



Waste Stream Mining



Wastestreaming

New York City’s infamous Fresh Kills landfill stopped receiving garbage 18 years ago, and an enormous public park is slowly rising in its place. But against the backdrop of the site’s return to leisure and nature, where does all the garbage go? A steady stream of waste — commercial and domestic — flows out of the city every day. Researchers have tracked the movement of trash across the US, revealing just how many miles it can travel, but we know less about the sites our discards shape along the way, and the places where they are finally buried or burned. Artists Joe Riley and Audrey Snyder asked what kind of landscapes grow in Fresh Kills’ shadow. As part of the park’s Field R/D program, they identified almost 100 sites through which New York City’s municipal solid waste moves, from local transfer stations to rural parks and prisons far beyond city limits. With a spreadsheet and camera, they traveled the city’s waste stream, documenting a system that thrives on low visibility to maintain a regime of disposability.



Atlantic Waste Management landfill, Waverly, VA

Out of site, out of time

One of the largest landfills in the United States sits on 1,300 acres near the small town of Waverly (population 1,997) in Sussex County, Virginia. Waste Management’s Atlantic Waste Disposal facility accepts on average between 6,000 and 8,000 tons of refuse per day. Around one third of that daily volume is municipal solid waste (MSW) from New York City. As the crow flies, Atlantic Waste Disposal is around 300 miles from Manhattan. But the city’s garbage does not fly to Virginia. It travels several hundred additional miles along one circuitous path among many in a vast waste export network, comprised of transfer stations, trucks, trains, landfills, and incinerators across the United States. Using public documents, we identified 97 transfer and destination sites for New York City’s solid waste and recycling material. We traveled to 46 of these sites in an effort to trace the chain(s) of removal and dispersion of the city’s waste: a navigation of the waste stream.

A typical journey in the waste stream looks something like this: On collection days we set a black plastic garbage bag out on a curb in one of the city’s 59 sanitation districts. This bag contributes 30 pounds to the around 12,000 tons of garbage that Department of Sanitation (DSNY) workers pick up daily. They transport all this garbage to transfer stations, where workers and machines compact the material into shipping containers. From here, the trajectory of our bag of garbage becomes much harder to see, as it is transferred into the hands of private waste management corporations and hauled to landfills and incinerators in several different states including, but not limited to, New York, New Jersey, Pennsylvania, Connecticut, Virginia, Kentucky, and Ohio.

Our own travels through the waste stream did not follow the same path. The journey began with maps, travel directions, and a spreadsheet with peculiar shorthand notation we used to describe our destinations.

PA_WTI_COVANTACHESTER indicated a waste incinerator in Chester, Pennsylvania that burns refuse from New York City.

NYC_BK_TX_MSW_IESICourt designated a privately-operated transfer station in Brooklyn that accepts MSW from DSNY trucks.

We thought NY_RE_NVINTERNATIONAL was a paper

recycling facility, but it turned out to be an empty building in an office park. From the vantage point of that vacant parking lot, the waste export network looked and felt like a shell game, diverting our attention from the material conditions of the waste stream. Hidden beneath the shells was one of the world’s largest man-made objects: Fresh Kills Landfill on Staten Island.

The ways to get off it . . . and the dump



IESI Corporation Transfer Station, Court Street, Brooklyn, NY

At the urging of Robert Moses, New York City began landfilling the wetland marshes at Fresh Kills in 1948, giving rise to mountains of trash several times larger and longer-lasting than any other project initiated by the “master builder.” When the city stopped its dumping operations in 2001, Fresh Kills was the largest landfill in the world — a monument to disposability. Over five decades of activity, the 2,200-acre, 150-million-ton gravity of this waste utility seemed to pull all of Staten Island into its orbit. Variations on one disparaging remark — “Staten Island is known for two things . . . the ways to get off it . . . and the dump”[1] — still hang in the air, describing how the noxious fumes of traffic and landfill displace the smells, sounds, and memory of marshland flora and fauna. Joseph Mitchell described this exchange of wetlands for waste utility in a 1951 profile of Andrew Zimmer, a Bureau of Marine Fisheries shellfish protector on Staten Island:

“Mr. Zimmer becomes depressed. The marshes are doomed. The city has begun to dump garbage on them. It has already filled hundreds of acres with garbage. Eventually, it will fill in the whole area, and then the department of parks will undoubtedly build some proper parks out there, and put in some concrete highways and scatter some concrete benches about.”[2]

With the questionable veracity of Mitchell’s journalistic methods in check, his prediction of environmental and architectural metamorphosis rings true as the city today turns the landfill into “a proper park.” (Nearly three times the size of Central Park, it is scheduled to open in stages through 2036.) Navigating the waste export network that formed in Fresh Kills’ vacuum, we began to understand how New York City’s landfill is not closed or inert. It now proliferates everywhere, and anywhere else but here.

Some (other) proper parks out there



Ongoing capping of Freshkills’ West Mound, the last remaining landfill section to be capped at the site.

The Rahway River flows through Essex, Middlesex, and Union counties in New Jersey, and into the Arthur Kill on the western edge of Freshkills Park. Several miles upstream is a waste incinerator facility operated by the “energy-from-waste” (EfW) corporation Covanta. Covanta Union Rahway is housed in a bland box that appears dormant, except for a steady stream of trucks driving in and out while steam whisps from a tall smokestack. The premise of EfW is that discarded materials are incinerated to generate electrical power for local municipalities. Covanta goes so far as to characterize

the process as renewable energy, “because the fuel (waste) is consistently replenished and all of the energy recovered preserves natural resources.”[3] The promise of “recovering” a small amount of energy-generating potential from “the fuel” — the bag of garbage we set out on the curb — works to obscure the fossil-fuel-based interstate transport of an ever-increasing volume of discarded materials, themselves derived from non-renewable resources such as oil. These shipments of waste, not the waste itself, are “the fuel” for Covanta Union Rahway.

Although relatively close to New York City, Covanta’s four New Jersey sites are lodged within a much wider field of carbon emissions-driven waste transport. In 2016, DSNY trucks traveled 14.3 million vehicle miles to dispose of 3.2 million tons of MSW. (An estimated 5.5 million tons of commercial waste were moved by a private fleet over 50 million vehicle miles in 2015.) While the availability of enormous volumes of waste may come as no surprise, the industrial recategorization of that material as a vital resource must be understood as a dangerous contradiction driving the flow of the waste stream. EfW’s business model is centered not on renewables or electrical generation, but on waste volume and vehicle miles. Covanta’s profitability is based on tipping fees: the rates that private and public waste carters pay in order to deposit material at the facility. These account for nearly three quarters of the company’s \$1.7 billion revenue, according to a 2019 report, while less than one fifth of revenue comes from electricity sales.

Four square miles of land preservation



Covanta Union EfW facility, Rahway, NJ.

Many of our requests to visit landfills, incinerators, and transfer stations in an official capacity were ignored or denied. In the face of the waste management industry’s characteristic reticence, lite trespassing and peering over fences became our strategy. We were turned away from the entrance to Dunn C&D Landfill (which receives both MSW and commercial waste from New York City) and left to view the site from the adjacent cemetery and school in a Rensselaer, NY neighborhood peppered with signs protesting the landfill’s harmful effects. 500 miles away in Chesterfield, Virginia, we watched from a golf driving range as trucks dumped waste atop a 300-foot-tall garbage mound. Everywhere, we found ourselves in the wash of the waste stream, where sites of disposability blend together with spaces of public life and leisure.

Rahway River Parkway was designed in 1925 by Olmsted Brothers (the landscape architecture firm of the sons of Frederick Law Olmsted, designer of Central Park). Covanta built the Union Resource Recovery incinerator at the edge of the parkland in 1994. The same year, Rudolph Giuliani was elected New York City Mayor in a victory often attributed to voters in Staten Island, many of whom longed for New York’s waste to go elsewhere. Within two years, his administration began to fulfill a pledge to close the Fresh Kills Landfill.

In an interview, landscape architect James Corner reasoned that “Fresh Kills Landfill is the best thing that has happened to Staten Island. What you have here is four square miles of land preservation, which will never be subjected to overdevelopment like the rest of the island.”[4] Substituting the long-term destruction of local ecology for an act of “preservation,” this rhetoric renders our present system of disposability pleasurable, or at least contrasting favorably with otherwise inevitable “overdevelopment.” Sites like Fresh Kills are often placeholders for the development of public parks, since it is relatively cheap and politically advantageous

to make a park on industrially contaminated land. Characterized as an act of rehabilitation and/or remediation, the public park helps to release pressure from the public secret of disposability. As we traveled further in the waste stream, we witnessed the synchronized logics of disposability and development extend beyond parks and into the carceral system.

All the good stuff from the land



View of Freshkills from Owl Hollow Soccer Fields, Staten Island

Sussex State Prisons I & II are located next to the Atlantic Waste Disposal landfill in Waverly, Virginia. The prisons share a combined capacity of 2,491 incarcerated people, including those on Virginia’s death row. The landfill and prisons opened in the 1990s: the height of US prison construction and the decade in which Virginia emerged as the country’s second largest interstate importer of garbage by volume.

The prison and the landfill are difficult to see from the surrounding county roads, hidden behind buffer zones of dense pine forest. The only visible signs of activity are ever more trucks kicking up clouds of dust, slow trains hauling containerized waste, and bulldozers burying our trash. We imagine that workers in these vehicles can see down into the prison from the landfill’s peaks. And perhaps prisoners can also see the landfill steadily rising above enclosing walls.

New York City’s pervasive waste is one of the few things that moves freely through these walls. Inside prisons located either on top of former dumps, or next to active ones, prisoners are subject to exposure from toxic residues — their bodies integrated into the waste management complex. Robert Mosely, formerly incarcerated at a prison on the edge of a coal-ash dump, succinctly describes the cycle: Contractors “extract all the good stuff from the land, then they sell it to waste companies that contaminate the land, and then they sell it to prisons. Then they start shipping inmates there, and people start getting sick.” [5]



Approach to Sussex State Prisons I & II, Waverly, VA

Just as the physical containment of incarceration anonymizes and dehumanizes people, so does the containerized shipping of waste turn the things we consume and throw away into an abstract logistical concern. The shipping container made the fluidity of global supply chains available to the accumulation and dispersal of waste. DSNY workers at local transfer stations pack waste into corrugated steel boxes and dispatch the units to far afield destinations. Containerized shipping became entrenched in New York City’s waste disposal infrastructure with the 2002 adoption of a Long Term Export Program. One key component was the construction of a truck-to-container-to-rail transfer station at Fresh Kills. The Staten Island Transfer Station sends a daily deposit of waste directly to Atlantic Waste Disposal in Virginia, collapsing the distance between these places. It is as if Fresh Kills is located simultaneously across from the Staten Island Mall and next to a Virginia prison complex.

New York, NY; New York, VA . . .

Wherever we look in the waste stream, from the economics of waste management to the organization of landfills in relation to parks, schools, and prisons, the shipping of waste and toxification of place are made to appear common-sensical. As more and more of these architectures are assembled in support of the waste stream, the city’s spatial and temporal footprint expands exponentially. These assemblies, together with the contaminants they contain and disperse, re-colonize everywhere the waste stream touches as “New York,” and make “New Yorkers” of everyone in its flow.

While we were travelling to several landfills in Virginia in July 2018, a long-debated “Waste Equity Bill” became law in New York City. Intended to reduce harm from transfer station pollution and truck emissions, Intro 157-C caps the volume of waste that can be processed in North Brooklyn, Queens, and the South Bronx — neighborhoods that have borne the brunt of the city’s public and private waste transfer operations. Other neighborhoods are now compelled to reckon with a “fair share” of the city’s waste. Yet this legislation buttresses and perhaps even multiplies the flows of waste away from the city, reproducing the same inequities in other, more distant locales.



Machine for compacting waste materials into shipping container, DSNY Staten Island Transfer Station, Staten

Seeing and describing the waste stream is one working strategy for connecting local struggles around waste management in places like the South Bronx to political and environmental concerns of geographically distant communities from Waverly to Rahway, Rensselaer, and beyond. By materially analyzing the impact of New York City’s waste and visualizing its egress, can we re-imagine and re-order cycles of consumption and disposal? Can we support and embrace — rather than ship and dispossess — the materials, peoples, and places that now constitute the waste stream? Can the notion of “fair share” be diverted away from all those “New Yorkers” caught in the path of the waste stream and back toward the industrial producers of waste?

This is but a single flow in a waste complex built on infrastructural, carceral, and communicative systems that drive cycles of consumption and disposal, extraction and contamination, and link regional land use with everyday life. Though waste disposal is a common feature of daily life in the city, it is hardly a common concern. Yet in the midst of rising temperatures, sea levels, and estrangement from the material resources that support life and the consequences of their use, it is a concern that grows increasingly urgent — challenging us to proceed by holding the needs of the present and future against the current(s) of the waste stream



North Shore Marine Transfer Station, Flushing, NY

[1] Carlos Hernandez, “Freshkills Park: The Story is in the Soil,” Accessed June 4, 2019. https://bit.ly/2UbiaCu.

[2] Joseph Mitchell, The Bottom of the Harbor (New York: Random House, 2008), 73-74.

[3] “Energy-from-Waste Facilities vs Incinerators: Debunking the Myths,” Accessed July 18, 2019. https://bit.ly/2vv48S9.

[4] Elizabeth Barlow Rogers, Green Metropolis: The Extraordinary Landscapes of New York City as Nature, History, and Design (New York: Knopf, 2016), 129.

[5] Michael Waters, “How Prisons Are Poining their Inmates,” Accessed July 18, 2019. https://bit.ly/310dhxA.

FRONT 1: Sorting material from World Trade Center Wednesday, October 24, 2001, at the Fresh Kills Landfill on Staten Island. (Photo: AP/Beth A. Keiser)

FRONT 2: Last Garbage Barge to Fresh Kills, Thursday, March 22, 2001. (Photo: DSNY)

Joe Riley (b. 1990) is an artist, researcher, fabricator, and educator. He has a BFA from Cooper Union and is a PhD student in Art History & Practice at UC San Diego. Alongside Audrey Snyder he was a fellow of the Socrates Sculpture Park Emerging Artist Fellowship (2018-19) and Fresh Kills Field R/D program (2017-18). His collaborative work with the collective Futurefarmers has exhibited widely, including Artes Mundi 7 and Sharjah Biennial 13.

Audrey Snyder (b. 1991) is an artist and chef based in the US. Her engagement in these practices finds footing in seeds, soil, and geological time. She has a BFA from the Cooper Union and participated in the Interdisciplinary Art & Theory Program, Fresh Kills Field R/D program, and was a fellow of the Socrates Sculpture Park Emerging Artist Fellowship. In 2019, her project CAMPAGNA/CAMPANA/CAMPO was awarded first prize from the Rural Design Lab in San Potito Sannitico, Italy. Her collaborative work with the collective Futurefarmers has exhibited widely.



Roadway stained from leachate at Freshkills Park, Staten Island, NY.

