

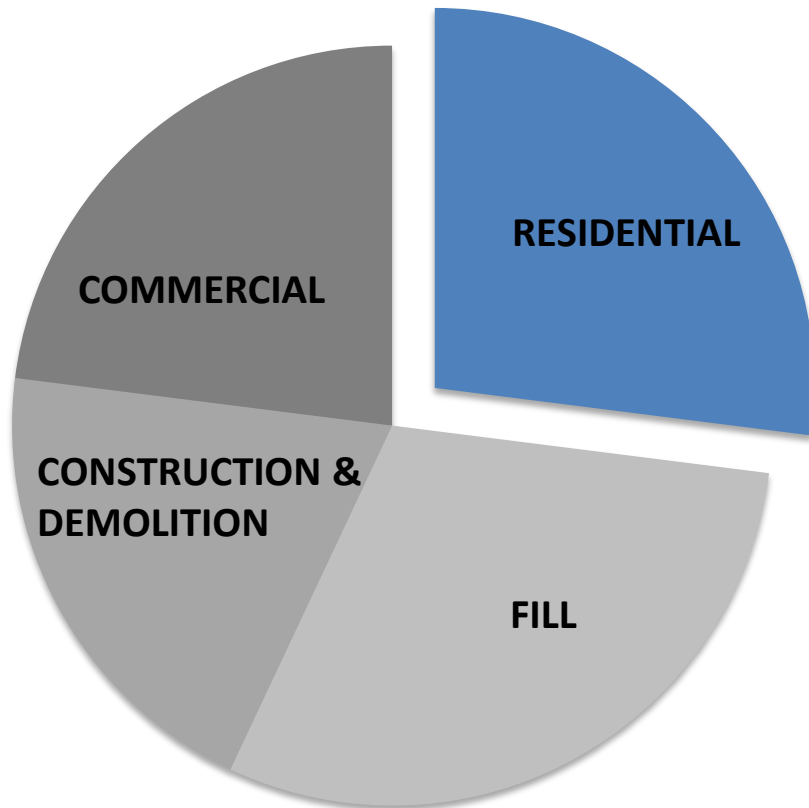


Sustainability and Solid Waste: Doubling NYC's Diversion Rate by 2017

11 March 2013

CITYWIDE SOLID WASTE OVERVIEW

- NYC generates approximately **14 million tons** of solid waste from residences, institutions, construction and demolition, fill and commercial businesses each year
- ~50% of the entire waste stream is recycled (largely due to the high rate of fill diversion)

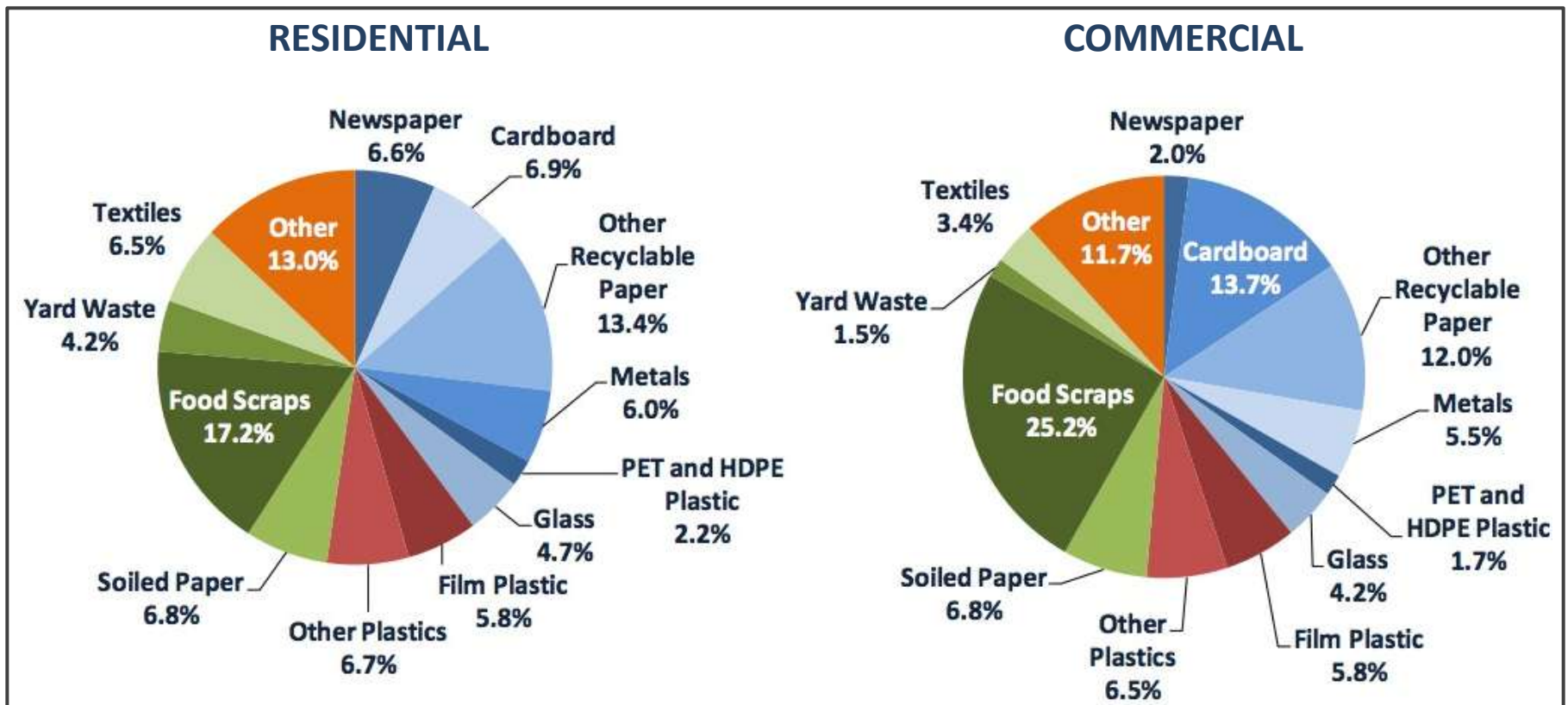


WASTE TYPE	DESCRIPTION	DIVERSION RATE
Residential	Households, select non-profit institutions and government buildings, city parks, street baskets and street sweeping.	15%
Commercial	Office buildings and industrial businesses.	40%
Construction & Demolition	Debris from construction site	38%
Fill	Dirt and soil from excavation for construction projects	99%

CITYWIDE SOLID WASTE OVERVIEW

- **Organic material** and **recyclables** each make up ~35% of the commercial and residential waste streams
- The City collects approximately a quarter of NYC's waste using a fleet of over 2,000 vehicles and a staff of nearly 6,000; commercial waste is collected privately with a similarly sized fleet and roughly 200 carting companies

COMPOSITION OF NYC SOLID WASTE, 2008 DATA



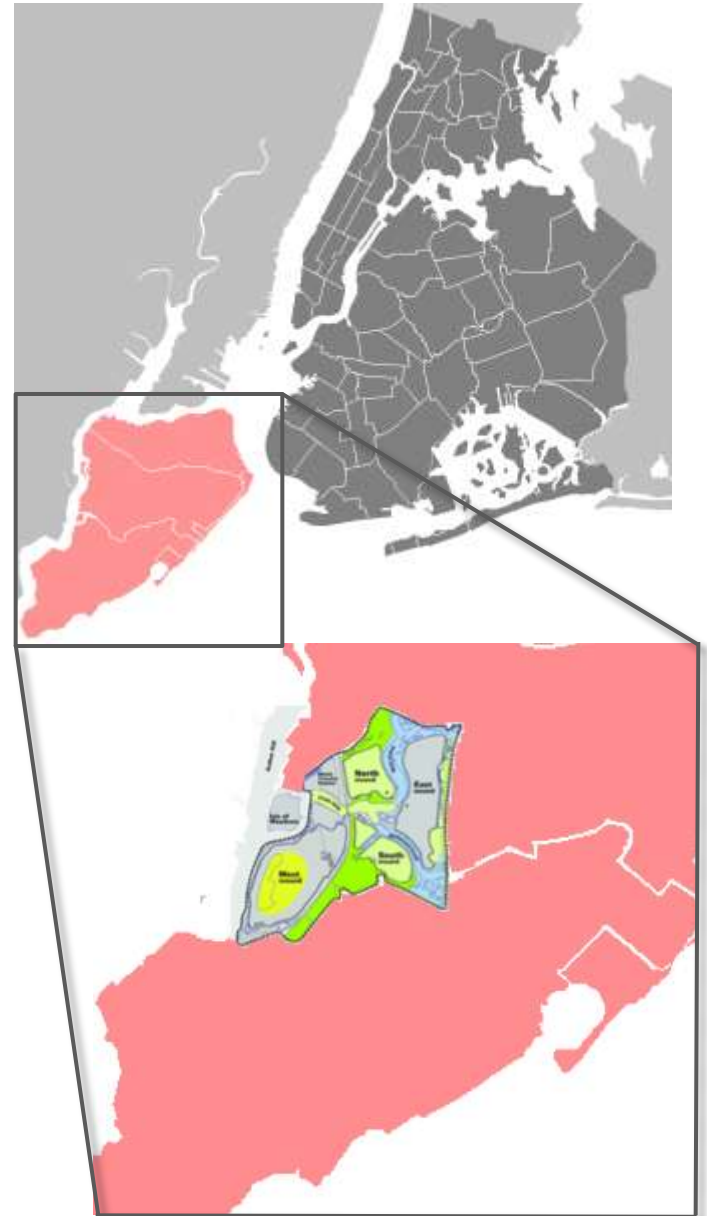
CITYWIDE SOLID WASTE OVERVIEW

FRESH KILLS LANDFILL

- Opened in 1947 in rural Staten Island
- Initially only intended for 20 year operation
- Covered 2,200 acres (890 ha)
- Became New York City's principal landfill, and it was once the largest landfill, and man-made structure, in the world

CLOSURE IN 2001

- Capped for landfill gas capture
- Began transformation into reclaimed wetland and landscaped public parkland (will be three times the size of Central Park)

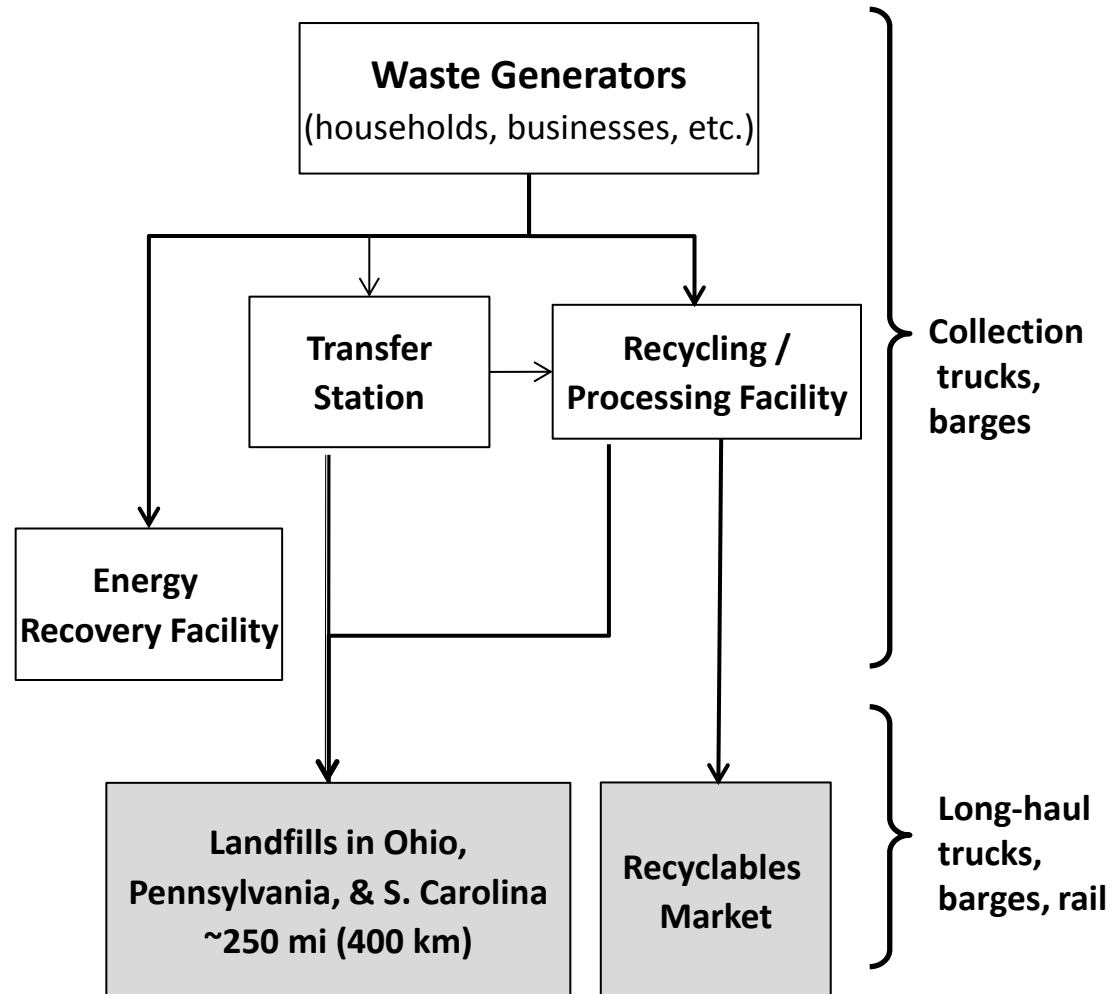


SOLID WASTE LOGISTICS

REMOVAL FROM NYC

After collection, waste and recyclables are transported out of the city, through a network of 90 city- and state-run transfer stations, using a combination of:

- Collection trucks
- Long-haul trucks
- Barges
- Railcars



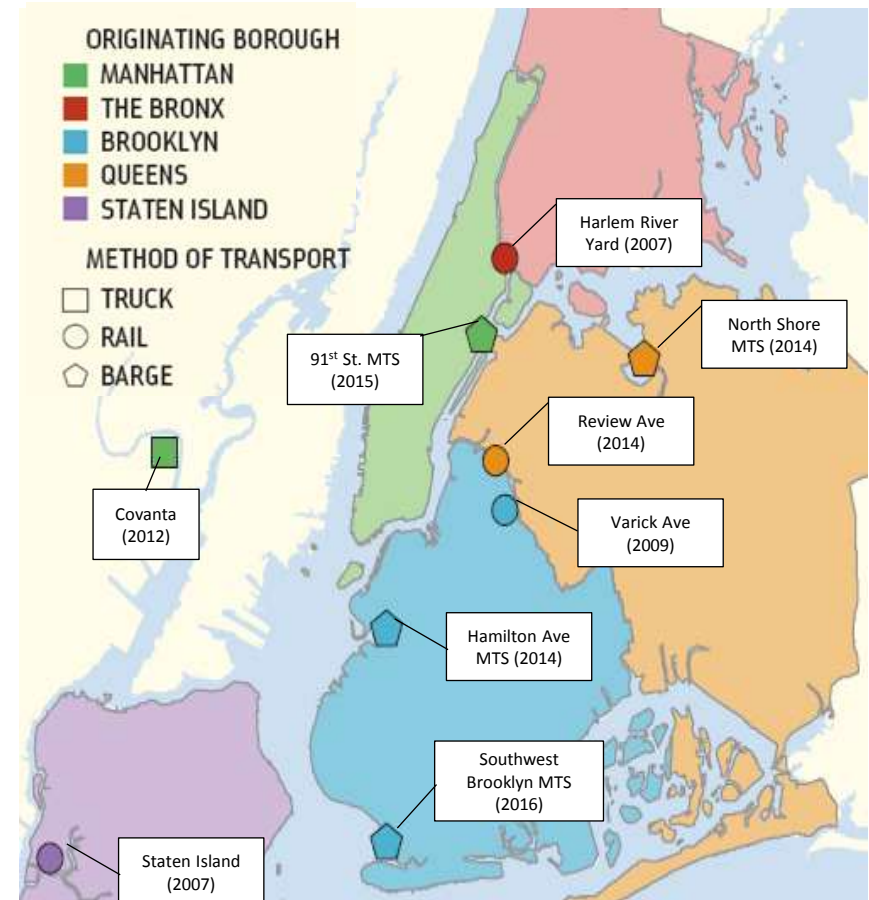
2006 SOLID WASTE MANAGEMENT PLAN

IMPLEMENTING BARGE AND RAIL PLAN FOR REFUSE DISPOSAL

- Once SWMP is fully implemented, ~41% of City-managed waste will be exported by rail, ~12% by city collection truck, and ~47% by barge



FY10



Future

**IN 2007, MAYOR BLOOMBERG UNVEILED A COMPREHENSIVE PLAN
TO CREATE A GREENER, GREATER CITY**



planNYC IS NYC'S SUSTAINABILITY BLUEPRINT

WHEN RELEASED, PLANYC FOCUSED ON NINE ISSUES:



HOUSING



OPEN SPACE



BROWNFIELDS



WATER QUALITY



WATER NETWORK



TRANSPORTATION



ENERGY



AIR QUALITY



CLIMATE CHANGE

IN 2011, MAYOR BLOOMBERG REVEALED AN UPDATED PLANYC



TARGET:

**DIVERT 75% OF THE
CITY'S WASTE FROM
LANDFILL BY 2030**

AND ADDED A TENTH FOCUS AREA: SOLID WASTE

WHAT'S NEXT: DOUBLING DIVERSION

GOAL: Double residential and institutional waste diversion from landfills from 15% to **30% by 2017**

- Reduce waste sent to landfills by **more than 500,000 tons** annually
- Save up to **\$186 million, including \$51 million in reduced export costs**
- Reduce GHG emissions associated with solid waste by **7%**

HOW WILL WE GET THERE?

3-Part Waste Reduction Plan

**Invest in City's
Waste Reduction
and Recycling
Infrastructure**

**Increase Access to
Waste Reduction
Programs**

**Create Incentives
and Engage Public
in Reducing Waste**

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SELECT SOLID WASTE INITIATIVES UNDERWAY

RECYCLING

- Expand Recycling Program to Add Plastics
- Expand Public Space Recycling
- Improve City's Waste Reduction Communications

ORGANICS

- Expand Community-Level Food Scrap Collection
- Launch Community Waste Reduction Competition

LOCALIZED PROCESSING CAPACITY

- Pilot New & Emerging Conversion Technologies
- Open New Compost Sites



“[WE’LL] TACKLE NEW YORK CITY’S FINAL RECYCLING FRONTIER: **FOOD WASTE.”**

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THE MAYOR'S FOOD WASTE CHALLENGE

OBJECTIVES

- Incentivize source separation and diversion of organic waste in the commercial sector
- Provide information / increase transparency in the commercial sector
- Develop a data-supported framework for commercial waste mandates

TARGET PARTICIPANTS

- Scale: Restaurants generate large volumes of food waste
- Diversity: Fast food to high end restaurants
- Distribution: Restaurants in all five boroughs



THE MAYOR'S FOOD WASTE CHALLENGE

THE 50% CHALLENGE

The Mayor's Food Waste Challenge invites New York City restaurants to match the City's goal to reduce landfilled organics by committing to a 50 percent food waste diversion goal

TOOLKIT COMPONENTS:

1. Guidelines on establishing a baseline (waste audit)
2. Resources on waste diversion techniques & innovative technologies
3. Tracking / Reporting Tool
4. Staff & customer education resources
5. Marketing resources





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**A GREENER,
GREATER
NEW YORK**



Waste Collection by City Agencies

- DSNY uses a fleet of over 2,000 vehicles and a staff of nearly 6,000 to collect more than 3 million tons of waste every year.
 - Approximately 3% of this waste (99k tons) is collected by other agencies such as Parks, DOT, DOC, DEP and NYCHA.
 - In addition to waste collection from households and street baskets, DSNY also collects waste from eligible non-profit organizations, institutions or buildings. DSNY will also pay the tip fee or export cost for waste from non-profit organizations who handle collection independently.
 - These entities include all public schools, select NYCHA facilities, city-owned government offices, select state office buildings, museums, and cemeteries. (Note: hospital waste is collected by commercial carters.)
 - It is not clear how many non-profit organizations or buildings DSNY services and/or how much waste is collected from these entities.
 - Approximately 1,100 doctors' offices (typically located in residential buildings) pay DSNY for waste collection. DSNY received \$326,591 in FY11 revenue since ~90% of these pay \$329.89/year.
- In addition to recycling paper, metal, glass, and certain plastics, DSNY manages or facilitates small-scale collection and recycling or reuse of household hazardous waste, e-waste, textiles, furniture, tires, derelict vehicles, asphalt/millings, fill, dirt and dredge.
- DSNY manages a composting facility at Rikers Island for food waste, and will resume leaf and yard waste collection from households in select CBs in Spring 2013 (currently unfunded) and composting at Fresh Kills, Soundview, and Spring Creek (Spring Creek pending approval).

Solid Waste Management Plan Progress

- Since the approval of the City’s Solid Waste Management Plan in 2006, we have made much progress:
 - We have signed long-term contracts for the export of City-collected waste by rail from the Bronx and Staten Island, and part of Brooklyn.
 - Two MTSs are under construction—Hamilton Avenue in Brooklyn and North Shore in Queens – and are expected to be completed by Summer 2013.
 - DSNY is currently negotiating long-term contracts for all four MTSs.
 - DSNY has a 30-year contract with the Visy paper recycling mill in Staten Island.
 - The recycling facility at South Brooklyn Marine Terminal is under construction and will be complete in CY13; the facility will enhance the transport of recyclables by barge.
 - We created the Office of Recycling Outreach and Education to increase recycling participation using grass-roots community focused approach.
- The environmental benefits of the SWMP are primarily limited to the residential sector, which comprises approximately a quarter of the city’s entire waste stream. (The 59th Street MTS for commercial C/D waste is an exception.) However, the MTS contracts do envision implementation of “incremental pricing” (marginal pricing) to encourage commercial carters to utilize DSNY SWMP facilities.

GreenNYC Study Findings

- GreenNYC's Behavioral Impact Study examined environmental attitudes, including those related to recycling. Study findings:
 - 87% of New Yorkers have access to recycling bins. Of the 13% that do not, 36% of them report using clear plastic bags to recycle curbside.
 - Despite this high number of residents with the ability to recycle, we know from our waste characterization study that New Yorkers are not recycling as much as they could.
- The focus groups identified the following attitudes:
 - People accept recycling as a fact of life but compliance is not consistent
 - Many people admit they don't recycle consistently
 - New Yorkers make a strong association between recycling and the environment
 - Most believe paper recycling is far more straightforward than plastic, glass and cans, and were surprised to hear that a substantial percentage of household paper is not being recycled
 - Motivators for those who recycle: it's the law, it's our responsibility, fines associated with not recycling, easy to understand how the behavior helps the environment (reduces landfill waste and puts materials back into use)
 - Barriers to recycling: unclear on requirements, effort involved, forget, don't have space for recycling containers in home, privacy concerns

Waste Reduction Challenges

- Structural and institutional factors inhibit waste reduction in NYC:
 - There is a bifurcated waste collection system: residential waste collection is the responsibility of City government while commercial waste collection is the responsibility of private carters
 - There is limited space for recycling in residential multi-family buildings
 - The City has limited enforcement tools to improve recycling rates
 - Underlying system costs are rising, becoming an increasing burden to City budget and taxpayers.....
 -*but* absence of transparent price of waste collection to residential generators makes it difficult to send economic signals to encourage waste reduction or diversion
 - Recycling rules are complex and are different for residential and commercial generators
 - Challenges to collection of food organics include vermin, lack of space in residential and commercial buildings/businesses, and the lack of a large-scale food composting facility in close proximity to the city.
 - Unlike jurisdictions which franchise carters by route and price, NYC has fewer tools to mandate what types of recycling services carters have to provide.

Commercial Waste Collection

- All commercial waste is collected by private carting companies.
- Commercial recycling rules are based on the type of business:
 - Commercial businesses (offices, retailers, etc.) are required to recycle paper, cardboard and bulk metal (and textiles if more than 10% of waste stream)
 - Food establishments are required to recycle paper, cardboard, metal, glass and plastic bottles and jugs.
 - While it is currently legal for private carters to collect recyclables using a single stream, a business must have a contract with a carter to do post-collection sorting; this occurs rarely in practice.
- All carters collecting or disposing of putrescible waste (for example from office buildings or restaurants) are required to obtain a license from BIC; there are ~200 licensed carters in NYC.
 - A carting license costs \$5k (plus \$500/collection vehicle) and must be renewed every 2 yrs.
 - Licensees are required to submit a detailed customer register twice/year and may be fined for inaccurate data submitted.
- Carters that solely collect or dispose of construction and demolition waste and/or fill must register with BIC; there are ~700 C&D carters registered w/BIC.
 - Registration costs \$3,500 (plus \$500/collection vehicle) and must be renewed every 2 yrs.
- While we estimate approximately 20% of commercial waste is transported directly to transfer stations outside the city, there are 18 permitted commercial waste (putrescible) transfer stations; 19 permitted fill material transfer stations; and 22 permitted C&D transfer stations within the City.

Commercial Waste Collection & Disposal

- The City collects data about commercial waste collection and disposal in three ways:
 - Private transfer stations in NYC report data to DSNY on a quarterly basis regarding the type and volume of waste tipped at their facilities. (Except from MRFs.)
 - Reporting is paper-based and then entered into DSNY's PODS database.
 - Commercial carters report data to DSNY twice/year about volumes of waste and recyclables that they collect on each of their routes in NYC.
 - DSNY only receives information from licensed carters (not carters for C&D or fill).
 - Reporting is paper-based and then entered into DSNY's PODS database.
 - Licensed commercial carters report data twice/year through their customer registry to BIC.
 - Reporting is submitted on an electronic template (on a CD) provided by BIC.
- Despite a lack of centralized data collection, we estimate the City generates approximately 3.2 million tons of commercial waste each year, nearly 40% of which is recycled or composted.