
REPORT TITLE: Curbside and Multi-Residential Enforcement Programs to Reduce Blue Box Contamination

FROM: Andrew Farr, Interim Commissioner of Public Works

RECOMMENDATION

That Region-wide curbside and multi-residential enforcement programs be implemented to reduce contamination in the blue box and other waste collection programs as outlined in the report of the Interim Commissioner of Public Works titled “Curbside and Multi-Residential Enforcement Programs to Reduce Blue Box Contamination”;

And further, that curbside households that regularly set out extra bags of recycling be provided with education on how to fit more recycling in the blue cart and, where appropriate as determined by staff, be given a larger or second blue cart as outlined in the subject report;

And further, that the programs outlined in the subject report be funded from general working fund reserves.

REPORT HIGHLIGHTS

- Contamination in blue box recycling is a growing issue, not only in Peel, but across Ontario and Canada.
- Contamination costs the Region of Peel over \$3.6 million in added collection and processing costs each year. It also puts the Region’s ability to successfully market recovered material at risk.
- Staff conducted pilots to test whether various education and enforcement approaches produced sustained reductions in blue box contamination.
- Curbside pilot findings showed that approximately 60-70 percent of curbside households had less than 10 percent contamination in their blue box, and that after education alone that number rose to 80-90 percent. This is positive as it demonstrates that most people understand how to recycle and are doing a good job.
- The remaining curbside households that were putting an excessive amount of contamination in their blue box bring the overall average curbside blue box contamination rate for Peel to roughly 30 percent. These households demonstrated the greatest percentage of sustained behaviour change when their blue carts were not collected, and residents were educated on how to clean up the contamination.
- Multi-residential pilot findings showed that 50 percent of buildings lock their front-end recycling containers. The remaining 50 percent that do not lock their front-end recycling containers have blue box contamination rates in excess of 30 percent, with some of them over 50 percent.

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- The percentage of buildings that were locking their front-end recycling containers increased to 80 percent after issuance of a first notification letter and to 100 percent after an issuance of a Notice to Comply. By enforcing that property managers lock front-end recycling containers and conduct regular inspections, contamination levels dropped by up to 30 percent.
 - Staff recommend implementing Region-wide curbside and multi-residential enforcement programs using the approaches as described in this report, commencing in 2021.
 - Staffing needs for enforcement of blue box recycling contamination will be met in the short term with contract staff funded from general working fund reserves. Long-term staffing requirements for enforcement will be considered as the specifics of the transition of the Blue Box Program from the Region to producers are better understood.
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DISCUSSION

1. Background

Contamination in blue box recycling is a growing issue, not only in Peel, but across Ontario and Canada. Peel's curbside audits showed an average curbside recycling contamination rate of 25 percent in 2018 and 30 percent in 2019. Multi-residential audits show an average contamination rate of 35 percent. This number will continue to trend upward without a focus on enforcement and education.

Approximately 97,000 tonnes of blue box recyclable material are collected annually from curbside and multi-residential buildings. It is estimated that approximately 30,000 tonnes of this material are contamination.

Combined, curbside and multi-residential blue box contamination costs the Region over \$3.6 million in added collection and processing cost each year. Since some of this contamination ends up in the sorted products, it could also reduce the revenue Peel receives for recovered materials and put the Region's ability to market recovered material at risk.

On June 20, 2019, the Waste Management Strategic Advisory Committee received a report entitled "Update of Curbside and Multi-Residential Enforcement Strategy and the Excess Recycling Pilot" which updated Council on the pilot projects to test enforcement approaches for curbside and multi-residential buildings and to address extra bags of recycling set out in the Region of Peel.

This report provides a final update on the curbside and multi-residential enforcement pilots and includes recommendations for implementing Region-wide enforcement programs. It also provides a final update on the excess recycling pilot and includes a recommendation to implement a program to reduce extra bags of recycling.

Curbside and Multi-Residential Enforcement Programs to Reduce Blue Box Contamination

2. Curbside Enforcement Methodology, Findings and Recommendations

Peel provides curbside waste collection services to 330,000 households. The majority of homes are on a bi-weekly cart-based garbage and recycling collection service, with weekly organics cart collection.

Curbside Pilot Methodology

Staff conducted a 12-month enforcement pilot from October 2018 to October 2019. The enforcement methodology was evaluated in a total of 42 areas in Brampton, Mississauga and Caledon. Staff selected locations that were identified as having higher levels of contamination, based on contractor feedback and audit results.

The objective of the pilot was to determine which of three enforcement approaches had the greatest sustained impact on changing resident behaviour. The three enforcement approaches were:

- education only;
- education and removal of contamination prior to collecting blue cart; and
- education and not collecting blue cart.

The pilot was implemented in phases with the level of enforcement increasing in each phase. Each phase lasted approximately eight weeks or four collection cycles.

Overall, residents were eager to do the right thing, and staff did not receive any escalated complaints from residents about the enforcement. Only one resident called to report that the contamination in their cart was due to illegal dumping.

Staff assigned a contamination level rating to each blue cart and applied a level of education and enforcement to match the contamination level; carts with higher contamination received stricter enforcement.

As can be seen in Table 1, below:

- Phases 1 and 2 of the pilot used education only regardless of the level of contamination;
- in Phases 3 and 4, contamination was removed from carts with medium and high contamination prior to collecting the blue cart; and
- in Phases 5 and 6, highly contaminated blue carts were not collected and Notices to Comply were issued to residents.

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Table 1: Contamination Levels and Actions Taken

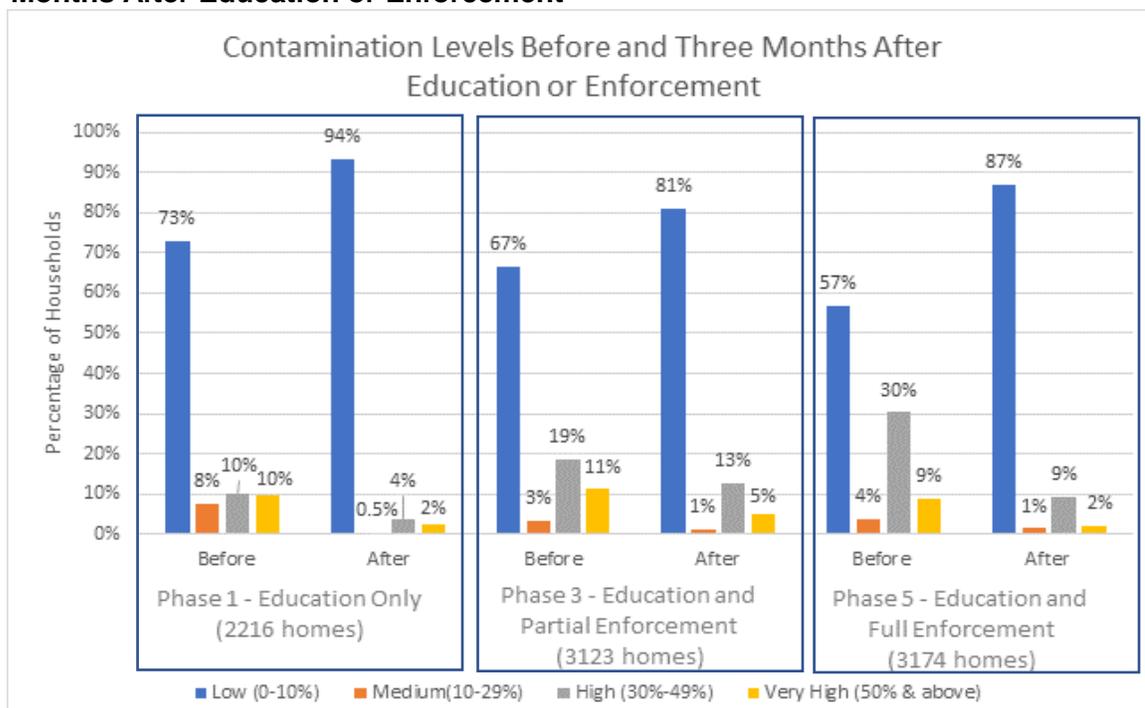
Contamination Level	Action Taken		
	Phase 1 and 2 Education Only	Phase 3 and 4 Education and Partial Enforcement	Phase 5 and 6 Education and Full Enforcement
Low 0-9%	Residents were provided a thank you note and a seed package for their efforts	Residents were provided a thank you note and a seed package for their efforts	Residents were provided a thank you note and a seed package for their efforts
Medium 10-29%	Cart collected; education material provided to resident	Cart collected; education material provided to resident	Cart collected; education material provided to resident
High 30-49%	Cart collected; education material provided to resident	Cart collected; black garbage bags and visible contamination was removed and left behind; education material provided to resident	Cart collected; black garbage bags and visible contamination was removed and left behind; education material provided to resident
Very High 50% and Above	Cart collected; education material provided to resident	Cart collected; black garbage bags, visible contamination removed and left; education material provided to resident	Cart not collected; education material and Notice to Comply provided to resident

In order to evaluate which enforcement approach provided sustained results, staff returned to the homes three months after the end of each phase to see if the residents were still setting out clean recyclables or if they reverted back to setting out contaminated material. These visits were valuable in providing insight on the behaviour of residents once staff were no longer in the community conducting regular cart inspections.

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Curbside Pilot Findings

Figure 1: Contamination Levels Before Education or Enforcement and Three Months After Education or Enforcement



The above data shows that even before education and enforcement interventions, approximately 60-70 percent of households had less than 10 percent blue box recycling contamination. After intervention, that number rose to 80-90 percent. This is positive as it demonstrates that most people understand how to recycle and are doing a good job.

The few remaining households, however, are negatively impacting the Region’s recycling program by putting an excessive amount of contamination in their blue box recycling to bring the overall average blue box contamination rate for Peel to roughly 30 percent.

Thankfully, the targeted enforcement approaches tested in the pilot were successful in getting these poor performing households to improve their recycling behaviours.

Table 2 - Change in Number of Households with Medium, High, and Very High Contamination Levels Three Months After Enforcement

	Percentage of Households with Medium, High or Very High Contamination		
	Before	After Three Months	Difference
Phase 1 – Education Only	28%	7%	(-11%)
Phase 3 – Education and Partial Enforcement	33%	19%	(-14%)
Phase 5 – Education and Full Enforcement	43%	12%	(-31%)

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As can be seen in Table 2, each of the education and enforcement approaches resulted in sustained improvements but clearly, the approaches with stricter enforcement for highly contaminated blue boxes resulted in the greatest improvement.

Achieving the greatest possible improvement is important for the following reasons:

- the lower the contamination rate, the greater the reduction in collection and processing costs;
- the lower the contamination rate, the cleaner the recovered commodities will be at the Region's material recovery facility and the lower the risk of not being able to sell recovered materials or having to sell them for a reduced price; and
- as Peel prepares for the transition of the blue box program to full producer responsibility, it will move Peel's blue box contamination rate closer to the contamination rate producers will require, which is expected to be 10 percent or less.

What the above tables do not show is that:

- Residents with less than 30 percent contamination changed their behaviour with education alone.
- Residents with greater than 30 percent contamination who had their carts collected after visible contaminants were left behind initially responded positively but did not sustain the behaviour.
- Residents with greater than 30 percent contamination whose carts were not collected demonstrated the greatest percentage of sustained behaviour change.

Recommended Region-Wide Curbside Enforcement Program

It is recommended that a curbside enforcement team utilize the following curbside education and enforcement approach, which reflects the findings of the pilot:

- for households with less than 10 percent blue box contamination, congratulating the household for their efforts by giving them a thank you note and providing education materials on all waste programs;
- for households with 10 to 30 percent blue box contamination, educating residents and leaving behind large contaminants from recycling carts (but still collecting recycling cart);
- for households with more than 30 percent blue box contamination educating residents, not collecting recycling carts and issuing a Notice to Comply; and
- for all households, use the opportunity to educate residents on proper garbage and green bin behaviour as well as encourage greater green bin participation.

The education and enforcement approach recommended above is not intended to preclude staff from utilizing other provisions, remedies or penalties set out in the waste collection by-law, including the issuance of fines. Staff will continue to use discretion in how it administers such penalties.

The curbside enforcement team that conducted the pilot, consisting of one team lead and six curbside customer service representatives, were reassigned to other, more pressing duties due to COVID-19. It is recommended that the team recommence curbside enforcement of blue box contamination in late 2020 or early 2021.

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The curbside enforcement team would be able to provide education and enforcement as recommended in this report to approximately 20,000 households per year. The team would also provide education about how to properly dispose of garbage and organics and encourage those who do not currently participate in the organic collection program to do so.

It is recommended that the staffing needs for the curbside education and enforcement team be met in the short term with contract staff funded from general working fund reserves. Funds will be allocated from general working fund reserves until December 2024 to align with Peel's preferred blue box transition date. Long-term staffing requirements for enforcement of blue box contamination will be considered as the specifics of the transition of the Blue Box Program from the Region to producers are better understood.

Staff will use the data from curbside audits and set out studies to identify areas that have the highest levels of contamination and lowest levels of program participation and focus enforcement efforts in these areas first. Residents will be notified of the Region-wide enforcement approach through existing communication channels.

Finally, it is recommended that staff monitor the enforcement program and report back on the results following a year or two of operation.

3. Multi-Residential Enforcement Methodology, Findings and Recommendations

Peel provides waste collection services to 760 multi-residential buildings (105,000 units). Depending on the building, recycling is collected in carts, containers attached to a chute system or in lockable front-end containers. Approximately 70 percent of the total recycling tonnage collected from the multi-residential sector, is from lockable front-end containers. There are 430 buildings (73,000 units) that use lockable front-end containers and it is estimated that 50 percent of these buildings lock their containers. Given that 70 percent of multi-residential buildings use front-end containers, the pilot focused on these buildings.

Multi-Residential Pilot Methodology

In 2019, a multi-residential enforcement pilot to reduce blue box recycling contamination was implemented and evaluated at four buildings that were identified as having low recycling participation and high contamination rates. Contamination rates ranged from 38 percent to 51 percent.

These buildings had received targeted education campaigns in 2018 that resulted in no change to blue box recycling contamination levels.

Property managers were advised that the recycling containers would be monitored for four months during which they would be responsible for reducing blue box recycling contamination to 25 percent by the end of the monitoring period.

The property managers were asked to lock their front-end recycling containers, conduct daily inspections to ensure that non-recyclable materials were removed from the recycling container and to distribute letters to residents to encourage proper participation in the recycling program.

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At the end of each month during the monitoring period, if recycling contamination was above a prescribed target, a recycling clean-up fee was charged based on the cost to collect and process contaminated recycling material.

Multi-Residential Pilot Findings

At the end of the monitoring period, all buildings had measurable improvement in recycling performance, demonstrating on average a 30 percent reduction in recycling contamination could be achieved within the four-month period. One building was able to reduce recycling contamination to as low as 18 percent. This was attributed to the locking of the recycling container and the regular presence of the by-law officer. Each building was charged one clean-up fee during the pilot for not meeting the prescribed targets.

Staff further tested this approach by focusing on container locking behaviour at 150 buildings. Staff found that 50 percent of buildings were not locking their front-end recycling containers at the beginning of the pilot test. After a notification of the requirement to lock recycling containers was issued to buildings with unlocked front-end recycling containers, 80 percent of buildings complied. After the first Notice to Comply was issued, 100 percent of buildings complied.

Historical audit data shows recycling contamination in front-end containers ranging from 21 to 45 percent.

The pilot data reveals that approximately 50 percent of the buildings with lockable containers in Peel have recycling contamination levels close to or below 30 percent. This is a positive start to managing contamination levels in the multi-residential recycling sector. The remaining 50 percent of buildings have above 30 percent contamination with some buildings being well above 30 percent. It is these poor performers that negatively impact the Region's recycling program and bring the overall average blue box contamination rate for the multi-residential sector as high as 45 percent.

Recommended Region-Wide Multi-Residential Enforcement Program

Based on the results of the multi-residential enforcement pilot, staff recommend the implementation of a Region-wide multi-residential enforcement program beginning in 2021 that focuses on stricter enforcement of the Waste Collection By-law requirement that buildings keep their front-end recycling containers locked at all times except on their collection day.

The enforcement program will reinforce property managers' responsibility for reducing contamination within their buildings. The Region will continue to support property managers by providing them with the required information and resources to assist them in educating building residents.

It is recommended that the following approach, which reflects the findings of the pilot, be utilized:

- All 430 multi-residential buildings using front-end lockable recycling containers receive formal notification reiterating the requirements to lock front-end containers,

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outlining the expectations, fines, potential clean-up costs and possible suspension of collection for non-compliance and the Region's commitment to reducing contamination through enforcement.

- A By-law Enforcement Officer will visit each of these buildings an average of four times per year. This best practice to have continual enforcement presence was identified as a key lesson learned from the pilot.
- A written Notice to Comply will be used for a first offence of recycling containers not locked and an Offence Notice (fine) of \$400 will be issued to the property manager for each subsequent occurrence.
- If the Notice to Comply and recurring fines do not work, issuing additional clean-up fees or deferring and/or suspending waste collection services will be considered.

Similar to curbside, this enforcement approach will reduce collection and processing costs, reduce the risk of not being able to sell recovered materials or having to sell them for a reduced price and move the blue box contamination rate closer to the contamination rate producers will require when the blue box program is transitioned to full producer responsibility.

Multi-residential buildings with containers on a chute system or carts that are not equipped with locking mechanisms will require alternate methods of enforcement. Staff will develop an enforcement approach for these buildings over the next year.

It is recommended that the staffing need to deliver the multi-residential enforcement program be met in the short term with one new contract By-law Enforcement Officer funded from general working fund reserves until December 2024, to align with Peel's preferred blue box transition date. Long-term staffing requirements for enforcement of recycling contamination will be considered as the specifics of the transition of the Blue Box Program from the Region to producers are better understood.

Staff will continue to study alternative approaches to address contamination at the remaining 330 buildings on a chute system or carts.

Staff will monitor the results of the enforcement program and establish a better understanding of the varying contamination levels among all multi-residential buildings. Staff will report back on the enforcement program following a year or two of operation.

4. Extra Bags of Recycling

Methodology

As part of the pilot, Council also requested staff to address extra bags of recycling at the curb. Staff conducting the enforcement pilot also collected data on the extent of the extra bags of recycling at the curb, worked with residents to better utilize existing cart capacity, and where appropriate, provided residents with a larger or second recycling cart.

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Findings

Staff determined that four percent of households set out extra bags of recycling infrequently (one time over an eight-week cycle). This did not require staff to provide additional capacity to these residents as they were able to manage with the cart size that they use.

Staff also found that one percent of households set out extra bags of recycling frequently (anywhere from two to four times in the eight-week cycle). These residents required additional capacity for their recycling and were offered either a larger or additional recycling cart.

Residents were in favour of receiving the additional capacity for their recycling. The additional capacity also helps manage waste collection costs as collecting two carts takes less time at the curb than collecting carts and bags combined.

Recommendation

It is recommended that curbside households that regularly set out extra bags of recycling be provided with education on how to fit more recycling in the blue cart and, where appropriate as determined by staff, be given a larger or second blue cart.

RISK CONSIDERATIONS

Curbside Enforcement

To address the risk of an increase in illegal dumping where carts are pulled back from the curb, staff will be thorough in their education, so residents know how to properly dispose of material. Residents will also be made aware of the consequences of illegal dumping and that staff will be monitoring for illegal dumping.

Multi-Residential Enforcement

To address risks of property managers acceptance of this renewed enforcement approach, staff will ensure property managers remain involved in the enforcement process, informing them of the By-law, giving them necessary tools to ensure locking will be a success for them (e.g. provision of new padlocks when needed, continued support via educational resources such as flyers or pamphlets focused on benefits to bin locking to resident, environment, etc.). Staff will also remind property managers that waste collection services can be deferred and/or suspended should they not comply.

To address the risks of communications relating to the enforcement program not reaching all affected property managers, a communication strategy that includes multiple channels as well as in-person conversations with property managers will be developed and include proactively updating the multi-residential buildings contact list.

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FINANCIAL IMPLICATIONS

Annual funding in the amount of \$680,000 for the curbside enforcement program, and \$110,000 for the multi-residential enforcement program will be funded through general working fund reserves until the transition of the Blue Box Program, and cover the cost of staffing, resources and communications materials. This funding request for this initiative is included as part of the 2021 budget process.

The enforcement programs are estimated to save the Region of Peel up to \$1,000,000 annually in processing and collection costs until the transition of the Blue Box Program. The net savings of implementing enforcement is therefore expected to be in the order of approximately \$210,000 annually during this period. Enforcement will also help to ensure contamination does not negatively impact the current market value of Peel's recycling.

Long-term staffing requirements for curbside and multi-residential enforcement will be considered once Peel's post-transition involvement in the Blue Box Program is better understood.

For further information regarding this report, please contact Norman Lee, Director, Waste Management, Ext.4703, norman.lee@peelregion.ca.

Reviewed and/or approved in workflow by:

Department Commissioner, Division Director and Financial Support Unit.

Final approval is by the Chief Administrative Officer.



N. Polsinelli, Interim Chief Administrative Officer