

Plastics and Sustainability Report 2025



Purpose



Fig. 1 | Park patron recycling a single use water bottle in one of the park recycling bins.

Hudson River Park ("the Park") has converted Manhattan's west side waterfront from concrete barrier into green space capable of absorbing rainwater and runoff. Between the refurbished piers lies the Park's 400-acre Estuarine Sanctuary — a vibrant ecosystem that supports a rich abundance of Hudson River wildlife. The stewardship of both the estuary and inland green spaces guides the Park's sustainable operations decisions.

Two Park-wide initiatives address sustainability: plastics reduction and composting. The **Park Over Plastic (POP)** initiative reduces single-use plastics while educating the community about plastic pollution, and the **Community Composting Program** invites the public to divert organic waste from landfills through accessible drop-off sites throughout the Park.

volunteer cleanup efforts and conducts yearly waste audits of Park sites and tenants to evaluate waste management effectiveness. The Park then shares annual metrics on compost food scraps and community engagement in sustainability programming.

The Park additionally quantifies aquatic waste recovered through

Background

Plastic Solutions at Hudson River Park

Volunteer Engagement & Stewardship: Shoreline Cleanups

Since 2015, Hudson River Park has collected, analyzed, and removed large macro-debris (1 inch or larger) from riprap shorelines at Gansevoort Peninsula and Pier 76 using the National Oceanographic and Atmospheric Administration

(NOAA)'s marine debris protocol. The Park hosts shoreline cleanup events with corporate and community volunteers to remove and categorize trash that washes up along the Gansevoort Peninsula shoreline known as **Blue Team events (Fig. 2)**. Presently, the Park has collected and disposed of over 2,700 lbs. of marine debris. The recorded data from these events are submitted to the **International Trash Trap Network (ITTN)** database and shared with other stakeholders to improve the collective understanding of the effects of plastic pollution on local waterways.

Emerging Technology: The WasteShark

A common challenge during cleanups is retrieving debris that accumulates beyond safe reach of the shoreline. In 2023, the Park acquired a **RanMarine WasteShark**, fondly known as “Gulp”, (**Fig. 3**) to help tackle this issue. Inspired by the whale shark, the **WasteShark** is a zero-emission, remotely operated surface water vehicle that collects macroplastics and debris from water bodies. The WasteShark expands the impact of community shoreline cleanups by accessing hard-to-reach areas and removing plastic debris before they further degrade into microplastics (Schmaltz et al., 2020).

The WasteShark also serves as an educational tool, as it generates public interest of passersby during cleanup events. By providing an opportunity for organic engagement with Park staff, the WasteShark helps encourage Park visitors to make better informed decisions about their waste and recycling habits – both in the Park and at home.



Fig. 2 | Blue Team volunteers recovering waste washed up along the south Gansevoort Peninsula shoreline.



Fig. 3 | The HRPT WasteShark "Gulp" is deployed in the river during a Shoreline Cleanup.

Sustainable Policies: Park Over Plastic

In 2019 the Park launched the **Park Over Plastic (POP)** initiative, which aims to reduce single-use plastics and educate the community about plastic pollution. This sustainability program uses a phased approach to build community engagement and reduce plastic waste across all the Park facilities, programs, and tenant spaces.

To encourage proper recycling throughout its grounds, the Park increased the number of waste bins and strategically paired trash and recycling bins with clear signage and continues to engage in conversations with tenants to minimize waste. Waste contamination in each type of bin is audited throughout different sites to collect metrics on waste management methods.

Community Composting Program

In addition to recycling plastic waste, the Park composts food scraps and horticulture waste to divert organic materials from landfills while creating healthy soil for reuse. The Park's **Community Compost Program** welcomes food scraps from local residents at 10 drop-off locations throughout the Park, which are then processed at the Community Compost Center and distributed to plant beds, protecting them from disease, pests and erosion. NYC produces approximately 44 million pounds of garbage daily, much of which is transported by from waterfront neighborhoods using fossil fuel-powered trucks and barges to other landfills. Burning these fossil fuels releases carbon dioxide that traps excess heat in the atmosphere, warming oceans, melting polar ice sheets, and raising sea levels—making coastal communities like NYC particularly vulnerable to flooding, storm surge and intense storms.



Fig. 4 | A Park tenant displays their commitment to reducing single-use plastics through the POP initiative.



Fig. 5 | The regenerative cycle of community-based composting programs turning food scraps into new food. (By: River Project Team)

To address this environmental issue, the Park launched its compost initiative in 2015 to reduce reliance on fossil fuels and lower carbon emissions. The program has expanded greatly, with the Park and community diverting nearly 660,000 pounds of organic waste from landfills to date.

Project Goals

- Operate and maintain 10 community compost drop-off sites and processing materials into compost that nourishes Park plant beds, diverting organic waste from landfills
- Enhance waste management capacity by overseeing over 100 landfill and recycling bins
- Foster environmental stewardship through community engagement and education programs, volunteer opportunities, and tenant partnerships that reduce waste generation throughout areas of tourism, recreation and commerce
- Protect shoreline health by removing debris and maintaining clean waterfront areas



Fig. 6 | Volunteers at Gansevoort Peninsula at the start of the Shoreline Cleanup program, prior to pier redesign, circa 2016.

Methods

Shoreline Cleanup

- Volunteers are split into teams equipped with trash and recycling bags, data sheets, and PPE
- Volunteers are instructed how to identify recyclable and non-recyclable debris
- Ten-meter transects are plotted along the south shoreline of Gansevoort Peninsula for each team
- Teams gather, identify, enumerate, and record plastics and other debris with assistance from Park staff
- Resin Identification Codes (RICs), unique plastic alternatives, and common brands are noted when possible
- Total recyclable and landfill debris are weighed



Fig. 7 | Volunteers recover debris during shoreline cleanups.

WasteShark

- Park staff wearing waders and PFDs deploy the WasteShark via the kayak launch on the southwestern corner of the Peninsula during Shoreline Cleanups
- The WasteShark is driven back and forth within the inter-pier area to collect floatable debris from the water
- After ~20 minutes of deployment, the WasteShark is retrieved, and its catchment cage is emptied onto a tarp before being turned off or re-deployed
- Debris is identified, enumerated, weighed, and recorded using the same schema as shoreline debris for comparability



Fig. 8 | Park staff work together to deploy Gulp into the Hudson off the inlet at Gansevoort Peninsula.

Waste Audit

Over two days during peak summer activity, one recycling and one landfill bag are collected from each of 13 pre-determined sample sites in the Park and analyzed as follows:

- Full bags are weighed in total
- All non-organic material is removed and categorized by type (e.g., plastic utensils, beverage bottles)
- Each category of debris is weighed and recorded
- Contaminants in each bag are documented (recyclables in landfill bags and non-recyclables in recycling bags), along with any unique plastic alternatives or common brands
- Liquid is collected in a bucket, weighed, and recorded at the completion of each bag



Fig. 9 | Staff member is sorting waste contamination during a Waste Audit.

Community Composting

- Horticultural waste, primarily carbon-rich materials such as woody debris, grass clippings, fallen leaves, and desiccating plants, is collected by staff during daily Park landscape maintenance
- Community members bring food scraps, primarily nitrogen-rich materials, to 10 drop-off locations
- All organic waste is transported to the Park's Compost Center on 33rd Street, where it is weighed and processed in the EcoRich Rapido 2000 industrial composter
- Volunteer groups support maintenance and operations of the Compost Center
- Fresh compost is ready in approximately one to two months and is returned to plant beds within the Park



Fig. 10 | An image of a composting bin at one of the 10 drop-off sites in Hudson River Park.

Major Findings

Shoreline Cleanup and WasteShark

Between April and October 2025, nearly one hundred volunteers recovered 5,573 pieces of marine debris or a total of 204.5lbs. This is a 6% increase of debris pieces and a 65% increase in total weight from last year. On average, volunteers recovered 19.5 pieces of debris per meter. Compared to last year, this is a 60% decrease in the amount of debris recovered per meter last year despite roughly the same amount of yearly cleanup volunteers. August saw the highest concentrations, with 39 pieces/m of debris recovered. As seen in previous years, the majority of recovered debris were foam & hard plastic fragments (**Fig. 12**). These smaller plastics typically break down from larger pieces, and are likely the result of hydro, photo-, and mechanical degradation from the water, sun and salt.

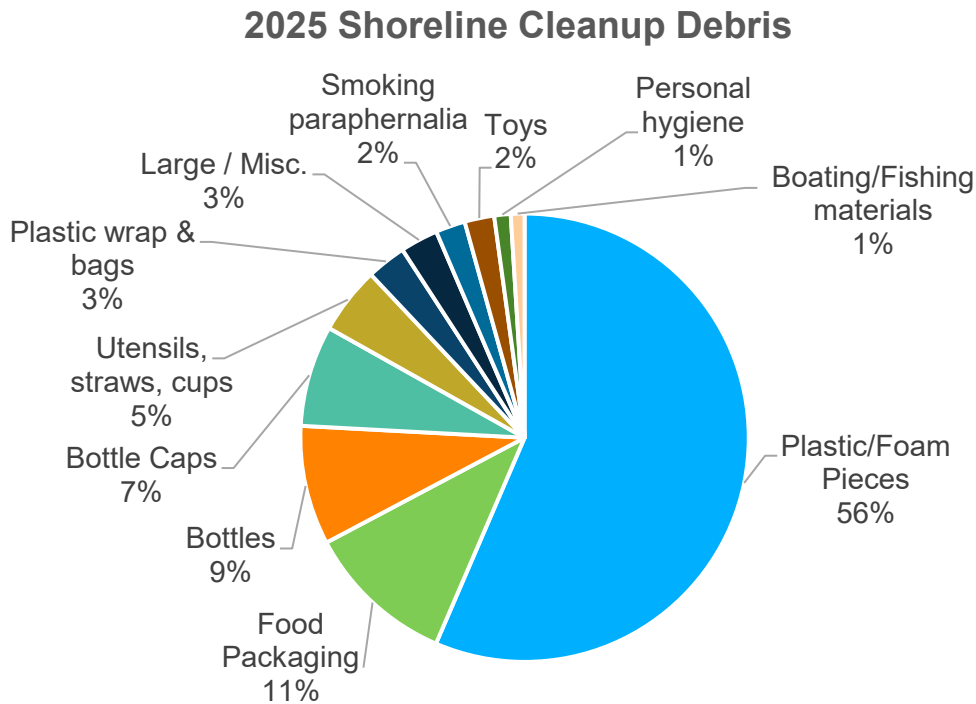


Fig. 12 | Total shoreline debris retrieved by category in 2025 (n=5,573). Debris was collected across 7 events, April - October.



Fig. 11 | Comparison of area covered during Shoreline Cleanups. The larger blue section denotes the potential area covered by the WasteShark.

Combined data for debris recovered in 2024 and 2025 indicates that the WasteShark collected proportionally more whole pieces of debris from the river in comparison to shoreline volunteers. Plastic and foam pieces were 33% more abundant on land. Although food containers only made up 12% of washed-up plastics, they made up 40% of the WasteShark’s haul. Less debris was collected in 2025 due to mechanical issues with the WasteShark, precluding deployment at some of the later clean up events. The WasteShark will be repaired and ready to go for the 2026 season.

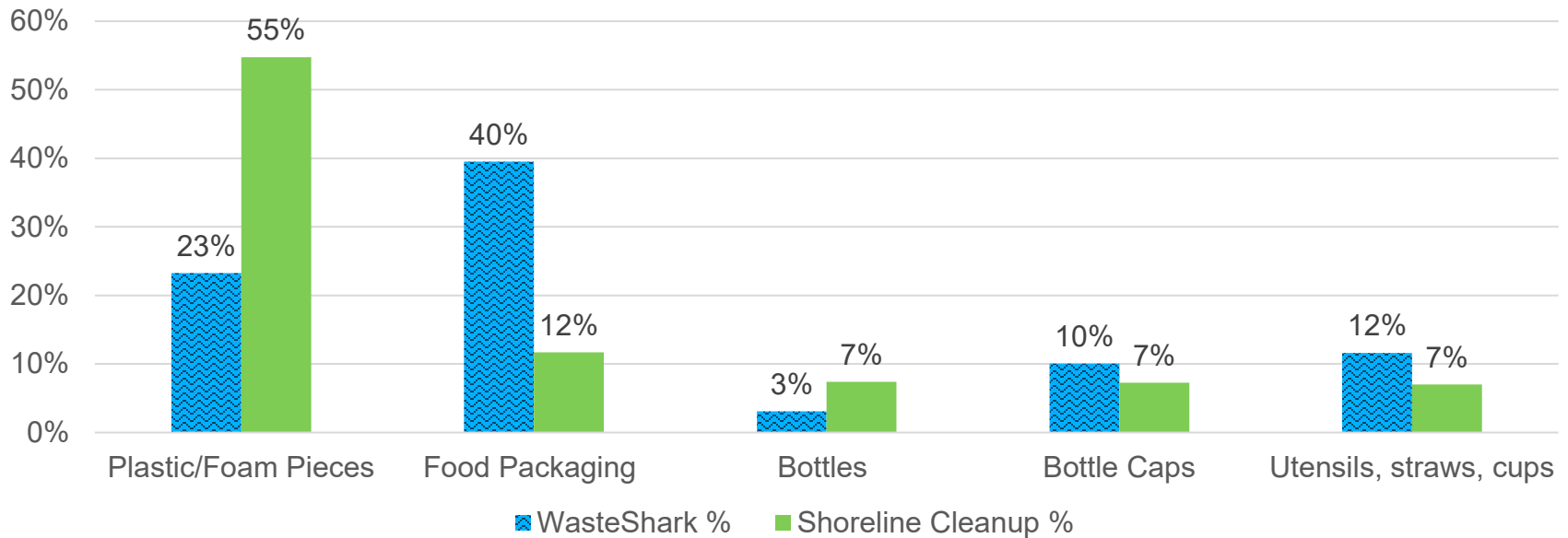


Fig. 13 | Top 5 types of debris recovered from the Wasteshark (n=113) in comparison to Shoreline Cleanup volunteers (n=8428) in 2024 & 2025 combined.

Waste Audit

This year, the total landfill contamination (16.5%) was significantly higher than recycling contamination (2.8%) a trend commonly seen each year. Out of 92 lbs. of materials analyzed from recycling bins, only 2.6 lbs. were non-recyclable contaminants. Out of 132 lbs. of analyzed materials from landfill bins, 22 lbs. were recyclable contaminants. Contaminants are defined by bin type: in a recycling bin, contaminants are any non-recyclables, and vice versa for a landfill bin. Three

sites – Pier 84, Pier 95, and Pier 40 admin – had no indication of recycling contamination, but five of the thirteen sites had landfill contamination rates higher than the average.

Overall contamination rates have increased this year. In 2024, the total recycling and landfill contamination from all sites was 0.9% and 10.6% respectively. Therefore, this year’s total recycling and landfill contamination rates technically increased respectively by more than 200% and 55%. It should be noted, however, that these rates do not necessarily reflect larger scale trends within the Park, as many of the analyzed bags were quite sparse in materials, leading to very

Contamination per Site

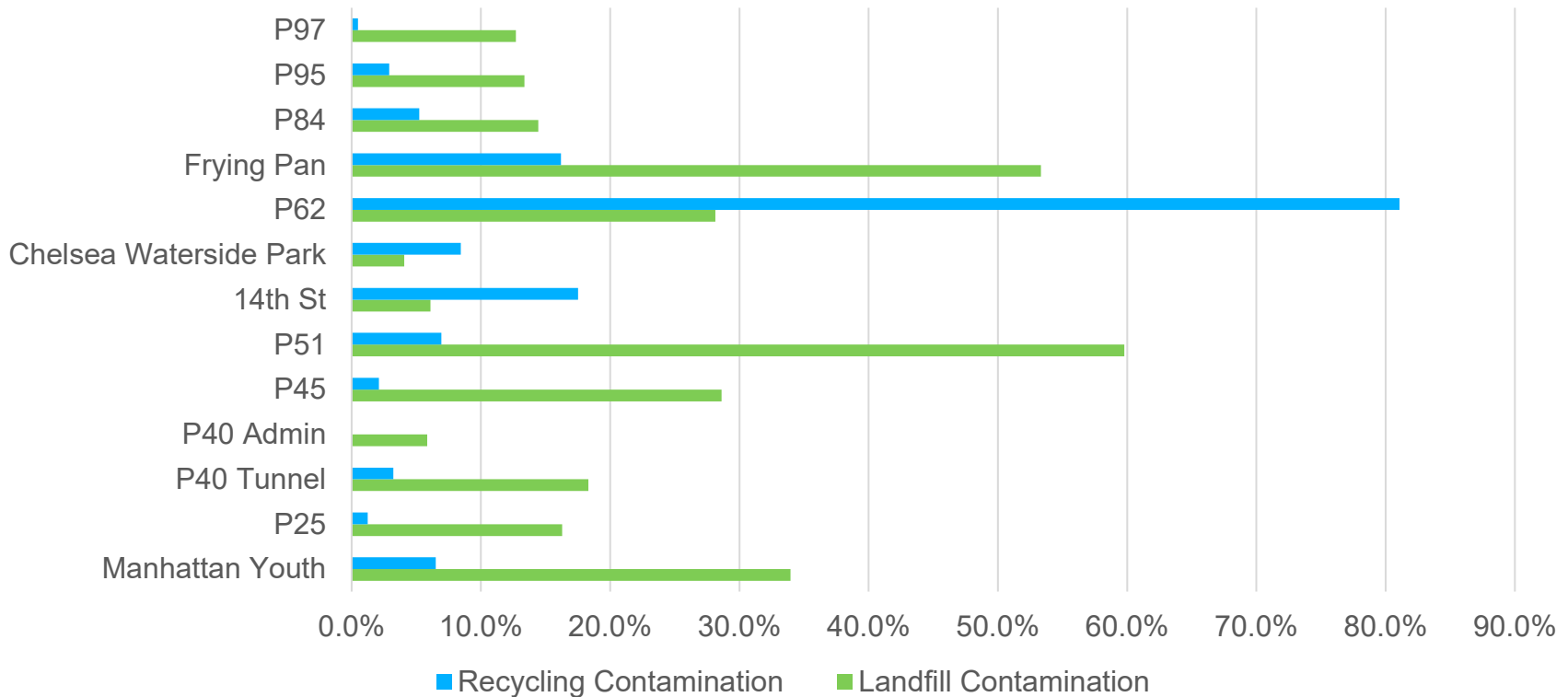


Fig. 14 | Total percentage of each contamination type per site (lbs.) in the 2025 Waste Audit. Contamination refers to waste placed in the incorrect bin. (Recycling: n = 92.5; Landfill: n = 131.6) Piers are abbreviated with the letter “P”.

low weights, easily contaminated by even one or two misplaced objects. More samples are needed to properly assess contamination rates.

Community Composting

As of November 25th, 2025, the Park’s Community Compost program has processed nearly 38,000 pounds of food waste in 2025 alone. Since its inception in 2018, the Park’s compost program has processed over 650,000 pounds of food waste. Food waste is collected from the Park’s ten public drop-off locations, its Pier 40 offices, various boathouses, and Pumpkin Smash event. Of the ten drop-off sites, Chelsea Waterside Park contributed the most composting scraps – 16% of the yearly to date total. Other top contributors were Pier 51 and Pier 46, each providing nearly 15% of the total scraps. This year marks the fifth consecutive year of Chelsea Waterside Park’s top contribution of compost.

The Park collected the majority (42%) of its total scraps in spring, while the lowest amount of waste was collected in fall (12%). Lower amounts of food scraps were collected in 2025 than in previous years of the Community Compost program (**Table 1**), likely due to expanded compost access in New York City thanks to efforts of the Dept. of Sanitation.

Total Compost per Site

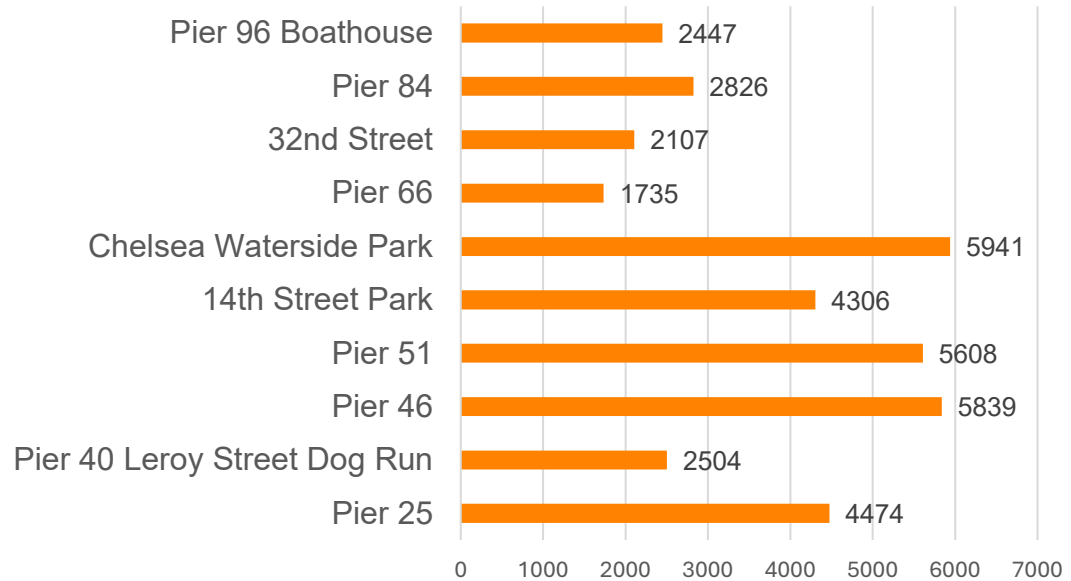


Fig. 15 | Total weight of food scraps in pounds collected across 10 drop-off sites in Hudson River Park, arranged North to South from top to bottom.



Fig. 16 | Pumpkin and wood scraps to be composted from the annual Pumpkin Smash event.

Table 1 | Total amount of food scraps (in pounds) composted per site, annually.

Site	2018	2019	2020	2021	2022	2023	2024	2025
Pier 25	6,187	8,085	5,573	16,797	19,087	13,100	9,751	4,510
Pier 40 Leroy Street Dog Run	4,208	5,969	9,851	12,836	14,496	10,661	5,972	2,516
Pier 46	n.d.	n.d.	1,358	12,315	15,733	15,374	12,750	5,898
Pier 51	4,208	5,179	3,356	11,123	13,461	11,829	13,419	5,690
14th Street Park	3,542	5,210	2,172	9,421	11,502	11,017	6,800	4,328
Chelsea Waterside Park	7,085	9,780	5,975	21,502	24,220	18,229	15,364	5,990
Pier 66	321	764	991	8,811	9,235	8,018	3,735	1,735
32nd Street	3,902	3,754	2,142	7,369	8,703	7,323	5,003	2,127
Pier 84	9,297	11,698	5,977	18,425	15,559	10,113	5,861	2,860
Pier 96 Boathouse	n.d.	n.d.	2,727	19,165	23,051	14,018	4,791	2,447

Takeaways

Park and community efforts prevent hundreds of pounds of plastic waste, largely comprised of plastic and foam fragments, from breaking down further into microplastics along the Gansevoort shoreline, which are near-impossible to remove from the environment. Plastic pollution can pose serious health concerns for shorebirds and other marine organisms when ingested, acting as vectors for harmful chemicals, bacteria, or simply as choking hazards. The WasteShark was especially effective in this effort by removing plastics from the water at earlier stages of degradation, helping to mitigate fragmentation along the shoreline.

The WasteShark, or “Gulp,” has proven to be a popular addition to shoreline cleanups, by engaging passers-by that aren’t part of volunteer groups and sparking organic conversations about plastics, pollution, and sustainability. Gulp will continue to help the Park and volunteers to keep the Gansevoort Shoreline clean for many years to come.

Recycling and landfill contamination rates were higher than last year, though low sample weights allow for highly “contaminated” bags very easily. The Park will attempt to ensure audited recycling and landfill bags have more debris in future years in order to more accurately assess contamination rates and key in to locations that may need more bins or signage.

The compost program continues to succeed in diverting tens of thousands of pounds of food scraps from landfills to be used as nutrient-rich compost for the Park’s 4 miles of plant beds and lawns. New city regulations enforced in April 2025 require that all residents separate their compost from their trash and recycling, and the City now provides increased access to both shared and building specific compost bins. Expanded access to compost bins may have reduced community reliance on Park compost facilities for food waste disposal, which may help explain the lower deposit rates in 2025. Though the annual Pumpkin Smash event shows that community members are interested in supporting and participating in Park composting events attendance, with over 700 attendees and ~2,000 lbs. of composted pumpkins.



Fig. 17 | Participant creating compost via percussive degradation at the annual Pumpkin Smash event at Pier 84.

Future Directions

The Park's Shoreline Cleanup, Waste Audit, and Community Compost Programs have shown tremendous progress toward achieving a low-waste Park. Ongoing tracking provides annual data to assess the efficacy of Park sustainability initiatives. To continue improving waste education and management, the Park plans to consider additional signage throughout the grounds, paired with landfill and recycling bins, to inform visitors which plastics can and cannot be recycled. While past contamination issues rose partly from insufficient recycling receptacles, additional steps are needed to further reduce contamination rates. Implementing more community education events—such as open cleanup events and WasteShark deployments—can help community members become more proactive about waste sustainability both in Hudson River Park and in their daily lives.

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