Impacts of New York City Waste on the 125th Street BID

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Introduction

The ambition to improve the waste situation on 125\textsuperscript{th} Street stems not only from the intent to fix a problem that residents have faced for years, but also from a desire to establish the community in a leadership position by taking a stand on highly relevant environmental issues. In order to make improvements, a thorough knowledge of the current system that deals with waste is critical. The day to day operations impact long term trends, and operational changes to the waste system will have significant consequences.

To most of us, the garbage system seems to be an immutable system that operates as a matter of course. But the system has changed immensely over time, with some of the most significant changes occurring within the last ten years. In order to fully understand the existing system, one must look at how it developed and why the progression occurred as it did.

This report is a collection of the most relevant information on both the history of waste and a breakdown of the current system. The history of waste on 125\textsuperscript{th} street is considered within the broader context of New York City waste and the industry of waste collection as a whole.
Primary Historical Themes

The history of waste and its collection in New York City is intimately tied to both food and fuel. Food and its packaging is associated with changing trends in the character of waste gross quantity and composition, and so affects both how much is discarded and how it decomposes. Fuel has historically been the other large component of city waste and additionally relates to how waste is dealt with, as increasing distances require increased fuel.

Distance is the third major factor in city waste history. As food and fuel have fluctuated throughout the years, the distance between waste source and disposal has steadily increased. Removing waste from immediate experience to and exporting it to distant states has surely shaped our attitudes and habits surrounding waste.

Local Waste Disposal Before 1881

Initially, New Yorkers disposed of waste in the same place they lived. Prior to 1881, when the Sanitation Department was first founded, historical accounts commonly recall a vision of people throwing trash out the window to accumulate on the street below. Far from ignorance, this was a method of disposal and re-use, using the systems in place at the time. Rag-pickers and bone-pickers collected usable portions of the waste, and pigs roaming the streets consumed much of the rest.

Daniel C. Walsh, a professor at Columbia University, collected and published an account of waste volumes per capita for 100 years, 1990 to 1999, which can provide a useful datum to compare not only how much waste was produced but what type. From 1900 to 1940, over 60% of the waste produced was fuel-related-ash left over from burning wood. This period prior to refrigeration was also characterized by higher food waste due to spoilage.

Local Garbage Dumps, 1881 to 1948

With the inception of the Department of Sanitation (initially the Department of Street Cleaning) in 1881, waste was separated from living areas for the first time. The Department moved waste progressively farther from the downtown streets. Garbage was first dumped into the river, but following complaints of filthy shorelines was distributed to local dumps throughout the five boroughs. Following more complaints of vermin and odor from neighbors of these dumps, the city needed to find an alternative.

Recycling also made its debut in New York City at this time. From 1895 to 1918, citizens separated animal waste for use as fertilizer, as well as paper and rags which were either reused or burned in self-energizing incinerators. The program was stopped due to a lack of laborers (Ascher, 194).

The Sanitary Landfill, 1948 to 2001

For the next degree of separation, New York leaders decided to establish a sanitary landfill, a recent innovation other cities were also adopting at the time. The Fresh Kills landfill was controversial from its beginning through its closing, particularly since both events were highly political negotiations with the borough of Staten Island. Eight transfer stations moved trash from trucks to barges, which floated waste to the landfill. At peak operation, it accepted the 12,000 tons of waste collected by the DSNY each day, and had the distinction of being one of only two man-made objects visible from outer space.

Sanitary landfills are the norm today, but they are a recent invention and relatively low-tech. They are intended to contain decomposing waste and the potential health hazards associated with it. Like other such landfills, Fresh Kills used daily cover (typically a blend of earth, crushed glass, or other fill material) to cap the new layer of waste brought in each day. The benefit is a decrease in odor and vermin attraction, but the drawback is that sealing the garbage in this way slows its decomposition and increases its life span. Many landfills are lined to prevent liquids from decomposing material from entering local groundwater systems. Fresh Kills is unlined, but does have a leachate collection system. Still, such systems are imperfect and in this case the system competes with the the landfill’s two natural streams and the tidal flows.
which tend to flush leachate from landfill to harbor (Royte, 94-95). The landfill also collects methane gas, which is emitted in the normal process of decomposition. Formerly it was just flared off each day, but now the gas is used for fuel.

Walsh’s data for this period indicates a much lower percentage of fuel-related waste, with the ash content dropping from 63% in 1930 to 1% in 1971 (Walsh, table SI-1). Food waste dropped significantly mid-century with the introduction of refrigeration (Walsh, 5). Perhaps the most critical shift indicated in this data is in the method of collection. Prior to 1938, waste was collected in three streams: Ash, rubbish (paper and rags), and garbage (all other waste). As the ash content dropped and waste collection became more centralized, this three-stream collection was stopped. The bottle bill made a further shift in collection methods and in the overall weight and volume of trash, effectively removing many bottles from the waste stream for re-use.
Waste Hauling

Long-Distance Hauling, 2001 to Present

With the closing of Fresh Kills, waste disposal has become an interstate operation. The landfill was phased out between 1996 and 2001. Some claim the closing was premature and executed for political rather than practical reasons, but regardless of the cause, the resulting shift in waste traffic has had implications far beyond the city. 60% of what the DSNY collects in Manhattan – which is only approximately 3% of the city’s total waste stream – goes to Newark, New Jersey, where it is burned in a modern ‘clean’ incinerator to produce electricity and heat (Royte, Where Does it All Go?). Perhaps the largest chunk of the waste stream, about 9,000 tons or 18% (Kloor), is trucked by the DSNY’s contractors to western Pennsylvania, where towns trade space and dumping rights for free waste collection and money which is often intended for public works. Other states such as Ohio and Illinois have also accepted waste in the past. Although lists of transfer stations are publicly available, the final destination of New York City’s waste is in the hands remains, for the most part, confidential.

Walsh’s data seems to suggest a surprising trend of the amount of waste per capita declining over the past 100 years. However, considering the trends discussed so far, it is perhaps more accurate to say that although two primary components of waste in the first third of the century- food and fuel – have declined due to advances in technology, our total waste has not dropped proportionally. Furthermore, we are now producing waste with a much longer life span. Packaging and plastics are now a large component of our waste, and can take anywhere from years to centuries to decompose. Figure 1 summarizes trends of residential ash, rubbish, and garbage disposed within New York City over the past 100 years.

![Figure 1: Trends of NYC waste over past 100 years.](image)

Impact of Exporting

By exporting, New York City no longer has to have its waste within its borders, but there are new disadvantages on economic, health, environmental, and public education fronts. The price jump of $40 to $105 per ton for the DSNY at the time of the Fresh Kills closure (Royte, Garbageland, 32) reflects both tipping fees charged by other states and the cost of long-distance truck hauling with increasing fuel prices. A typical compactor truck used to collect waste in the city gets approximately 2.8 miles per gallon (Rich), while the trailers used for interstate hauling

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get a modestly improved 3 miles per gallon. Traveling a collective 135,000 miles and using 33,700 gallons of diesel per day by one estimate (Kloor), this represents an impressive financial and environmental impact. Diesel fumes, in the meantime, are a known contributor to asthma, which is particularly an issue in less affluent neighborhoods with high concentrations of both transfer stations and high asthma rates. Finally, exporting garbage perpetuates the illusion that when something is thrown away, it just goes away. Lack of local presence of garbage has health and quality-of-life benefits, but it also makes it easier for people to throw things away without thinking of where waste goes or what happens to it.

City’s New Plan for Waste Removal

The city is required by the state to have a waste disposal plan that is updated at least every 10 years. (NYS Environmental Conversation Law 27-0107). After two years of not having a plan, City Council approved Mayor Michael Bloomberg’s Solid Waste Management Plan (SWMP) on July 20th, 2006. The Final Comprehensive Solid Waste Management Plan was issued in September 2006. This plan will fundamentally change how the city disposes of its waste. There are several key changes:

Instead of using trucks to transport the city’s approximately 12,000 tons of residential and institutional waste outside of the city, the city will transfer the waste by barge or rail to container stations, where the waste will be containerized for transport to out-of-state landfills (Executive Summary, 5). This is an effort to reduce the amount of truck traffic in New York City neighborhoods. Truck traffic has been linked as one of the major causes of health problems such as asthma. The change will reduce truck export of waste from 84 percent of all waste (the other 16 percent is incinerated) to 13 percent that is exported by truck. In the new plan, 87 percent of waste will be exported by rail or barge. This will reduce DSNY truck traffic by 2.7 million miles per year and long-haul truck traffic by 3 million miles per year (nyc.gov, 19 July Press Release).

To transfer the waste by barge, the city is converting four existing marine transfer stations into city-owned transfer stations (MTS). These transfer stations are located on 91st street in the Upper East Side of Manhattan; Hamilton Avenue in Gowanus Canal in Brooklyn; Southwest Brooklyn (Shore Parkway and 41st Street in Brooklyn); and North Shore Queens (31st Avenue and 122nd Street in Queens) (Executive Summary, 7). The maximum projected amounts of waste for each facility are 1,644 tons per day for 91st Street Manhattan, 3,554 tpd for Hamilton Ave. Brooklyn, 1,968 tpd for Southwest Brooklyn, and 3,640 tpd for North Shore Queens.

The cost of export of garbage is expected to rise in the short term from $77 per ton to $107 per ton (Hu, “City Council”). The Mayor’s office sees the plan as fiscally responsible in the long term because it makes transportation costs and transfer station costs more predictable and stable. Currently, the 18 transfer stations (see Waste Handling Facilities section) are privately owned, whereas the new marine transfer stations would be owned and operated by the city. The mayor’s office also says that the cost of exporting garbage by rail and barge will be more economical than by truck, and it will be able to export garbage to less expensive landfills than was previously possible. Also, it will establish 20 year contracts with landfills so as to prevent price fluctuation. After 20 years, out-of-state landfill capacities will have to be re-evaluated, and it is possible that some of them will not be able to renew contracts due to a lack of space.

Each borough’s waste will be transferred at a transfer station within the same borough. Currently, most of the privately owned transfer stations are located in North Brooklyn, South Bronx and Southeast Queens, and these neighborhoods have suffered environmental and health consequences as a result of the disproportionate handling of waste (Executive Summary, 2).

The City has entered a 20 year contract with Sims Hugo Neu, which will build a new recycling plant in Sunset Park, Queens. There will also be a new Brooklyn waterfront recycling facility, which will be supplied by marine transfer of recyclables. A new marine transfer station for recycling is planned for Gansevoort Marine Transfer Station, and Sims Hugo Neu’s existing facilities at Hunts Point, Long Island City and Jersey City as well as the new Sunset Park facility will supply the Brooklyn waterfront recycling facility (Executive Summary, 3).

The Solid Waste Management Plan also calls for a public space recycling pilot program (Executive Summary, 14). In March of 2007, the City announced a pilot program for the collection of pedestrian recyclables in new street recycling containers. From April to June, the containers
will be placed in six public parks, with each of the boroughs represented. ("Public Space Recycling Pilot", NYCWasteLe$$).
DSNY

Every day in New York City, residences and institutions produce approximately 12,000 tons of waste, which is collected by the Department of Sanitation (see Figure 2). Commercial enterprises produce 13,000 tons of waste, which is collected by a network of private carters (“About”, DSNY). In addition to these waste streams, construction and demolition activity produces approximately 27,000 tons of additional waste (Henningson, 13)

The DSNY picks up residential curbside and containerized waste between one and three times per week, depending on population density. It also collects pedestrian litter from street waste baskets along these routes as well (“Refuse Collection”, DSNY).

Figure 2: 12,445 tons of residential waste generated in New York City per day.

Garage location and Collection Routes

The DSNY organizes its collection routes within the city’s Community Districts. For Manhattan’s 12 Community Districts, there are 11 DSNY garage locations from which the local collection trucks originate their routes. The 125th Street BID is located within Community Boards 9 and 10, and the portion of 125th Street east of the BID zone is located in Community Board 11. The garages for these zones are 125 East 149th Street, Bronx, between Gerard Ave. and Walton Ave (Community District 9), 110 East 131st Street between Lexington Ave. and Park Ave. (Community District 10), and 343 East 99th Street between 1st and 2nd Avenue

(“Garage Locations,” DSNY.)

Waste Handling Facilities

The waste collected by the DSNY is taken to one of 18 waste handling facilities that are privately owned and operated by nine companies. 15 of these facilities are transfer stations, where waste is collected, or “tipped”, from the local collection trucks and transferred to long-haul
trucks that export the garbage to other states. (Five transfer stations are located in Brooklyn. Two transfer stations are in Queens, two transfer stations are in the Bronx, and six transfer stations are in New Jersey.) New York exports its trash to 37 landfills in six states (Royte, “Let it Burn”). Three facilities are resource recovery plants, where 60 percent of Manhattan’s DSNY waste is incinerated (Royte, “Let it Burn”). Two resource recovery plants are located in New Jersey, and one resource recovery station in Long Island (DSNY 2004 Annual Report, 20).

Waste Incineration Process

When waste is incinerated, the volume of the waste is reduced to one quarter of its original volume. The incineration process is known as a “waste-to-energy” process, because it produces a considerable amount of megawatts of usable power. The downside to incineration is that the process produces toxic dioxins (carcinogenic hydrocarbons) and acids. Modern incineration conforms to much more stringent environmental standards by using scrubbers, catching particles by chemical and electrical reactions, and controlling combustion and flue-gasses. However, the carcinogenic dioxins are still contained within the ash that is produced, and this ash is contained within landfills. Opponents to incineration are concerned that these compounds will leak into the environment at some point (Royte, “Let it Burn”).

Schedule of Pickup

I. Between Morningside Ave. and the western third of St. Nicholas Ave., garbage is collected on Tuesdays, Thursdays, and Saturdays, with recycling collection on Thursdays.

II. Between the eastern two-thirds of St. Nicholas Ave. and Adam Clayton Powell Blvd., garbage is collected on Mondays, Wednesdays, and Fridays, with recycling collection on Fridays.

III. Between Morningside and the western third of St. Nicholas, garbage is collected on Tuesdays, Thursdays, and Saturdays, with recycling collection on Thursdays.

(NYC GIS Website, “Collection Schedule”).

Rules, Regulations, Limitations

In the United States, the day-to-day operations of the waste system are under the jurisdiction of the municipal government. New York City’s waste system laws coordinate all residential, institutional waste streams. The rules help to mitigate conditions between businesses and residents operating and living in dense conditions.

The Department of Sanitation of New York City publication, the Digest of Codes, 2004 summarizes all rules and regulations within the NYC Administrative Code and the Rules of the City of New York regarding waste and sanitation in New York City. Of particular interest to street-level business owners are the following rules:

Cleaning of Sidewalks and Gutters: (NYC Administrative Code Section 16-118(2) & 16-118.1): “The sidewalks (including tree pits, grass strips, etc.) and gutter areas (up to 18 inches into the street) along the building perimeter must be kept clean. . .Enforcement agents may issue violations for this rule only within two one-hour routing periods each day.” For 125th Street, these times are currently 12 p.m. to 1 p.m. and 3 p.m. to 4 p.m.

Proper receptacles: (NYC Administrative Code Section 16-120(a)): “Refuse must be put in leak-proof receptacles with tightly fitting lids or in securely tied heavy duty opaque plastic bags. Merchants and residential units must have enough receptacles to contain the waste generated in a 72-hour period.

Storage of Receptacles ((NYC Administrative Code Section 16-120(c)): Refuse must be kept within the building or at the rear of the premises until time of collection.

Commercial refuse put out for private collection must be placed on the sidewalk against the building, not at the curb or in the gutter. Commercial establishments may not keep their refuse on the street during the day if the carter picks the refuse up after closing. If the refuse is picked up after closing, the merchant may place refuse out for collection within one hour of
closing. If the collection service is performed during the day, the commercial waste may not be
placed out for collection unless it is within two hours of the actual collection time. Note: if your
collection is scheduled after close of business, and no employee is present at your establishment,
the Department will allow a reasonable length of time for removal and storage of the container.
Usually a one-hour grace period is granted from the time an employee is on the premises before
issuing a summons (a notice of violation). Containers (dumpsters are to be removed from the
sidewalks/streets and placed inside or in the rear of the premises. Containers must at all times
be maintained in a neat, clean and closed condition, and the area around them must also remain
neat and clean. Refuse may never be left out on a holiday or weekend.

Commercial Waste Disposal (NYC Administrative Code Section 16-116 (a)): Every
merchant, commercial establishment, business, etc., is obliged to dispose of its refuse in a legal
manner. A merchant, commercial establishment, business, etc., can either arrange with a private
carrier to have its refuse collected, or obtain a “Self-Hauler” registration from the Business
Integrity Commission and transport the refuse in a vehicle with commercial plates.

A merchant who disposes of a negligible amount of refuse (less than 20 gallons over
seven consecutive days) can share private carter service with one or more other merchants.

Decal - Commercial Waste Disposal (NYC Administrative Code Section 16-116 (b)):
Merchants and businesses must post a decal provided by their private carter that clearly and
legibly states the private carter’s name and the days and times the refuse is picked up.

Illegal Dumping ((NYC Administrative Code Section 16-119) It is illegal for any person to
dump, deposit or otherwise dispose of any dirt, gravel, clay, loam, stone rocks, rubble, building
rubbish, sawdust, shavings, trade or household waste, refuse, ashes, manure, garbage, rubbish
or debris of any sort being transported in a dump truck or other vehicle in or upon any street, lot
park, public place, or other area whether publicly or privately owned.

Private Contractors (Litter)

The 125th Street BID contracts with the Atlantic Maintenance Corporation to provide
street cleaning of pedestrian litter. The pedestrian litter is collected into trash bags branded with
the 125th Street BID logo and is placed at the Department of Sanitation litter receptacles for
pickup. The Department of Sanitation conducts pickups three times daily. The cleaning crew
picks up 7,500 bags per month within the BID boundaries, from Morningside to 5th Avenue
(Askins, BID Annual Meeting 2006.) This is equivalent to 20,521 yearly service hours, and 2.7
million pounds of pedestrian trash collected annually (BID Annual Report). The crew provides
street cleaning services on weekdays from 7:00 a.m. to 7:00 p.m. and on weekends from 8:00
a.m. to 5:00 p.m.

As previously mentioned, the some of the August-September 2006 Waste Survey
respondents felt that the presence of garbage bags piled in front of or around litter baskets
encourages illegal dumping. One store manager voiced concerns that the garbage collected at
the DSNY litter receptacles needed to be more frequent than once a day. The store owner stated
that garbage bags were sitting on the street near the corner receptacles for several hours, and
that this induced several occurrences of illegal dumping. The store owner manager further stated
that the store’s private carter complained several times about illegal dumping and charged the
store additional fees for garbage disposal.

Private Carters

Private carters are regulated by the Business Integrity Commission. The carters remove
approximately 13,000 tons of commercial waste per day (“About”, DSNY). Construction waste,
which includes untreated lumber and crates, treated wood, gypsum scrap, and rock/concrete and
brick is also removed by private carters.

The Business Integrity Commission agency was started in November of 2001 as the
Organized Crime Control Commission. There are 1,100 licensed private carters that haul
commercial and construction waste in New York City (“Business Integrity Commission”, nyc.gov).

Of particular interest to 125th Street is that private carters do not like hauling food waste
because it is not profitable to haul an equal volume of food waste which is heavier than normal
waste. (Van Ooyen, 4).
See Appendix A for a list of surveyed private carters that collect garbage from businesses within the 125th Street BID district.

**Waste Types**

New York City’s waste, including 125th Street, can be divided into five separate waste streams: residential waste, municipal waste, commercial waste, pedestrian litter, and construction waste. As previously mentioned, the New York Department of Sanitation collects residential and municipal waste as well pedestrian litter from street garbage cans. Commercial waste and construction waste is collected by the private carter industry. Some BID’s, including the one on 125th Street, collect pedestrian waste and deposit it on the corners for the DSNY. Within each of these waste streams, a certain percentage of the waste is recycled (“About”, DSNY).

![Figure 3: Waste streams in New York City.](image)

**DNSY: Residential Waste and Pedestrian Litter Study**

From the fall of 2004 to the summer of 2005, the DSNY conducted four cycles of waste characterization studies of residential waste as well as pedestrian litter. The purpose of the report was to characterize waste streams by housing density and income level over four seasons. The density and income information was based on the U.S. Census data of the year 2000. (The reports from the four periods are available on the DSNY website. As of this writing, the final aggregated report has not been published.)

Over three weeks per period, the city’s waste stream was sampled from existing collection routes, which is based on community board areas. The City’s population was organized into a matrix of groups, combining high to low densities against high to low incomes. The low-income low-density group was disregarded due to negligible numbers, so there were a total of eight distinct groups. In order to characterize the study data into these groups, the DSNY sampled the existing collection routes which were entirely composed of one income-density combination (“Fall 2004 WCS Results Highlights”, 4).

According to the 2000 U.S. Census, the collection routes within 125th Street in Community Board Districts 9 and 10 are mixed tract routes, but consist of mostly of high density-low income tracts. In West Harlem, south of 125th Street, there is one high density-medium income tract, and in Central Harlem there are a few medium density-low income tracts (“Fall 2004 WCS Results Highlights”, 9). Since the high density-low income tract is the predominant tract for the 125th Street BID, this report will hereafter give special consideration to how this tract compares with the citywide results.
Residential composition data highlights

As an average of the four periods, 35.4% of all residential waste that the DSNY collected was designated recyclable material. There are two streams of designated recyclable material collected in NYC. 22.82% is recyclable paper, and 12.61% is recyclable metals, glass and plastics.

20% of the metal, glass and plastic recycling collection was material other than materials designated for that collection. This material included 10% contamination, 7.2% plastic containers and packaging not collected in the NYC recycling program, .42% glass not collected in the NYC recycling program, and 2.5% paper.

See Figure 4 below for a comparison the percentages of waste for New York City and the high density-low income tract:

![Diagram](image)

**Figure 4:** Waste breakdown averages for New York City and high density-low income tract from Fall 2004 – Summer 2005 DSNY Waste Characterization Study.

Discernable trends for the high density-low income tract were evaluated based on whether the averages for the data collected over the four periods for the above categories differed by more than a 1% point. The discernable trends are as follows:

- The high density-low income tract recycles less of its total waste than the city as a whole.
- Also, the high density-low income tract recycles a lesser percentage of paper, but slightly more MGP than citywide. With regards to organic waste, the high density-low income tract disposes a higher percentage of organic waste than citywide. More noticeably, the percentage of food waste is 4% higher on average than the citywide percentage.

Waste basket data highlights

On average, approximately 24% of waste discarded into pedestrian litter baskets is suspected to be illegally dumped. On average, 17% of the weight of the illegally-dumped waste is attributed to a larger number of small bags of residential waste, and 7% is attributed to a small but heavy number of commercial waste bags. ("Illicit Street Basket Use", Fall 2004, Winter 2005, Spring 2005, Summer 2005 WCS Study Results).

Recycling

The recycling program in New York City was started in November of 1986. The city suspended the collection of glass and plastic in July of 2002. The collection of plastic was re-instated in July of 2003 on an alternate week schedule. In April of 2004, glass recycling and weekly pickup was resumed. ("Laws and Directives", NYCWasteLe$$.)
125th Street Waste Issues

125th Street, like many other such high traffic commercial streets, faces additional issues related to businesses-generated waste and pedestrian litter. Much like New York City as a whole, these issues relate to economics, health, and neighborhood quality of life.

Businesses are responsible for hiring private contractors to collect garbage and recycling, and can face fines from the DSNY for any improper disposal. These hauling costs can be a burden to small businesses such as the ones that characterize 125th Street, leading to illegal dumping. In 2002, Operation Dumpster, a program designed to reduce street clutter, made it illegal to keep dumpsters on the street. The results have raised a concern of improperly stored waste, particularly in small shops that may have difficulty finding storage space.

Health Concerns - Rats

When waste is not always properly stored, rats can become a problem on the street and represent a health hazard. Rats are a problem throughout the city, with citywide population estimates often ranging from 8 million to 80 million (1 to 10 rats per person, although both are likely exaggerations according to historical data) (Sullivan, 18-20). Still, high reproductive rates mean that one pair of rats has the potential of 15,000 descendants in a year (Sullivan, 19). They concentrate where food is readily available, particularly where food waste is thrown away. Rats are nocturnal and feed at night, so seeing one during the day is a sign of overpopulation significant enough that they need to alter their instinctive habits in order to obtain enough food (Sullivan, 20-21). Rats can occasionally be seen on 125th Street in daytime, and business owners have complained to the Business Improvement District (BID) office of their presence. The BID has worked with the Department of Small Business Services Outreach Unit, Department of Health Pest Control Division, the Community Board and the owners of the property in search of solutions. Even though the area has been baited on several occasions, the problem still persists. Vacant lots and clogging of the sewer system are contributing factors. The health risks posed by rats include contamination of food supplies and the potential exposure to any of the many viruses, bacteria, fungi the rodents and associated fleas may carry. Rat specialists and exterminators generally agree that the way to get rid of rats is not to poison or trap, but to eliminate their food supply; namely, garbage (Sullivan, 17).

Health Concerns - Asthma

Asthma is a particular concern in the Harlem area. Contributing factors include heavy truck traffic as well as cockroach and other insect populations, both of which affect 125th Street. Harlem has high pediatric asthma rates, as much as 5.4% compared to 1.77% citywide (WEACT), and also has some of the highest asthma hospitalization rates in the country. 125th Street, in addition to being a busy commercial street, serves as a crossing for 4 MTA bus lines and is a major truck route. Joining these trucks are waste collection vehicles, which are particularly numerous due to the number of businesses on the street. A walk-through of the BID area revealed a list of 34 carters for a five-block stretch, as indicated by hauler decals displayed in store windows. Cockroaches are attracted to garbage much as rats and are also a known contributor to asthma through their droppings and body parts (EPA)
BID Initiatives

Recognizing the problems, the BID have initiated a clean program and work closely with City Agencies to address problem areas. The Mayor’s office issues Sidewalk Cleanliness Scorecard Ratings for all neighborhoods, assessed annually. Pedestrian litter may be generated by excess leaflets being handed out, waste from street vendors, discarded fast food containers, and other items left behind by the many people who visit the area every day to shop or eat. Due to such efforts as the Sanitation Crew which cleans the sidewalks, the BID has achieved several 100% scores in recent years, which is higher than the city average (see Figure 3). Additionally, new pedestrian litter bins were designed and distributed in the summer of 2006.

Figure 3: 125th Street BID scorecard data for street and sidewalk.

Waste Survey Distribution

Still, the waste situation in the neighborhood is difficult, as was made evident in the Waste Survey conducted by the Urban Design Lab (UDL) in cooperation with the BID in the summer of 2006. The intent of the Survey was to gather primary data to help us understand the current waste situation on 125th Street. We hoped to gather information on the types and volumes of waste generated and the carters who removed it, but it was also important for us to understand how local residents and business owners viewed the situation and to understand their concerns.

The surveys were three pages long, mainly composed of multiple choice questions with checkboxes to make them quick and easy to fill out. There were four groups of recipients: Residents, Ground-Floor Business Owners, Upper-Floor Business Owners, and Property Owners, and each received a similar survey with actions particular to their sanitation issues. Surveys were initially distributed in two ways. The BID Sanitation workers distributed surveys to all ground-floor business owners in the BID boundaries, and surveys were mailed to other groups from BID mailing lists. As anticipated, follow-up was necessary, and took the form of both phone calls and in-person visits to businesses to inquire about surveys dropped off and distribute new surveys if needed. These methods of follow up were used over the course of a month by Samina, Alanna, Ken, and Kelly of the UDL, in addition to Barbara Askins, President and CEO of the BID, and her assistant Candice. The final distribution was a survey accompanied by a personal note from Barbara, and was distributed to a list of 20 businesses that represented categories from which we had not received adequate response.
Waste Survey Results

Despite these efforts, the return rate was very low. Of 826 targeted respondents, in the end only 25 were returned, a return rate of only 3%.

There was mixed interest in the waste survey. Several of those approached in person expressed that they were happy the BID was addressing this as an issue they were concerned with as well. A few store owners (less than 10) wanted to know what new measures were being adopted to address the concerns that they had. However, most store managers were either politely disinterested, or outwardly bothered by being approached for answering survey data. The BID has observed illegal dumping by some of its members and is working closely with the Department of Sanitation to alleviate this problem. This effort could have possibly had a negative impact on gathering information. Although front-line employees may be interested and willing, approval from higher managers was required and either slowed or stopped survey responses. In other cases, managers were themselves running the stores and seemed too busy to respond.

The low response rate makes it impossible to generate quantitative results as far as amount or types of waste generated, or waste hauling costs. Rather, the most valuable result from the surveys are qualitative results: the lessons learned about communication within the BID and in identifying perceptions of waste issues and willingness to take action.

Business Owner Concerns

Illegal dumping was a major concern for a few business owners who were directly affected by it. As part of an interview conducted during the August-September 2006 Waste Survey, a store manager stated that garbage bags were sitting on the street near the receptacles for several hours, and that this induced several occurrences of illegal dumping. The store owner manager further stated that the store’s private carter complained several times about illegal dumping and charged the store additional fees for garbage disposal. The concern over illegal dumping was raised by several property owners.

Garbage sitting on the street was the other primary concern identified. Although the BID has high scores for clean streets and sidewalks, the appearance of trash in the corners is still a community concern. The Department of Sanitation has agreed to work closely with the BID in this area. During recent conversations in March 2007, reviewing the pick-up schedules and making adjustments is a possibility. These bags are a health concern as well as an aesthetic one, since the thin plastic is no barrier to rodents and insects. There is also some misunderstanding surrounding the DSNY pickups. Some store owners seem to be under the impression that the BID litter bags are collected only once daily, which causes a problematic accumulation. However, a DSNY representative stated that such pickup should occur two to three times per day, along with the regular waste bin pickups. Regardless of what occurs in practice, the public perception is that pickups are either insufficiently frequent or poorly timed with the accumulation of pedestrian litter peaks.

Community Interest and Involvement

Overall, there is a gap between intent and action regarding waste issues on 125th Street. Many who expressed an interest were nevertheless unresponsive. One manager sat down with a surveyor to discuss his issues with the BID at length, and stated how he thought there should be more in-person outreach such as we were doing that day, but then never completed and returned the survey. The intent/action gap seems to be caused by a combination of insufficient time on the part of business owners, lack of interest, belief that things cannot or will not change, and a lack of communication among business owners or between the business owners and the BID on these issues. Some business owners feel that their concerns are not heard by the BID, although some of those who make this complaint admitted that they do not attend BID meetings.

Future Survey Attempts

There are ways in which future surveying attempts could be improved. The survey would have benefited from more time and personnel than the BID and UDL were able to devote to it at the time. With only a few people working on it part time, follow-up was not as persistent as the
follow-up done by professional surveyors, and such delays may have contributed to the overall poor response. In order to increase the respondent rate of future surveys, a method must be conceived that offers a more compelling reason for answering the survey. This may be in the form of an incentive. Perhaps this could be free advertising within the BID Newsletter. Also, it is more effective to approach potential survey respondents with actual current initiatives, because survey respondents are more willing to respond if they feel that something is actively being done about the topic being surveyed. They appreciate being informed of these new measures, and this encourages them to participate. It is also advisable to include stamped, self-addressed envelopes for the return of surveys. During the months of August and September 2006, four individuals went door-to-door to speak with store owners about filling out the survey. While this method undoubtedly increased the number of survey responses, it was difficult for store managers to fill the survey out immediately, and it was not possible to follow up on a second day on every visit to pick up surveys. Also, several of the surveys that were faxed back were unreadable due to poor resolution.
Conclusion and Recommendations

There are several infrastructural measures within the current system of waste management that can be taken to address 125th Street’s current waste-related issues. Many of these steps involve requesting clearer communication and demonstrating need for additional services from the city, such as increased frequency in collection of pedestrian litter baskets. The businesses of 125th Street can also find innovative ways to reduce truck traffic on the street by perhaps forming a collective for waste hauling services, so as to reduce the number of distinct private carters that service the street. An increased awareness on the street about the waste process will help the community members to become more involved.

Waste is usually regarded as only a problem to be dealt with. But waste can also be a valuable resource. For example, it has been put to use for decades as a landfilling material. In the current climate of soaring energy prices, environmental damage caused by conventional fuel sources, and political unrest in oil-rich countries, perhaps waste would be put to its most valuable use as an energy source. It is the belief of the UDL that 125th Street has the opportunity to be a leader in an urban waste-to-energy application, and can help shape its economic future by doing so.

To this end, the UDL has simultaneously researched alternative methods of dealing with waste. Potential methods and recommended additional research studies are listed below.

Potential Methods

The primary technology the team has researched is anaerobic digestion, which takes putrescible waste (such as food) and accelerates the process of decomposition, trapping the methane gas released. This gas can be used as fuel to power the digester with a small residual of usable heat or electricity. The process is already used with some frequency in rural situations, but does not yet widely exist in an urban setting. The major issues to resolve in order to realize this technology are waste analysis and source separation. In order to design a system, both the quantity and contents of the waste stream to be used must be determined. In order to run the system, there needs to be a system in place for separating organic from inorganic waste, whether that occurs at an individual business or at a central processing facility.

The team is also analyzing biodiesel filtering, a process that utilizes cooking grease to produce diesel that can be used in new, clean transportation alternatives. The equipment required for biodiesel filtering is less expensive and more readily available for small-scale use, relative to the equipment needed for anaerobic digestion. Also, source separation is not an issue, since the grease already exists in a separate distribution/collection system.

Other potential methods deal with truck traffic and pollution concerns. As previously stated, a walkthrough indicated the presence of more than 30 private carters in the BID area of 125th Street. One way to reduce truck traffic would be too coordinate pickups so that fewer carters service the area. Implementation in this case would be a challenge, since each business has an independent contract with a carter and the right to choose from among the licensed carters.

Pollution from truck traffic could also be reduced by using cleaner burning fuels. The DSNY has one of the cleanest truck fleets in the United States by using low-sulfur diesel and testing new particulate filters (Ascher, 186). Beyond federal standards for commercial vehicles, the cleanliness of the commercial collection trucks is dependent on the carter that owns them. In order to establish an industry-wide standard for cleaner trucks, changes at the city level may be necessary, with financial incentives for compliant fleets.

Recommended Additional Studies

Since source separation is an issue with anaerobic digestion, it is recommended that a study be performed on the viability and potential methods for such separation. Possible case studies could include the Hunt’s Point or Riker’s Island composting systems, which must also separate organic matter out from other types of waste. Issues addressed must include the space,
equipment, staff, safety concerns, and economics of source separation, and also whether it should take place at individual businesses or at a central collection facility.

Quantifying and analyzing waste on 125th Street is the other key study needed to move forward with any alternative waste management proposal. Since this data is not readily available and a full study of all 125th Street waste may be impractical, it is recommended that the analysis begin with one business that is willing to cooperate with the BID and participate in a pilot project. Analyzing the quantity and contents of this business’s waste stream for a period of time would provide the information necessary to establish a pilot project using that particular stream, and it would also provide the base for a collection of hard data on the subject which does not currently exist for this area.
Bibliography


New York State Environmental Conversation Law, Section 27-0107, Subsection 1.b.i.


Appendix A: List of Private Carters Servicing 125th Street

The following is a list of private carters that collect commercial trash from businesses with the 125th Street BID boundaries. This list was compiled in July 2006 by surveying the required decals posted on businesses’ doors within the 125th Street BID area.

<table>
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<tr>
<th>Carter Name</th>
<th>Telephone</th>
<th>Address</th>
<th>Boro / City</th>
</tr>
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<tr>
<td>NYSEC Acquisition Health Care Waste Service</td>
<td>718.842.9655</td>
<td></td>
<td></td>
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<tr>
<td>Action Carting Environmental Services</td>
<td>866.270.9900</td>
<td>429 Frelinghuysen Ave.</td>
<td>Newark</td>
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<tr>
<td>American Compaction Systems Inc.</td>
<td>914.594.9700</td>
<td>44 N. Saw Mill River Road</td>
<td>Elmsford</td>
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<td>Amro Carting Corp.</td>
<td>718.542.3236</td>
<td>337 Coster Street</td>
<td>Bronx</td>
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<tr>
<td>Argento Rubbish Removal Inc.</td>
<td>718.824.4625</td>
<td>3286 Country Club Road</td>
<td>Bronx</td>
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<tr>
<td>BFI Waste Systems of New Jersey, Inc.</td>
<td>718.497.4000</td>
<td>72 Scott Ave.</td>
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<tr>
<td>City Waste Services, Inc.</td>
<td>718.328.8582</td>
<td>167 33 Porter Road</td>
<td>Jamaica</td>
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<tr>
<td>Cyber City Carting, Inc.</td>
<td>718.320.2729</td>
<td>P.O. Box 1076 Baychester</td>
<td>Static Bronx</td>
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<tr>
<td>D&amp;D Carting Co. Inc.</td>
<td>718.965.4790</td>
<td>107 8th Street</td>
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<tr>
<td>D &amp; L Schiro Carting Corporation</td>
<td>718.991.8190</td>
<td>1345 Spofford Ave.</td>
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<td>Filco Carting Corp.</td>
<td>718.456.5000</td>
<td>111 Gardner Ave.</td>
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<td>Five Star Carting Inc.</td>
<td>718.349.7555</td>
<td>5835 47th Street</td>
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<td>Hugo</td>
<td>201.443.3000</td>
<td>1099 Wall Street West</td>
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<td>Isabella City Carting Corp.</td>
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<td>Jem Sanitation Corp.</td>
<td>212.226.3442</td>
<td>P.O. Box 708</td>
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<td>Liberty Ashes Inc.</td>
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<td>Metropolitan Waste Services of New York Inc.</td>
<td>716.667.2511</td>
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<td>Mid Bronx Haulage Corp.</td>
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<td>Mr. T Carting Corp.</td>
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<td>Sicale</td>
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<td>Rainbow's USTWC</td>
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<td>718.863.0300</td>
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Appendix B: Waste Characterization Study Comparison

The following data was compiled from the four waste characterization study highlight reports for the Waste Characterization Study conducted by the DNSY between the fall of 2004 and the winter of 2005. The purpose of the extracted data is to compare a breakdown of the city’s waste stream as compared to the high-income, low-density tract waste stream (the predominant census tract within the 125th Street BID). The first set of data shows the recycling rates for the two major categories of recycling, paper and metals/glass/plastics. The second set of data shows a breakdown of the major categories of all waste, which includes all refuse and all recycling.

<table>
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<th>City Sp05</th>
<th>City Su05</th>
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