

## Executive Summary

For decades, the Raymark facility in Stratford, Connecticut, was a source of local pride. The facility, a major employer, produced brakes and other friction parts widely used in automobiles, tanks and other vehicles. Asbestos was a major component of these parts. When the firm improperly disposed of wastes on site and offered this material free of charge for use as fill in Stratford, it caused extensive soil and groundwater contamination. While investigations and cleanup planning are ongoing across much of the site, EPA's Superfund program has cleaned up the former Raymark facility and returned it to productive use.

Collaboration among EPA, the U.S. Army Corps of Engineers, the Connecticut Department of Energy and Environmental Protection (CT DEEP), developers, and other stakeholders led to a remedy that is compatible with commercial uses while ensuring the protection of public health and the environment. Today, Stratford Crossing is a bustling shopping center that hosts Walmart, Home Depot and other businesses. This case study explores the area's cleanup and reuse, illustrating the opportunities and beneficial effects of Superfund redevelopment in action.



Figure 1. Entrance to the Stratford Crossing shopping center.

## Beneficial Effects

- Six commercial businesses are currently active at the site. They generate over \$101.1 million in annual sales.
- Site businesses employ nearly 430 people, providing annual employment income of nearly \$11.7 million to the local community.
- In 2015, site property parcels generated over \$1.3 million in tax revenues and had an estimated property value of over \$50 million.

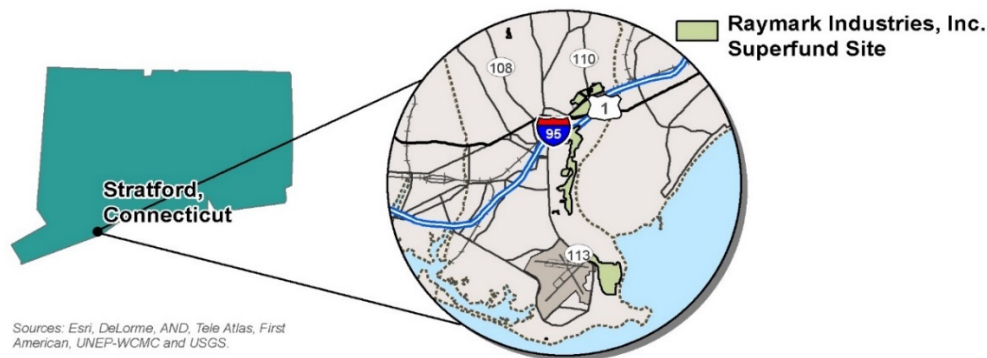


Figure 2. Site location in Stratford, Connecticut.

## Introduction

When Superfund site properties are remediated for reuse, they can revitalize local economies with jobs, new businesses, tax revenues and local spending. This case study documents the beneficial effects of new development on Operable Unit 1 (OU1), the former facility property, at the Raymark Industries, Inc., (Raymark) Superfund site in Stratford, Connecticut.

To manage the cleanup, EPA divided the area into nine operable units (OUs). Site OUs include the facility (OU1), groundwater (OU2) and areas across Stratford where facility wastes were used as fill (OUs 3 through 9). This case study focuses on the cleanup and redevelopment of OU1, the 33.4-acre former Raymark facility, which is located along Interstate 95 and East Main Street near the Housatonic River. Investigations and cleanup are ongoing at the other eight OUs.

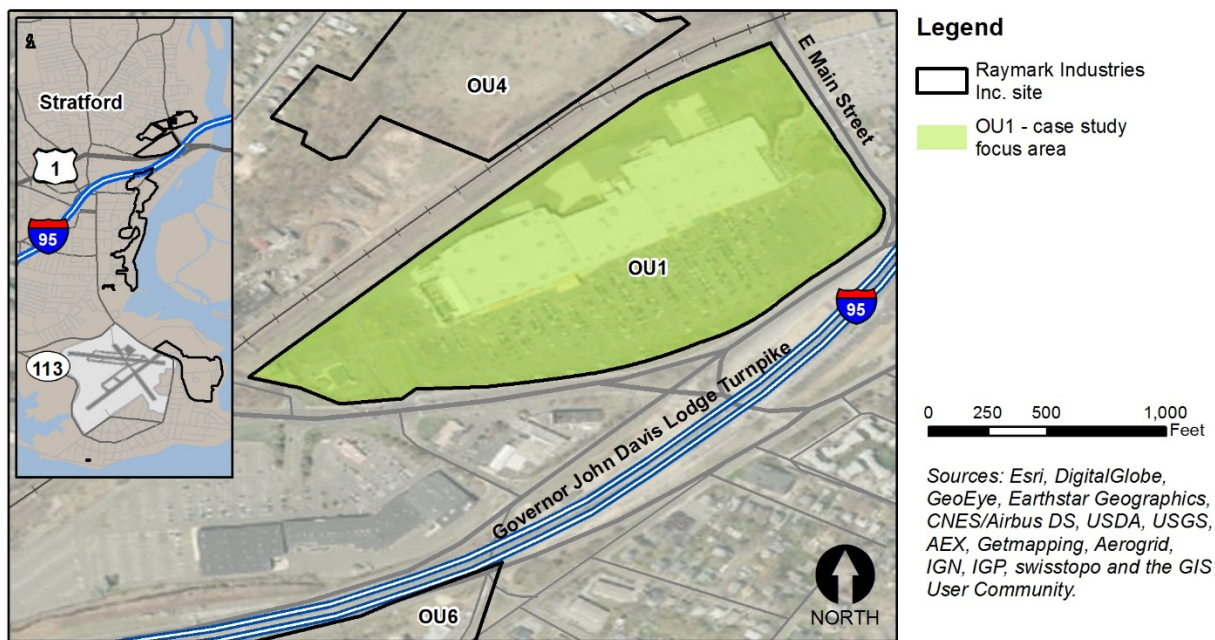


Figure 3. Aerial view of OU1.

## Site History

Raymark (formerly Raybestos) and its predecessors manufactured automotive brakes, clutch parts and other friction components at its Stratford facility from 1919 to 1989. In its prime, the firm was a major local employer and a “significant source of ... civic pride as the leading producer of friction brakes used on military tanks and bombers in World War I and World War II.”<sup>1</sup> In 1947, the firm sponsored the construction of Raybestos Memorial Field, located across the railroad tracks north of the facility. The field was home to the Raybestos Brakettes, a famous women’s softball team that traveled the world.<sup>2</sup>

Raymark disposed of its manufacturing wastes and wastewater in lagoons on the facility property. Initially, Raymark used the industrial waste to fill wetlands on the property to expand the factory. Over time, it also provided this fill material for use across Stratford, including in wetlands near the Housatonic River and on residential, commercial, recreational and municipal properties. The contaminated fill included asbestos, a fibrous mineral that is resistant to heat and fire, which was used in the manufacturing of brakes and other

products at this facility. Asbestos was an important component of parts made at the facility. If disturbed, asbestos fibers can be released into the air and inhaled into the lungs, where asbestos fibers will accumulate and lead to serious health problems. Asbestos is also a known carcinogen. Given the health concerns with asbestos exposure, EPA banned all new uses of the material in 1989.<sup>3</sup> Other contaminants of concern in Raymark's waste stream include polychlorinated biphenyls (PCBs), lead and copper, as well as volatile organic compounds (VOCs) in soils at the former facility. VOCs, semi-volatile organic compounds (SVOCs) and metals are contaminants of concern in the groundwater.

Raymark's materials handling and disposal practices pre-dated federal environmental regulations. Activities at the Raymark facility were regulated under EPA's Resource Conservation and Recovery Act, which governs the disposal of solid and hazardous waste and was passed in 1976. As early as 1978, the Town of Stratford and CT DEEP installed covers on several municipal properties to protect residents from exposure to the Raymark waste and fill materials. Geologic investigations and groundwater sampling began in the early 1980s. Between 1992 and 1995, EPA oversaw additional sampling of sediment, soil, buildings and surface water as well as cleanup efforts to cover the lagoons, remove hazardous material from and secure the Raymark facility, and minimize movement of contamination. EPA placed materials from approximately 45 residential cleanups on site as part of a removal action. EPA listed the site on the Superfund program's National Priorities List (NPL) in April 1995 and signed the Record of Decision (ROD) for the final OU1 remedy about two months later.

## **Site Cleanup and Transformation**

The cleanup selected in the 1995 OU1 ROD focused on controlling the source of contamination by containing contaminated soil, preventing leaching of contamination to groundwater and preventing surface erosion. Cleanup activities included decontamination and demolition of buildings, non-aqueous phase liquid removal, capping, and institutional controls. EPA contracted with the U.S. Army Corps of Engineers (USACE) for the cleanup and stabilization of OU1.

According to Mike Jasinski, the site's remedial project manager at the time, future use considerations informed the development of the former facility property's remedial design. The area was centrally located with nearby access to Interstate 95, attracting developers interested in commercial redevelopment opportunities. EPA coordinated closely with a developer, their engineer and USACE during the remedial design, which would allow the property to accommodate a large shopping mall.

Cleanup began with the decontamination and demolition of 15 acres of industrial buildings in September 1995. This effort finished in April 1996. Where possible, metal components were decontaminated and recycled. Most materials (e.g., bricks) were disposed of on site. Next, sub-grade improvements to the property to support building loads and other infrastructure began. These improvements included soil compaction or preloading, and installation of stormwater management systems, soil gas collection, non-aqueous phase liquid recovery and groundwater monitoring wells. The property was then backfilled and graded.

Construction of a permanent cap over the entire site began in October 1996. This multi-layered, impermeable cap prevents human contact with wastes and protects against precipitation leaching soil contamination into groundwater. The cap consists of layers of geo-synthetic clay liner, low-density polyethylene flexible membrane

liner, and geo-composite drainage. Its design and construction allowed for future utility installation as part of site redevelopment activities. To extend the life of a sewer line buried under the cap, EPA coordinated with the Town of Stratford to make sewer line improvements.

EPA completed construction at the former Raymark facility in 1997. In 1998, CT DEEP assumed responsibility for ongoing operation and maintenance activities, including monitoring of non-aqueous phase liquid recovery, air emissions from extracted soil gas, and groundwater. In addition, CT DEEP monitors the site's institutional controls, environmental land use restrictions recorded on the OU1 land records.

A consortium of companies including the Walmart Real Estate Trust and Home Depot acquired the property at a bankruptcy auction in January 2000. In 2002, Charter, LLC assumed ownership from the consortium. Construction of Walmart, Shaw's Supermarket and Home Depot facilities followed. Construction of an additional building, Webster Bank, finished in 2005. In 2010, Shaw's Supermarket closed. Facility renovations to prepare for a new tenant, ShopRite Supermarket and Pharmacy, included utility work. CT DEEP, in compliance with the environmental land use restrictions, oversaw this work.

## Local Benefits

Today, Stratford Crossing Shopping Center is a bustling commercial area that is home to several regional and national companies – Walmart, Home Depot, ShopRite, Subway and Webster Bank. Together, these businesses employ 429 people, contribute \$11.7 million in annual employment income and generate over \$101.1 million in annual sales.

### Home Depot

Located at the western end of Stratford Crossing, this store is one of two Home Depots in Stratford. In addition to home improvement supplies, the store offers workshops, installation services and truck rentals.<sup>4</sup> The Stratford Crossing location contributes \$3.1 million in estimated annual employment income and generates \$20 million in estimated annual sales.

### Walmart

Located at the east end of the shopping center, the Stratford Crossing Walmart contributes over \$3.1 million in estimated



Figure 4. Subsurface work prepared the site for future commercial use.



Figure 5. Views of the Home Depot and Walmart at the Stratford Crossing Shopping Center.



annual employment income and generates \$50 million in estimated annual sales.

### **Subway**

The Stratford Crossing Subway restaurant is located in the Walmart. It contributes over \$476,000 in estimated annual employment income and generates \$1 million in estimated annual sales.

### **ShopRite Supermarket**

Headquartered in Keasbey, New Jersey, ShopRite is a cooperative of 45 individually owned member supermarkets operating under the ShopRite banner.<sup>5</sup> The stores are located in New Jersey, New York, Connecticut, Pennsylvania, Delaware and Maryland. The Stratford Crossing location contributes \$4.2 million in estimated annual employment income and generates \$20 million in estimated annual sales.

### **ShopRite Pharmacy**

Located in the ShopRite Supermarket, the pharmacy contributes over \$85,000 in estimated annual employment income and generates over \$177,000 in estimated annual sales.

### **Webster Bank**

A regional bank in operation since 1935, Webster Bank has 176 branches located between New York City and Boston. The Stratford Crossing branch contributes over \$632,000 in estimated annual employment income and generates \$10 million in estimated annual sales.



Figure 6. Views of Subway and ShopRite.



Figure 9. Webster Bank is located on the northern edge of the site property.

## ***Property Values and Property Tax Revenues***

Properties cleaned up under the Superfund program and returned to use have a strong likelihood of increasing in value. Increased property values can boost property tax revenues, which help pay for local government operations, public schools, transit systems and other public services. The 2015 assessed value of properties at the Raymark site exceeds \$50 million, resulting in over \$1.3 million in local property taxes annually. 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.<sup>9</sup>

## Conclusion

In the mid-1990s, the community of Stratford was faced with the closure of a facility that was once a source of pride and a major local employer. Collaboration among EPA, USACE, CT DEEP, interested developers and other stakeholders resulted in a cleanup approach that protected public health and the environment while enabling the area's compatibility with commercial redevelopment. Today, the site is a bustling commercial center that generates tax revenues, supports jobs and provides employment income. The site's cleanup and redevelopment shows how Superfund site reuse can provide communities with valuable services and amenities.

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

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<sup>1</sup> <http://www.ctpost.com/local/article/Full-disclosure-Stratford-s-toxic-legacy-2242266.php>

<sup>2</sup> <http://www.nytimes.com/2000/02/06/nyregion/the-old-factory-may-be-gone-but-the-softball-team-remains.html>

<sup>3</sup> <http://www.cancer.gov/about-cancer/causes-prevention/risk/substances/asbestos/asbestos-fact-sheet>

<sup>4</sup> <http://www.homedepot.com/l/Stratford/CT/Stratford/06614/6225>

<sup>5</sup> <http://www.shoprite.com/about-us>

<sup>6</sup> The sales and use tax rate in Connecticut is 6.35 percent. Local jurisdictions in the state do not impose additional sales taxes. For more information, see the State of Connecticut Department of Revenue Services Taxpayer Answer Center at: [http://askdrs.ct.gov/Scripts/drsrightnow.cfg/php.exe/enduser/std\\_adp.php?p\\_faqid=398](http://askdrs.ct.gov/Scripts/drsrightnow.cfg/php.exe/enduser/std_adp.php?p_faqid=398).



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## Reuse and the Benefit to Community Raymark Industries, Inc. Superfund Site

### Technical Appendix

#### Employment Information for On-site Jobs

EPA obtained the data included in this Technical 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. 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.

When Hoovers/D&B database research could not identify employment and sales volume for on-site businesses, EPA used the [Manta](#) database. These databases include data reported by businesses. Accordingly, some reported values might be underestimates or overestimates. While sales values typically exceed estimated totals of annual income, sales can sometimes be lower than estimated income. This could be attributed to a number of business conditions and/or data reporting.

#### 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 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 Raymark Industries, Inc. 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 Fairfield 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 Raymark Industries, Inc. 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. Raymark Industries, Inc. Superfund Site: Information for On-Site Organizations and Businesses**

On-site Business	NAICS Code <sup>a</sup>	NAICS Title	Number of Employees <sup>b</sup>	Average Weekly Wage (2014) <sup>c</sup>	Annual Wage (Mean Annual) per Employee	Total Annual Income <sup>d</sup>	Annual Sales (2015) <sup>b</sup>
Home Depot USA, Inc.	444110	Home Centers	100	\$601	\$31,252	\$3,125,200	\$20,000,000 <sup>e</sup>
Shop-Rite Supermarkets, Inc.	445110	Supermarkets and Other Grocery (except Convenience) Stores	148	\$545	\$28,340	\$4,194,320	\$20,000,000 <sup>e</sup>
Stratford Markets, Inc (ShopRite Pharmacy)	445110	Supermarkets and Other Grocery (except Convenience) Stores	3	\$545	\$28,340	\$85,020	\$177,260
Subway	722511	Full-Service Restaurants	20 <sup>e</sup>	\$458	\$23,816	\$476,320	\$1,000,000 <sup>e</sup>
Wal-Mart Stores, Inc.	452112	Discount Department Stores	150	\$406	\$21,112	\$3,166,800	\$50,000,000 <sup>e</sup>
Webster Bank	522120	Savings Institutions	8	\$1,521	\$79,092	\$632,736	\$10,000,000 <sup>e</sup>
<b>Total</b>			<b>429</b>			<b>\$11,680,396</b>	<b>\$101,177,260</b>

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

<sup>b</sup> Data are from the D&B database, unless otherwise noted.

<sup>c</sup> Average weekly wage per employee based on BLS 2014 Average Weekly Wage data.

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

<sup>e</sup> Value provided by Manta.



### Property Values and Local Tax Revenue Generated from Property Taxes

EPA obtained data on the most recently appraised values for property parcels at the Raymark Industries, Inc., Superfund site in June 2016 through property records accessible through Fairfield County's online property appraisal database (<https://maps.gbrct.org/stratfordgis/viewer.html>). EPA also obtained 2015 property tax information for the site parcels.

**Table 2. Property Value and Tax Summary for Taxes Payable in 2015**

Parcel ID No.	Parcel Address	Total Appraised Value of Land and Improvements (2015)	Total Property Tax (2015)
5010030001-A	Barnum Avenue Cut-Off	\$153,000	\$3,961
5010030001	150 Barnum Avenue Cut-Off	\$18,260,300	\$472,686
5010030002	250 Barnum Avenue Cut-Off	\$14,374,500	\$372,098
5010030003	350 Barnum Avenue Cut-Off	\$17,723,000	\$458,778
<b>Total</b>		<b>\$50,510,800</b>	<b>\$1,307,523</b>