Diversion Report II

NYC Organics Collection Pilot

April – September 2014

Submitted January 2015 by NYC Department of Sanitation Commissioner Kathryn Garcia to:

- **Mayor Bill de Blasio**
- **City Council Speaker Melissa Mark-Viverito**
- **Chair of the Committee on Sanitation & Solid Waste Management Antonio Reynoso**

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Contents

Introduction

In October 2013, New York City Council passed Local Law 77, which requires the New York City Department of Sanitation (DSNY) to implement a voluntary residential organic waste curbside collection pilot program and a school organic waste collection pilot program. Local Law 77 requires the Sanitation Commissioner to report on the amount of organic waste diverted from participating households and schools. Pursuant to this requirement, DSNY submits *Local Law 77 Diversion Report II*, covering the period April to September 2014.

Organic waste—food scraps, food-soiled paper, and yard waste—accounts for nearly a third of New York City's residential waste stream. This organic material, while historically considered trash, is a valuable resource and can be put to beneficial use. If managed properly, it can be used to create compost, a vital soil amendment, and to generate renewable energy to heat homes or power vehicles.

NYC Organics Collection employs a strategy similar to the current NYC recycling program, which collects recyclable materials from the curb on specific days of the week. DSNY initiated the pilot program in 2012 to evaluate the feasibility of curbside organics collection. As of January 2015, the program collects organic waste from more than 100,000 households, 700 schools, and many agencies and institutions across the five boroughs located in pilot areas. This report covers the period prior to the October 2014 school expansion.

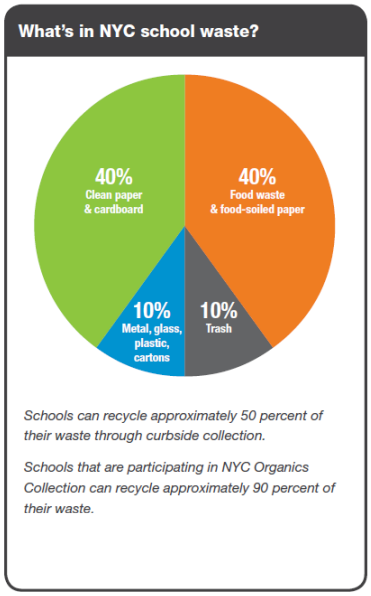
Local Law 77 Diversion Report I, submitted to City Council on June 1, 2014, covers the first six months of the pilot program, from October 2013 – March 2014, plus organics collection initiatives underway prior to Local Law 77. Refer to *Diversion Report I*, available at www.nyc.gov/recycle, for background on the program and organics collection in New York City.

Key Findings

- DSNY collected about 3,750 tons of organic material from residential pilot areas and participating schools between April and September 2014, over 6,500 tons since the program's start.
- Approximately one-third of all eligible households in the pilot areas have participated at least once in this voluntary program.
- Diversion rates in pilot areas have increased 3.4 to 6.5 percentage points.
- Nine audited schools in Manhattan achieved an average diversion rate of 43%, significantly higher than the baseline 14% average diversion rate for NYC public schools.
- Contamination in the school organics stream has been significantly higher than anticipated.

Schools

The composition of school waste – roughly 40% paper, 40% organics, 10% MGP, and 10% refuse – makes schools ideal candidates for organics collection. With successful separation, schools have the potential to be nearly zero waste institutions.



In partnership with the Department of Education (DOE), DSNY provides outreach to schools across the city, including those participating in organics collection. Outreach is designed to engage not only students and teachers but also principals, custodians, and food service workers. DSNY funds intensive outreach to schools through the Recycling Champions, an outreach and education program run by GrowNYC and managed by DOE. During the 2013-2014 school year, Recycling Champions provided intensive education to 90 schools, made 545 visits to organics schools, educated 42,000 students, and conducted trainings for 2,200 faculty, administration, custodians, and food service staff. For more on Recycling Champions, see Appendix A.

From April through September 2014, the period covered in this report, DSNY provided organics collection service to the 358 schools that participated during the 2013-14 school year. DSNY continues to support DOE as it works to troubleshoot barriers to program implementation and to improve compliance with the collection schedule. Approximate location of these sites is shown in Figure 2.

Figure 1: Example of a school cafeteria waste sorting station, including bins for liquids, MGP recycling, food scraps, and landfill.

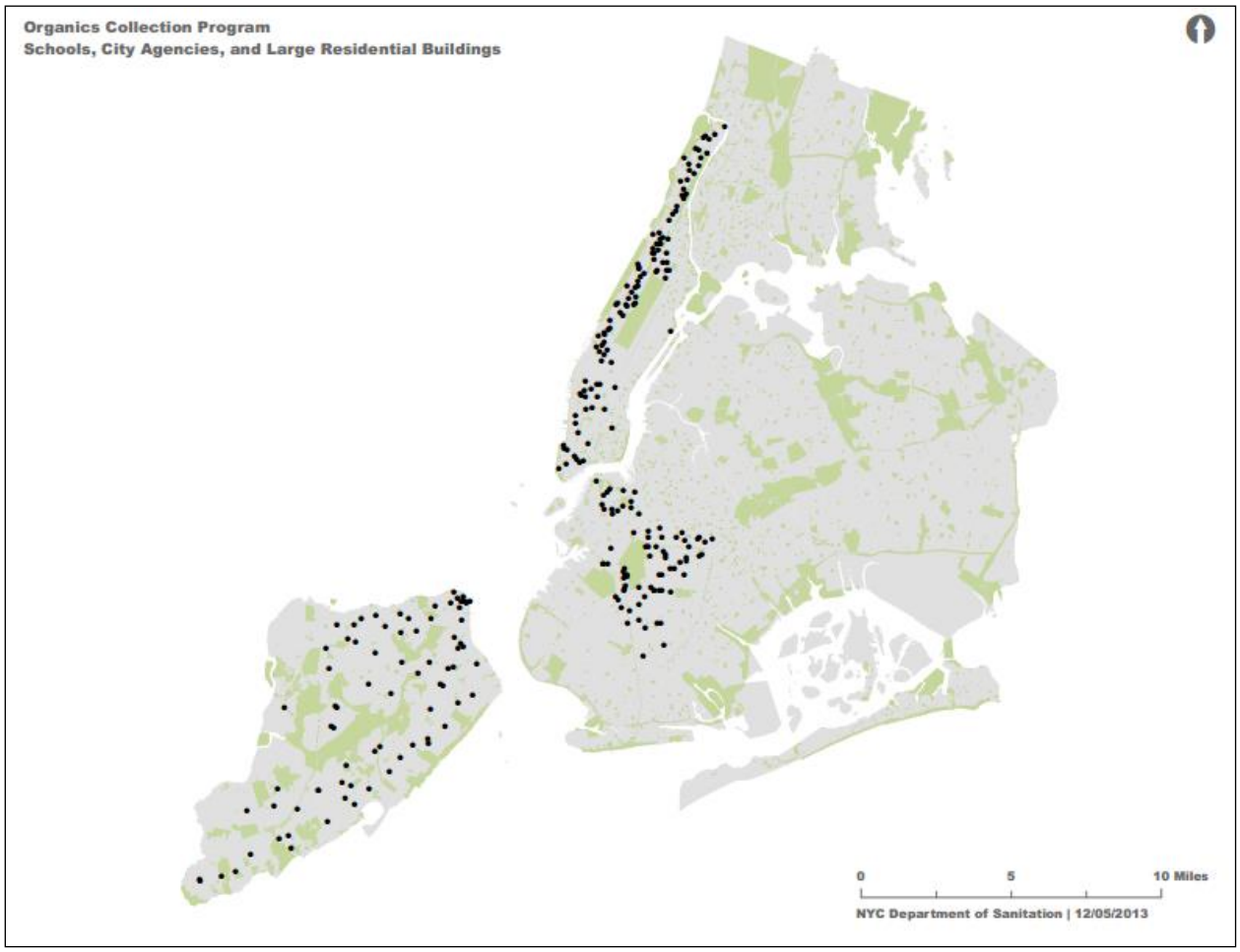
Collection Schedule

For the 2013-2014 school year, DSNY tailored its collection schedule to offer the most frequent service for the materials that schools generate in the largest volume (by weight) – paper and cardboard – and that are the most putrescible – food waste. Schools on the organics collection routes received five evenings per week collection of organics and paper recycling. Metal, glass, plastic & cartons (MGP) were collected once per week. Any remaining material, refuse, was collected two or three times per week on

the neighborhood collection schedule. In some neighborhoods, school trucks also serviced participating private schools, residential apartment buildings, nonprofit organizations, and city agencies.

At the close of the 2013-14 school year, DSNY reviewed the school collection schedule. Daily paper collection service did not measurably improve paper recycling rates in schools. In addition, DSNY had received multiple complaints from schools that once per week MGP service was inadequate for the high volume of milk cartons generated in cafeterias. Starting in September 2014, DSNY amended the school truck collection schedule to collect organics five evenings per week, paper & cardboard on Monday, Wednesday and Friday, and MGP on Tuesday and Thursday, with refuse service offered on the neighborhood curbside collection schedule.

Figure 2: School facilities, and agency, institution, and large residential building site serviced by the school organics collection trucks through September 2014.



Results

From April through September 2014, DSNY school organics trucks collected about 1,250 tons of material from 358 schools located in 234 separate school facilities (Figure 3). Since the program's start in 2012, DSNY school organics trucks have collected more than 3,100 tons of material.

Figure 3: Tons organic waste collected on school truck routes, and number of participating sites, by type.

	ALL			MANHATTAN			BROOKLYN			STATEN ISLAND		
	# Schools (Facilities)	# Other Sites*	Tons Collected	# Schools (Facilities)	# Other Sites*	Tons Collected	# Schools (Facilities)	# Other Sites*	Tons Collected	# Schools (Facilities)	# Other Sites*	Tons Collected
2012-13 School Year & Summer 2013												
Sept - Dec 2012	67 (37)	0	144.65	42 (22)	0	78.04	25 (15)	0	66.61	0	0	0
Jan - June 2013	89 (59)	4	310.39	42 (22)	4	185.88	25 (15)	0	124.51	22 (22)	0	19.85**
July - Aug 2013***	89 (59)	4	43.47	42 (22)	4	34.81	25 (15)	0	8.66	22 (22)	0	0
2013-14 School Year & Summer 2014												
Sept - Dec 2013	205 (141)	22	678.56	107 (57)	9	315.35	25 (15)	13	76.02	51 (47)	0	287.19
Jan - June 2014‡	358 (234)	37	1574.03	178 (97)	28	814.67	107 (68)	9	427.54	73 (69)	0	331.82
July - Aug 2014***	358 (234)	38	136.98	178 (97)	28	103.20	107 (68)	10	19.4	73 (69)	0	14.38
2014-2015 School Year to Date												
Sept 2014	358 (234)	38	272.08	178 (97)	28	148.41	107 (68)	10	65.3	73 (69)	0	58.37
Total												
Sept 2012 - Sept 2014	**358 (234)**	**38**	**3160.16**	**178 (97)**	**28**	**1680.36**	**107 (68)**	**10**	**788.04**	**73 (69)**	**0**	**711.61**

* Other Sites includes private schools, institutions, and apartment buildings

** In 2013, Staten Island schools were added in April, and only collected from kitchens. Fall 2013, Staten Island schools collected from kitchens and cafeterias.

*** During summer season, the school trucks continue to service the non-school sites and the schools open for summer school.

‡ Apartment buildings located within the residential pilot areas in Brooklyn were moved from the school truck routes to the residential organics routes in June, 2014.

Figure 4: Actual diversion rate, capture rate, and potential diversion rate as measured by one-week school waste audits conducted in fall 2014 and spring 2014.

	Fall 2014				Spring 2014 *		
	Diversion Rate	Capture Rate	Potential Diversion Rate		**Diversion Rate**	Capture Rate	Potential Diversion Rate
Manhattan Curbside Collections (9 sites)	**43.10%**	58.38%	73.90%		**47.00%**	70.12%	67.10%
Staten Island (10 Sites)	**30.40%**	47.53%	63.90%		**N/A**	N/A	N/A
Brooklyn Combined Curbside and Dumpster Collections (7 sites)	**18.30%**	24.32%	75.27%		**19.28%**	34.05%	56.63%
Average of Borough Audits	**30.60%**	43.41%	71.02%		**33.14%**	52.09%	61.87%

* The spring 2014 school audit, presented in Diversion Report I, included Manhattan and Brooklyn schools only. Capture rates and potential diversion rates were transposed in Diversion Report I – corrected here.

Diversion

DSNY periodically audits school waste to provide insight into the waste diversion achieved by DSNY-provided recycling services. As shown in Figure 4, school facilities audited in fall 2014[1] achieved diversion rates as high as 43%. Schools that used dumpsters for a portion of their waste management

[1] The Manhattan and Brooklyn schools were the same sites audited in spring 2014 (see *Diversion Report I*), plus ten additional facilities on Staten Island. All sites receive organics collection service.

achieved much lower diversion rates than schools where all material was set out curbside, as shown by the lower rates at the Brooklyn schools, though still higher than the estimated 14% overall diversion rate for schools in 2013.

The audits also show there is room for improvement. As much as three-quarters of the school material was either recyclable or suitable for organics collection (the "potential diversion rate" in Figure 4.) In other words, audited schools still threw away more than half of the waste targeted for recycling and organics collection. Figure 4 shows the relative amount of recyclable materials found in the refuse stream (by weight).

Contamination

Contamination is defined as the "wrong" material in a recycling stream, such as a bottle in the paper bin, or a foam tray in the organics bin. The school audits provide insight into "proper" participation in diversion activities, by sorting the items found in each stream, see Figure 6. Contamination in school organics, though relatively low overall by weight, continues to present challenges for DSNY's organics processing vendors and is higher than desired for an optimally functioning program.

Organics loads in the Brooklyn, Manhattan, and Staten Island school audits had contamination rates by weight of 3.6%, 7%, and 14% respectively. The material from the school kitchens is typically very clean, and is generally pure leftover food waste. The material from school cafeterias is often heavily contaminated with foam lunch trays, plastic containers, cutlery, and packaging. These materials are lightweight. As such, composting facilities judge contamination in large part by the volume and type of contaminants present in each load. Composting facilities report anecdotally that the school organics loads can have contamination rates of 50% or more by volume and can be visually indistinguishable from mixed refuse.

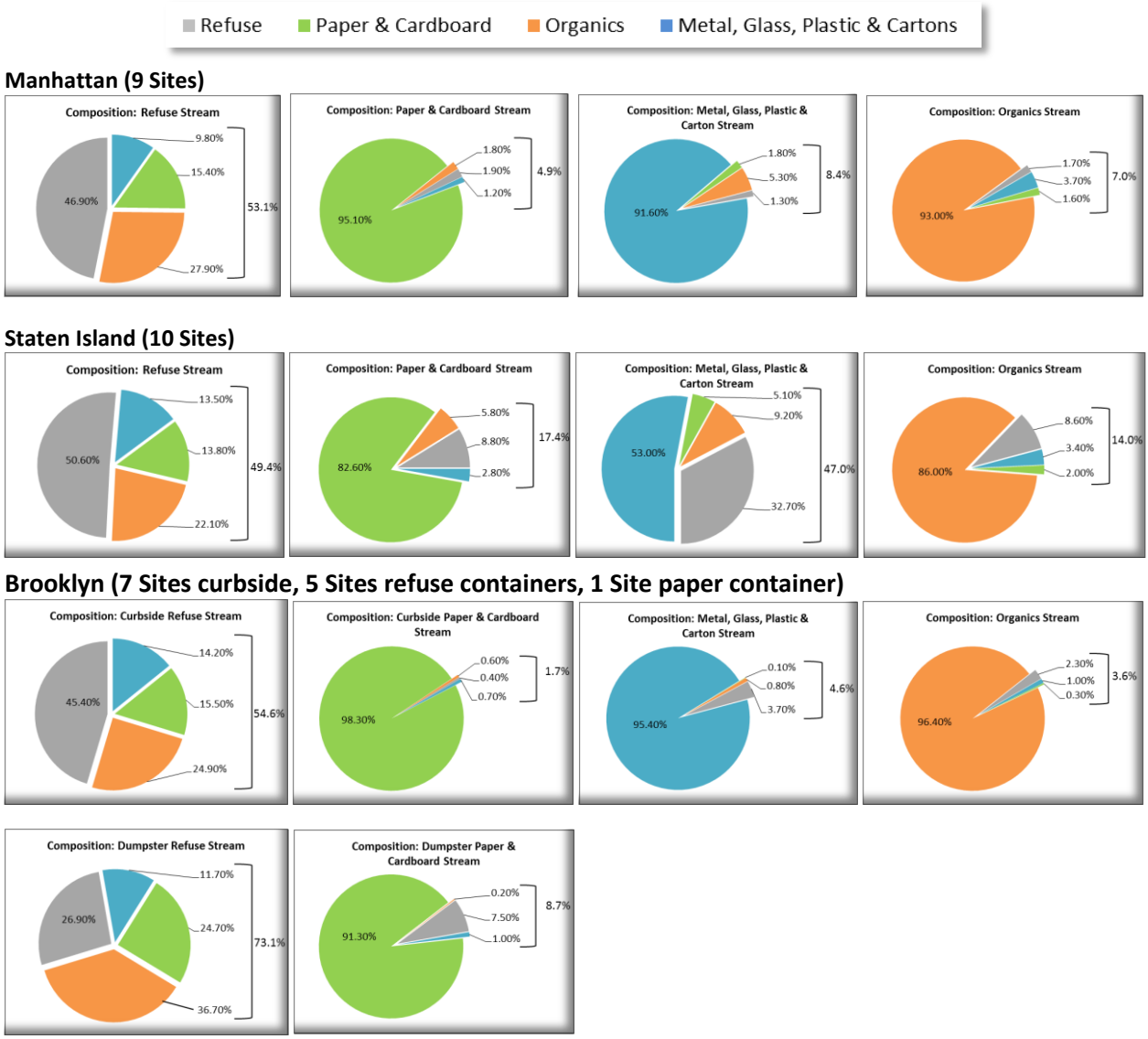
DOE schools receiving organics collection service are required to participate, whether or not they want to, which could be a cause of high levels of contamination in the organics loads set out for DSNY collection. DOE is procuring compostable trays for the 2015-2016 school year and plans to pursue compostable service ware and bags. In the meantime, the program relies on students and staff to properly sort food scraps and food-soiled paper products from recyclables and refuse. Feedback from DOE confirms that the most successful schools use student "green teams" to monitor cafeteria sorting stations. However, getting students to sort their waste in the cafeteria remains a heavy lift in the majority of schools.

Figure 5: Examples of clean and contaminated school organic material.

Clean food scraps in kitchen organics.

Contaminated school organics.

Figure 6: Composition of refuse, paper recycling, MGP recycling, and organics collection streams. This illustrates contamination rates (the share of material placed in the wrong stream.)



Summer School

During July and August 2014, agency, institution, and residential large residential sites continued to receive organics collection service, as well as the limited number of organics schools that remained open. DSNY observed dramatically reduced participation at summer school sites as well as an increase in contamination during the summer months. DOE noted that personnel working at summer schools are often different from the regular school year staff, and they were not necessarily trained to maintain the organics collection program. After review of the low compliance of summer school sites, DOE and DSNY agreed to determine whether sufficient training can happen before the 2015 summer interval to warrant organics collection or if service to schools should be suspended during the summer months.

Residential

In the spring of 2014, DSNY successfully expanded NYC Organics Collection to service 100,000 households in all five boroughs. Nearly 30,000 households were added in Queens, and in Brooklyn the program expanded to include a total of 40,000 households. In addition, by September 2014, 86 high rise apartment buildings in Manhattan and Brooklyn had volunteered to participate for a combined total of over 9,000 housing units.

DSNY maintained the same criteria used in the initial roll out to select 2014 expansion areas – low to medium housing density, high recycling rates, and resident engagement with community boards and elected officials. The boundaries of the selected pilot areas continue be coterminous with individual DSNY collection sections.

Each one- and two-family building in the spring 2014 pilot areas received a "starter kit" that included a brown organics bin, a small kitchen container to collect food scraps, educational materials, and coupons for compostable plastic bags. Households in three- to nine-unit buildings each received coupons, educational materials, and a kitchen container, and one shared brown bin.

Pilot areas through September 2014 are listed below with their associated neighborhoods and the phase in which each entered the pilot (shown on map in Figure 7). Detailed neighborhood maps are provided in Appendix B.

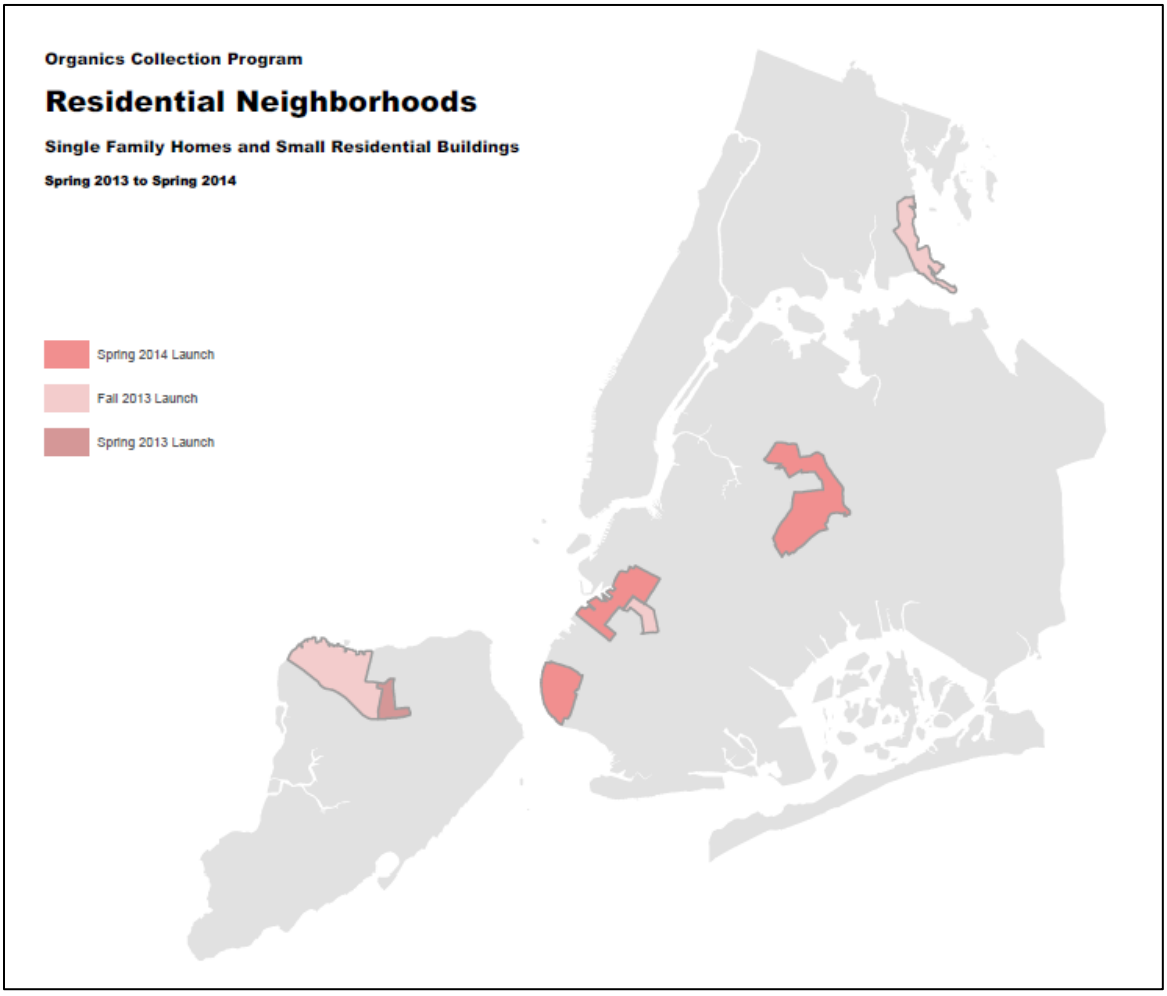
Fall 2013: Initial Roll-Out

- BX102: Bronx District 1 Section 2 (Throgs Neck, Country Club)
- BKS071: Brooklyn South District 7 Section 1 (Windsor Terrace)
- SI014: Staten Island District 1 Section 4 (Westerleigh, Mariner's Harbor, Graniteville)
  (Note: approximately service to 3,200 homes in Westerleigh began in May 2013)

Spring 2014: Expansion

- BKS072: Brooklyn South District 7 Section 2 (Greenwood Heights, Sunset Park)
- BKS064: Brooklyn South District 6 Section 4 (Park Slope, Gowanus)
- BKS065: Brooklyn South District 6 Section 5 (Park Slope, Gowanus)
- BKS102: Brooklyn South District 10 Section 2 (Bay Ridge)
- BKS103: Brooklyn South District 10 Section 3 (Bay Ridge)
- QW054: Queens West District 5 Section 4 (Glendale)
- QW055: Queens West District 5 Section 5 (Middle Village, Maspeth)

Figure 7: Residential Organics Collection pilot areas through fall 2014



Collection Schedule

From May 2013 through March 2014, DSNY collected organic material once per week in all pilot areas on the regular recycling day. Participants were instructed to place any yard waste that did not fit in the brown bin in another container, paper lawn & leaf bags, or in bundles.

Starting with the 2014 expansion, all Brooklyn sections are serviced twice per week on both regular collection days. Approximately half of the pilot households are located in Brooklyn; this allocation allows for comparison of a once per week schedule against a twice per week schedule to analyze any effects on participation.

Results

From April through September 2014, DSNY collected 2,503 tons of organic material on residential organics trucks for a cumulative total of more than 3,350 tons. During this time period, the average weight of material in each bin on the curb was 17.8 pounds, up from 16.5 pounds in the previous reporting period. Overall diversion rates rose between 3.4 and 6.5 percentage points (when including organics and traditional recyclables), and the four-week average set out rate for brown bins increased to 26.5%[2] from 16.7% in the previous period.

DSNY continues to conduct outreach on best practices in the pilot areas and to increase the availability of compostable bags. According to the organics processors, the contamination rate by weight is very low in the residential loads, though regular plastic bags, the most prevalent contaminant, are problematic.

Figure 8: Summary of Residential Participants and Tons Organics Collected April 2014 – September 2014

DSNY Section	Tons Collected (Apr-Sep 2014)	# Weeks in Program (Apr-Sep 2014)	Average Weekly Tons Collected (Apr-Sep 2014)	# Total Bins Deployed	Covered House-holds*	Month Joined Pilot
BX102	238.5	26	9.2	8,111	9,400	Sep 2013
BKS064	202.5	19	10.7	3,358	8,900	May 2014
BKS065	195.1	19	10.3	3,996	7,400	May 2014
BKS071	295.6	26	11.4	5,454	9,500	Oct 2013
BKS072	235.9	20	11.8	4,345	8,500	May 2014
BKS102	253.4	22	11.5	5,280	6,800	May 2014
BKS103	206.2	22	9.4	4,160	5,800	May 2014
QW054	255.5	17	15.0	11,252	14,400	Jun 2014
QW055	230.5	15	15.4	10,744	12,900	Jun 2014
SI014**	390.6	26	15.0	14,029	14,000	May/Oct 2013
Citywide	**2503.8**	**--**	**12.0**	**70,729**	**97,600*****	--

* Includes 1-9 unit residential buildings in the pilot areas. In the Brooklyn pilot areas, it also includes a small number of 10+ unit apartment buildings that have volunteered to participate.
** The SI014 pilot began in May 2013 and was expanded in October 2013.
*** Local Law 77 mandates DSNY to extend the pilot to 100,000 households. The majority of these households – over 97,000 – are located in single family homes and small apartment buildings, with the remaining fraction being fulfilled by households in large apartment buildings in Manhattan and Brooklyn.

Diversion

NYC Organics Collection contributed to diversion rate increases of between 3.4 and 6.5 percentage points over traditional recycling in pilot areas for the period April to September 2014 (Figure 9). DSNY diversion rates are traditionally calculated at the district, borough, and citywide level by dividing material collected for recycling by the total waste collected (recyclables and refuse). For the purposes of this pilot, diversion is calculated for the "universe" of waste attributable to the population being served

[2] The 26.5% four-week average set out rate for brown bins excludes Queens pilot areas. See figure 12.

by the program: one- to nine-unit residences and participating large apartment buildings in the pilot sections.

Figure 9: Diversion Rates of Collected Tonnages Attributed to Covered Households since Program Start (May 2013 – Sept. 2014)

DSNY Section	Diversion Rate without Organics Collection	Diversion Rate with Organics Collection	+/- Change with Organics Collection	% Change with Organics Collection
BX102	21.4%	24.8%	3.4%	16.1%
BKS064	30.6%	36.6%	6.0%	19.7%
BKS065	27.9%	34.5%	6.5%	23.8%
BKS071	26.0%	31.4%	5.4%	20.5%
BKS072	19.2%	24.0%	4.8%	25.5%
BKS102	22.1%	27.5%	5.4%	24.9%
BKS103	22.6%	26.6%	4.0%	17.8%
QW054	21.1%	25.7%	4.6%	22.3%
QW055	20.5%	25.3%	4.8%	23.6%
SI014	20.4%	24.5%	4.1%	20.2%

Figure 10: Share of curbside collections by material type in all pilot areas since program start weekly average by month (May 2013 – September 2014)

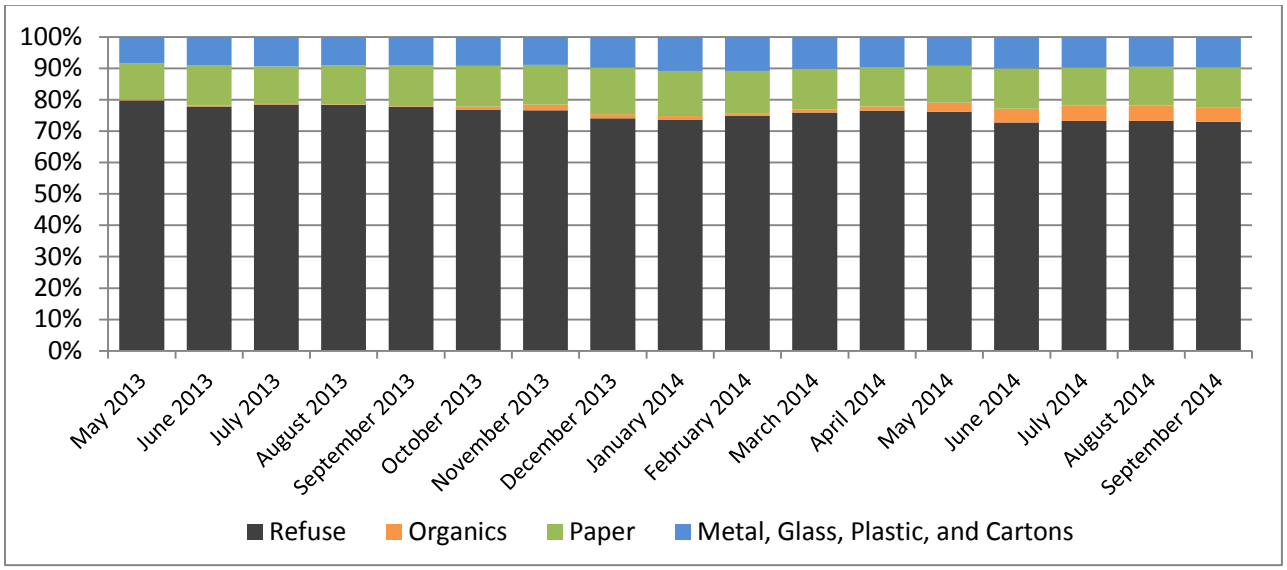


Figure 10 shows the relative quantity of recyclables and organics that were collected in all pilot areas since the program's start. Without organics collection service, the source separated organics fraction (orange) would be part of refuse. Detailed diversion information for each section can be found in Appendix C.

Contamination

DSNY relies on feedback from the organic waste processors to determine levels and sources of contamination. Between April and September 2014, residential material has consisted mostly of yard

waste – including leaves, branches, grass clippings, and brush – and a significant amount of household organic waste, mostly food scraps. In general, residential material from apartment buildings contains primarily food scraps, and very little, if any, yard waste. This organic material arrives commingled in the same truck, either loose or in bags.

Plastic bags are the largest source of contamination in the residential organic stream. They are removed by hand during the initial on-site sorting; otherwise the film plastic can jam the machinery during processing. Other contaminants, such as recyclable containers, and other household refuse, are removed by hand before processing. Overall, the residential material has much lower levels of contamination than the school material.

At the launch of the pilot, residents were offered options for lining their brown organics bins: no liner, paper bag, or compostable plastic bag. Recognizing the lack of local availability of compostable plastic bags, DSNY started allowing the use of regular clear plastic bags to line the brown organics bins to encourage participation. Other plastic bags are still prohibited, including grocery bags and black, white, or blue bin liner bags. At the conclusion of the pilot, DSNY will determine whether or not to allow the continued use of clear plastic bags for curbside organics collection.

Staten Island Feedback

The DSNY-managed Staten Island Compost Facility began accepting organic material from Staten Island residential pilot areas in the spring of 2013, and this practice continues today. This material is hand-picked daily to sort out contaminants and measure the relative quantities of yard waste and food waste in the loads. The contamination levels have been quite low throughout the pilot. Staten Island material is mainly yard waste with some household food scraps, which are typically contained in bags. Compostable paper and compostable plastic bags break down in the windrows at the Staten Island facility, but as the program has progressed, the processor is observing much larger quantities of traditional plastic grocery bags and kitchen garbage bags being used as “carriers” for the food waste.

Figure 11: Examples of bin liner strategies:

a) No liner

b) Compostable bags

c) clear plastic liner

d) paper bags

e) plastic shopping bags (prohibited)

Participation

To date, participation in the residential program remains modest, but steady. The pilot areas added in spring 2014, show the strongest participation. Overall, participation has increased to 26.5% from 16.7% during the first 6 month period. Of the 70,729 containers delivered in pilot areas about one-third were serviced at least once between April and September 2014, down from 44% during the previous six month reporting period.

Participation is measured through the use of radio frequency identification (RFID) tags that are embedded in each of the brown organics bins along with curbside observation surveys. RFID data provides a conservative estimate of participation. RFID readers do not capture, for example, yard waste set out at the curb in bags or material taken out of the brown bins at the curb as opposed to tipping the bin directly into the truck.

Figure 12: Bin distribution and four week rolling average participation as measured by unique containers set out for collection.

Section	Total Bins Deployed	Participation, # Bins	Participation, %
BX102	8,111	1,228	15.10%
BKS064	3,358	1,592	47.40%
BKS065	3,996	1,804	45.10%
BKS071	5,454	2,001	36.70%
BKS072	4,345	1,164	26.80%
BKS102	5,280	1,320	25.00%
BKS103	4,160	1,175	28.20%
QW054*	11,252	1,960	26.70%
QW055*	10,744	2,109	25.70%
SI014**	14,029	1,693	12.10%
Citywide ***	**70,729**	8,648	26.50%

* Participation estimates for the Queens pilot areas were obtained from a curbside survey performed over one week in June.

** Participation estimates for Staten Island pilot area covers the period April through June.

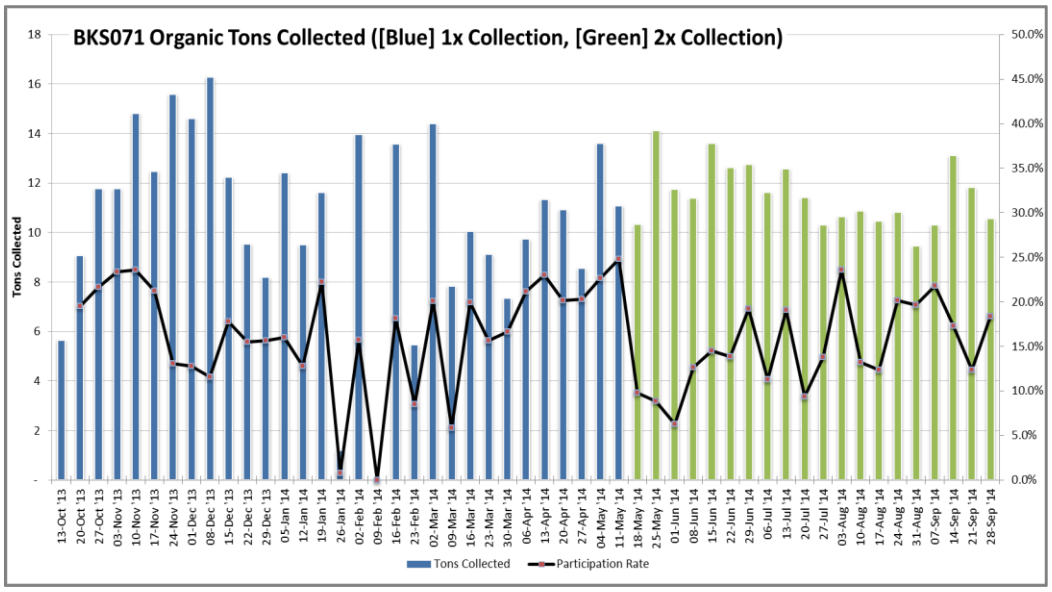
** Citywide numbers are weighted averages and exclude QW sections.

Collection Frequency Comparison, Windsor Terrace

The Windsor Terrace neighborhood (BKS071) joined the pilot in October 2013 with once per week organics collection. During the spring 2014 expansion, five additional Brooklyn pilot areas were added to the program, all receiving organics collection twice per week. Coinciding with this expansion, Windsor Terrace switched to twice-weekly service in May 2014. This change allows for easy comparison between once a week and twice a week collections. It also affords the opportunity to analyze the potential change in diversion rate from increasing frequency of service from once to twice weekly.

Figure 13 presents the week-by-week tonnage collected and participation rates for Windsor Terrace. To date, weekly tons collected have increased by about one ton on average with twice per week collection. Participation rates appear to have declined slightly on average. Regular seasonal behavior patterns may also influence these differences. The third diversion report will compare tons collected over the same seasons.

Figure 13: Windsor Terrace, Brooklyn (BKS071) tons collected and participation with once per week and twice per week collection service



Large Residential Buildings: Case Studies

Large residential buildings, defined for this pilot as residential buildings with ten or more units, pose unique issues in relation to waste management. Large residential buildings account for approximately 54% of New York's households. As of September 2014, DSNY and its nonprofit partner GrowNYC have recruited and enrolled 86 large residential buildings in Manhattan and Brooklyn with a combined total of more than 9,000 units in curbside organics collection.

DSNY and GrowNYC performed early waste audits at one of the first large residential buildings to enroll in organics collection, Morningside Gardens. (Refer to *Diversion Report I* for more information). DSNY performed another waste audit of Morningside Gardens in September 2014 over a period of five days. Diversion at the 980-unit complex has remained fairly consistent in the year since the site began source separating their organic material.

In August 2013, DSNY measured a diversion rate of 37% (see Diversion Report I), which increased to 42% in September 2014. Notably, the participation of this one complex in organics collection increased the overall district diversion rate for Manhattan 9 by 1.4 percentage points, according to the September 2014 audit.

GrowNYC estimates that roughly 28% of households in Morningside Gardens participate in organics collection. At this level of participation, average refuse bag weights have decreased by 30% and the quantity of bags set-out for collection have decreased by 18%. This represents a 7% decrease in bag set-outs since May 2014. Average bag weights of paper and metal, glass, plastic, and cartons (MGP) have increased by 13% and 25% while bag set-out counts have increased by 19% and 11%, respectively.

GrowNYC also performed similar bag count and weight waste audits for three other sites. All four audited sites are summarized in Figure 14.

Figure 14: Large residential building waste audit, 2014

Site Name	Bag Counts (% change)			Weight (% change)			Organics	
	Refuse	Paper	MGP	Refuse	Paper	MGP	Weight (tons)	Participation (approx. %)
Morningside Gardens	-18%	+19%	+11%	-30%	+13%	+25%	0.73	28%
The Cezanne	-14%	-4%	+5%	-10%	+2%	+15%	0.15	20%
Hillman Housing	N/A	+12%	+11%	N/A	+2%	+5%	0.59	25%
Castle Village	-18%	+7%	+17%	N/A	+2%	+12%	0.88	52%

Participant Feedback

During the reporting period, DSNY conducted several surveys to gain feedback from residents about the program. Staff distributed an online survey to all pilot areas, convened focus groups at participating large residential buildings, and conducted a door-to-door survey in three pilot areas: Westerleigh (SI014), Bay Ridge (BKS102), and Maspeth (QW055).

The purpose of these surveys was to gauge residents' participation level, collection habits, program preferences, critical feedback, and overall satisfaction. The surveys also afforded program staff a valuable opportunity to do public outreach and education, while addressing specific concerns about NYC Organics Collection. In total the surveys received feedback from about 500 residents.

Small Residential Buildings: Door-to-Door Survey

Ninety door to door surveys were conducted in Westerleigh, Maspeth, and Bay Ridge pilot areas.

Fifty-nine percent of respondents reported participating in the pilot, and were satisfied or very satisfied with the program. After having completed the survey, 89% of all respondents, including those that are not currently participating, indicated that they will participate in the future.

The vast majority of participants surveyed set out their brown bin for collection every week (86%). Most were satisfied with the bin size provided by DSNY. Almost all participants separate food scraps, and about half indicate setting out yard waste. Only 40% indicated they include food-soiled paper in their organics bin.

There is no ubiquitous strategy for managing organic material. For food scraps, 27% use compostable bags, 21% use plastic bags, and only a small percentage use paper bags (6%) or store their food scraps in the freezer before collection (4%), a "best practice" strategy recommended by DSNY. For yard waste, about half of participants reported using the brown bin, about 12% use plastic bags, and 10% use other containers, and only 4% use paper lawn & leaf bags.

Of the respondents who do not participate, a majority never tried the program (79%). The rest cited "too much work" as the top reason for stopping participation. In Maspeth, in particular, concern about "rodents / bugs" was cited for all non-participants. Thirteen percent of non-participants said they would

participate if the program were mandatory, but 21% said they simply had no interest in the program. Only 5% considered having compostable bags as an incentive for participation.

The DSNY mailers and flyers were the primary source of information about the program. Only 10% mentioned hearing about the program in the media. Another 12% indicated they never heard of the program – many of whom reside in Queens.

Most respondents, whether or not they participate, are favorable about the idea of the organics collection program. Twenty-seven percent of all respondents like the OCP program because it's good for the environment. Eighteen percent approve of the program because they like recycling and composting, and 13% like it because it helps reduce landfill waste. About 4% like it because their garbage is cleaner and less odorous. 10% have nothing favorable to say.

Respondents' opinions on what they don't like about the program or would want to change are much more varied. Twenty percent of all respondents want more education and program instructions. Eleven percent disapprove of the "ick factor" (dirty, smelly, rodent, bug). A small minority of respondents indicated one or more of the following critiques: want more frequent collection (8%), want changes to the brown bin and kitchen container design (7%), don't like to use compostable bags (4%), think the program is too costly (4%). Three percent said to get rid of it all together. Twenty percent of all respondents did not have any critique or feedback for improvement.

Large Residential Buildings: Online survey

The online survey received 334 total responses, 214 from residents in large residential buildings where organics collection is provided, and the rest from the small residential buildings (one to nine units) in the pilot areas. Almost all of the online respondents participate in the program. The small building responses were similar to the door-to-door survey. The large residential building feedback is summarized below.

The vast majority of large residential buildings have one centralized location where they drop off their organic waste. Only 11% of respondents reported having a collection container on their floor.

More than two-thirds of respondents reported using compostable bags to collect their food scraps. A majority of compostable bag users (61%) have them supplied by their building, which may be one reason for their higher use than among the small buildings. Anecdotal feedback from focus groups, included concerns about the permeability of the compostable bags.

Most respondents reported that their overall garbage, or non-recyclable waste, has reduced since they began participating in organics collection (72%). A majority of respondents indicated they discard organics waste in the collection container multiple times per week. Very few froze their organics, a best practice strategy recommended by DSNY as a "tidy" way to manage kitchen food scraps.

Next Steps

While the residential and school portions of NYC Organics Collection seek to maximize tonnage collected and minimize contamination, each has a very different set of operational considerations, challenges, and opportunities. None of the challenges are unique to NYC, nor are they insurmountable with continued education, outreach, and training efforts and the proper infrastructure to accommodate the anticipated behaviors.

Schools

In October of 2014, DSNY nearly doubled the number of schools participating in NYC Organics Collection from 358 schools to approximately 720 schools (about 40% of all NYC public schools). This increase brings all remaining Manhattan schools into the program, and expands service to more schools in Brooklyn, Queens, and the Bronx. (All Staten Island schools were added during the 2013-14 school year.) The third Diversion Report will provide initial results from this expansion.

DOE anticipates that by fall 2015, all schools will switch to compostable trays, eliminating one of the primary contaminants in the cafeteria organics stream. DSNY continues to support DOE as it works to improve the quality and quantity of organic waste being collected from schools by providing funding, resources, and convening stakeholder meetings with the unions representing DOE facility and teaching staff. The school program continues to receive assistance from Manhattan Borough President Gale Brewer, the Department of Health and Mental Hygiene, and GrowNYC's Recycling Champions program.

Residential

DSNY plans to expand the residential organics collection service to additional neighborhoods with about 40,000 households in spring 2015. DSNY also continues to recruit large buildings in Manhattan and Brooklyn to participate in organics collection (where the program offers 2 or 3 days per week collection service). Starting in October 2014, DSNY is using dedicated organics collection trucks to service large residential buildings in Manhattan to allow DSNY to better track and understand participation and diversion trends specific to these buildings.

Dual-Bin Pilot

Collecting a third recycling stream has required a third collection truck in most pilot areas. In October 2014, DSNY began testing the use of two dual-bin trucks to collect all four material streams in the Bronx pilot area. Each week on recycling day, sanitation workers collect organic material in one side of the truck and refuse in the other side. The two streams are then dumped separately; the organic material later goes to a composting site, and the refuse is sent to landfill. Operationally, this change will reduce truck traffic back to just two trucks on recycling day, capitalize on efficiencies along collection routes, and help determine if this system can be used in other organics collection zones. The results of this test will be provided in the third and final diversion report.

Processing

DSNY relies on existing facilities to handle and process the organics loads for the residential pilot and the school program. About a quarter of the material is generated on Staten Island, and is processed at a DSNY-managed composting facility on Staten Island. This facility, currently permitted to take food waste on a limited pilot basis, primarily composts leaves and woody material using open windrows. DSNY pays

its contracted vendor, WeCare Organics, to manually separate contaminants from the organics loads, a process that takes multiple hours daily.

For a short period, a small portion of the school program material was delivered to a Waste Management, Inc. (WMI) facility in Brooklyn, where the organic fraction was turned into a slurry and taken to the Newtown Creek wastewater treatment plant run by NYC's Department of Environmental Protection. WMI staff manually removed not only inorganic contamination but also the woody and paper portions of the organic material, as this was not acceptable in the plant's anaerobic digestion system. After the testing period, it was determined that pure food waste, such as what might come from restaurants, would be a more appropriate target feedstock for this facility.

The remaining material was trucked to the Wilmington Organics Recycling Center (Peninsula Compost) in Delaware, the only other facility in the region with the infrastructure to preprocess the material to remove contaminants. Peninsula Compost closed in October 2014. DSNY is now working with alternative composting facilities in the region to process the material. To date, while these facilities have plenty of capacity to take NYC's organics, they do not have infrastructure to do extensive presorting to remove large amounts of contaminants, such as exists in the school loads.

Contamination

DSNY is working on both front-end and back-end solutions to minimize and remove contaminants. On the front-end, finding a good "carrier" for food waste that is not a plastic bag has been one of the primary challenges to the residential program. New Yorkers do not uniformly use bins or carts to manage their refuse and recycling; rather, they use bags. So the task of managing the brown bin – keeping track of it and keeping it clean – is new to many and considered a barrier to participation for some. Though the pilot program has pushed the strategy of going "bag free," there is a strong perception that plastic bags are the best mechanism to keep the process of organics separation "clean and tidy." While compostable bags are sold in stores as an alternative to traditional plastic bags, and pilot areas received either sample compostable bags or coupons to purchase compostable bags, a majority of residents do not want to pay extra for these bags and prefer to line their bins with clear plastic recycling bags or use the shopping bags that they receive for free, even though the program prohibits them. DSNY is increasing its education and training opportunities for residents to learn best practices for organics "recycling".

On the back-end, compostable plastics break down at the processor. However, unless the entire system switches to compostable, organics loads mixed with traditional and compostable plastics will still require plastic to be sorted out before composting. Pre-processing equipment and technologies exist that can handle both the residential and school organics material, and DSNY is determining the siting opportunities and financing options to incentivize development of such infrastructure.

Appendix A: Recycling Champions Program Report

GrowNYC's Recycling Champions Program Support of DSNY's Organics Collection Program at NYC Public Schools – 2013-2014

OVERVIEW

Since 2010, GrowNYC's Recycling Champions Program (RCP) has developed model recycling programs and best practices at K-12 NYC public schools, working directly with educators, students, staff, and parents. During the 2013-2014 school year, RCP worked with 90 NYC public schools participating in Organics Collection. 100 percent of these schools were in compliance with the program's requirements.

Supporting Organics Collection is an important focus of Recycling Champions because many DOE cafeterias have inadequate recycling and waste management practices in place prior to joining Organics Collection. This is due to several reasons: cafeterias are common spaces often shared by multiple schools, administrators and faculty are not required to be present during lunch periods, and cafeterias are managed by various stakeholders including SchoolFood, custodians, and school aides. While these circumstances present a challenge, Organics Collection provides an opportunity to galvanize all stakeholders around school recycling.

At a glance, in 2013-2014 Recycling Champions was able to:

- Make **545 visits** to Organics Collection schools to ensure compliance and improve participation
- Directly educate and empower **42,350 K-12 students** on NYC recycling and organics collection
- Conduct trainings and professional development workshops for **2,251 faculty, administration, custodians, and SchoolFood staff** on recycling and organics collection responsibilities, and curriculum integration

DIVERSION RATES AT ORGANICS COLLECTION SCHOOLS

The Big Lift is a contest that challenges RCP schools to weigh all waste generated in a day from cafeterias, classrooms, and offices, once-weekly for six weeks. In 2013-2014, 12 of the 90 Organics Collection participating in RCP competed. The first two measurements in the contest establish a baseline for each school, and the next four measurements are averaged and measured against the baseline. **Figure 1** shows the average diversion rate per waste stream, and the total diversion rate, for each school in the contest.

Figure 1: Diversion Rates at RCP Schools as Measured During the Big Lift Contest

School Name	Borough	MGP	Paper	Organics	Total Diversion
I.S. 34	Staten Island	14%	24%	41%	79%
P.S. 30	Staten Island	12%	36%	27%	75%
Hunter College High School for Science	Manhattan	19%	48%	8%	74%
College Academy	Manhattan	24%	26%	24%	74%
P.S. 125 Ralph Bunche	Manhattan	2%	56%	10%	68%
Murry Bergtraum High School	Manhattan	13%	44%	10%	67%
High School for Arts & Technology	Manhattan	18%	36%	10%	65%
Brooklyn International High School	Brooklyn	11%	24%	26%	61%
P.S. 181	Brooklyn	9%	14%	38%	60%
High School for Media & Communications	Manhattan	12%	10%	25%	47%
P.S. 811	Manhattan	5%	18%	22%	45%
P.S. 33 Chelsea Prep	Manhattan	4%	15%	13%	32%
	AVERAGES	**12%**	**29%**	**21%**	**62%**

The metrics in Figure 1 do not provide an understanding of contamination levels in the recycling streams. Diversion rates are based on weight and the primary contaminants in the organics stream, polystyrene trays and plastic utensils, add negligible weight to bin. It is evident that schools can achieve diversion rates higher than the DOE's current citywide average of 24 percent and that schools can capture almost 80 percent of waste that can be diverted as recycling.

KEY FINDINGS

- Organics Collection requires that students sort their lunch waste. The first steps in the sorting process are emptying liquids from beverage containers and recycling milk and juice cartons, and bottles and cans. One effect of Organics Collection at schools is to increase MGP diversion, **MGP diversion rates increased an average of 336 percent** during the contest.
- Organics Collection is accompanied by a major shift in waste collection by DSNY, necessitating a renewed focus and increased communication on cafeteria waste management, and students' behavior in the cafeteria, by a school's administration and facilities staff. This effort can be leveraged to subsequently address classroom and office recycling. **Paper diversion rates increased an average of 291 percent** during the contest.
- *The Big Lift* metrics revealed that Organics Collection is a practice and habit that students can improve upon. Time, repetition, and consistency are necessary to developing positive habits, this applies to Organics Collection. **Organics diversion rates increased an average of 44 percent** during the contest, implying that student participation improved, resulting in more food waste in the organics bin rather than the trash bin.
- Student participation in the proper sorting of lunch and food waste is necessary to the success of Organics Collection. Prior to participating in Organics Collection, many schools lack adequate supervision and dismissal processes necessary to facilitate students clearing their lunch waste from tables.

Student participation was an obstacle to Organics Collection at Brooklyn Technical High School (K450). To quantify the impacts of students not sorting their waste, RCP studied participation rates at Brooklyn Tech and weighed the waste left on tables after each lunch period. **Figure 2** shows that as student participation increased, waste left on tables deceased. This is critical as waste left on tables is not sorted by SchoolFood staff.

Figure 2: Student Participation in Organics Collection at Brooklyn Technical High School

Lunch Period	Total Students	Students Participated in Waste Sorting	Percent of Students Sorting	Waste Left on Tables (lbs.)
1	293	75	26%	36.2
2	312	179	57%	20.6
3	219	110	50%	19.7

The advantages to student's taking responsibility for their lunch waste are clear. In addition to supporting recycling and Organics Collection, cafeterias are cleaner, with less waste left on tables and the floor, resulting in time and labor savings for SchoolFood staff and custodians, and improved behavior from students.

SCHOOL ORGANICS COLLECTION SUCCESS STORIES

→ P.S. 30, Staten Island

Recycling success at P.S. 30 was driven by an enthusiastic student green team and supported whole-heartedly by administration and staff. Recycling Champions educated and empowered the green team to develop a recycling game, song and dance routine, and presentations that they delivered school-wide.

The transformation of the green team into a leadership team, skilled at working together, teaching and mentoring others was remarkable. Their communication skills improved and their enthusiasm was consistently high.

Classroom recycling bins provided by Recycling Champions were distributed to every room and a competition asked every class to uniquely decorate their bin. The green team also helped monitor the Organics Collection program in the cafeteria. P.S. 30's enthusiastic commitment was demonstrated by their top finish in *The Big Lift* recycling contest, during which they **improved paper recycling by 63 percent** and **reduced trash by 42 percent**. They finished the contest with an incredible average overall diversion rate of 75 percent!

→ Murry Bergtraum High School, Manhattan

With over 1,300 students in the school, Murry Bergtraum High School needed persuasive and dynamic student leaders to show that recycling paper, cartons and bottles, and food, was cool.

Recycling Champions helped the green team develop a strategy for engaging students on cafeteria recycling using a marketing campaign and periodic incentives to make *going green*, fun. A "Wall of Shame" was even installed in the cafeteria to show students photographs depicting some of the negative environmental consequences of litter and waste.

Outside the cafeteria, the green team distributed recycling bins provided by Recycling Champions to

every classroom, and educated students and staff on what can be recycled. This effort propelled Murry Bergtraum High School to **increase paper recycling 272 percent**, winning Most Improved in *The Big Lift* contest. They also **reduced trash by an incredible 52 percent** and finished the contest with an average diversion rate of 67 percent!

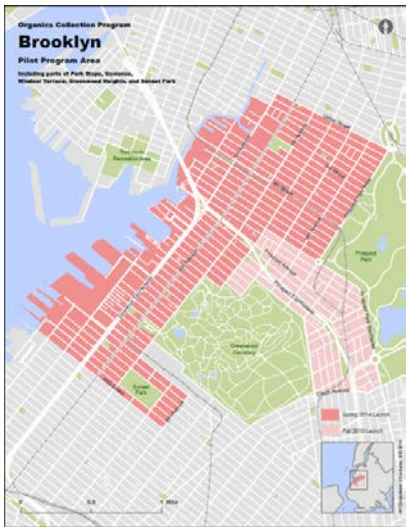
ORGANICS COLLECTION TESTIMONIALS

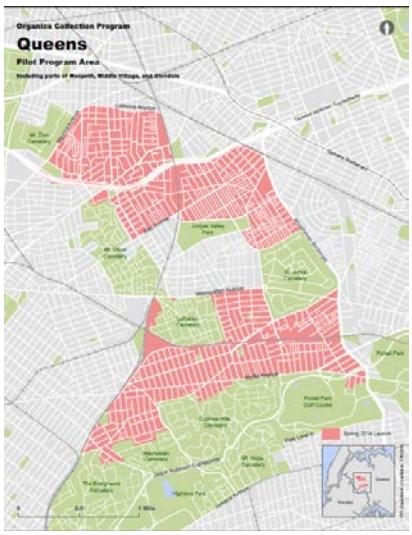
"The Organics Collection Program required minimal effort on our part to achieve some really great outcomes for our school. The program made the outside of the school cleaner - reduced the number of garbage bags and cut down on the rat population. Inside the cafeteria, the floors are cleaner. It is interesting to see students who want to participate. They are willing to do it and want to put their waste into the correct bin." **- Ray Wilson, Custodian Engineer, M149**

“When [Organics Collection] is done correctly, the cafeteria’s so much cleaner and more orderly.” **– SchoolFood Manager, Wadleigh Secondary School for Performing & Visual Arts**

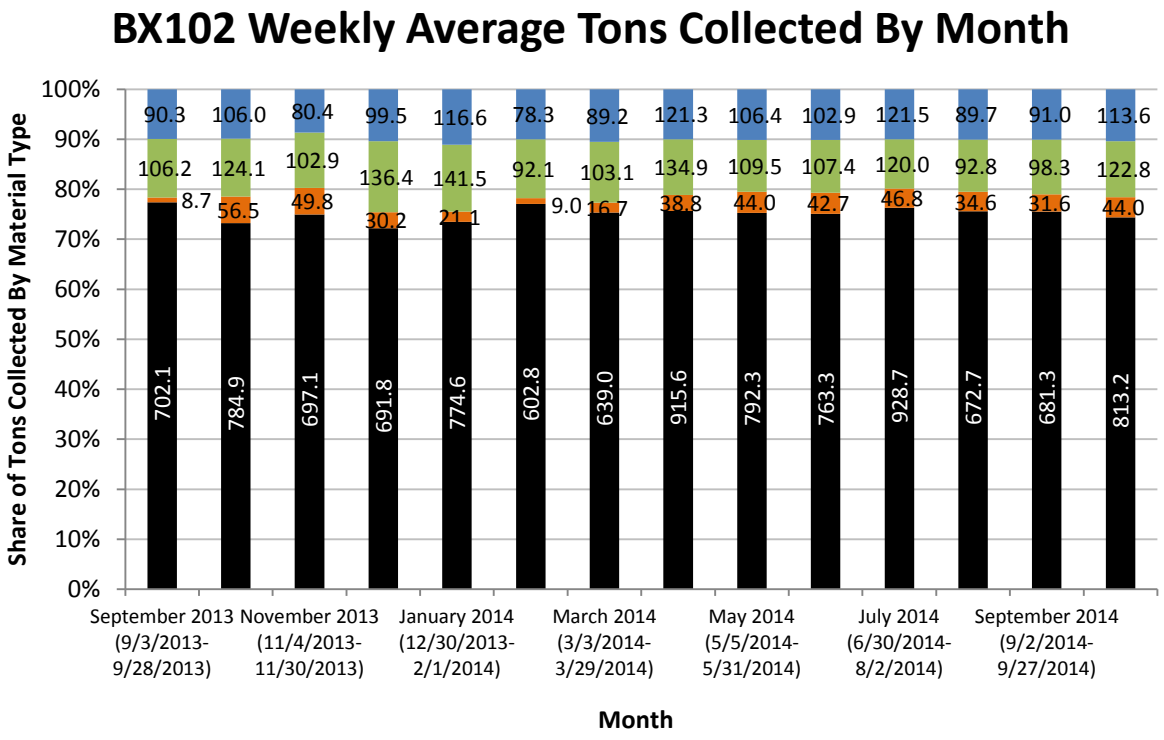
Appendix B: Residential pilot area maps as of September 2014

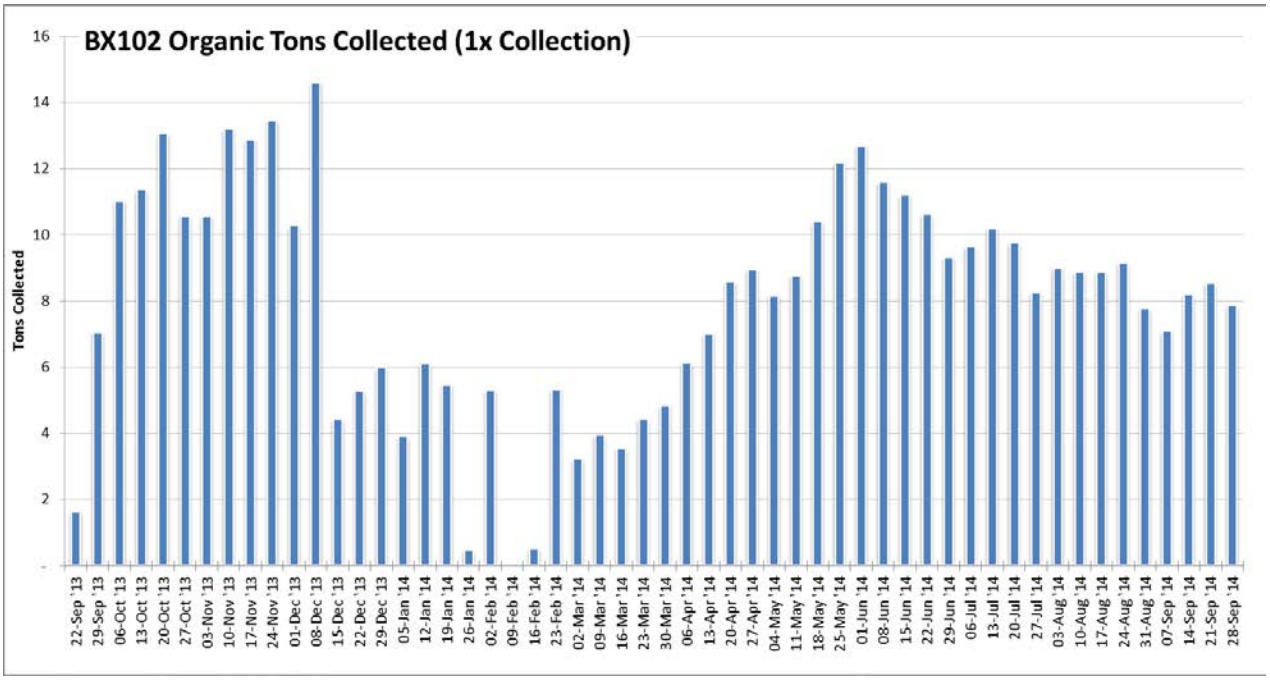
Maps available online at: on.nyc.gov/organics-maps



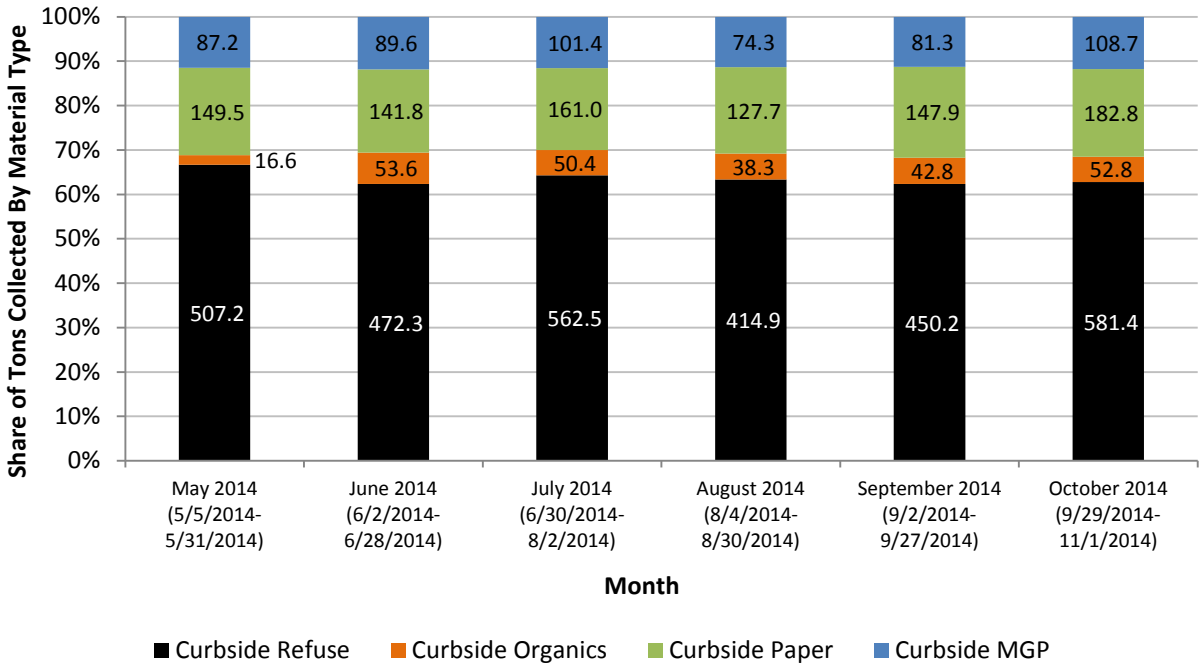


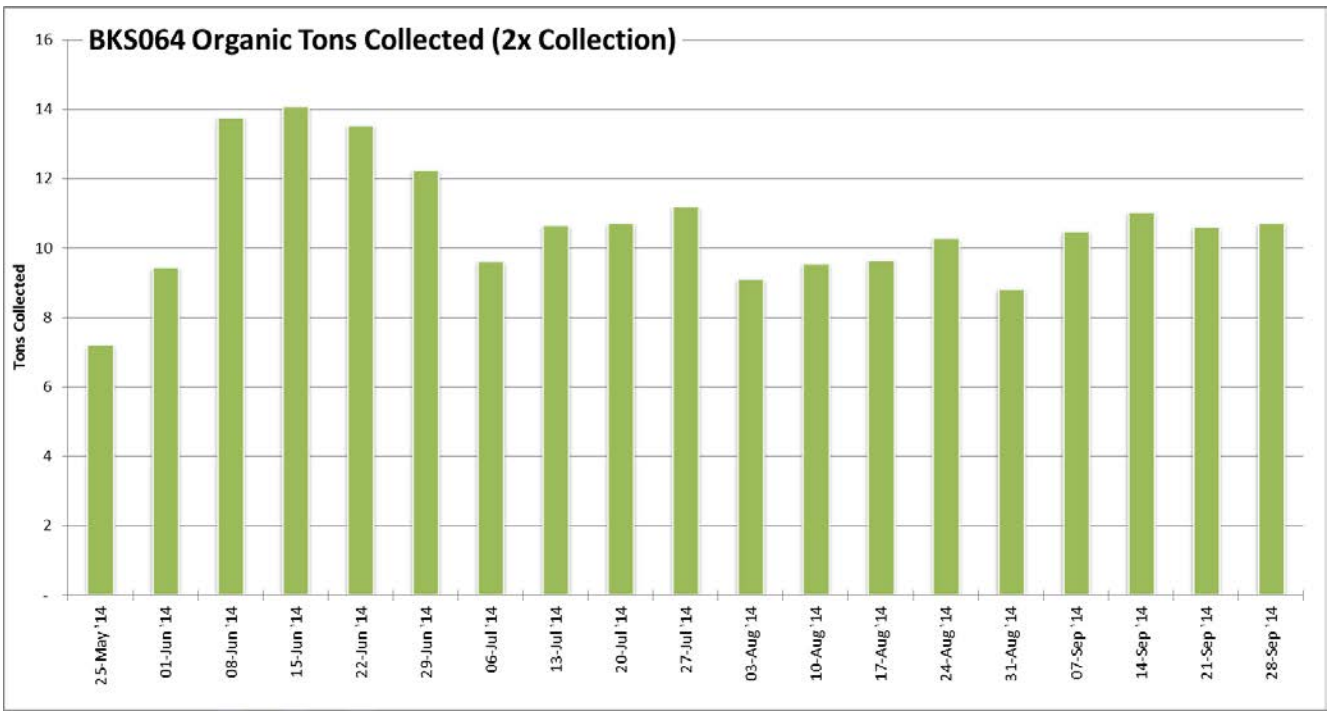
Appendix C: Residential Diversion by Section





BKS064 Weekly Average Tons Collected By Month





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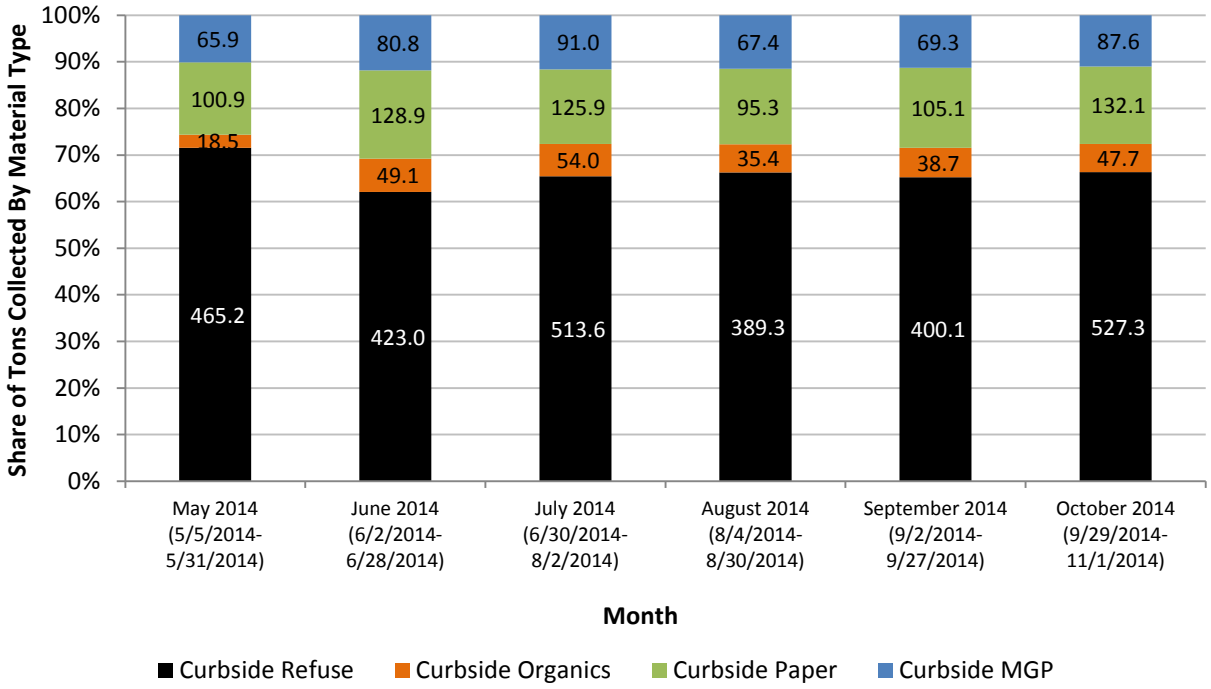
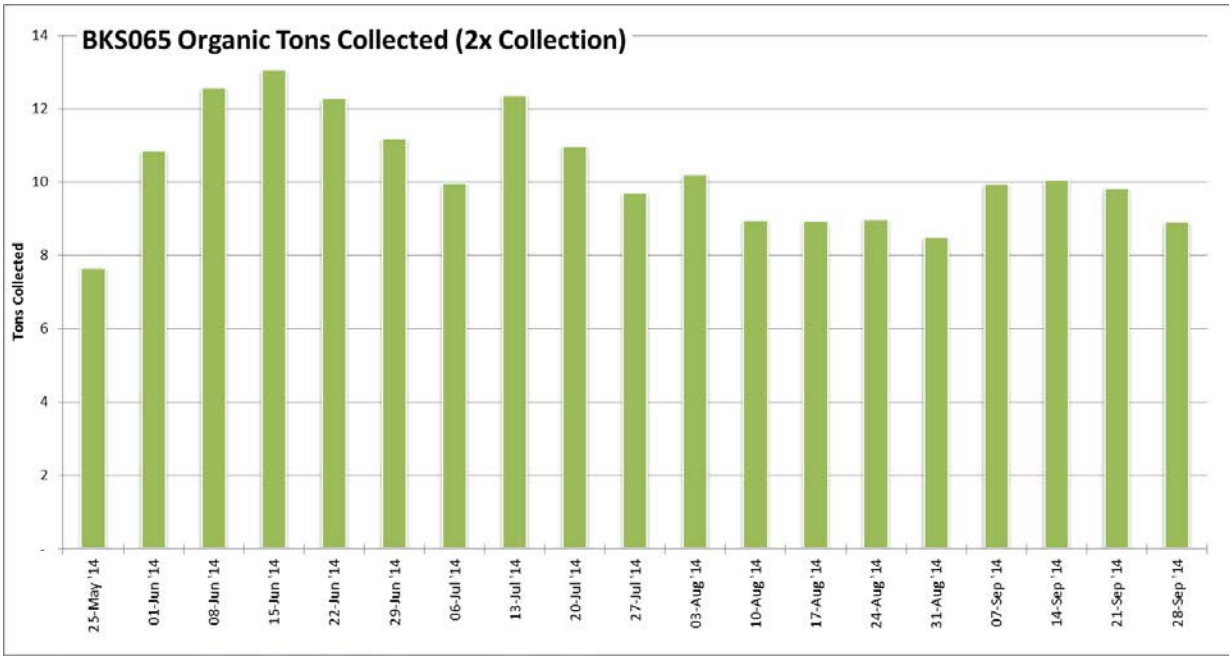
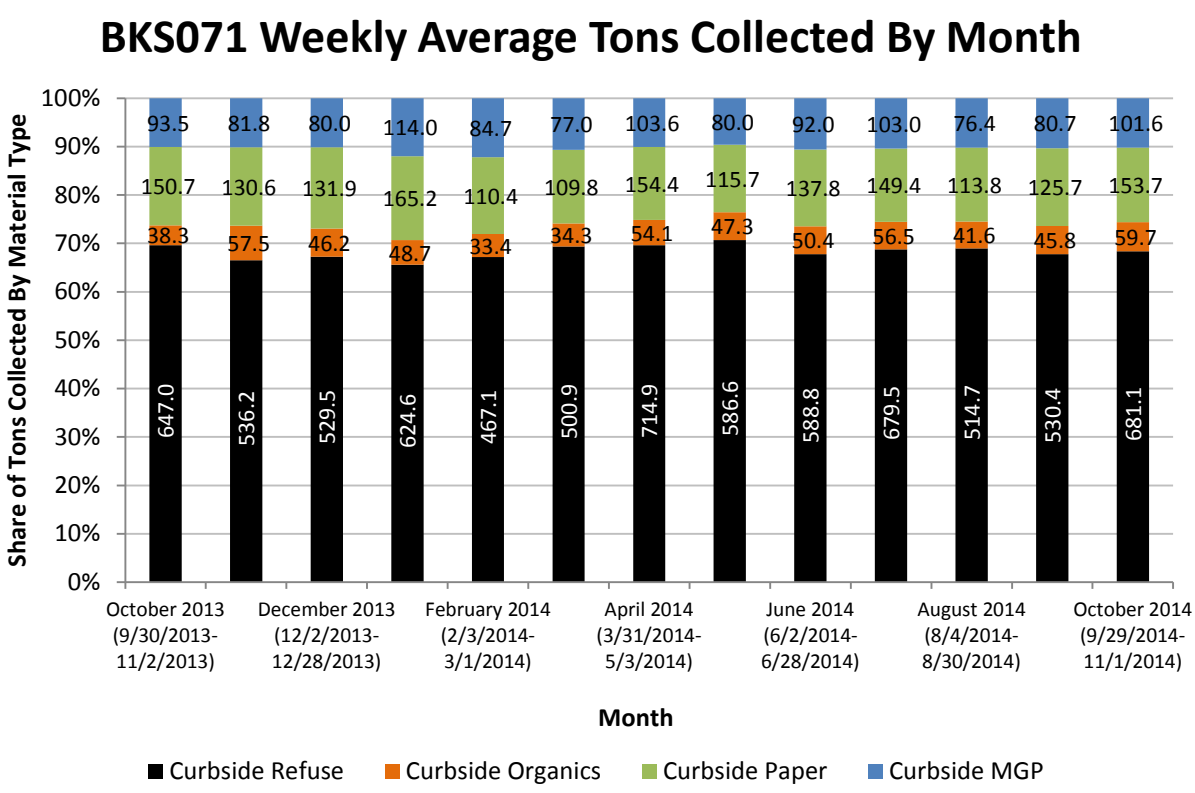
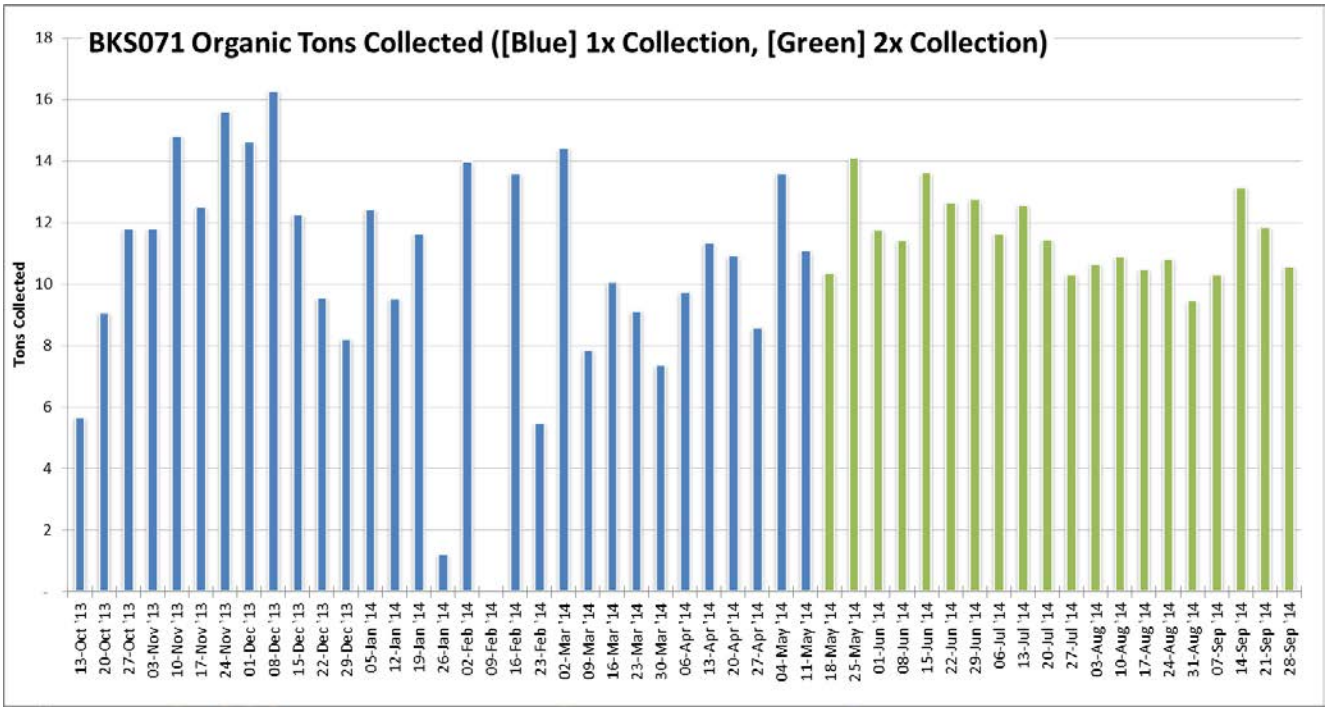





BKS071 Weekly Average Tons Collected By Month
Share of Tons Collected By Material Type
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
93.5
81.8
80.0
114.0
84.7
77.0
103.6
80.0
92.0
103.0
76.4
80.7
101.6
150.7
130.6
131.9
165.2
110.4
109.8
154.4
115.7
137.8
149.4
113.8
125.7
153.7
38.3
57.5
46.2
48.7
33.4
34.3
54.1
47.3
50.4
56.5
41.6
45.8
59.7
647.0
536.2
529.5
624.6
467.1
500.9
714.9
586.6
588.8
679.5
514.7
530.4
681.1
October 2013 (9/30/2013-11/2/2013)
December 2013 (12/2/2013-12/28/2013)
February 2014 (2/3/2014-3/1/2014)
April 2014 (3/31/2014-5/3/2014)
June 2014 (6/2/2014-6/28/2014)
August 2014 (8/4/2014-8/30/2014)
October 2014 (9/29/2014-11/1/2014)
Month
Curbside Refuse
Curbside Organics
Curbside Paper
Curbside MGP


BKS071 Organic Tons Collected ([Blue] 1x Collection, [Green] 2x Collection)
Tons Collected
18
16
14
12
10
8
6
4
2
-
13-Oct '13
20-Oct '13
27-Oct '13
03-Nov '13
10-Nov '13
17-Nov '13
24-Nov '13
01-Dec '13
08-Dec '13
15-Dec '13
22-Dec '13
29-Dec '13
05-Jan '14
12-Jan '14
19-Jan '14
26-Jan '14
02-Feb '14
09-Feb '14
16-Feb '14
23-Feb '14
02-Mar '14
09-Mar '14
16-Mar '14
23-Mar '14
30-Mar '14
06-Apr '14
13-Apr '14
20-Apr '14
27-Apr '14
04-May '14
11-May '14
18-May '14
25-May '14
01-Jun '14
08-Jun '14
15-Jun '14
22-Jun '14
29-Jun '14
06-Jul '14
13-Jul '14
20-Jul '14
27-Jul '14
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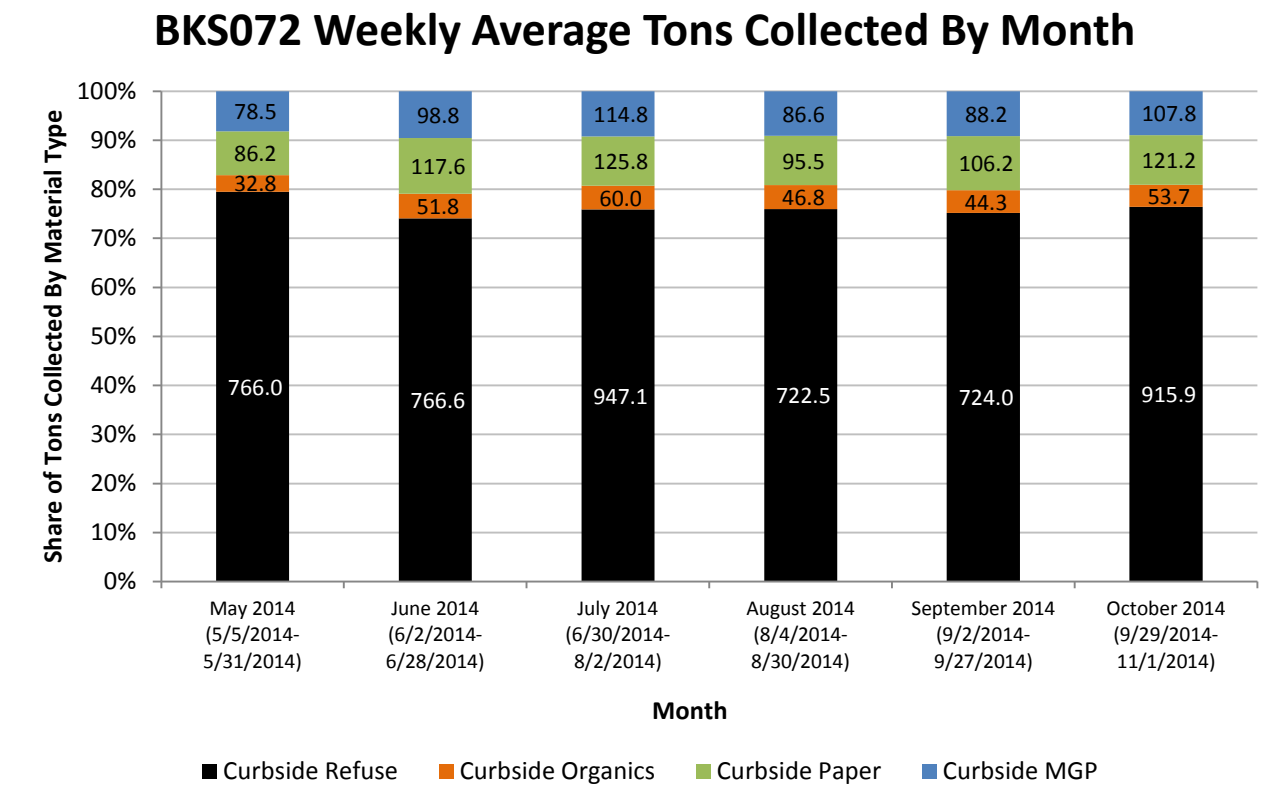
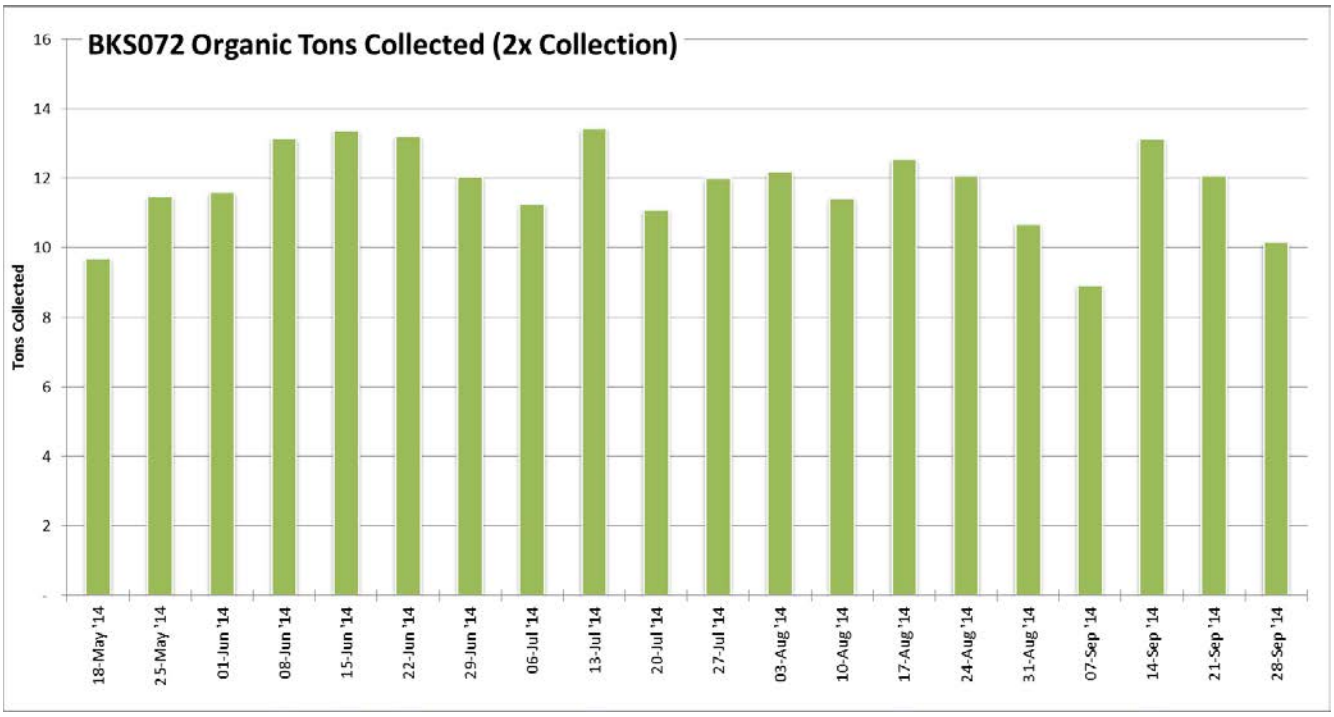
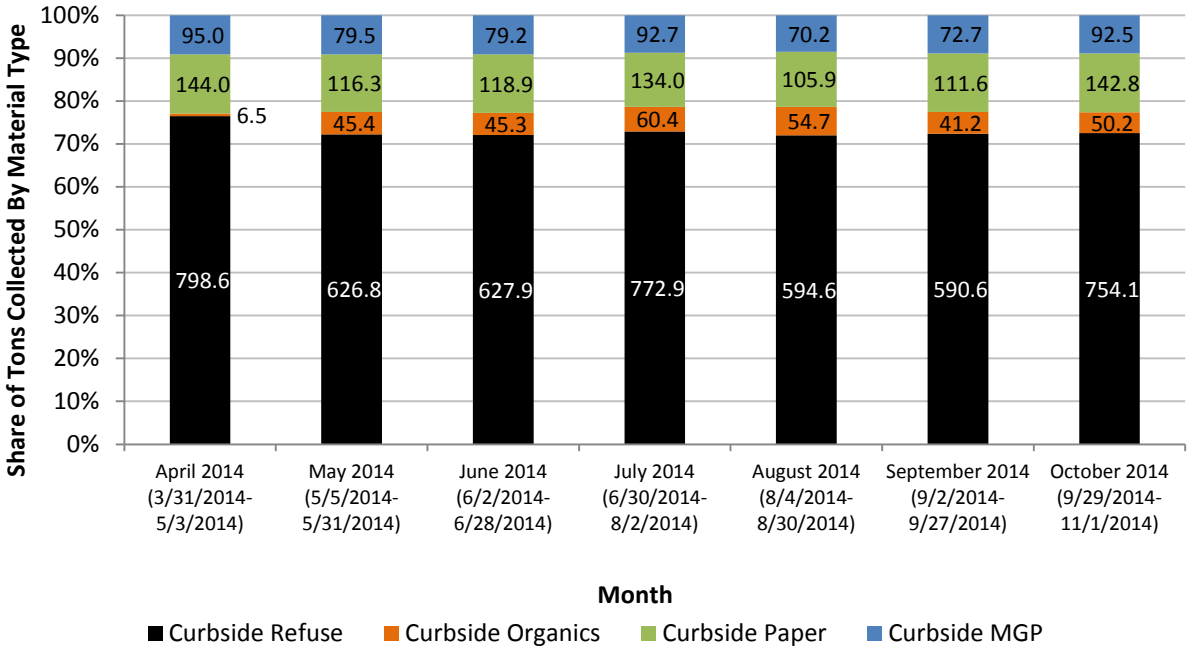
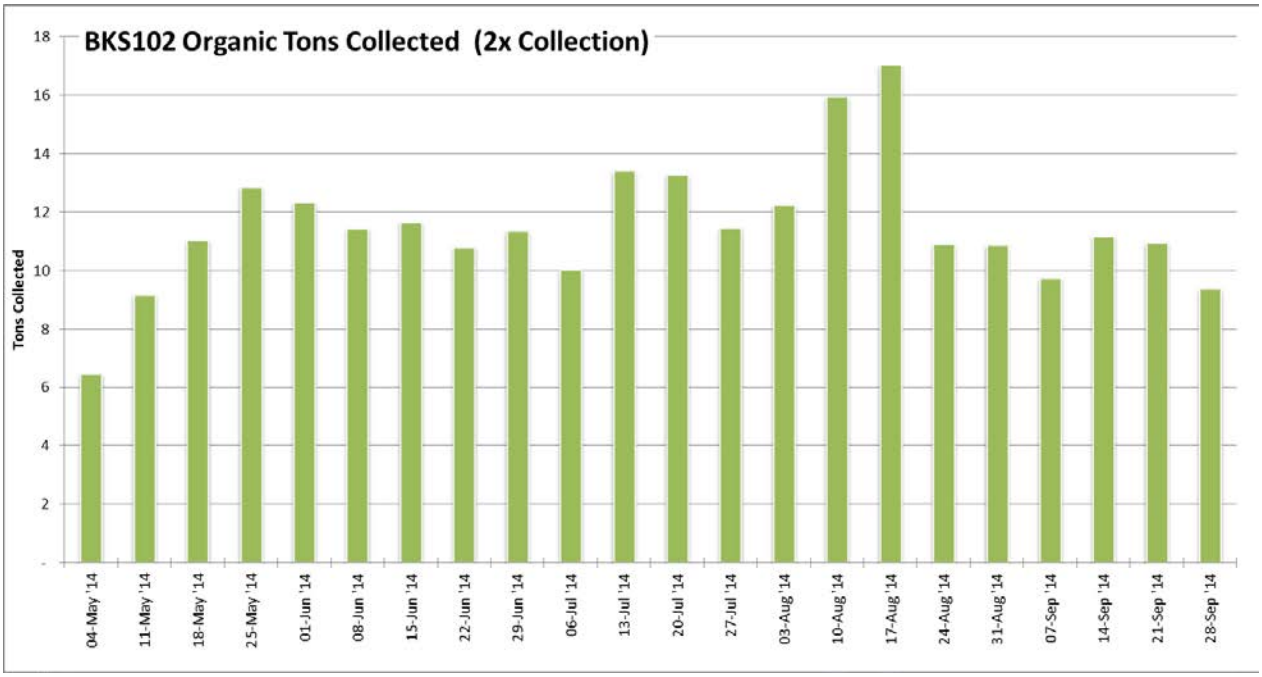
14-Sep '14
21-Sep '14
28-Sep '14


BKS072 Weekly Average Tons Collected By Month
Share of Tons Collected By Material Type
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
78.5
86.2
32.8
766.0
98.8
117.6
51.8
766.6
114.8
125.8
60.0
947.1
86.6
95.5
46.8
722.5
88.2
106.2
44.3
724.0
107.8
121.2
53.7
915.9
May 2014 (5/5/2014-5/31/2014)
June 2014 (6/2/2014-6/28/2014)
July 2014 (6/30/2014-8/2/2014)
August 2014 (8/4/2014-8/30/2014)
September 2014 (9/2/2014-9/27/2014)
October 2014 (9/29/2014-11/1/2014)
Month
Curbside Refuse
Curbside Organics
Curbside Paper
Curbside MGP

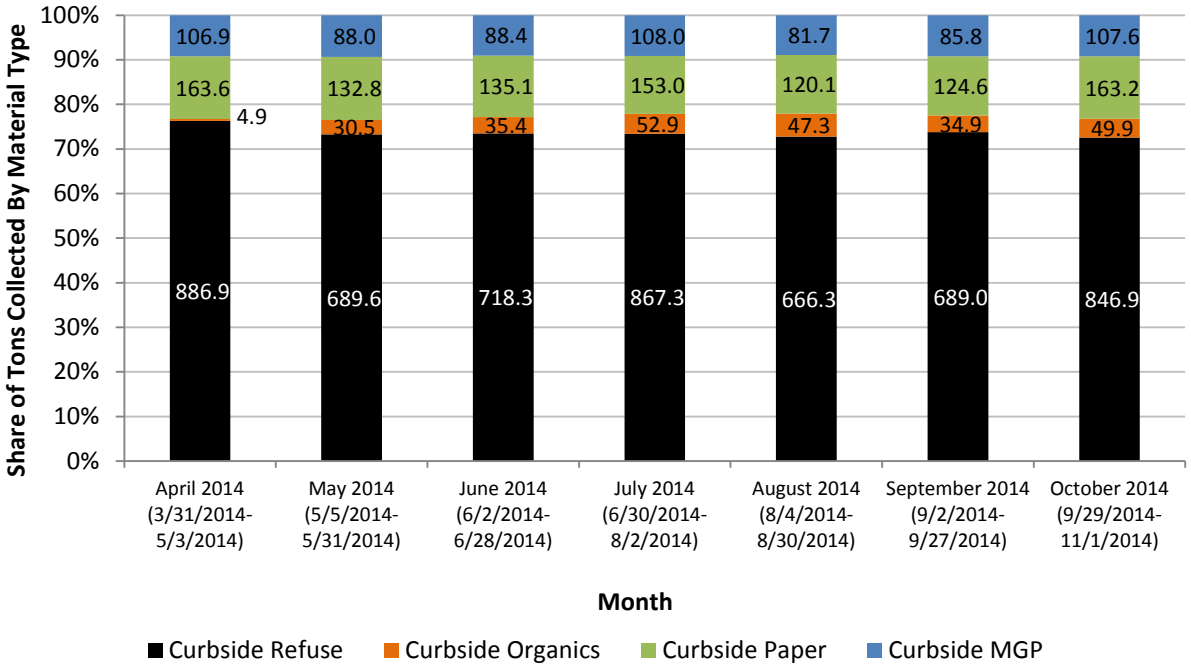

BKS072 Organic Tons Collected (2x Collection)
Tons Collected
16
14
12
10
8
6
4
2
-
18-May '14
25-May '14
01-Jun '14
08-Jun '14
15-Jun '14
22-Jun '14
29-Jun '14
06-Jul '14
13-Jul '14
20-Jul '14
27-Jul '14
03-Aug '14
10-Aug '14
17-Aug '14
24-Aug '14
31-Aug '14
07-Sep '14
14-Sep '14
21-Sep '14
28-Sep '14

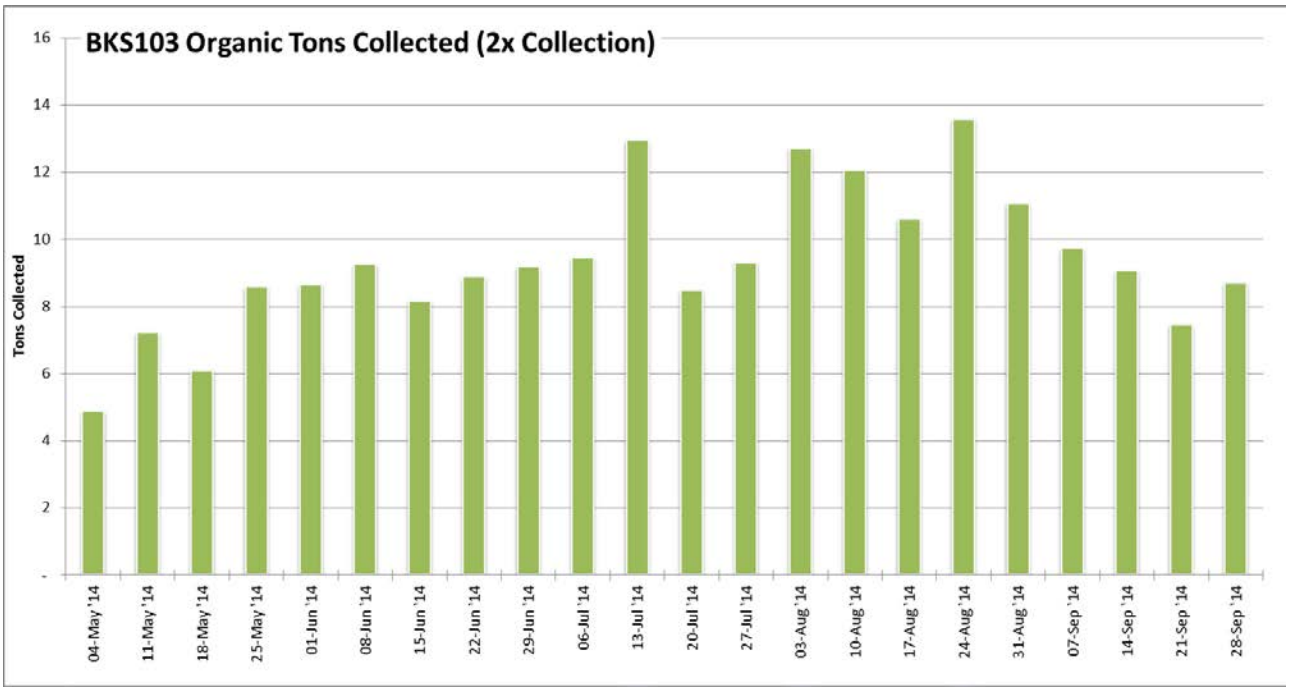
BKS102 Weekly Average Tons Collected By Month

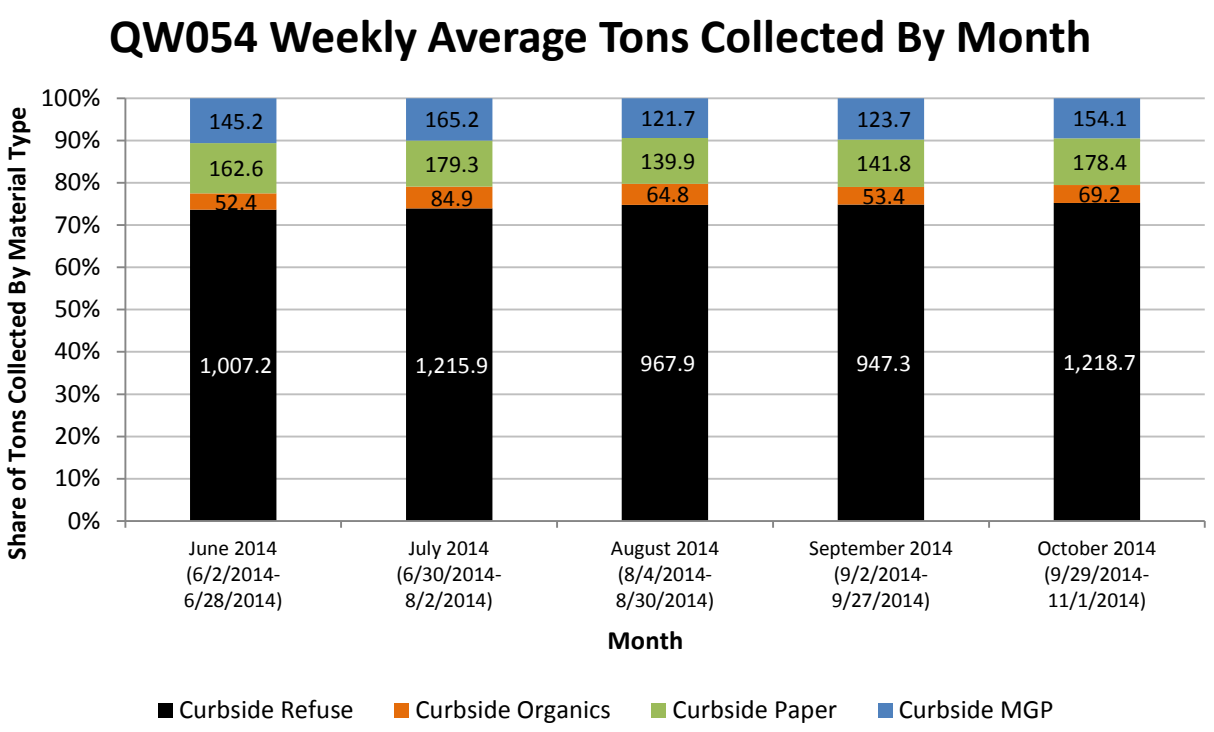


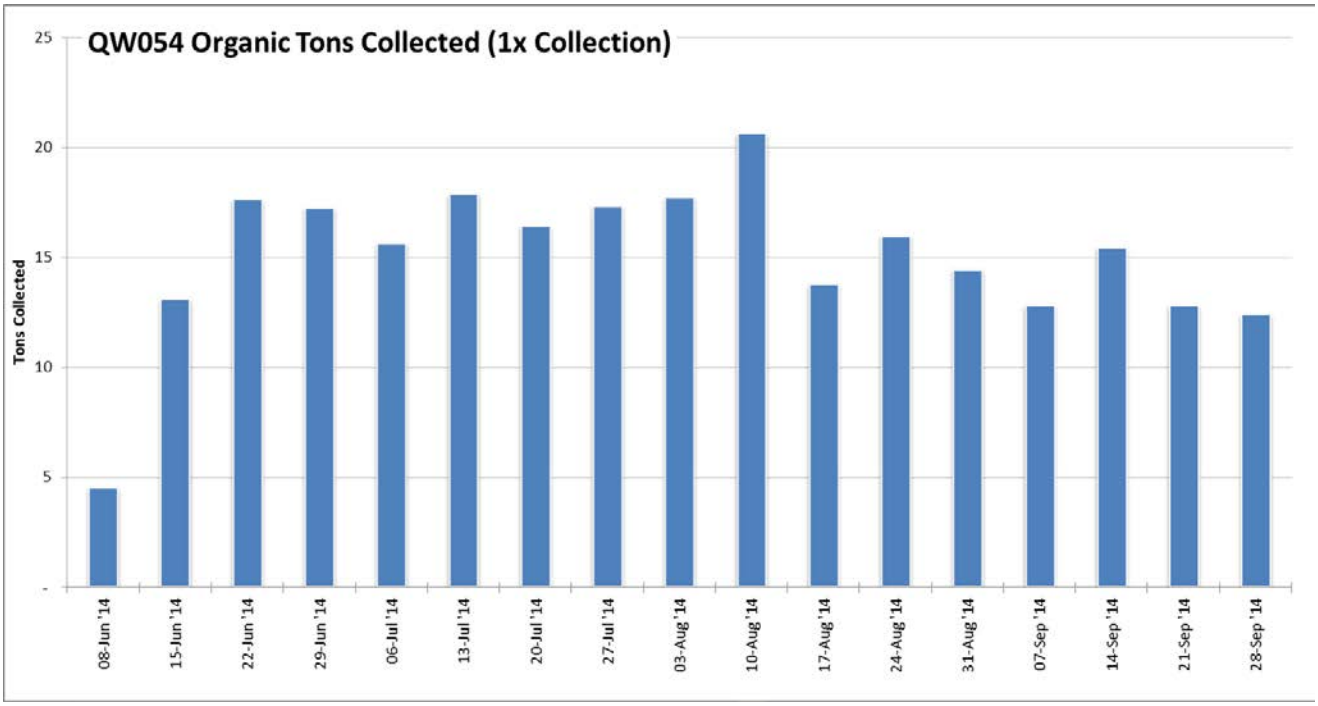


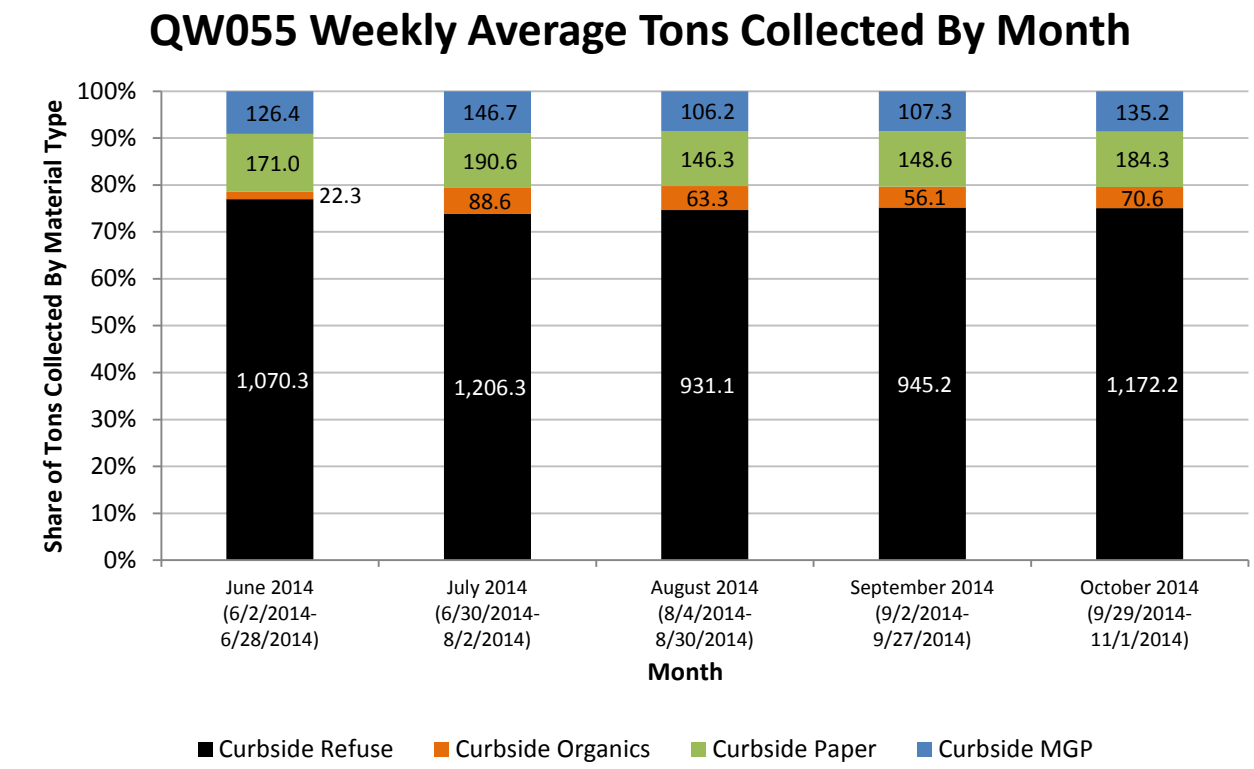
BKS103 Weekly Average Tons Collected By Month

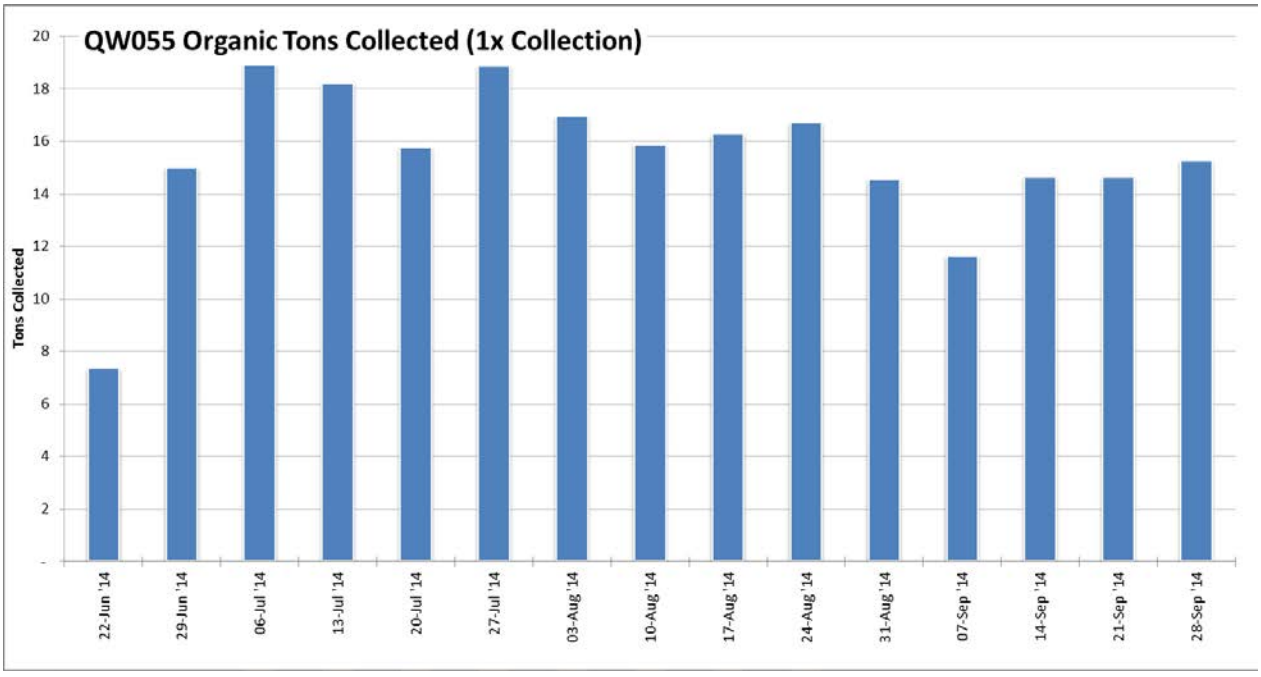


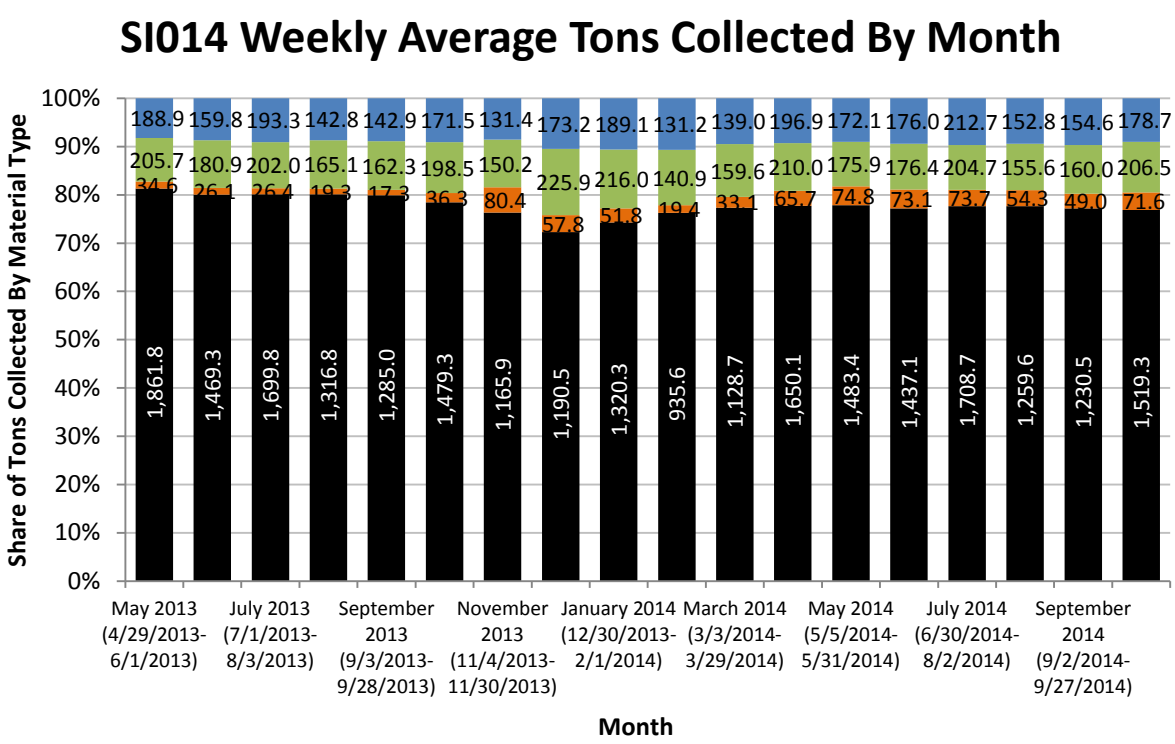


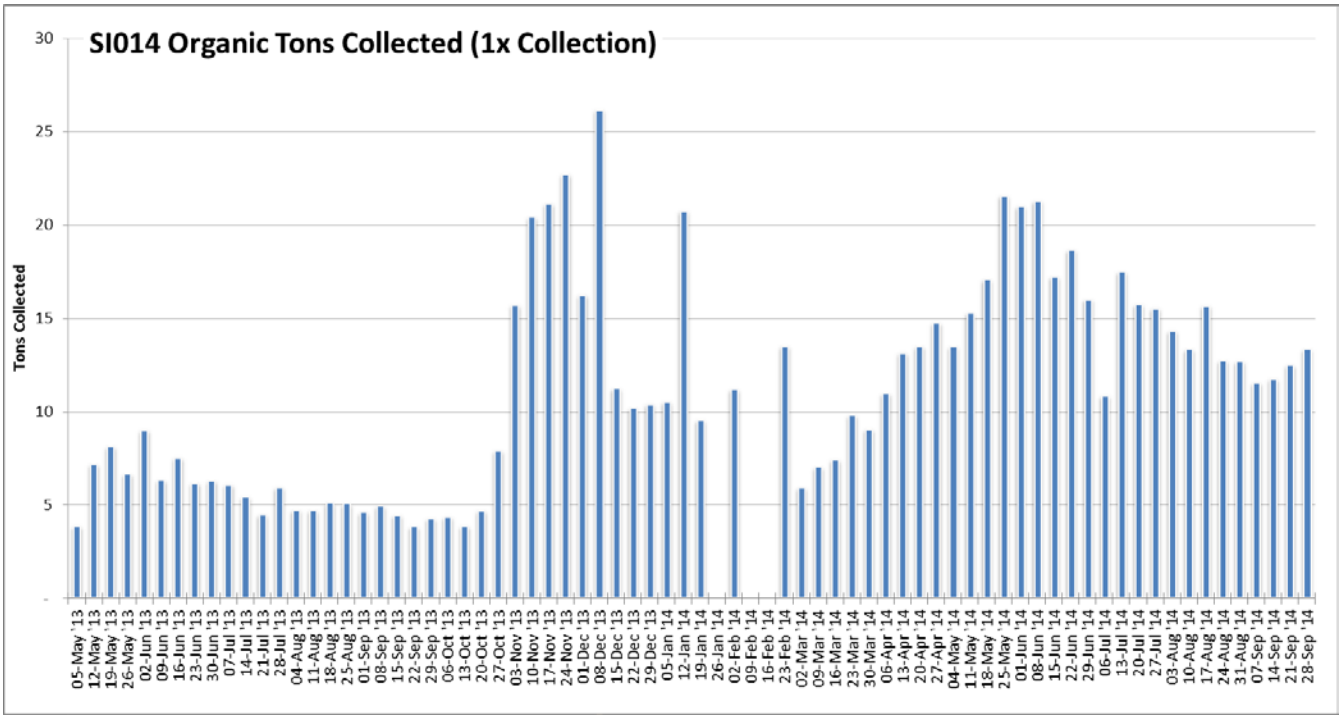

QW054 Weekly Average Tons Collected By Month
Share of Tons Collected By Material Type
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
145.2
162.6
52.4
1,007.2
165.2
179.3
84.9
1,215.9
121.7
139.9
64.8
967.9
123.7
141.8
53.4
947.3
154.1
178.4
69.2
1,218.7
June 2014 (6/2/2014-6/28/2014)
July 2014 (6/30/2014-8/2/2014)
August 2014 (8/4/2014-8/30/2014)
September 2014 (9/2/2014-9/27/2014)
October 2014 (9/29/2014-11/1/2014)
Month
Curbside Refuse
Curbside Organics
Curbside Paper
Curbside MGP


QW054 Organic Tons Collected (1x Collection)
Tons Collected
25
20
15
10
5
-
08-Jun '14
15-Jun '14
22-Jun '14
29-Jun '14
06-Jul '14
13-Jul '14
20-Jul '14
27-Jul '14
03-Aug '14
10-Aug '14
17-Aug '14
24-Aug '14
31-Aug '14
07-Sep '14
14-Sep '14
21-Sep '14
28-Sep '14


QW055 Weekly Average Tons Collected By Month
Share of Tons Collected By Material Type
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
126.4
171.0
22.3
1,070.3
146.7
190.6
88.6
1,206.3
106.2
146.3
63.3
931.1
107.3
148.6
56.1
945.2
135.2
184.3
70.6
1,172.2
June 2014 (6/2/2014-6/28/2014)
July 2014 (6/30/2014-8/2/2014)
August 2014 (8/4/2014-8/30/2014)
September 2014 (9/2/2014-9/27/2014)
October 2014 (9/29/2014-11/1/2014)
Month
Curbside Refuse
Curbside Organics
Curbside Paper
Curbside MGP


QW055 Organic Tons Collected (1x Collection)
Tons Collected
20
18
16
14
12
10
8
6
4
2
-
22-Jun '14
29-Jun '14
06-Jul '14
13-Jul '14
20-Jul '14
27-Jul '14
03-Aug '14
10-Aug '14
17-Aug '14
24-Aug '14
31-Aug '14
07-Sep '14
14-Sep '14
21-Sep '14
28-Sep '14


SI014 Weekly Average Tons Collected By Month
Share of Tons Collected By Material Type
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
188.9 159.8 193.3 142.8 142.9 171.5 131.4 173.2 189.1 131.2 139.0 196.9 172.1 176.0 212.7 152.8 154.6 178.7
205.7 180.9 202.0 165.1 162.3 198.5 150.2 225.9 216.0 140.9 159.6 210.0 175.9 176.4 204.7 155.6 160.0 206.5
34.6 26.1 26.4 19.3 17.3 36.3 80.4 57.8 51.8 19.4 33.1 65.7 74.8 73.1 73.7 54.3 49.0 71.6
1,861.8 1,469.3 1,699.8 1,316.8 1,285.0 1,479.3 1,165.9 1,190.5 1,320.3 935.6 1,128.7 1,650.1 1,483.4 1,437.1 1,708.7 1,259.6 1,230.5 1,519.3
May 2013 (4/29/2013-6/1/2013)
July 2013 (7/1/2013-8/3/2013)
September 2013 (9/3/2013-9/28/2013)
November 2013 (11/4/2013-11/30/2013)
January 2014 (12/30/2013-2/1/2014)
March 2014 (3/3/2014-3/29/2014)
May 2014 (5/5/2014-5/31/2014)
July 2014 (6/30/2014-8/2/2014)
September 2014 (9/2/2014-9/27/2014)
Month
Curbside Refuse
Curbside Organics
Curbside Paper
Curbside MGP


SI014 Organic Tons Collected (1x Collection)
Tons Collected
30
25
20
15
10
5
-
05-May '13
12-May '13
19-May '13
26-May '13
02-Jun '13
09-Jun '13
16-Jun '13
23-Jun '13
30-Jun '13
07-Jul '13
14-Jul '13
21-Jul '13
28-Jul '13
04-Aug '13
11-Aug '13
18-Aug '13
25-Aug '13
01-Sep '13
08-Sep '13
15-Sep '13
22-Sep '13
29-Sep '13
06-Oct '13
13-Oct '13
20-Oct '13
27-Oct '13
03-Nov '13
10-Nov '13
17-Nov '13
24-Nov '13
01-Dec '13
08-Dec '13
15-Dec '13
22-Dec '13
29-Dec '13
05-Jan '14
12-Jan '14
19-Jan '14
26-Jan '14
02-Feb '14
09-Feb '14
16-Feb '14
23-Feb '14
02-Mar '14
09-Mar '14
16-Mar '14
23-Mar '14
30-Mar '14
06-Apr '14
13-Apr '14
20-Apr '14
27-Apr '14
04-May '14
11-May '14
18-May '14
25-May '14
01-Jun '14
08-Jun '14
15-Jun '14
22-Jun '14
29-Jun '14
06-Jul '14
13-Jul '14
20-Jul '14
27-Jul '14
03-Aug '14
10-Aug '14
17-Aug '14
24-Aug '14
31-Aug '14
07-Sep '14
14-Sep '14
21-Sep '14
28-Sep '14