CIF #666.13

City of St Thomas
Public Space Recycling

THE CORPORATION OF THE CITY OF
ST. THOMAS

Final Project Report, June 2014

City of St Thomas

CIF Project #666.13

Acknowledgement:

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Executive Summary

The City of St Thomas is home to 37,000 residents, boasts an historic downtown, and picturesque parks for recreation and special events. In 2011, City staff and council prioritized implementing a public space recycling program, to not only maintain the welcoming nature of the City, but to also encourage residents, business owners, and visitors to divert waste from landfill. The public space recycling program focuses on capturing recyclable containers by providing opportunities for recycling in the highest foot traffic areas of the City. The new recycling bins, and signage on the bins, have an additional benefit of providing exposure for the City's Blue Box program. City staff created a three phase plan for implementing the public space program and received financial and technical support from the Continuous Improvement Fund (CIF). This report consolidates the results to date of the first two phases of this plan which have been successfully implemented at a cost of $84,350.

Phase 1 - August of 2011, the City replaced all existing garbage bins on Talbot St in the City's downtown core with 50 two sort garbage & recycling containers and provided P&E materials to business owners and residents. Phase 2 - July 2013, City staff installed 12 single sort recycling containers in Pinafore Park and purchased 10 – 96 gallon carts for special events.

As a component of the agreement with CIF, the City agreed to measure and monitor the new program and to provide a report to be made available on the CIF's website. In 2013, the City contracted a consultant to perform waste audits of the new program. Based on these audits, staff estimate that an additional 1.5 metric tonnes of materials are now annually. The consultant report identified capture of targeted recyclable materials in the downtown (97%) and at special events (75%) as key successes and noted potential areas of concern in the capture of recyclables in the containers installed in Pinafore Park (21%) and contamination of the bins downtown (43%). The bins downtown have been a target for vandalism: The soft fronts of the containers were being kicked-in and the locks were being broken off. City staff notified the container manufacturer of the vandalism and were supplied with an insert which reinforces the front of the container and prevents damage.

Over half of the contamination of the downtown recycling containers is recyclable fibres, normally targeted through the City's 2-stream residential recycling program. Though contamination indicates poor performance, there are negligible costs to its effects on the public space program, since annual volumes are so small. Thus, staff are content to accept a high capture of recyclable materials downtown as a positive indicator of engagement in the Blue Box program. In Pinafore Park, City staff note the poor capture of recyclables as a result of having not twinned every garbage can. Staff plan to remedy this by twinning every garbage bin this summer (2014). The use of carts during special events are a resounding success as they provide additional capacity for recyclables and exposure of the Blue Box program.

Overall, City staff are pleased with the success of the public space recycling program and are excited for the future as the City expands the program to parkettes and the waterparks. For further information on the City of St Thomas' public space recycling program, please contact:

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1 BACKGROUND INFORMATION

1.1 Project purpose

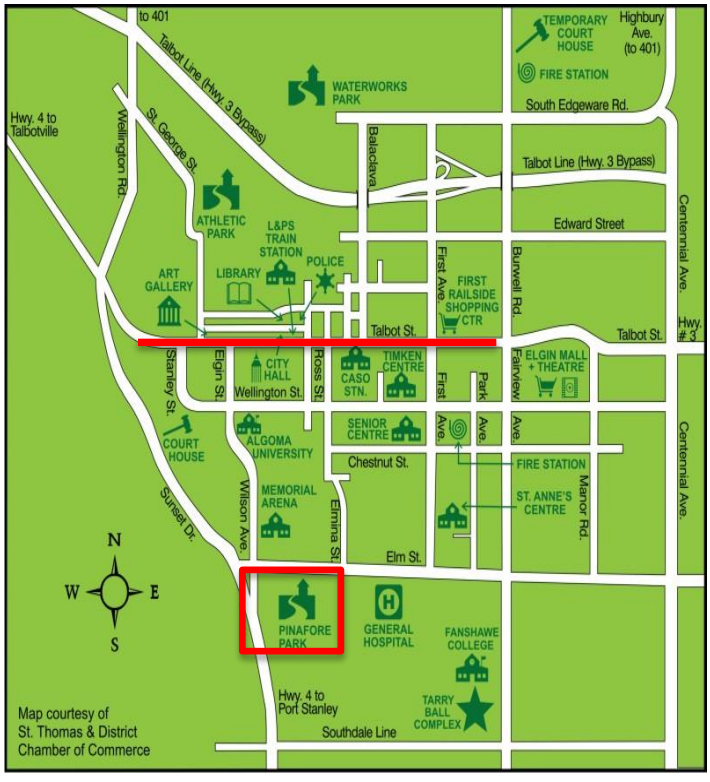
The City of St. Thomas (City) is in Southwestern Ontario approximately 30km south of London. It has a population of roughly 37,000. The City provides a residential two-stream curbside collection program to 16,000 households and ships the recyclable material to the materials recovery facility operated by the City of London. Public consultation for the development of the City's waste management master plan, the City identified the implementation of public space recycling as a key priority. The City of St Thomas Downtown Development Board had also been requesting that the City replace the existing wire mesh garbage containers, which were in need of replacement due to age and safety concerns.

In August of 2011, Staff began to implement a three phase plan to institute the public space recycling program into the City in order to better engage residents, promote at home recycling behaviors, and achieve its diversion goal of 65%.

Phase 1 Replace existing garbage containers in the downtown, Talbot Street, area with twin bin recycling and garbage containers.
August 2011

Phase 2 Purchase and install twin bins in Pinafore Park, the City's largest park and the venue for many of the City's special events. Additionally, the City purchased 96 gallon wheelie bins to use during special events.
July 2013

Phase 3 Is the future phase of the public space recycling campaign. Currently, City staff are reviewing & evaluating options for implementing the public space recycling program in City parkettes.



Total project costs for the implementation of public space recycling were $84,350. The CIF provided a public space recycling grant in the amount of $39,250. The breakdown of the project's budget in the following sections.

2 IMPLEMENTATION

The City of St Thomas' public space recycling program focused on providing opportunities to recycle in order to promote at home recycling behaviors. The City targets recyclable containers only (plastic bottles, aluminum cans and glass bottles).

2.1 Areas of Focus

Phase 1: Twin Binning the Downtown

The purpose of the first phase of the public space recycling implementation plan, was to replace existing garbage containers in the downtown, Talbot Street, area with a two sort recycling and garbage container. Talbot Street is a busy section of the City's downtown and gets a majority of the pedestrian traffic. This is the perfect area for the City to position the containers and signage for use as P&E, as it is a regular reminder to business owners, shoppers, and other visitors to the downtown that the City is invested in recycling and waste diversion.

Talbot Street, Downtown St Thomas

The old bins were removed in August 2011 and replaced with 50 new two sort recycling and garbage containers. The new two sort containers were purchased at a cost of $851.00 and offer 45 gallons of waste storage capacity – 22.5 gallons for recycling and garbage respectively. The bins were placed between Balaclava St and Stanley St and are serviced twice weekly (Monday & Friday) by an independent collections contractor.

Initially, City staff intended on purchasing tri sort containers for the public space recycling program, which would have included a sort for recyclable fibres. This two stream recycling would have been consistent with the City's residential curbside collection program. However, the City decided in favour of black two sort garbage & recycling containers based on consultation with the City of St Thomas Downtown Development Board.

Phase 2: Recycling in Pinafore Park & Special Events

The second phase of the public space recycling program focused on increasing the City's recycling profile by providing single sort recycling containers in Pinafore Park

Pinafore Park, St Thomas

and recycling carts for special events. Pinafore Park is the City's largest park and the venue for many of the City's special events, including the annual Fire Muster Event held on Labour Day.

Twelve (12) single sort recycling containers were purchased & installed in Pinafore Park in July of 2013. The new recycling containers were placed near garbage bins throughout this park; not all garbage bins were twin binned with recycling containers due to staffing and other resource limitations. The single sort containers were purchased for $851.00 each and have a storage capacity of 45 gallons for recyclable containers. The recycling containers are serviced by municipal parks & recreation staff on an 'as needed' basis throughout the season.

In order to increase recycling during special event functions the City purchased an inventory of recycling carts (10) in June 2013 that are loaned out upon request to organizations holding special events.

2.2 Budget

Table 1: Budget for the implementation of the City's public space recycling program

Item	Budget	CIF Funding	Actual Costs
Recycling Bins & Signs - 50 Dual Sort Containers - 12 Single Sort Containers - 10 Recycling Carts	$75,500	$34,250	$69,500
Promotion & Education	$14,000	$0	$0
Implementation	$4,000	$2,000	$4,000
Monitoring Strategy and Final Report: - Waste and Visual Audits	$4,000	$2,000	$8,850
Final Report & Project Evaluation	$2,000	$1,000	$2,000
Total	**$99,500**	**$39,250**	**$84,350**

Promotion and Education of the new public space program was advertised through the City's waste calendar, flyers to local business owners, and flyers posted in the downtown and park areas. The costs of P&E were included in the City's annual P&E budget for the Blue Box recycling and waste management programs. Costs for signage and imagery on the Recycling containers were included in the bin costs from the manufacturer.

2.3 Measuring & Monitoring - Waste and Visual Audits

A component of the project agreement with the CIF was to create a measuring and monitoring strategy for the materials collected by the public space recycling program. In August of 2013, 2cg Waste Management Consulting Services were contracted by the City to complete waste and visual audits for the public space recycling program.

The waste audit was completed for wastes generated on Talbot St., at Pinafore Park and at a special event. A waste auditing crew of two 2cg staff was used to sort wastes. 4 days of waste audits were completed in September of 2013. Garbage and recycling were sorted into the categories described in Table A.1 and weighed. Tables A.2, A.3, and A.4 depict the results of the waste audits.

Talbot Street
Garbage and recycling were collected from 20 randomly selected bins on Talbot Street on 10 September and 12 September 2013. Garbage had already been (inadvertently) collected on 10 September so only recycling was collected and analyzed. This process was repeated on 12 September and two days' worth of garbage and recyclables were collected from the same 20 bins.

Pinafore Park
Garbage and recycling were collected in Pinafore Park on 11 September 2013 by 2cg staff. Wastes were generated from 7 September to 10 September.

Special Events- Fire Muster Event
Waste samples were taken from the St. Thomas Fire Muster Event that was held on 31 August to 1 September at Pinafore Park. Wastes were sorted in the storage shed of the Dance Pavilion on 3 September. It should be noted that not all wastes were weighed and this sample was audited for composition purposes only.

Single sort recycling container, Pinafore Park, St Thomas

3 Results

3.1 Analysis of Program Performance

The auditing consultant, 2cg, compiled data collected during waste audits completed in early September 2013 and consolidated this information into a report on the materials composition for the City of St Thomas' public space recycling program. By extension, City staff were able to project (based on the number of collections per season) that the public space recycling program captures an additional 1.5-2 metric tonnes of recyclable materials per year.

Table 2: Consolidated waste composition data from September audits

Location	Diversion	Capture	Contamination
Downtown	19%	97%	43%
Pinafore Park	4%	21%	18%
Special Event – Fire Muster	20%	75%	8%

Phase 1

This phase of the public space recycling program focused on the rollout of two sort containers on Talbot Street in the City's downtown business area. Clearly, residents, business owners/employees, and visitors to the town are aware of the opportunity to recycle. The capture rate of recyclable materials is excellent and staff are optimistic that this metric infers that the P&E component of this programming has been successful.

Two sort recycling container
Talbot Street, St Thomas

Staff were surprised that contamination of the recycling stream in this area of programming was so high; ~43%. On further inspection, more than half of the contaminants in the beverage container only recycling stream are recyclable fibres that would normally be targeted materials in the two stream residential curbside program; recyclable fibres represent ~23.5% of the recycling stream.

This result can be interpreted in one of two ways. One, it is good news as it appears that at home recycling behaviours are solidly engrained in the minds of residents as all the materials that would be targeted through the residential curbside program are ending up in the recycling program. Or, conversely the recyclable fibre can be viewed strictly as a contaminant that is decreasing the performance of the recycling program.

Since one of the primary objectives of public space programming is to connect with residents and promote the recycling program, City staff are pleased to see a connection between at home recycling behaviours and the downtown component of the public space program. Also of significance is that only ~2 metric tonnes of material are being captured by this programming and the costs for the City to manage the recyclable fibre contaminants are negligible.

Damaged two sort container
Talbot Street, St Thomas

Another significant component of contamination is organic materials. In an effort to continuously improve all aspects of the City's waste management services, staff are considering changes in P&E and signage to better inform residents on the acceptable materials in each section of the two sort container.

While collecting from the downtown bins, waste audit staff noted that the locks on some bins were broken and the doors were left open. The waste audit staff recommended that these bins be fixed in order to keep waste from spilling out of the bins, but also to decrease the amount of household waste placed in bins, and that the bins be regularly monitored by collection staff to ensure that similar problems of this nature are dealt with accordingly.

Apart from the waste audits, City staff have had to deal with significant damage to the downtown two sort containers. Initially, the containers were purchased with soft fronts as there was no material behind the light weight slip in sorting guide. Hooligans were kicking in the front of the bins causing damage. Staff followed up with the container vendor and were provided with a hard slip in panel to place behind the sorting guide which has prevented further damage.

Phase 2

Incorporating single sort recyclable containers in Pinafore Park and recyclable carts for special events, were the focus of the second phase of the public space recycling program. Staff observed that the capture of materials in the park sector of this program is poor, as ~21% of recyclable materials are being captured from the waste generated in this area. There are likely several contributing factors to the poor performance of the park bins, foremost is the fact that not all garbage bins in the park are twinned with single sort containers. Staff plan on addressing this issue by twinning each garbage bin in Pinafore Park during the summer season of 2014 and assessing the impact on the rate of capture of targeted recyclable materials thereafter.

Staff were pleased with the use of the recycling carts at the Fire Muster special event. Although the capture of materials is not perfect, staff feel this is likely due to shorter window for communicating with residents as they are coming/going from the event. Staff are confident the positioning these large containers, which are obviously recognizable as recycling receptacles, at special events is definitely providing a reminder to residents and event participants of the City's commitment to waste diversion and the Blue Box program.

4 Conclusions

The costs to implement the public space recycling program in the City's downtown, Pinafore Park, and special events totaled $84,350. The addition of the recycling bins on Talbot St., in Pinafore Park and at Special events has improved waste diversion in public areas, provided residents, business owners, and visitors to the City with a cleaner & more welcoming environment, and acts as a valuable P&E interphase between City staff & residents, improving the rapport between residents and the Blue Box program.

The City was fortunate to receive funds from multiple sources to help minimize the costs of investing in this programming. Going forward, the collection contract to service the public space program costs approximately $2,500 annually. The bins will continue to be serviced twice weekly in order to adequately manage the materials generated. Staff are confident that the public space recycling program provides great value for the ongoing operational costs.

The City of St. Thomas has funds of $100,000 in its Capital Budget for the growth and development of the Public Space recycling program. In 2014 all garbage cans will be paired with a recycling container in Pinafore and Waterworks parks and the Talbot street cans will be repaired. Additionally, money will be set aside specifically for a more extensive promotion and education campaign. In order to monitor the City's continuous improvement plan for the public space recycling program, another waste audit will be completed around the same time in 2014 to assess performance.

Contamination of the recycling stream (and perhaps recyclables in the waste stream as well) is a significant issue for the entire public space recycling program. In addition to the aforementioned waste audits scheduled for Sept 2014, City staff plan on monitoring container fullness in order to assess the adequacy of the current garbage and recycling container capacity and service frequency. If collection capacity is adequate, and any spill-over effects are not significant, City staff will review the labeling on containers and look to improve the current communication materials on site.

APPENDIX A

Table A.1: Public Space Recycling materials targeted for capture

	Main Category	Sub Category	Accepted in Recycling Program
1.	Paper	Paper Fast Food Packaging Other Recyclable Fibers Gable Top Containers Aseptic Containers Paper Coffee/Drink Cups Paper Towel	
2.	Cardboard & Boxboard	Cardboard & Boxboard	
3.	Plastic	PET Water Bottles PET Other Beverage HDPE Beverage Polystyrene Food Packaging Film Plastic	✓ ✓ ✓
4.	Glass	Bottles and jars	✓
5.	Metal	Aluminum cans Steel cans	✓ ✓
6.	Organics	Food Waste Pet Waste	
7.	Other waste	Other Recyclable Containers Non-Recyclable Materials	✓

Table A.2 Public Space Garbage Composition

Material Category	Accepted in Recycling	Talbot Garbage 12 September		Talbot Garbage 10 September		Talbot St Total		Non Pavilion Garbage 11 September		Pavilion Garbage 11 September		Parks Garbage 11 September		Special Event 3 September	
		kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%
Paper															
Paper Fast Food Packaging		1.6	6.7	0.0	0.8	1.6	6.2	0.5	12.9	0.0	0.0	6.6	6.9	4.1	7.1
Other Recyclable Fibers		2.6	10.9	0.1	4.0	2.7	10.3	0.2	6.5	0.0	0.0	1.1	1.1	1.0	1.7
Gable Top Containers		0.1	0.5	0.0	0.0	0.1	0.5	0.0	1.1	0.0	0.0	1.8	1.9	0.3	0.5
Aseptic Containers		0.1	0.4	0.0	0.8	0.1	0.5	0.0	0.5	0.0	0.4	1.9	2.0	0.1	0.2
Paper Coffee/Drink Cups		1.8	7.7	0.7	26.6	2.5	9.4	0.3	7.5	0.5	5.6	3.3	3.4	3.9	6.8
Tissue		1.3	5.6	0.2	7.3	1.5	5.7	0.3	7.0	0.9	9.9	3.6	3.8	5.5	9.6
Total Paper		**7.6**	**31.8**	**1.0**	**39.5**	**8.5**	**32.5**	**1.3**	**35.5**	**1.4**	**15.9**	**18.4**	**19.1**	**15.0**	**26.0**
OCC & Boxboard															
Total OCC and Cardboard		**1.0**	**4.1**	**0.1**	**2.4**	**1.0**	**4.0**	**0.3**	**7.5**	**0.1**	**0.7**	**8.6**	**9.0**	**7.4**	**12.9**
Plastics															
PET Beverage Water Bottles	X	0.1	0.5	0.0	0.0	0.1	0.5	0.2	4.8	0.0	0.2	0.9	1.0	1.3	2.2
PET Beverage Other	X	0.3	1.1	0.0	0.0	0.3	1.0	0.1	3.2	0.4	4.0	3.3	3.4	2.4	4.1
HDPE Beverage	X	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.5	0.0	0.0	0.1	0.1	0.0	0.1
Polystyrene Fast Food Packaging		0.1	0.4	0.0	0.8	0.1	0.5	0.0	0.0	1.5	17.3	5.5	5.7	0.7	1.1
Film Plastic		0.8	3.3	0.2	7.3	1.0	3.7	0.0	1.1	0.3	3.8	4.3	4.5	4.6	7.9
Total Plastic		**1.3**	**5.4**	**0.2**	**8.1**	**1.5**	**5.6**	**0.4**	**9.7**	**2.3**	**25.3**	**14.1**	**14.7**	**8.9**	**15.5**
Glass Beverage Bottles															
Total Glass	X	**0.0**	**0.0**	**0.4**	**16.9**	**0.4**	**1.6**	**0.0**	**0.0**	**0.0**	**0.0**	**4.2**	**4.3**	**0.0**	**0.0**
Metal															
Aluminum Beverage Containers	X	0.2	0.7	0.0	0.8	0.2	0.7	0.1	1.6	0.7	7.4	5.3	5.5	1.5	2.6
Steel Containers		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.9	0.0	0.0
Total Metal		**0.2**	**0.7**	**0.0**	**0.8**	**0.2**	**0.7**	**0.1**	**1.6**	**0.7**	**7.4**	**7.2**	**7.4**	**1.5**	**2.6**
Wood															
Total Wood		0.3	1.2	0.0	0.0	0.3	1.1	0.0	0.0	0.0	0.0	2.8	3.0	0.0	0.0
Organic Waste															
Food Waste		7.1	29.9	0.0	0.0	7.1	27.0	0.5	14.5	3.2	36.1	16.6	17.2	12.7	22.1
Pet Waste		2.4	0.0	0.0	0.0	2.4	9.2	0.5	0.0	0.0	0.0	4.0	4.1	1.7	0.0
Total Organic Waste		**9.5**	**40.0**	**0.0**	**0.0**	**9.5**	**36.3**	**1.1**	**28.5**	**3.2**	**36.1**	**20.6**	**21.4**	**14.4**	**25.0**
Other Waste															
Other Recyclable Containers		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.5	0.0	1.8	1.9	0.0	0.0
Non-recyclable Materials		4.0	0.0	0.8	0.0	4.8	18.3	0.6	0.0	0.8	0.0	18.5	19.2	10.4	0.0
Total Other Waste		**4.0**	**16.8**	**0.8**	**32.3**	**4.8**	**18.3**	**0.6**	**17.2**	**1.3**	**14.6**	**20.3**	**21.1**	**10.4**	**18.1**
Total		**23.8**	**100.0**	**2.5**	**100.0**	**26.3**	**100.0**	**3.7**	**100.0**	**8.9**	**100.0**	**96.3**	**100.0**	**57.6**	**100.0**

Table A.3 Public Space Recycling Composition

Material Category	Accepted in Recycling Program (X)	Talbot Recycling 12 September		Talbot Recycling 10 September		Talbot St Recycling Total		Parks Recycling 11 September		Special Event 3 September	
		kg	%	kg	%	kg	%	kg	%	kg	%
Paper											
Paper Fast Food Packaging		0.2	0.9	1.2	3.2	1.4	2.4	0.3	3.6	0.0	0.0
Other Recyclable Fibers		3.5	16.4	4.9	12.6	8.3	13.9	0.1	1.6	0.3	1.2
Gable Top Containers		0.0	0.2	0.3	0.7	0.3	0.5	0.0	0.4	0.0	0.0
Aseptic Containers		0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.2	0.0	0.0
Paper Coffee/Drink Cups		1.0	4.7	2.7	7.0	3.7	6.2	0.4	4.5	0.2	0.8
Tissue		0.1	0.4	0.0	0.1	0.1	0.2	0.1	0.9	0.0	0.0
Total Paper		**4.8**	**22.7**	**9.1**	**23.6**	**13.9**	**23.3**	**1.0**	**11.2**	**0.5**	**2.0**
OCC & Boxboard											
Total OCC and Cardboard		**0.2**	**0.9**	**0.6**	**1.5**	**0.8**	**1.3**	**0.1**	**1.1**	**5.2**	**22.4**
Plastics											
PET Beverage Water Bottle	X	1.7	8.0	2.4	6.2	4.1	6.8	0.8	9.4	3.9	16.9
PET Beverage Other	X	3.9	18.4	5.1	13.3	9.0	15.1	1.5	16.9	2.8	12.0
HDPE Beverage	X	0.1	0.7	0.3	0.8	0.4	0.7	0.0	0.2	0.7	2.8
Polystyrene Fast Food Packaging		0.0	0.0	0.2	0.6	0.2	0.4	0.0	0.2	0.0	0.1
Film Plastic		1.1	5.4	0.7	1.9	1.9	3.1	0.1	0.9	0.5	2.0
Total Plastic		**6.9**	**32.5**	**8.7**	**22.6**	**15.6**	**26.1**	**2.5**	**27.6**	**7.9**	**33.8**
Glass Beverage Bottles											
Total Glass	X	**0.7**	**3.5**	**2.0**	**5.1**	**2.7**	**4.5**	**1.0**	**11.7**	**0.0**	**0.0**
Metal											
Aluminum Beverage Contai	X	1.6	7.7	4.6	11.9	6.2	10.4	1.2	13.5	5.7	24.6
Steel Containers		0.0	0.0	0.4	1.1	0.4	0.7	0.0	0.0	0.0	0.0
Total Metal		**1.6**	**7.7**	**5.0**	**13.0**	**6.7**	**11.1**	**1.2**	**13.5**	**5.7**	**24.6**
Wood											
Total Wood		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Organic Waste											
Food Waste		3.4	15.8	8.4	21.9	11.8	19.7	2.9	32.6	1.2	5.2
Pet Waste		0.1	0.0	0.2	0.0	0.3	0.5	0.0	0.0	0.0	0.0
Total Organic Waste		**3.5**	**16.3**	**8.6**	**22.4**	**12.1**	**20.2**	**2.9**	**32.6**	**1.2**	**5.2**
Other Waste											
Other Recyclable Containers		0.2	0.0	0.0	0.0	0.2	0.3	0.0	0.0	2.8	12.0
Non-recyclable Materials		3.3	0.0	4.6	0.0	7.8	13.1	0.2	0.0	0.0	0.0
Total Other Waste		**3.5**	**16.3**	**4.6**	**11.8**	**8.0**	**13.4**	**0.2**	**2.2**	**2.8**	**12.0**
Total		**21.2**	**100.0**	**38.6**	**100.0**	**59.8**	**100.0**	**8.9**	**100.0**	**23.2**	**100.0**

Table A.4 Garbage and Recycling Compartment Weights Collected on 12 September

Bin	Recycling Compartment (kg)	Garbage Compartment (kg)
1	0.2	1.22
2	1.52	1.7
3	0.08	1.18
4	0.18	0.5
5	0.28	0.38
6	0.38	0.5
7	4.22	2.46
8	0.64	0.76
9	0.26	0.32
10	0.24	1.66
11	1.56	0.68
12	1.64	0.84
13	2.14	1.16
14	0.12	0.54
15	1.3	3.03
16	0.1	1.82
17	0.34	2.32
18	0.06	0.46
19	3.6	1.18
20	1.18	2.72
Total	**20.04**	**25.43**