
MEMORANDUM

PWC-C 19-2021

Subject: Every Other Week (EOW) Garbage Collection Diversion Impact Analysis

Date: Tuesday, May 11, 2021

To: Public Works Committee

From: Alison Powell, Business Support Analyst

The purpose of this memorandum is to provide Public Works Committee with an update on the waste diversion impact resulting from the change to every-other-week (EOW) garbage collection.

Background

On October 17, 2019, Council approved EOW garbage collection for implementation. Reducing the frequency of garbage collection encourages residents to divert waste through the use of the Blue/Grey Box and Green Bin, both of which are still collected weekly. As seen in comparator municipalities, when residents utilize all diversion programs, there is a reduction in the amount of garbage placed at the curb for collection.

EOW garbage collection pertains to all residential properties, including Multi-Residential (MR) properties, and for those Industrial, Commercial & Institutional (IC&I) and Mixed-Use (MU) properties located outside Designated Business Areas (DBAs) that are using Niagara Region's curbside collection service.

On October 19, 2020, EOW garbage collection commenced with the start of the new waste collection contracts. Green for Life (GFL) Environmental Inc. services Collection Area One (1); and Miller Waste Systems Inc. services Collection Area Two (2).

- Collection Area One (1) – the Town of Grimsby, the Town of Lincoln, the Town of Pelham, the City of Thorold, the Township of Wainfleet, and the Township of West Lincoln. Contracts are continuing to be monitored by staff with regards to any shortages (supplies and trades) and updates will be highlighted.

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- Collection Area Two (2) – the Town of Fort Erie, the City of Niagara Falls, the Town of Niagara-on-the-Lake, the City of Port Colborne, the City of St. Catharines, and the City of Welland.

Tonnage Analysis

To determine the impact EOW garbage collection has had on the amount of waste collected from the curb, a preliminary review of tonnage data from October 19, 2020 through the end of March 2021 was done, identified as 'After EOW' in this memorandum. This data has been compared with data from the same timeframe in 2019 and 2020 (October 21, 2019, through the end of March 2020), identified as 'Before EOW' in this memorandum. Further review of one (1) year's worth of data will be completed in late 2021.

It is important to note that the data presented in this memorandum pertains to all curbside collected waste from residential properties, MR properties (not including those with front-end garbage collection as an enhanced service), IC&I, and MU properties throughout Niagara region, including those IC&I and MU with weekly collection inside DBAs. However, the majority of the waste is generated by the residential sector through the EOW curbside collection service.

IC&I and MU properties inside the DBA receive enhanced service collection, paid for by local area municipalities, in which garbage is collected at minimum one (1) day per week, sometimes more depending on the DBA. In addition to increased frequency of garbage collection, certain DBAs also have increased bag limits allowed at the curb for collection. Waste collected inside DBAs is not collected separately from waste outside the DBA; therefore, this tonnage data is not tracked separately and is included in the tonnages reported in this memorandum.

The combined amount of curbside collected garbage, organics and recycling after EOW garbage collection began, has increased from 58,260 tonnes to 59,068 tonnes. This is a 1.4 per cent increase in total garbage collected in less than six (6) months.

Additionally since EOW garbage collection began, the amount of curbside collected organics and recycling has increased from 47 per cent to 56 per cent, resulting in significantly reduced demand on the landfill sites.

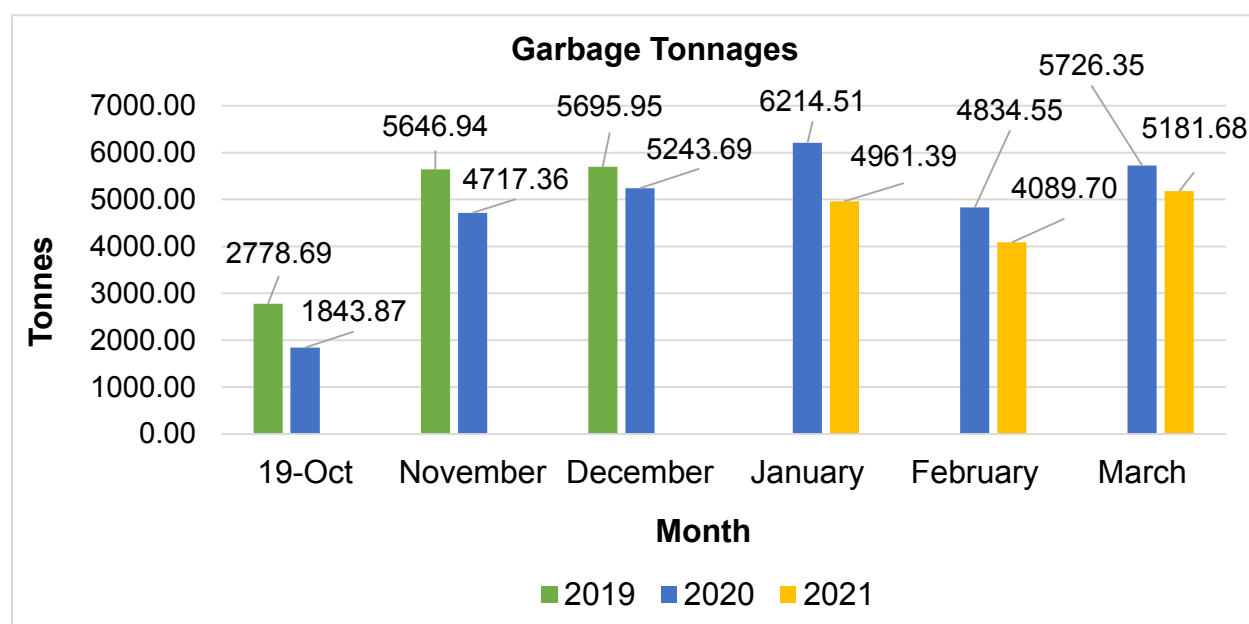
Garbage

Curbside collected garbage tonnages have decreased since the start of EOW garbage collection. From October 19, 2020 through to the end of March 2021, the amount of curbside collected garbage has decreased by 15.7 per cent compared to the same time frame in 2019 and 2020. Table 1 and Figure 1 provide a monthly breakdown of garbage tonnages.

Table 1 Garbage Tonnages

Month	Before EOW (Tonnes)	After EOW (Tonnes)	Difference
October (last two weeks)	2,778.69	1,843.87	-33.6%
November	5,646.94	4,717.36	-16.5%
December	5,695.95	5,243.69	-7.9%
January	6,214.51	4,961.39	-20.2%
February	4,834.55	4,089.70	-15.4%
March	5,726.35	5,181.68	-9.5%
Total	30,896.99	26,037.69	-15.7%

Figure 1 Garbage Tonnages



This decrease can be attributed to residents diverting their waste through organics and recycling, as these diversion programs have seen considerable increases in tonnages collected at the curb in just six (6) months.

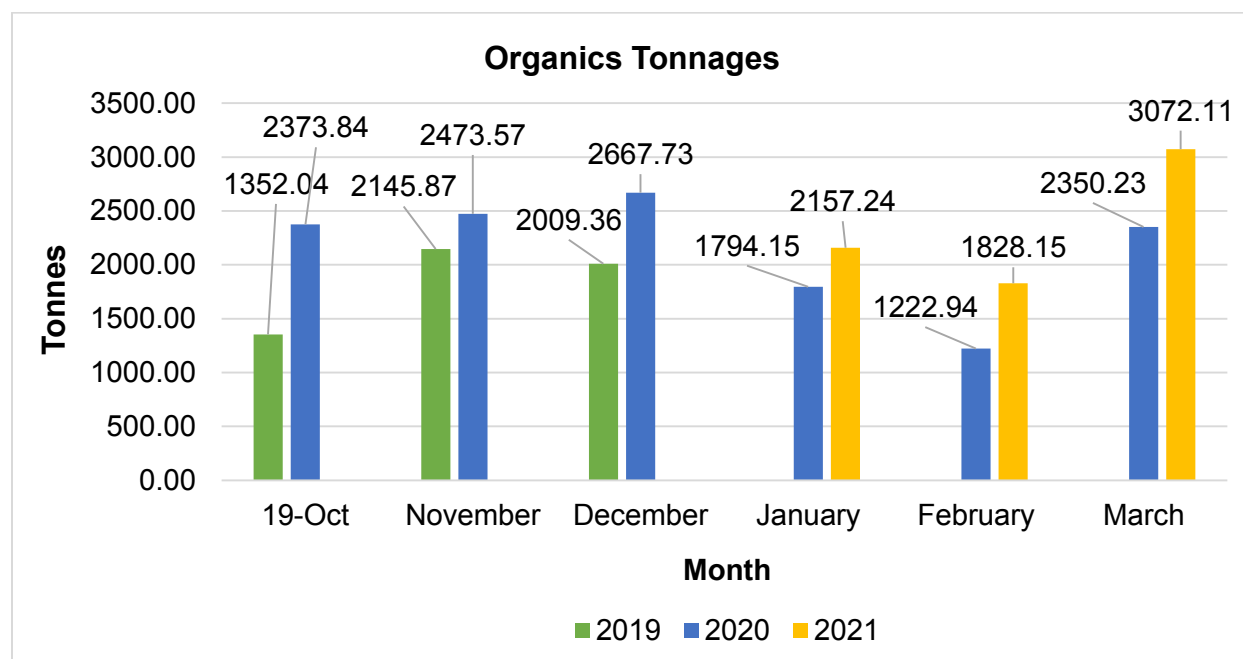
Organics

Tonnages for curbside collected organics have increased 34 per cent since the start of EOW garbage collection compared to the same time frame in 2019 and 2020. See Table 2 and Figure 2 for a monthly comparison.

Table 2 Organics Tonnages

Month	Before EOW (Tonnes)	After EOW (Tonnes)	Difference
October (last two weeks)	1,352.04	2,373.84	75.6%
November	2,145.87	2,473.57	15.3%
December	2,009.36	2,667.73	32.8%
January	1,794.15	2,157.24	20.2%
February	1,222.94	1,828.15	49.5%
March	2,350.23	3,072.11	30.7%
Total	10,874.59	14,580.77	34.0%

Figure 2 Organics Tonnages



Organics collection includes food waste collected in the Green Bin and co-collected leaf and yard waste, with the exception of dedicated leaf and yard waste collection in the spring and fall in urban areas. In 2020, separate leaf and yard waste took place from November 2 to 27. In 2019, it was October 28 to November 22. The 2019 data for October contains one week of non co-collected leaf and yard waste, whereas the October 2020 data only includes co-collected leaf and yard waste. This explains why the larger increase was observed in October 2020 when compared with October 2019. Excluding data from October 2019 and 2020, the increase in curbside collected organics was 28.2 per cent. The increase in organics can be attributed to increased participation in the Green Bin program, and co-collected leaf and yard waste. As per PW 20-2021, the COVID 19 pandemic did affect the amount of organics generated.

In preparation for EOW garbage collection and the expected increase in Green Bin tonnages, staff began to deliver additional supply of Green Bins to distribution centres throughout the region, providing residents the opportunity to purchase additional containers. In 2020, staff delivered 12,077 Green Bins to distribution centres, a near 60 per cent increase over the 7,569 Green Bins delivered in 2019.

Reduction of organics being landfilled will result in the following benefits:

- The extended site life for open Region landfills will result in increased revenue generating capacity from the reduction of divertable materials being landfilled by residents and other service users participating in the curbside recycling and organics programs.
- Deferred capital costs for new disposal infrastructure. As a point of reference, the Humberstone Landfill site vertical expansion will have a total cost of approximately \$11.2 million.
- Cost avoidance/cost reduction in the landfill contract with Walker Environmental due to an increase in the diversion of waste from disposal. This may be offset by increased tonnages of food and organic waste collected at the curb from improved participation and capture rates, which would result in increased processing contract costs, unless the tonnages are reduced through food waste avoidance and other reduction initiatives.
- Long term cost reduction with care and control of landfill sites, due to reduction of organics being landfilled, resulting in improved leachate quality. Based on Niagara Region's Landfill Liability Model, the contaminating life and monitoring would be reduced by approximately five (5) years and thus produce an estimated annual savings for the two (2) Regional landfill sites of \$1.3 million.

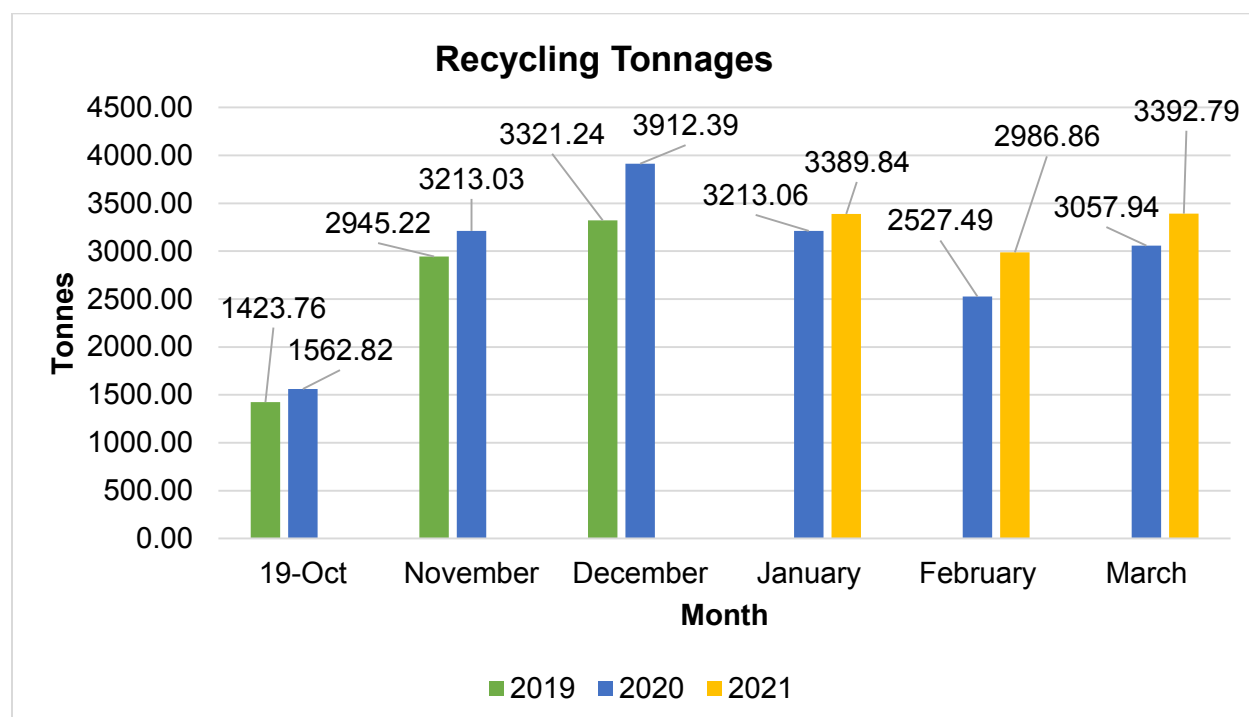
Recycling

Curbside recycling tonnages have increased 11.9 per cent since the start of EOW garbage collection compared to the same time frame in 2019 and 2020. Table 3 and Figure 3 provide a monthly comparison. The tonnages include all recycling collected in Blue/Grey Boxes, Blue/Grey Carts, bundled cardboard and front-end cardboard collection from downtown St. Catharines.

Table 3 Recycling Tonnages

Month	Before EOW (Tonnes)	After EOW (Tonnes)	Difference
October (last two weeks)	1,423.76	1,562.82	9.8%
November	2,945.22	3,213.03	9.1%
December	3,321.24	3,912.39	17.8%
January	3,213.06	3,389.84	5.5%
February	2,527.49	2,986.86	18.2%
March	3,057.94	3,392.79	11%
Total	16,488.71	18,547.73	11.9%

Figure 3 Recycling Tonnages



Similar to the Green Bins, additional Blue and Grey Boxes were delivered to distribution facilities for resident purchase. In 2020, staff delivered 25,464 Blue/Grey Boxes to distribution centres, a 20.5 per cent increase over the 21,131 Blue/Grey Boxes delivered in 2019.

Capture Rates

An expected benefit of EOW garbage collection is an increase in participation and capture rates in the Region's diversion programs. Prior to EOW garbage collection, nearly 50 per cent of one (1) garbage bag/can from the low-density residential sector was organics, and nearly 14 per cent was recyclables.

Seasonal waste audits are currently in progress to determine the material stream composition of a garbage bag after the implementation of EOW garbage collection. Audit results are expected in late 2021.

Illegal Dumping

Based on comments received from municipal comparators who have implemented EOW waste collection, Niagara Region expected that EOW garbage collection would influence illegal dumping for a short term; however, would level off back to normal levels in the long term.

In 2020, there was a total of 678 incidents of illegal dumping investigated by Niagara Region. This is a small increase over the 677 incidents that were investigated in 2019. There has been no evidence of an increase in roadside dumping in Q1 2021. Staff are now proactively monitoring public space litter bins, primarily in St. Catharines and Niagara Falls for illegal dumping. This data will be further reported on later this year.

To address concerns of potential increases in illegal dumping, Region staff are planning an illegal dumping campaign for 2021 as per WMPSC-C 18-2021.

In conclusion, Niagara Region's policy change from weekly garbage collection to EOW has demonstrated a high level of effectiveness for the first six (6) months. Residents and businesses have embraced the weekly diversion programs, which is evident from the aforementioned tonnage data, and should be applauded for their efforts.

Next Steps

Later in 2021, staff will provide an update on the diversion impact of the change to EOW garbage collection as more data is collected, as well as update capture rates based on audit results.

Incidents of illegal dumping will continue to be tracked and monitored throughout 2021 to determine what impact, if any, EOW garbage collection has had on illegal dumping.

Respectfully submitted and signed by

Alison Powell

Business Support Analyst