

Executive Summary

Jersey City, New Jersey, has long been a center for heavy industry. Some land uses have contributed to environmental challenges in the area. Between 1970 and the mid-1980s, for example, landfilling and illegal waste disposal at 87 acres along the Hackensack River contaminated soil and groundwater. Cooperation among the U.S. Environmental Protection Agency (EPA), the New Jersey Department of Environmental Protection (NJDEP), the City of Jersey City, potentially responsible parties (PRPs) and local businesses has led to a remarkable transformation of this area. Today, the PJP Landfill Superfund site is an economic hub and ecological asset rather than a contaminated landfill.

Today, four businesses operate at the site – a paper product manufacturing company, a distribution facility for an online grocery supplier, a trucking company and a gas station. The area also includes over 32 acres of green space along the Hackensack River; restored wetlands attract wildlife. This case study explores the area’s cleanup, reuse and continued use, illustrating the opportunities and beneficial effects of Superfund redevelopment in action.

Beneficial Effects

- Site businesses employ about 1,225 people, providing estimated annual employment income of nearly \$51 million.
- In 2015, site properties generated \$1,746,419 in tax revenues, and had a total estimated property value of \$24,289,600.
- Restored wetlands provide habitat for area wildlife.
- Walkways and benches provide a riverfront recreation amenity.

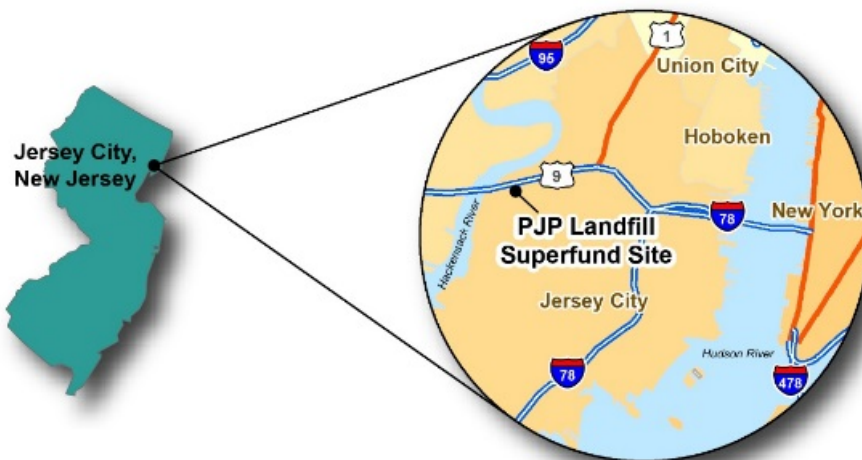
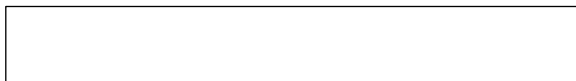


Figure 1. Location map for the PJP Landfill site near Jersey City in Hudson County, New Jersey.



Introduction

Site restoration and reuse can revitalize a local economy with jobs, new businesses, tax revenues and spending. Cleanup may also take place while there are active land uses on site. This case study captures the beneficial effects of the continued use and new development at the PJP Landfill site.

The 87-acre area is located along the Hackensack River in Jersey City in Hudson County, New Jersey. The Pulaski Skyway, an elevated highway, passes over the site. Truck Routes 1 and 9 border the site to the southeast. The Sip Avenue Ditch bisects the site; it directs surface water runoff into the Hackensack River (Figure 2). The site is located less than a mile from downtown Jersey City. Homes, public services, and commercial and industrial land uses are located nearby. The site is in active commercial and industrial use. According to the U.S. Census, an estimated 262,146 people lived in Jersey City in 2014.¹

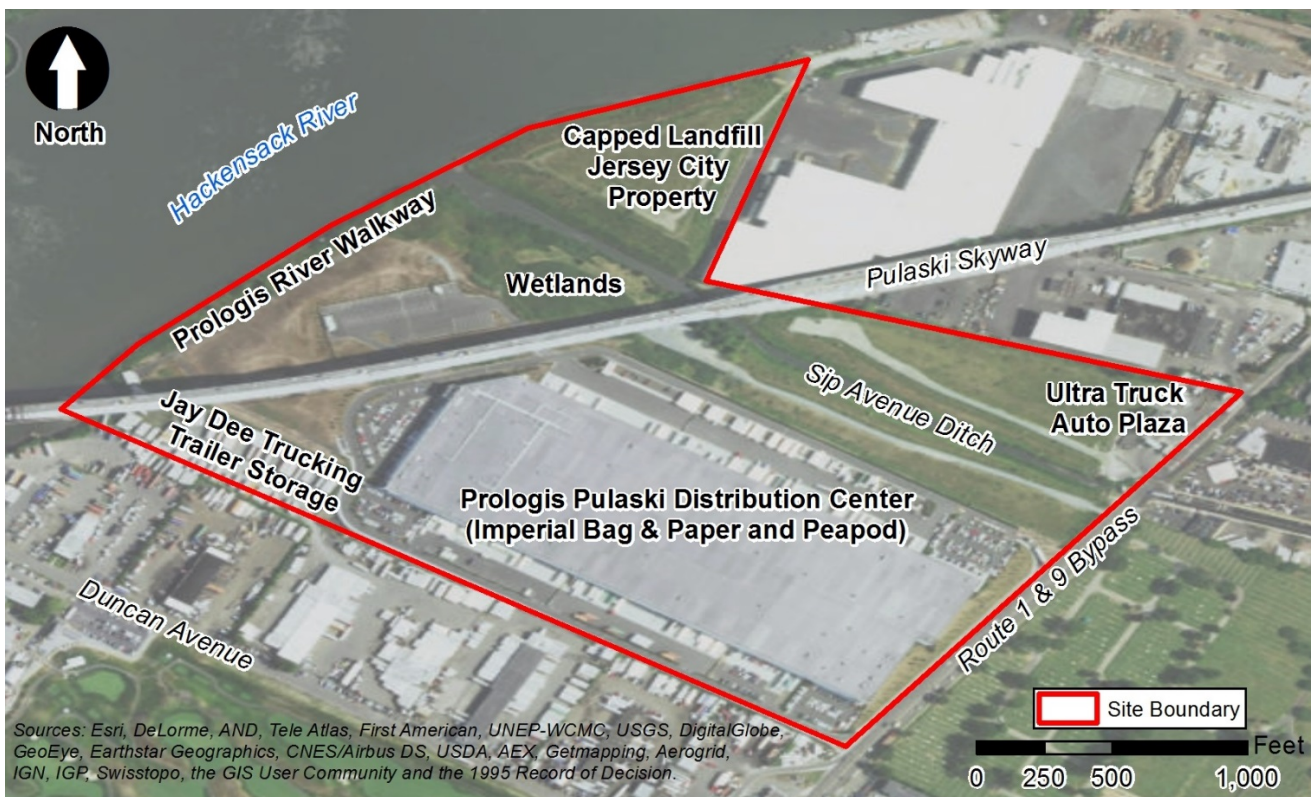


Figure 2. Map of site features and current land uses.

¹ http://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml#.

Site History

In 1932, the New Jersey Department of Transportation extended part of the Pulaski Skyway across the site. The PJP Landfill Company operated a commercial landfill on site from 1970 until 1974, accepting chemical and industrial wastes. Alleged illegal dumping continued until 1984.

In July 1973, the New Jersey Department of Transportation uncovered steel and plastic drums containing chemicals under the Pulaski Skyway. In 1977, NJDEP required that the PJP Landfill Company cover and grade the landfill and remove wastes in contact with the Hackensack River. The company failed to comply.

From 1970 to 1985, frequent subsurface fires – attributed to the combustion of underground drums and decomposition of landfill wastes – resulted in periodic closure of the Pulaski Skyway and widespread community concerns. During that time, NJDEP and the Hudson Regional Health Commission conducted inspections, sampled soil and monitored the air. Sampling confirmed that waste disposal practices had contaminated soil and groundwater with volatile organic compounds, semi-volatile organic compounds, petroleum hydrocarbons, pesticides and inorganic constituents. In 1982, EPA added the site to the Superfund program’s National Priorities List (NPL). NJDEP is the lead agency for this site.



Figure 3. Billowing smoke from a subsurface landfill fire before cleanup.



Figure 4. Waste tires and refuse at the site before cleanup.
Source: NJDEP

Site Cleanup

During 1985 and 1986, an interim remedial measure by NJDEP addressed immediate concerns. The Department extinguished landfill fires and capped a 45-acre area. NJDEP also installed a gas venting system and a firebreak trench for the capped area. Since the interim cap was put in place, there have been no fires. NJDEP excavated and re-compacted over a million cubic yards of contaminated materials. Cleanup also included the off-site disposal of contaminated soil, cylinders and drums.

In 1988, a NJDEP contractor completed the site’s remedial investigation and feasibility study (RI/FS). It looked at the extent of contamination and its potential impact on the Hackensack River. The RI/FS found contaminants in soil, sediment and surface water.

After additional sampling in 1993, drainage ditches were dug up and additional gas venting systems put in place. NJDEP held off on construction of the permanent landfill cap and other remaining parts of the cleanup plan after outside parties expressed interest in purchasing the site property and redeveloping the area. The involvement of property owners, responsible parties and developers working with EPA, NJDEP and local government took time. Clear communication and careful coordination among stakeholders resulted in the site's successful cleanup and reuse.



Figure 5. Compression, tire shredding and capping activities. Source: NJDEP

Enabling New Development, Enhancing Protectiveness

AMB Cleanup

The site's proximity to New York City and major transportation routes made it attractive to many businesses looking for development opportunities in the area. Remaining cleanup would result in the availability of a large piece of property in a prime location. AMB Property, L.P. and AMB Pulaski Distribution Center, LLC – together known as AMB – purchased 51.4 acres of site property owned by the Archdiocese of Newark. AMB planned to build a large warehouse on the property. Through an agreement with NJDEP, AMB assumed responsibility for the cleanup of this part of the site. AMB started the cleanup in 2008. Activities included the removal of about 6,500 tires, installation of groundwater monitoring wells and construction of a cap over the area.

Extensive planning and coordination between EPA, NJDEP and AMB integrated remedy and reuse considerations, enabling construction of the warehouse on top of part of the landfill. For example, EPA and NJDEP approved AMB's plan for vapor ventilation and monitoring systems as part of the foundation of the warehouse. Landfills can generate large amounts of gases such as methane over time as materials in the landfill break down. The vapor ventilation system prevents the exposure of workers to unsafe levels of landfill gases. The system collects landfill gases beneath the building and pumps them to an outdoor carbon filtration unit. The landfill gas monitoring system monitors landfill gas concentrations within the warehouse, making sure the concentrations do not reach unsafe levels.

The original cleanup plan called for three groundwater monitoring wells in front of the main entrance to the facility. NJDEP allowed the developer to modify the plan, allowing for installation of three flush-mounted wells instead. The updated

"It gives me tremendous satisfaction to see the transformation of an underutilized contaminated property into sustainable beneficial use, despite initial complications due to multi-party involvement. The PJP Landfill remediation was a true partnership between the public and private sectors involving several government agencies, religious organizations and private entities."

– Haiyesh Shah, NJDEP Project Manager

design enabled sampling while also allowing for unrestricted access to the front door of the warehouse. NJDEP also approved the use of flush-mounted wells throughout parking areas around the warehouse.

Waste Management of New Jersey and Jersey City Cleanup

The City of Jersey City acquired 32 acres of the site from a private owner in 2010; the locality’s goal was to create green space and a park under the Pulaski Skyway. At that time, Waste Management of New Jersey (WMNJ), one of the site’s PRPs, was still actively cleaning up the area. The cleanup included landfill capping. WMNJ agreed to complete all required cleanup following the locality’s acquisition of the property. Future land use was taken into consideration during the design of the remedy. Original plans for the cap called for grading the ground surface at a slope of 6 percent to minimize maintenance costs. Given that this slope would not support recreational uses, the City proposed a 2 percent slope instead. WMNJ and NJDEP signed off on the more gradual slope to help facilitate the area’s recreational reuse.

Cleanup of the Jersey City part of the site included restoration of wetland areas where water flows into and out of the site from the Hackensack River. WMNJ’s wetlands restoration activities included capping, slope stabilization and landscaping. The City of Jersey City now maintains these areas. In May 2012, WMNJ completed its part of the cleanup.



Figure 6. The Sip Avenue Ditch, before and after cleanup.
Source: NJDEP

Beneficial Effects

The selected remedy protects human health and the environment while enabling new development and supporting the continued operation of a long-time business. Site cleanup also supports recreational and ecological reuses. The section below highlights the beneficial effects of these new and continued site uses in greater detail.

Prologis Pulaski Distribution Center

In June 2011, AMB was acquired by Prologis. Prologis completed construction of the LEED-certified Pulaski Distribution Center in 2014. According to NJDEP, construction of the 878,000-square-foot warehouse created about 250 temporary construction jobs. Prologis leases the distribution center and warehouse to two tenants, Imperial Bag & Paper Co. and Peapod.

Imperial Bag & Paper Co.

Imperial Bag & Paper Co.'s company headquarters are located on site. The business distributes disposable bags and plastic food containers as well as janitorial supplies such as gloves, chemicals and plastic containers. It also offers eco-friendly product alternatives across their product lines. The size of the facility allows the company to keep 20,000 products in stock. The business provides nearly \$31 million in estimated annual employment income to the community. In 2015, the business generated over \$1.8 billion in estimated annual business sales revenues.

Peapod (Ahold E-Commerce Sales Company)

Peapod is an online grocery delivery service offering more than 12,000 products. Over 75 percent of the Jersey City Peapod workforce lives in Jersey City. Peapod's Jersey City location initially opened in June 2014. The primary reason why the company opened a location at the site was its close proximity to transportation infrastructure and major markets such as New York City. The business supports several green initiatives – including cell phone and plastic bag recycling, and electronic invoicing – to reduce waste. The business provides nearly \$20 million in estimated annual employment income to the community.

Jay Dee Trucking

Jay Dee Trucking uses a 3-acre area on the western side of the site for truck trailer parking and storage (Figure 2). The company worked with NJDEP to make its asphalt parking area part of the site's cap. Jay Dee Trucking is responsible for maintaining and monitoring the area under a remedial action permit from NJDEP.

Ultra Truck Auto Plaza

Command Services, Inc. operates the Ultra Truck Auto Plaza on the far eastern part of the site (Figure 2). The business has been located on site for years. It includes a gas station and provides areas for truck parking and maintenance. It provides about \$131,000 in estimated annual employment income to the community.

Ecological and Recreational Reuse

Prologis and the City of Jersey City manage all other parts of the site for recreation and green space. Prologis and the City of Jersey City developed a waterfront greenway along the Hackensack River. Prologis also developed a waterfront walkway, which provides a recreational amenity for on-site employees. People can enjoy



Figure 7. Entrance to the Imperial Bag & Paper facility.



Figure 8. Peapod delivery trucks parked on site.



Figure 9. Truck trailer storage at Jay Dee Trucking.



Figure 10. The Ultra Truck Auto Plaza.

riverfront views and watch wildlife. The site's wetlands cleanup has led to creation of habitat for a wide variety of wildlife, including deer and waterfowl.



Figure 11. Restored wetlands and wildlife along Sip Avenue Ditch.

Why Are Wetlands Economically Important?

Wetlands provide a wide variety of services – such as flood control and water quality improvement – in addition to supporting wildlife habitat and recreation areas. Replacing these services with manmade facilities would be expensive. Worldwide, wetlands are estimated to provide \$14.9 trillion in ecosystem services. To learn more, see EPA's *Economic Benefits of Wetlands* fact sheet, available at <http://water.epa.gov/type/wetlands/outreach/upload/EconomicBenefits.pdf>.


Property Value and Tax Revenue

Remediated properties and businesses also generate property tax revenues that benefit the City of Jersey City, Hudson County and the local school district. In 2015, site properties generated \$1,746,419 in tax revenues, with an estimated total property value of \$24,289,600. The site is also part of a New Jersey Urban Enterprise Zone (UEZ). The state developed the UEZ program to help revitalize urban communities and stimulate local economies by encouraging businesses to locate in UEZ-designated areas. Benefits for businesses include reduced retail sales taxes, tax-free purchases, energy sales tax exemptions, financial assistance, subsidized unemployment insurance costs and tax credit options. On-site businesses that produce retail sales and services also generate tax revenues through collection of sales taxes, which support state and local governments.²

Future Site Use

The City of Jersey City plans to develop green space under the Pulaski Skyway into Skyway Park, a recreation area and ecological asset. Park facilities could include soccer fields, tennis courts and other recreation facilities. Once EPA takes the site off the NPL, the area will qualify for funding from the Port Authority of New York and New

² The combined sales tax rate in Hudson County, New Jersey, is 7.0 percent. For more information, see the Sale-Tax.com website: <http://www.sale-tax.com/HudsonCountyNJ>. The reduced UEZ sales tax rate is 3.5 percent. For more information, see Jersey City Economic Development Corporation's website: <http://www.jcedc.org/Pages/uez.html>.



Jersey. The City plans to use those funds and other resources for the park's development. People living near the site have limited recreation options, so the park will address an urgent community need. They cannot currently access the waterfront, for example, because there is no way to cross Truck Route 9, a busy truck bypass. The City is tentatively planning to build a walkway over the truck route to connect nearby neighborhoods to the waterfront. Another potential future plan for the site includes construction of a walkway over the Sip Avenue Ditch.

Looking forward, EPA and NJDEP will continue to work with stakeholders to support protective reuses and continued uses, and ensure the long-term stewardship of the remedy.

Conclusion

For decades, subsurface fires at the PJP Landfill produced billowing smoke and caused widespread concern. Today, following extensive cleanup, economic and ecological revitalization have changed the landscape forever. This once-vacant landfill now hosts wetland habitat, green space and a riverfront walkway, with additional recreation plans on the horizon. Coordination and cooperation among site stakeholders has allowed long-time facilities to remain open for business and made possible the construction of the Prologis Pulaski Distribution Center. Today, new and long-time businesses on site support the local economy, providing about 1,225 jobs, nearly \$51 million in estimated annual employee income and over \$1.8 billion in estimated annual business sales revenues.



*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 PJP Landfill 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. Both 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 and local newspaper articles.

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 PJP Landfill 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 Hudson 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 PJP Landfill 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. PJP 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 Income ^d	Annual Sales (2015) ^b
Imperial Bag & Paper Co. LLC	423850	Service Establishment Equipment and Supplies, Merchant Wholesalers	470 ^e	\$1,262	\$65,624	\$30,843,280	\$1,880,000,000
Jay Dee Trucking	484110	General Freight Trucking, Local	NA	NA	NA	NA	NA
Peapod (Ahold E-Commerce Sales Company)	445110 ^f	Supermarkets and Other Grocery (except Convenience) Stores	750 ^g	\$511	\$26,572	\$19,929,000	Not available
Command Services Inc. (Ultra Truck Auto Plaza)	447190	Other Gasoline Stations	5	\$504	\$26,208	\$131,040	\$720,000
Total			1,225			\$50,903,320	\$1,880,720,000

^a NAICS code provided in the D&B database, unless otherwise specified.

^b Data are from the D&B database, unless otherwise specified.

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

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

^e Employee number provided by Imperial Bag & Paper Co. Human Resources Manager Alexandra Berkowitz during a 2/22/2016 phone interview.

^f NAICS code assumed.

^g Employee number provided by the Jersey City Peapod Human Resources Manager Danielle Howard during a 3/24/2016 phone interview.

NA – Jay Dee Trucking parks truck trailers are on a small area at the site. Its business offices are not located within site boundaries. Based on this information, the business is counted as a business operating on the site but economic information on jobs and sales is not included for this business; this report does not want to attribute economic totals for the entire business to small portion on the site.

Property Values and Local Tax Revenue Generated from Property Taxes

EPA obtained data for site property parcels' most recently assessed values in January 2016 through property records accessible through the New Jersey Association of County Tax Boards' online property appraisal database (http://tax1.co.monmouth.nj.us/cgi-bin/prc6.cgi?district=0906&ms_user=monm#). EPA also obtained 2015 property tax information for the site parcels.

Table 2. Property Value and Tax Summary

Parcel ID No.	Parcel Address	Total Market Value of Land and Improvements (2015)	Total Property Tax (2015)
0906-11701-5	HACKENSACK RIVER	\$200,000	Exempt
0906-11706-16	HACKENSACK RIVER	\$50,000	\$3,741
0906-11706-2	309 ROUTE 1	\$133,700	Exempt
0906-11702-4	325-353 ROUTE 1 & 9	\$423,800	Exempt
0906-11706-1	SIP AVE. AT SKYWAY	\$50,000	Exempt
0906-11702-5	SIP AVE.	\$76,200	Exempt
0906-11702-3	SIP AVE.	\$50,000	Exempt
0906-11707-3	255 ROUTE 1&9	\$23,291,600	\$1,742,678
0906-11707-2	HWY 1 & 9 & SIP AVE.	\$9,300	Exempt
0906-11707-1	HACKENSACK RIVER SIP	\$5,000	Exempt
		\$24,289,600	\$1,746,419