4,924.95
R682356	\$342,290.00	\$1,260.59
R682350	\$1,117,890.00	\$4,117.63
R642926	\$158,190.00	\$4,735.11
R642927	\$332,370.00	\$1,533.26
R642929	\$2,512,700.00	\$11,384.30
R680565	\$205,950.00	\$8,167.78
R680566	\$3,828,780.00	\$10,209.97
R680567	\$1,251,030.00	\$3,118.98
R320456	\$584,100.00	\$1,180.22
<b>Totals</b>	<b>\$238,771,240.00</b>	<b>\$1,584,663</b>

<sup>a</sup> Parcels without property tax values are exempt from property tax.