Toronto, Multi- Residential Front-End Loading Bin Contamination Abatement Project City of Toronto Report 1101

September 2019

City of Toronto, Multi- Residential Front-End Loading Bin Contamination Abatement Project
CIF Project Number 1011

Final Report
Date: *September 2019*

Prepared for: Resource Productivity and Recovery Authority
Continuous Improvement Fund

Prepared by:

City of Toronto
Solid Waste Management Services

Acknowledgement

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Executive Summary

The City of Toronto has multifaceted recycling promotion and education campaigns, but despite this contamination levels at the City's processing facility are on the rise. These increases in contamination levels, in turn, increase the processing costs to deal with the excessive contaminated material. The purpose of this project was to assess the feasibility of a more hands on approach to deal with recycling contamination.

This project was launched in response to concerns raised by the City's processing staff. Increasingly loads coming into the Toronto facility were flagged and or rejected as they contained more than 25% non-targeted, unwanted materials. These contamination levels were overwhelming the sorting facility and compromising its ability to process materials efficiently. This in turn was driving an increase in the City's processing costs.

In an effort to address this, a two-step approach was implemented:

1. Inspecting Multi-Residential (MR) Front-End Loading (FEL) recycling bins and rejecting contamination at the source.
2. Recovering the cost of collection contaminated materials.

The findings suggest that inspection and rejection at the source is an effective approach to combat recycling contamination. In the beginning stages of the project Solid Waste witnessed significant reduction in contamination being diverted away from the City's processing facility, however more recently changes to the market for recyclables has resulted in a rise in the amount of product deemed as contaminated. Prior to this change, the City witnessed an overall 9.36% decrease in the amount of contamination found at MR FEL buildings in general.

The City has been able to recover the cost of managing contaminated material both through saving the cost of processing contaminated recycling at the processing facility and by charging the cost of lifting the material as garbage back to the customer. Next steps include establishing a working group to address issues including but not limited to: communications, customer service, education and outreach, transfer station protocols and other opportunities to work towards a circular economy.

1. Introduction

The City of Toronto has experienced significant amounts of non-recyclable materials entering the City's processing facility. The current contamination rate at the facility is estimated at approximately 27%-29%; costing the City and its residents millions of additional dollars to process this excess contamination. The City of Toronto collects approximately 180,000 tonnes of single stream recycling material annually, of which roughly 55,000 tonnes are generated by Multi-Residential Front-End Loading Bin buildings, representing 31 percent of the total. The City of Toronto has continued a pilot project that commenced in 2016, involving the inspection of FEL recycling bins for contamination and rejecting them as garbage at the source. The following provides an update on the findings from those inspections.

2. Background

The City of Toronto is directed by a Waste Strategy which includes a goal of 70% diversion by 2026. The first five years of the Waste Strategy focus on enhancing the current integrated waste management system. This project is focused on Multi-Residential Front-End Loading buildings.

The Toronto Municipal Code defines multi-residential to include:

- Buildings with nine or more units, and generally includes apartments, condominiums and some types of townhouses,
- Small multi-residential buildings that receive curbside waste collection using wheeled curbside bins, and
- Large multi-residential buildings that use front-end containers for waste collection

This pilot project focuses specifically on the third category, large multi-residential buildings with front-end containers. In December 2016, letters were sent to all building owners/management groups that received FEL bin service, to inform them of the contamination issue. The letter notified them that, starting in 2017, bins would be inspected, contamination exceeding 25% of the bin would be rejected as garbage and buildings would be invoiced for the cost of the garbage lift (see Appendix 1).

In January 2017 the inspection process project began. Each MR FEL building site in the City was visited and their FEL bins monitored, this amounted to roughly 2,500 addresses. Data was generated for each route. Inspectors then carried out inspections on three (3) routes per day which demonstrated the highest percentage of contamination per route to determine if the program was making a difference in contamination being diverted to the processing facility.

3. Approach

Regular recycling material is taken to one of seven City of Toronto transfer stations and then transported for processing to one single processing facility. The facility also accepts material from other municipalities which is combined with the City of Toronto material on the tipping floor prior to processing.

In order to manage the excessive contamination SWMS Contract Services (SWMS-CS) began a two-fold approach:

1. Inspecting Multi-Residential (MR) Front-End Loading (FEL) recycling bins and rejecting contamination at the source.
2. Recovering the cost of processing contaminated materials

3.1 Monitoring and Measurement Methodology

3.1.1 Bin Inspection Team (SWMS-CS)

To conduct the contamination inspections temporary staff were employed to perform recycling bin inspections. Crews of no less than 2 staff each were formed and worked 4 days per week.

The bin inspection and cost recovery project involved an average of:

- six (6) bin inspection staff,
- one (1) project supervisor, and
- one (1) collection truck

Figure 1: *Bin Inspection Team*

Each crew inspected an average of 65 buildings per day and/or 260 buildings per week. Combined, the 6 inspectors visited an average of 780 buildings each week.

The entire City was covered and each MR FEL address was visited at least once.

The inspection supervisor schedules crews to make routine visits to FEL addresses to inspect FEL bins.

Figure 2: *Contaminated Recycling - 4 garbage bags circled in red*

The crews arrived at sites ahead of the recycling collection vehicles. Staff inspected all recycling bins set out for collection. Inspectors flagged bins with contamination levels exceeding 25% (see Appendices 2 & 3 for visual inspection procedures). For example, four (4) or more black garbage bags in one bin would be considered 25% contamination. Staff would use their judgement for other materials considered contaminants such as yard waste and textiles. To ensure staff safety, inspections were visual only.

Once a contaminated bin at a building had been identified the buildings site contact (superintendent or site operator) would be advised of the contamination in the bins and provided with a choice of two (2) options to resolve the matter (see Appendix 4 for contaminated bin notification script).

> **Option 1**: Remove the bin from the current day's collection and correct the contamination. The bin would then be picked up on the next scheduled recycling day.
> **Option 2**: Have the bin picked up as garbage on the current collection day.

If the building site contact was unavailable, or refused to comply, contaminated recycling bins were collected as garbage.

The collection of the contaminated recycling as garbage was coordinated through a relay of information by the inspection staff to the driver of the recycling truck via text or phone call identifying the contaminated bin(s) and instructions not to pick it up. The project supervisor would, in turn, advise the contractor to add that bin to the schedule of a dedicated FEL truck for pick up that day. The material left behind was later collected as garbage. Inspection staff document information at each site on a "Notice of Non-Compliance" form. The notice was designed to act as back up documentation and eventually for billing purposes and would be provided to building owners/representatives as part of their invoice package (see Appendix 5).

From January 2017 to present, the following data has been tracked:

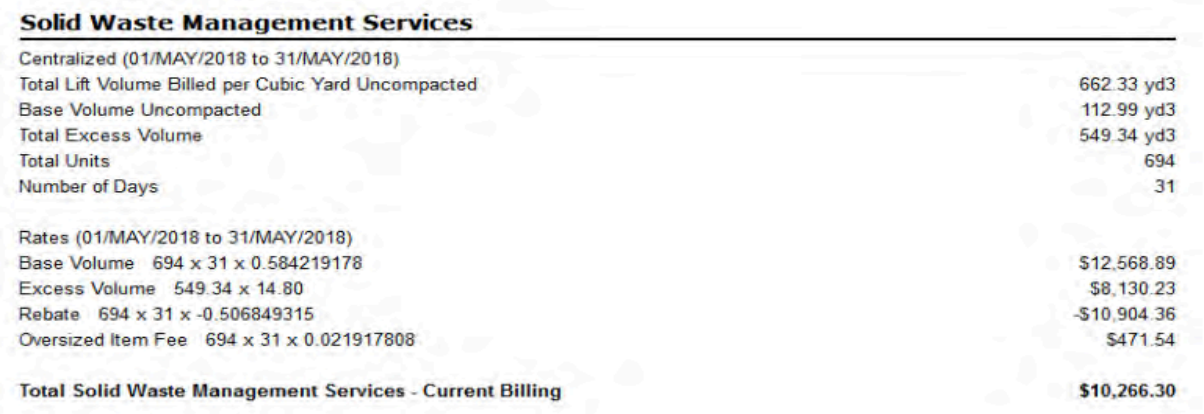
Inspections

- Site inspections completed
- Site inspections with contamination
- Recycling FEL bins collected as garbage (contaminated bins)

3.1.2 Invoicing Multi-Residential Buildings

Where possible, the cost of removing the contaminated material as garbage was recovered by including the lift on the building's invoice. It should be noted that the City of Toronto does not have a separate charge to collect recycling. Meaning, had the bin not been deemed contaminated, it would have been collected at no cost to the property owner. It is important to note that some buildings do not fully utilize their garbage set out allowance as they do not produce the base rate volume of waste. In these instances, when contaminated recycling is collected as garbage, the cost of that collection is already covered as it is not in the garbage excess category.

For the buildings that have met or exceeded their garbage set out limit, contaminated recycling is invoiced as garbage to the site. Regular garbage collection *plus* contaminated recycling appears on the monthly utility bill as a blended number. The contaminated recycling charge is included as part of the total excess volume charge (see Figure 3). The goal in passing this cost along to the MR FEL buildings is to offset the City's cost for collecting the material as garbage.



Solid Waste Management Services

Centralized (01/MAY/2018 to 31/MAY/2018)	
Total Lift Volume Billed per Cubic Yard Uncompacted	662.33 yd3
Base Volume Uncompacted	112.99 yd3
Total Excess Volume	549.34 yd3
Total Units	694
Number of Days	31
Rates (01/MAY/2018 to 31/MAY/2018)	
Base Volume 694 x 31 x 0.584219178	$12,568.89
Excess Volume 549.34 x 14.80	$8,130.23
Rebate 694 x 31 x -0.506849315	-$10,904.36
Oversized Item Fee 694 x 31 x 0.021917808	$471.54
Total Solid Waste Management Services - Current Billing	**$10,266.30**

Figure 3: *Invoice including extra charges for contamination*

4. Project Results & Analysis

Over a three (3) year period, beginning in 2016 the sites analyzed for this project were visited a combined approximately 72,000 times. On average, buildings were visited two times per month by bin inspectors.

4.1 Inspections (SWMS-CS) and Contamination

Bin inspectors deemed approximately 19,000 bins to be contaminated through the current life of this project (see figure 4). If possible, customers were provided with the option of remedying the

contamination. If staff were unable to reach customers or customers refused or were unable to correct contamination, these bins were lifted as garbage.

Bin inspectors strategically focused on the routes in which the highest percentage of contamination was found. The City was able to measure an approximate overall 9.36% decrease in contamination through just awareness (see Appendix 8).

It is important to note that inspections were carried out in all four (4) districts of the City in an effort to manage contamination and unnecessary processing, not the behaviour of residents.

	Front End Contamination Project			
	2016	2017	2018	2019
Total number of address visited	2092	24033	31571	14687
Total number of address visited with contamination	339	3915	6970	1664
Total number of bins contaminated	552	5958	10166	2315
Total tonnes dumped as garbage	82.7	954.98	1447.09	370.3
% of address visited with contamination	16.02%	16.29%	22.07%	11.32%

Figure 4: *Analysis of FEL Building Visits*

4.2 Cost Recovery

In order to mitigate the increased cost to the City resulting from managing contamination, the cost of the additional volume of garbage was charged back to MR FEL buildings. One of the challenges associated with cost recovery is that the charges for picking up contaminated recycling as garbage do not appear on invoices as a separate line item.

Each MR FEL building has a base rate volume of waste allocated to be set out. Instances in which the contaminated recycling picked up as garage exceeds the building's base rate volume an additional charge will appear on their next invoice as "Total Excess Volume" (See figure 3). When the additional pick up does not exceed the building's base rate volume no additional charges will appear.

Additional costs associated with the inspection project include:

1. Labour:
   - Inspection Crews
   - Administration: project coordination, financial services (for cost recovery), data analysis

2. Collecting Recycling as Garbage:
    - Collection trucks
    - Contractor Costs

City Expenditures/Revenue 2018	Cost
Estimated Collection & Staff Cost	$906,000.00
Estimated Processing Savings	$206,000.00
Estimated Revenue from Customer Costs	$1,020,000.00
Total Expenditure/Revenue	**-$320,000.00**

Figure 5: *Approximate City Expenditures/Revenue*

Analysis:
The City is able to fully recover the cost of the contamination project both through saving the cost of processing contaminated recycling at the City's processing facility and charging the cost of lifting the contaminated waste as garbage back to the customer.

4.3 Frequency of Contaminated Bins

The pie graph in Figure 6 represents the frequency in which buildings were flagged for contaminated recycling bins when visited.

Figure 6: *Percentage of Buildings - Frequency of Flagging Contaminated Recycling Bins during Inspection Visits (39 Buildings)*

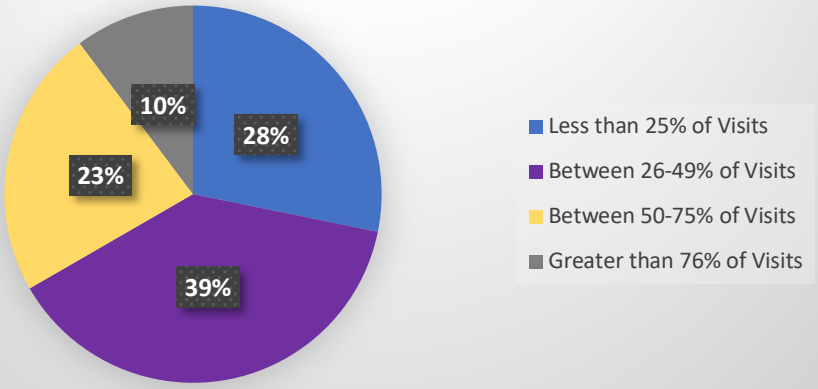


Figure 6: *Illustrates that every time an inspector visited the chance of finding contamination varied.*

1. In 33% of buildings (13/39 buildings), there was between 50% - 76% chance of finding a contaminated bin
2. In 67% of buildings (26/39), there was a > 50% chance of discovering contaminated bins

*See Appendix 8 for further Contamination Statistics

Analysis:
The MR sector does not perform consistently from building to building. Some buildings set out more contaminated recycling than others.

4.4 Type of Contamination in FEL Recycling Bins

In the June 2018 bin investigation study, inspectors found that the major contaminants in the recycling bins were black bags, organic waste, and textiles.

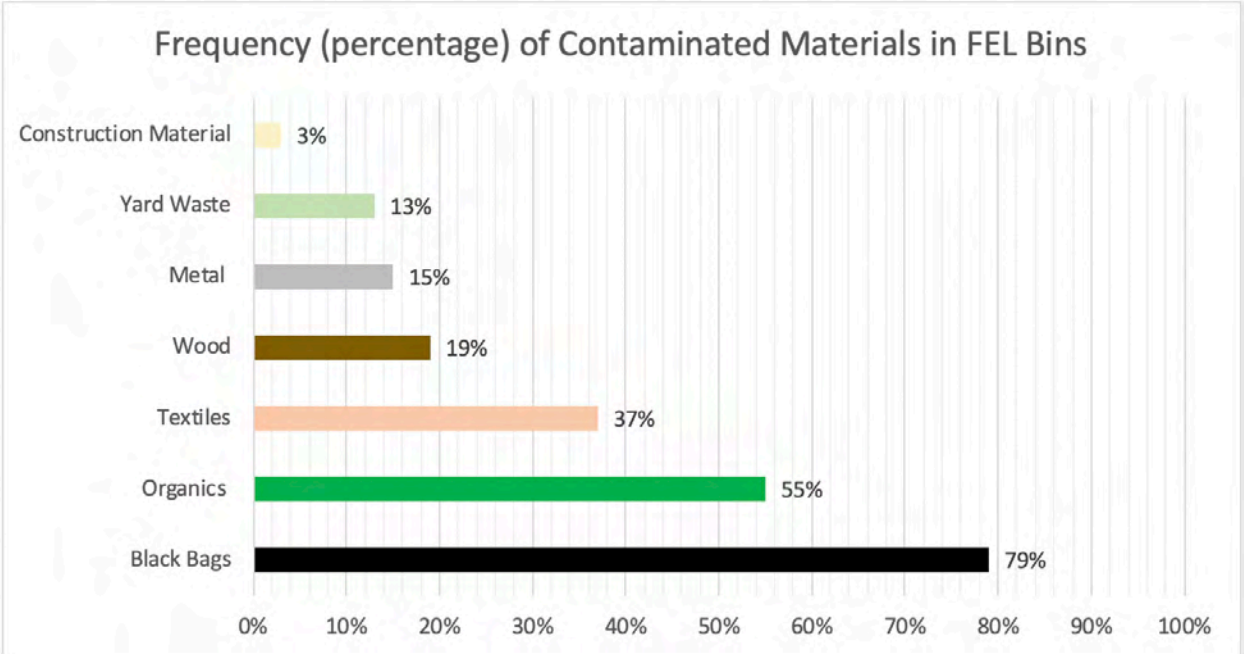


Figure 7: *Materials found in Contaminated FEL recycling bins June 2018*

Analysis:
The contamination found in FEL recycling bins included a variety of materials. Black bags present as the highest form of contamination at 79%.

4.5 MR FEL Response to Contamination Diversion

As a result of repeated contamination issues amongst other issues onsite, TCHC revamped their waste compound for 275/285/295 Shuter St. and 155 Sherbourne Ave. Figure 8 is an example of the compound prior to renovations and Figure 9 shows the current state of the waste compound.

Contamination levels have been drastically reduced at these four addresses because of new onsite staff with an increased understanding of contamination and the importance of segregating containers in order to prevent illegal dumping.

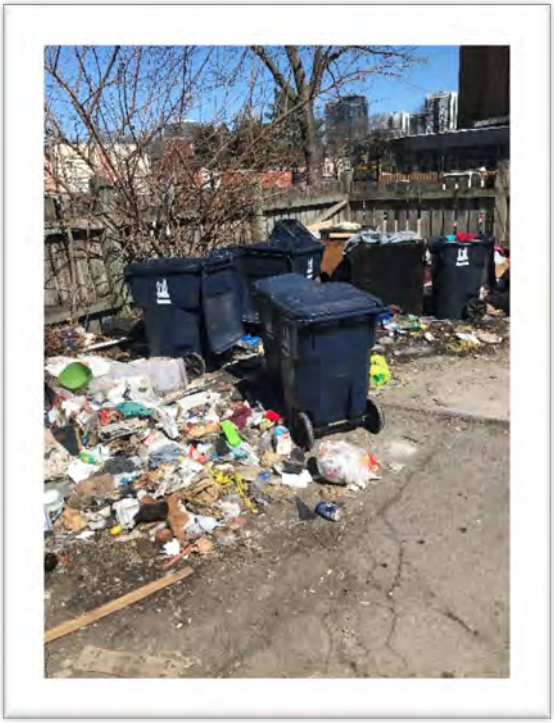


Figure 8: *Prior to Revamp*

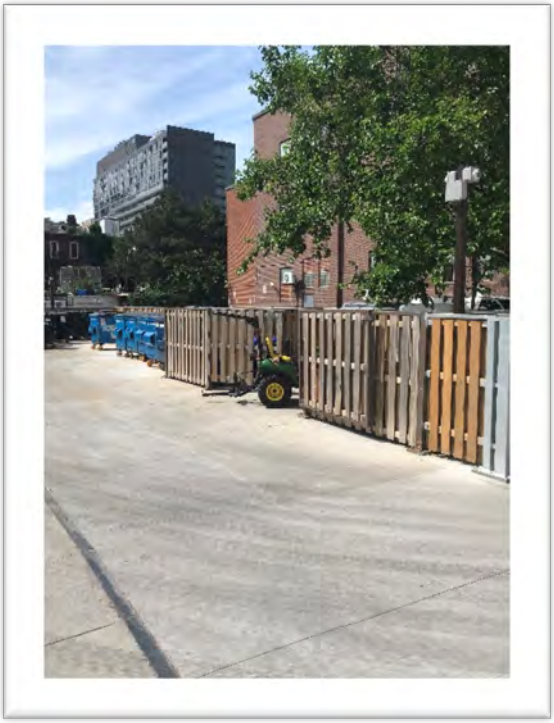


Figure 9: *After Revamp*

Analysis:
The contamination abatement project has encouraged some MR FEL buildings to take ownership of their waste issues by bringing awareness to what is being set out for collection.

5. Budget

Contamination inspections costs to the City include, Contractor costs, 1 Project Lead, Bin Inspectors, Administrative costs and Benefits. Data tracked for the 12 month period between January and December 2018 shows an approximate cost to the City of $906,000.00.

City Expenditures 2018	Cost
Estimated Collection & Staff Cost	$906,000.00[1]

Figure 10: *City Expenditures 2018*

Analysis:
The City's expenditures are fully offset by both the amount the City saved by diverting contamination from the City's processing facility and by charging back the cost of lifting the waste as garbage to the customer.

[1] CIF Project 1011 Funding was 46% of approved expenditures for 6 months (June to December 2018) with an upset limit of $102,981

6. **Conclusions**

The Multi-Residential Front-End Loading Contamination Abatement project has demonstrated that identifying contamination and rejecting it at the source has had a positive impact on the amount of contamination being diverted to the City's processing facility by avoiding unnecessarily processing highly contaminated products. Furthermore, the City has been able to recover the cost of managing contamination by billing it back to the customer.

The pilot will be continued and refinement to the process will allow for a better understanding of what is working and the opportunity to expand those successes.

Next steps for the pilot project include establishing a working group to address issues which include but are not limited to: communications, customer service, education and outreach, transfer station protocols and other opportunities to work towards a circular economy.

Appendices

Appendix 1 – Letter to FEL customers (December 2016)

TORONTO

Vincent Sferrazza
Director
Policy, Planning & Support

Jim McKay
General Manager

Solid Waste Management Services
City Hall
100 Queen Street West
25th Floor, East Tower
Toronto, ON M5H 2N2

Refer to: Charlotte Ueta
Telephone: 416-392-8506
Fax: 416-392-4754
Email: Charlotte.Ueta@toronto.ca
www.toronto.ca/recycle

December 5, 2016

Attention Property Manager / Owner:

Re: Contamination in Blue Bin Recycling Program

The City has noticed a substantial increase of non-recyclable materials in the Blue Bin Recycling Program. Garbage and other items like Green Bin organic materials, household hazardous waste, furniture, carpet and black garbage bags are not recyclable and SHOULD NOT be placed in the Blue Bin. The City's recycling processing facility now receives more than 45,000 tonnes of non-recyclable materials annually, lowering processing efficiency. A 5% reduction in contamination in the Blue Bin recycling stream could save the City more than $2 million annually.

Staff are now visiting all City-serviced properties and inspecting recycling bins for contamination. If it is found that the Blue Bin is contaminated, **the Blue Bin will be collected and charged as a Garbage bin lift.** Staff will inform an on-site property representative that the Blue Bin has been rejected due to contamination.

To help properties reduce their waste and address contamination, the City continues to offer customer service support to educate residents, tenants and staff on proper participation in the City's waste diversion programs. City staff are available to provide presentations, staff training, on-site waste diversion evaluations, and printed resources available in various languages, at no cost.

To help reduce contamination in your Blue Bin(s):

- Stencil your waste bins with the appropriate waste stream (i.e. Garbage, Recycling and Organics).
- Provide residents or tenants with printed resources on proper participation in the City's waste diversion programs and post these in common areas throughout the property.
- Regularly monitor waste bins and remove contaminants, including **black garbage bags** from the Blue Bin.

To make a request for City staff to assist your property with their waste diversion needs or to order free print education resources, please email swmsupport@toronto.ca. For further information on the City's waste diversion programs or to view available print resources visit: toronto.ca/recycle.

If you have further questions, please contact Charlotte Ueta, Manager (Acting), Waste Management Planning, at 416-392-8506.

Thank you for your commitment to the City of Toronto's waste diversion programs.

Yours truly,

Vincent Sferrazza, Director, Policy, Planning & Support
Solid Waste Management Services

VS/cu

Copy to: Jim McKay, General Manager, Solid Waste Management Services
Rob Orpin, Director, Collections & Litter Operations, Solid Waste Management Services

311
Toronto at your service

Appendix 2 – Procedures for Identifying Contaminated Bins

Contamination Blitz

Office Staff xxx-xxx-xxxx

Procedure of identifying contaminated bins:

1. You will be following a truck doing a FE recycling route to identify contaminated bins.

2. Before the driver dumps the recycle bins, we do a quick check to see if the bin is contaminated. We are looking for heavy contamination. If there are roughly 4 or more black bags in one bin we will consider it heavy contamination. Use your judgement for other materials that are considered contaminants. You do not need to sift through the bin, just a visual check (may have to open the lid).

3. Once you have checked the recycle bins on site, notify the driver not to dump (by telephone) any bins deemed contaminated.

4. Take photos of the bin number and the contamination in the bin. If possible, try to get one picture with both the contamination and the bin number.

5. Send the photos via email to office staff.
   - Please include the address in the subject line.
   - In the body of the email, include :

     a) what bin numbers are being left due to contamination.
     b) Type of contamination found

   This info will be used to communicate with GFL so the truck knows which bins to dump. This step needs to be done ASAP to reduce delays of the truck dumping the bins as garbage.

6. Using the "NOTICE OF NON COMPLIANCE" sheet, Record all fields of information. These forms all have a unique Reference number.

7. Using your route/contact sheet, make contact with the building to notify them what recycle bin will be dumped as garbage and why. Record the name and phone number of the person you spoke to on the "NOTICE OF NON COMPLIANCE". If you are unable to get a hold of anyone on site, please call **Office Staff (xxx-xxx-xxxx**) and they will attempt to find a number.

   *****Please check off locations you have been to on your route/contact sheet and hand them in at the end of the day to office staff.

8. Hand in the "NOTICE OF NON COMPLIANCE" for any locations that were contaminated to office staff at the end of the day to be filed.

Locating the truck on your assigned route:

1. When you leave the yard with your assigned route, follow the route sequence given to you and go to the location that is closest to the time that you expect to arrive. When you are getting close, you **can contact office staff** to find where the truck is exactly. Office staff will require the route number to find out what truck is assigned to the route. (There can be a delay on the GPS, it may take a few attempts)

2. If you lose the truck, you can contact office staff and he will let you know where the truck is.

Appendix 3 – Safe Working Procedures Visual Inspections Bin/Containers

TORONTO

Visual Inspection Bins/Containers

Solid Waste Management Services
Safe Working Procedure **SWP-SWMCOLL-XXX**

Purpose

This procedure specifies general safety precautions for conducting visual inspection of curbside bins and front-end containers to identify "contamination" of materials, and/or related tasks like taking photos, communicating, etc. Waste stream "contamination" is the presence of unacceptable material in a waste stream.

Hazards

Biological hazards (contaminated surfaces)	Cyclists/vehicular traffic
Insect/animal stings/bites	Slippery/uneven surfaces
Crushing/pinching hand/fingers by heavy lids slip	Loss of balance
Cuts/skin abrasions from sharp edges/broken lids	Overhead hazards
Flying/falling debris from containers	Weather extremes
Unexpected container movement/rolling	Workplace violence

1. General Precautions

1.1. Staff must have adequate instruction in the operation, be familiar with the hazards and safety precautions, and wear City uniform/identification when conducting visual inspections or approaching clients.

1.2. Employee are to wear the proper personal protective equipment.

1.2.1. High-visibility (on roads, parking lots, around vehicles, etc.)

1.2.2. Safety boots

1.2.3. Eye protection is recommended to prevent eye injury from flying particles, dust, splashes, etc. especially important when materials are close to eye level

1.2.4. Leather gloves to protect from skin abrasions, cuts and bruises.

1.3. Vehicles shall be driven only by employees who hold a valid Ontario Driver's licence and a City of Toronto operator's permit for that class of vehicle; and who are familiar with the applicable driving-related SWMS safe working procedures, for more requirements see *Driving General Rules SWP-SWMGEN-008*.

1.4. Park in a safe manner, abiding by the parking by-laws, avoid blocking traffic; always turn on the 4-way warning lights, and 360 beacon.

1.5. Be aware of pedestrian and vehicular traffic, including cyclists when opening car doors, parking, etc.

1.6. Check the work area for any unsafe conditions (e.g. poor visibility, uneven/snow covered ground, pot holes, icy/slippery surfaces, slope, snow banks, overhead hazards, construction hazards, traffic, extreme weather, stinging insects, etc.).

1.7. Before the inspection, observe the container/bin for damages, broken lids, overflowing, casters, and wheel locking mechanism, etc.

1.8. Do not touch, or handle materials by hand (use a hand tool if provided); open the lid, look, and take photos as needed.

1.9. Be prepared for the unexpected shift of materials, bin cover and/or dust/materials being blown away by wind (position yourself upwind where possible), presence/movement of small animals, rodents, insects, etc.

1.10. Staff are expected to be pleasant, professional, courteous and respectful in all dealings and contact with the general public, residents, contractors, property/building staff, etc. Under no circumstances are you to engage in any type of physical or verbal altercation.

1.11. Report to your Supervisor any unusual or unsafe conditions.

1.12. **In case of emergency call 911.**

2. **Front-end containers**

2.1. When stopping on residential routes, unless assistance is required in completing the tasks, only the passenger should step out of the vehicle.

2.2. Front-end containers come in various sizes and materials; and some will not have the lids open. Lift the lid carefully, ensuring you have a good grip, be extra careful when the lid is heavier (e.g. metal), or wet/slippery.

2.3. Seek assistance with heavy lids or tall containers (one worker holds the lid, one looks inside/takes photos); ensure you check with each other before lifting/closing the lid.

2.4. Do not stick hands or head inside underneath raised lids, do not climb or overextend to see inside, use the camera stick.

3. **Residential bins**

3.1. Walking and Crossing Streets

3.1.1. Stay on sidewalks, where there are no sidewalks, walk facing traffic and as close to the edge of the road as possible.

3.1.2. Look and listen for cars and trucks backing out of driveways and exiting laneways.

3.1.3. Always cross the street at traffic signals, pedestrian crossovers, school crossings or at intersections with stop signs (don't jaywalk or cross mid-block where drivers are not expecting to encounter pedestrians).

3.1.4. Put away hand-held electronic devices, pay attention to traffic and your surroundings at all times.

3.1.5. Do not wear anything that obstructs your peripheral vision (e.g. hoodies); or that covers your high-visibility equipment (e.g. backpacks).

3.1.6. Look both ways for oncoming traffic (Stop, Look and Listen for traffic) and don't step onto the road until it's safe to do so.

3.1.7. Walk, don't run, while crossing the street.

3.1.8. Make eye contact with oncoming drivers and cyclists before proceeding across their path. Pay particular attention to vehicles:

- turning right across your path
- turning left across your path from the opposite side of the street

3.1.9. Carry items in a way that will not obstruct your vision (to see where you are walking).

3.1.10. Be especially careful stepping on/off the curbs, in/out of the car, or walking on inclines. Avoid uneven or slippery surfaces (e.g. utility covers, lawns, etc.); or other hazards on the side of the road or sidewalk (e.g. holes, discarded items, construction, bushes, etc.)

3.2. Lift the lid carefully for inspection (do not inspect bins that have items/material piled on top; do not touch or remove the materials, just make a record).

3.3. For moving a bin, see the *Two-Wheeled Bin SWP-SWMCOLL-043* procedure.

Appendix 4 – Script for Contacting FEL Customers Regarding Contaminated Recycling Bins

Good Morning/Afternoon,

My name is _____ and I am calling on behalf of the City of Toronto, Solid Waste Management division.

We have done an inspection on the recycle bins at _____ and bin #(s) _____ have been deemed contaminated. For this reason your recycle bin or bins will be collected as garbage and not as recycling.

If you have any questions or concerns please call xxx-xxx-xxxx

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In order to achieve successful recycling and prevent further contamination to the recycling stream, the City of Toronto offers many resources available which include informative calendars for residents, educational presentations, and online resources to help residents become more informed. (Waste wizard online)

For more information on these programs/resources please call xxx-xxx-xxxx

Thank you for your time and have a nice day

*During the conversation or when leaving a message make sure to get

1) Person's name who you are contacting
2) Time and date of when the phone call was placed

Appendix 5 – Notice of Non-Compliance Form for Contaminated Bins

TORONTO

NOTICE OF NON COMPLIANCE
Contamination

8984

Inspector name:	Date:
Address:	Contact Name:
Contact Telephone #:	Time of Contact:
Bin Numbers: Notes:	
Inspector Signature:	

Office Use Only:

Collected by:

Unit # _____

Date _____

Appendix 6 – Photos of Contaminated FEL Recycling Bins

Black Bag Contamination

Construction Contamination

Appendix 7 – Photos of Recycling at Transfer Station

Contamination Truck Loads

Appendix 7 – Continued

Recycling Truck Load

Appendix 8 - Multi Residential Contamination Statistical Report

Collection Day	Route # Route Boundaries	% Per route as of April 2017	% Per route as of April 2018	% Per route as of April 2019	Overall Change (+/-)
MON	**1201** Steeles (N) Dufferin (W) Sheppard (S) Bathurst (E)	21%	14.49%	12.10%	-8.90%
MON	**1203** Wilson (N) Keele (W) Lawrence (S) Yonge (E)	16%	13.74%	10.94%	-5.06%
MON	**1210** Dupont (N) Spadina (W) Dundas (S) Yonge (E)	24%	15.22%	12.10%	-11.90%
TUES	**2201** Steeles (N) Highway 27(W) Rexdale (S) Islington (E)	35%	25.49%	25.56%	-9.44%
TUES	**2203** Steeles (N) Jane (W) Sheppard (S) Keele (E)	44%	35.36%	37.61%	-6.39%
TUES	**2205** Eglinton (N) Royal York (W) St.Clair (S) Weston (E)	33%	25.89%	21.02%	-11.98%
THUR	**4204** Lawrence (N) Vic Park (W) St.Clair (S) Kennedy (E)	30%	16.77%	17.76%	-12.24%
THUR	**4208** Finch (N) Vic Park (W) Sheppard (S) Kennedy (E)	23%	16.52%	13.94%	-9.06%
THUR	**4209** Eglinton (N) Brimley (W) Kingston (S) Markham (E)	28%	16.91%	18.70%	-9.30%
FRI	**5205** Steeles (N) Leslie (W) Sheppard (S) Don Valley (E)	21%	13.27%	13.32%	-7.68%
FRI	**5208** Eglinton (N) Don Valley (W) Lakeshore (S) Woodbine (E)	29%	13.55%	12.26%	-16.74%
FRI	**5209** Bloor (N) Yonge (W) Carlton (S) Sherbourne (E)	21%	17.58%	16.96%	-4.04%