

Port Authority of New York and New Jersey Sets Plan to Reach “Zero Waste to Landfill”



Challenge

The Port Authority of New York and New Jersey (the Port Authority) engaged the New York State Pollution Prevention Institute (NYSP21) to evaluate waste management practices at sites across the agency to improve overall diversion.

Solution

NYSP21 partnered with Think Zero LLC to provide the Port Authority with a comprehensive report about waste management at 11 of its 43 facilities. The report included suggestions for long-term improvements based on industry best practices and an estimated total potential for diverting waste across all of the agency’s facilities. The Port Authority will use the report to set a formal zero-waste goal and develop a roadmap for achieving it (expected in 2025).

Results

NYSP21 worked with Think Zero to quantitatively assess the Port Authority’s waste composition and identified specific opportunities for increasing waste diversion for the agency as a whole and for each facility. After calculating a baseline waste diversion rate of 59 percent, the researchers laid out steps to increase that figure to 75 percent, while addressing the agency’s currently high contamination rate.

Port Authority of New York and New Jersey

The Port Authority is responsible for managing transportation infrastructure that spans air, land, rail, and sea. The agency owns a total of five airports, two tunnels, four bridges, three bus terminals, 13 PATH train stations, five container ports, and the World Trade Center campus in lower Manhattan. Increasing the agency’s focus on sustainability and environmental protection is one of six priorities the Port Authority has embraced to fulfill its mission.¹

“It was a pleasure to work with NYSP21 and Think Zero to examine the current state of Port Authority’s waste management and to identify strategies to move us towards a path to zero-waste. We now have real data showing us what actually exists in our waste streams, how well we’re currently diverting, and what best practices we can implement to optimize our waste diversion. It won’t necessarily be easy to implement these new strategies but we are building from a great foundation now thanks to the team.”

Alexandria Cassidy, Port Authority of New York and New Jersey

Challenge

In October 2021, the Port Authority announced a list of sustainability initiatives known as the Clean Dozen 2.0.² The list builds on a set of climate-focused projects launched by the agency in 2018 in alignment with the Paris Climate Agreement and includes an initiative to establish an agency-wide zero-waste target. The Clean Dozen 2.0 initiative supports the agency's broader goal of halving its direct emissions by 2030 and achieving net-zero emissions by 2050. The Port Authority requested assistance from NYSP2I to develop a report on the agency's baseline waste composition and waste-management practices in order to identify improvement opportunities.

The report was commissioned to provide recommendations and observations that would inform the Port Authority's efforts to set a waste diversion goal and a zero-waste roadmap for achieving it. The Port Authority is a large agency serving hundreds of millions of passengers annually. The Port Authority's facilities include public-facing sites, such as transportation hubs, infrastructure, parks, and concession spaces, as well as offices, maintenance facilities, and spaces operated by the agency or by tenants. The combined size of all the facilities; the large number of employees, tenants, and passengers; and the diversity of activities across the Port Authority portfolio made creating a baseline of the agency's operations in order to recommend actions a challenging endeavor.

Solutions

NYSP2I worked with Think Zero to take several actions to develop a zero-waste-to-landfill implementation strategy for the Port Authority. These actions included the following:

- documentation of the agency's organizational business structure related to waste management
- identification of a performance baseline for the agency's current waste-diversion rate based on a representative sample of 11 facilities across transportation departments via
 - analysis of 12 months of hauler-supplied data,
 - on-site tours, assessments and staff interviews, and
 - hands-on waste-characterization audits.
- benchmarking of peer best practices, commitments, and diversion performance
- assessment of available waste-verification and certification standards
- creation of a priority list of actions for a zero-waste roadmap tailored to each facility type
- recommendations for potential maximum achievable diversion rates under various performance and waste service-level circumstances

Results³

NYSP2I delivered a detailed waste-reduction and -diversion plan designed to advance the Port Authority's efforts to establish an agency-wide waste-diversion rate goal and action-oriented roadmap. Specific findings within the plan include the following:

- Based on data from the waste audits conducted during this project, 63.4 percent of the Port Authority's waste consists of recyclable material and 11.7 percent is compostable. However, the contamination rate was 77 percent, making diversion of these streams more difficult.^{4,5,6} This is especially true in areas where the general public disposes of items. A high-priority action recommendation from NYSP2I is to improve public-facing bins and signage to improve sorting accuracy among the general public and to create source-separation training programs for tenants, businesses, and staff that use the Port Authority's facilities.
- Additional diversion opportunities could be realized through sustainable procurement practices and advanced recycling methods that are not typically provided by curbside recycling programs.
- Considering the agency as a whole, capturing all food waste and compostable packaging for composting would increase the agency-wide diversion rate by 11.7 percent and diverting all liquids would increase it by 4 percent. Together, this could realize a total increase of 15.7 percent in overall diversion from just these three waste streams. In other words, the diversion rate for the Port Authority would increase from its current rate of 59 percent to almost 75 percent.

Waste Stream	Potential Diversion Rate Increase (%)	Primary Obstacle(s)	Solution(s)
Organics	9.6%	Waste segregation; cost of service	<ul style="list-style-type: none"> • Pilot composting program • Signage • Outreach
Liquids	4.0%	Lack of awareness; lack of plumbing infrastructure	<ul style="list-style-type: none"> • Implement additional liquid catchment systems • Signage • Outreach
Compostables	2.1%	Waste segregation	<ul style="list-style-type: none"> • Pilot composting program • Signage • Outreach • Improve material purchasing policies
Recycling	59.0%	Contamination	<ul style="list-style-type: none"> • Training • Signage • Outreach
New total potential diversion rate for all waste streams:			
75%			

The Port Authority has already begun implementing several opportunities identified by NYSP2I and Think Zero during the project:

- An agency-wide zero-waste working group with representatives from each transportation department has been established.
- Clear, visible, and consistent waste-bin and recycling signage has been created.
- Efforts to ensure recycling at all facilities have been increased.
- A waste-tonnage data-collection and -tracking system is being established.
- Sustainable procurement practices are being implemented.
- Waste-hauler guidelines and requirements are in development.
- Composting and anaerobic digestion programs are being piloted.
- Diversion-rate goals across the agency and facilities are being put in place.

¹ "Our Priorities and Standards." <https://www.panynj.gov/port-authority/en/about.html>

² <https://www.panynj.gov/port-authority/en/press-room/press-release-archives/2021-press-releases/ahead-of-united-nations-climate-conference-port-authority-embraces-biden-administrations-new-goals.html>

³ Results reflect data from nine of 11 sites controlled by PANYNJ.

⁴ Waste is considered contaminated when a given waste stream, bottles and cans, contains other materials such as food, liquids, general trash, or even other recyclable materials (e.g., plastic in a cardboard bin). For materials to be recycled successfully contamination must be as limited as possible. Waste haulers typically limit contamination to approximately 10%.

⁵ <https://resource-recycling.com/recycling/2018/12/11/contamination-fines-gain-steam-around-u-s/>

⁶ https://sustainability.wm.com/downloads/WM_2022_SR.pdf

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