COUNCIL INFORMATION PACKAGE

SUMMARY

JANUARY 28, 2022

1. **C-2022-025**
   Correspondence dated January 24, 2022 from the Niagara Region respecting Community Homelessness Prevention Initiative Investment Plan 2022-23 – COM 1-2022

2. **C-2022-026**
   Correspondence dated January 21, 2022 from the Niagara Region respecting Every Other Week Garbage Collection Diversion Impact – Full Year Analysis – WMPSC-C 41-2021

3. **C-2022-027**
   Correspondence dated January 21, 2022 from the Niagara Region respecting Niagara Official Plan: Proposed Draft for Consultation – PDS 2-2022

4. **C-2022-028**
   Correspondence dated January 28, 2022 from the City of St. Catharines addressed to the Niagara Regional Clerk respecting a motion regarding CHPI Funding Shortfalls File No. 35.23.125

5. **C-2022-029**
   Correspondence dated January 25, 2022 from the Town of Lincoln addressed to the Niagara Regional Clerk respecting a resolution of support regarding the Niagara Region's Vision Zero initiative.

6. **C-2022-030**
   Correspondence dated January 25, 2022 from the Town of Lincoln addressed to the Niagara Regional Clerk respecting a resolution of support regarding the Niagara Region's Transit Consolidation: Moving Transit Forward in Niagara.

Received January 24, 2022
C-2022-025

Administration
Office of the Regional Clerk
1815 Sir Isaac Brock Way, PO Box 1042, Thorold, ON L2V 4T7
Telephone: 905-685-4225 Toll-free: 1-800-263-7215 Fax: 905-687-4977
www.niagararegion.ca

January 24, 2022

CL 2-2022, January 20, 2022
PHSSC 1-2022, January 11, 2022
COM 1-2022, January 11, 2022

DISTRIBUTION LIST

SENT ELECTRONICALLY

Community Homelessness Prevention Initiative Investment Plan 2022-23
COM 1-2022

Regional Council, at its meeting held on January 20, 2022, passed the following recommendation of its Public Health and Social Services Committee:

That Report COM 1-2022, dated January 11, 2022, respecting Community Homelessness Prevention Initiative Investment Plan, **BE RECEIVED** and the following recommendations **BE APPROVED:**

1. That the Ministry mandated Community Homelessness Prevention Initiative (CHPI) investment plan for the 2022-23 funding allotment **BE APPROVED;**
2. That the Regional Chair **BE DIRECTED** to send a letter to the Minister of Housing to urge the province to immediately address the funding inadequacies of the Community Homelessness Prevention Initiative;
3. That this motion **BE CIRCULATED** to the local area municipalities and local area MPPs; and
4. That this matter **BE RAISED** at the annual Association of Municipalities of Ontario (AMO) conference for further consideration.

A copy of COM 1-2022 and the Regional Chair's letter are enclosed for your reference.

Yours truly,

Ann-Marie Norio
Regional Clerk
:kl
CLK-C 2022-003

Distribution List
Local Area Municipalities
Jeff Burch, Member of Provincial Parliament, Niagara Centre
Wayne Gates, Member of Provincial Parliament, Niagara Falls
Jennie Stevens, Member of Provincial Parliament, St. Catharines
Sam Oosterhoff, Member of Provincial Parliament, Niagara West

cc:
A. Jugley, Commissioner, Community Services
S. Dean, Executive Assistant to the Commissioner of Community Services

Subject: Community Homelessness Prevention Initiative Investment Plan 2022-23

Report to: Public Health and Social Services Committee

Report date: Tuesday, January 11, 2022

Recommendations

1. That the Ministry mandated Community Homelessness Prevention Initiative (CHPI) investment plan for the 2022-23 funding allotment **BE APPROVED**.

Key Facts

- The purpose of this report is to obtain approval for the fiscal 2022-23 CHPI investment plan before February 15, 2022 as required by the Ministry of Municipal Affairs and Housing (MMAH).
- On August 23, 2021, the MMAH provided notification of the notional funding allocations for CHPI. Niagara will receive $7,847,786 for the one-year term April 1, 2022 through March 31, 2023 (mirroring the funding for the 2019/20 fiscal year).
- Consistent with previous years, MMAH requires service managers to submit the CHPI investment plan for 2022-23 by February 15, 2022 outlining the planned spending in the directed categories of: emergency shelter solutions, housing with related supports, homelessness prevention, other housing services and supports and program administration.
- The proposed investment plan included in the report has been developed based on the CHPI program guidelines (January 2017), in alignment with Niagara's Ten Year Housing and Homelessness Action Plan and with consideration to existing funding allocations to support a stable homelessness system in Niagara.
- As a result of COVID, Niagara received significant additional Social Services Relief Fund (SSRF) funding from the Province during the years 2020 and 2021 to support expenditures in the homelessness system to ensure a safe environment for Niagara's most vulnerable residents, and support agencies committed to working with them, however that funding terminates on March 31, 2022.

Financial Considerations

The total 100% provincial CHPI funding provided for 2022-23 is anticipated to be $7,847,786. This amount has been consistent for the past 3 years. It should also be

noted that Niagara Region is allocating $1,908,968 of levy funding to the same priority funding categories beyond the proposed provincial amounts (assuming a consistent levy allocation in Q1 2023) pending 2022 budget approval. Niagara Region is also providing $2,190,997 in additional levy to operate the Bridge Housing and Permanent Supportive Housing facilities built using Social Services Relief Phase 2 capital funding. As per a review by KPMG consultants it was noted that Niagara Region has one of the highest regional levy contributions towards homelessness.

Niagara Region also receives $1,190,084 of federal funding from Reaching Home (largely to fund Housing First programs, and to support Coordinated Access and Built for Zero participation) and $750,490 in provincial funding for Home for Good (intensive supportive housing). These other funding sources are not included in the CHPI investment plan prepared for the MMAH.

Current homelessness service contracts were executed through a Negotiated Request for Proposal procurement process for each of the CHPI categories and have been approved for a four-year contract period from April 1, 2020 to March 31, 2024. The contract awards align with the CHPI investment plan for 2022-23. Niagara Region funds and works collaboratively with 18 agencies in the region to deliver homelessness services and supports to the residents of Niagara.

Analysis

The proposed CHPI investment plan is designed to align with the CHPI program guidelines issued in January 2017 (revised May 2019). The Ministry requires that an investment plan be submitted each year indicating how Niagara Region plans to use the funding provided based on the categories identified by the province, and additionally, recognizing the four provincial homelessness priorities of chronic homelessness, youth, Indigenous persons and homelessness following transitions from provincially-funded institutions and service systems.

The vision for CHPI is to have “A coordinated and holistic service delivery system that is people-centered, evidence informed and outcomes-based, and reflects a Housing First approach that focuses on homelessness prevention and reduces reliance on emergency services.” [1] This vision reflects a shift towards a system that focuses on

[1] Community Homelessness Prevention Initiative Program Guidelines, January 2017, Ministry of Housing.

proactive and permanent housing solutions rather than reactive responses to homelessness.

The chart below shows the funding plan submitted for 2020-21, 2021-22 and the proposed plan to be submitted for 2022-23 and the changes in funding allocations, over the prior year.

	2020-21	**2021-22**	**2022-23**	**Change**
Emergency Shelter Solutions	$2,753,623	$2,753,623	$3,374,172	$620,549
Housing with Related Supports	$852,179	$852,179	$852,179	$0
Other Services and Supports	$397,521	$397,521	$520,000	$122,479
Homelessness Prevention	$3,555,701	$3,555,701	$2,812,673	$(743,028)
Program Administration	$288,762	$288,762	$288,762	$0
Total	$7,847,786	$7,847,786	$7,847,786	$0

The relative amounts set out in Niagara's investment plan align with provincial expectations, and ensure funding levels in each category support stability in the Niagara homelessness system while allowing for the capacity to move the system forward in achieving provincially identified priorities. While stability is a key goal in supporting the homeless sector in Niagara, the loss of the pandemic funding, at a time when homelessness and the acuity of clients is increasing, has raised significant concerns regarding the ability of the system to support clients' complex needs without additional funding and resources. The types of services that will be funded under the CHPI categories, as well as some specific work, related to system improvements, are outlined as follows:

Emergency Shelter Solutions

- Shelter providers will operate using a housing focused philosophy based on the successful pilot project offered during the pandemic. Since June of 2020, the 30-bed housing focused shelter pilot (opened June 2020) had 66 admissions with 71% exiting to permanent housing.
- Niagara will utilize shelter diversion practices, building on the learnings of the successful youth shelter diversion pilot offered in 2019 and adult shelter diversion pilot offered in 2020.
- Funding will support a low barrier, trauma informed shelter, offered in a variety of settings; necessary basic needs, and meals, along with housing support services including transportation to shelter.
- The increase in allocation towards Emergency Shelter Solutions is to better align with actual contracted costs to provide shelter services in Niagara. The demand in Niagara remains high due to housing costs being up 50% over the last 2 years which is impacting length of stay.
- There will be continued effort to align with provincial policy expectations, emphasizing prevention over emergency responses.

Housing with Related Supports

- Consistent with best practices, funding will support Housing First units and, where appropriate, transitional housing programming in Niagara. These critical programs aim to increase housing stability, and reduce reliance on emergency shelters.
- Funded services will also include case management to assist clients with access to medical care, and supports related to mental health, substance use, and crisis intervention. Coordinated access to these resources is another key component in Niagara's work associated with Built for Zero, offering the right support, for the right person, at the right time.

Other Services and Supports

- This category captures Niagara's outreach services, including assertive street outreach support workers who provide help to find stable housing, and connections to other services including mental health programs, healthcare, addictions services, and legal aid.
- Assertive street outreach is another key component in Niagara's Built for Zero efforts and system improvement work. Niagara successfully launched a hot spot mapping

tool for encampments in 2020, to further support and enhance collaboration with municipal partners, community and police.
- Outreach services proved very instrumental in supporting homeless clients during the pandemic as many clients chose to live rough during this time, some feeling this was a safer option than the shelter system. Niagara remains concerned that the loss of the enhanced level of funding and associated service will negatively impact those living rough, increase encampment behaviour and have a negative impact on Niagara's downtown communities.

Homelessness Prevention

- Homelessness prevention funding supports programs which address eviction prevention, assistance to secure and retain housing, and assistance with budgeting and banking through trusteeship.
- This category includes the Housing Stability Plan (HSP), which, as in prior years, is an important component of the homelessness prevention program. HSP provides financial assistance for rent arrears, and rent deposits (again, quite helpful for those leaving shelter). This program has been adjusted to reflect practices in other communities in order to reallocate funding to support the operations of the Bridge Housing project. While this does align with the policies of other communities, it is happening at a time when the rental market, arrears and economic climate would suggest that this funding will be in high demand.
- This category also includes funding towards the Niagara Emergency Energy Fund (NEEF) to address utility arrears in order to support clients to retain housing. This funding was also reduced to allow for adequate funding for the Bridge Housing program. While the new policies will have alignment with peers, the timing in the current local economic climate of Niagara may be challenging.

Program Administration

- Funding supports capacity building, supports for system transformation including training for staff and leaders to all third party agencies delivering programs.
- While permitted under the Administration category, Niagara Region does not allocate the full 10% available under the CHPI guidelines for administration, focusing as much funding as possible to direct client service delivery.

Risk Management Planning for CHPI

Under the CHPI program guidelines (January 2017), there is a requirement to identify potential risks and mitigation strategies. The risks that will be identified in this investment plan include:

Risk

- Effectively meeting the provincially mandated capacity assessment requirements and deliverables for service managers and all third party providers such as adoption of best practices, training and key performance measurements

Mitigation

- Continue to monitor the sector for best practice developments and evolving policy changes.
- Continue to allocate administration monies to this initiative and work with all agencies to identify system wide training needs, ensuring system capacity along with standard processes.
- Launch of a data strategy for Homelessness Services to support best practice and accountability.
- Development of prevention framework to inform system transformation activities
- Pilot best practices and transfer learning to the system for emergency shelter through the housing focused shelter site.
- As a leader, Niagara has a Quality By-Name List pulling directly from Niagara's HIFIS database; staff are looking at monthly data to track homelessness activity e.g. inflows and outflows to homelessness.

Risk

- There is an affordability risk in Niagara, as $1,908,968 in additional levy funding is being used to support the program. An additional $2,190,997 in municipal funding is being allocated to support the Bridge Housing and Permanent Supportive housing operating costs also not funded by the province. The annual base provincial funding available (based on 2019/20 funding levels, not even reflecting inflationary increases) remains inadequate to support local needs and address existing demand for services. Ongoing reliance on local not-for-profit sector contributions and levy sources is not sustainable. In addition, the impact of the loss of the pandemic funding to the system at a time when social assistance caseloads are increasing and

anticipated to peak at levels in excess of those pre pandemic, combined with a local housing crisis (the St. Catharines rental market is now the 9th most expensive in the country), and a significant portion of the economy dependent on tourism, the Region has significant concerns about the ability to adequately support the homeless population and agencies serving these vulnerable persons.

Mitigation

- Local funding allocations and contract award processes seek to ensure selected agencies utilize outcome-based models and best practices. Niagara has embarked on a data strategy, which will further support effective monitoring of contracts and outcomes. Dialogue will continue with MMAH related to local needs and relative funding levels.
- Further development of contract management and quality assurance program; agencies are providing in-kind/fundraising dollars to fulfill service requirements.
- Reallocation of expenditures to the Bridge Housing project is expected to support Niagara's effort to reduce (and ultimately end) chronic homelessness. It is well known that chronic homelessness significantly contributes to emergency shelter capacity pressures and costs, and thus, Bridge Housing is also hoped to be a more cost-effective solution.

Risk

- Niagara currently operates within an environment in which rental costs have accelerated, for example, average rents increased by 5.7% from 2019 to 2020, housing prices are up over 50% over the last 2 years.
- Niagara has been impacted by the opioid situation, with EMS calls for overdoses significantly elevated over 2020, (2020-625; 2021 Q1-Q3-723)

Mitigation

- Niagara's Affordable Housing Strategy is offering interconnected strategies resulting from partnership between several Regional departments including Community Services, Planning and Development, and Finance, as well as Niagara Regional Housing.
- Adjusting policies for HSP and NEEF to address pressures for families during pandemic.
- Partnership with REACH Niagara for medical care and through COVID-19 dollars, Niagara supported EMS Community Outreach pilot program.

Niagara developed a robust COVID strategy including operationalizing a self-isolation shelter, vaccine clinics for individuals experiencing homelessness, on-site testing, and PPE distribution.

Alternatives Reviewed

Not applicable, as a CHPI plan must be developed and submitted in order to receive this funding to support Niagara's homelessness serving system.

Relationship to Council Strategic Priorities

This recommendation is aligned to Council's strategic priority of ensuring a "Healthy and Vibrant Community." By approving this report, Niagara Region is able to receive this provincial funding and support clients through the stages of the housing continuum.

Other Pertinent Reports

- COM 08-2015 Community Homelessness Prevention Initiative Funding Allocations 2015-16 and 2016-17
- COM 02-2017 Community Homelessness Prevention Initiative Investment Plan 2017-18
- COM 02-2018 Community Homelessness Prevention Initiative Investment Plan 2018-19
- COM 01–2019 Community Homelessness Prevention Initiative Investment Plan 2019-20.
- COM 01–2020 Community Homelessness Prevention Initiative Investment Plan 2020-21

Prepared by:
Cathy Cousins, CPA, CA
Director, Homelessness Services &
Community Engagement
Community Services

Recommended by:
Adrienne Jugley, MSW, RSW, CHE
Commissioner
Community Services

Submitted by:
Ron Tripp, P.Eng.
Chief Administrative Officer

This report was prepared in consultation with Stephanie Muhic, Program Financial Specialist.

Niagara Region

Fort Erie Ontario Our Focus: Your Future

Niagara Region

Town of Lincoln

NiagaraFalls Canada

Niagara-on-the-Lake

Pelham Niagara

Port Colborne

St. Catharines

City of Thorold Where Ships Climb The Mountain

Wainfleet

Welland Ontario · Canada

West Lincoln Your Future Naturally

January 24, 2022

Hon. Steve Clark, MPP
Minister of Municipal Affairs and Housing
College Park 17th Floor, 777 Bay Street
Toronto, ON M7A 2J3

Sent by e-mail
minister.mah@ontario.ca

Dear Minister Clark,

Re: COMMUNITY HOMELESSNESS PREVENTION INITIATIVE INVESTMENT PLAN 2022 - 2023

Niagara Region, in partnership with our 12 local area municipalities, has welcomed all of our past opportunities to discuss homelessness funding directly with your office, through Niagara Week events, stand-alone meetings and our annual Association of Municipalities of Ontario delegations.

As you may recall, we have continued to voice our concerns regarding the level of homelessness funding in Niagara, along with concerns regarding the funding formula itself. As the funding model has a strong historical component, we continue to feel that the current rate of funding does not adequately respond to Niagara's current homeless service demands and local needs.

The enhanced funding that was made available through the Social Services Relief Funding (SSRF) due to the pandemic was greatly appreciated by Niagara's homeless system and its agencies. This funding provided us with additional abilities to support Niagara's most vulnerable citizens during these very difficult times, keeping clients safe and supported. These funds also demonstrated the additional success that the system can have in responding to homelessness, when the system has the additional resources necessary to provide best practice supports, and the supports are reflective of the demand.

Niagara's housing market continues to pose a challenge for homeless persons in Niagara, with a vacancy rate of only 2.6% and Canada Mortgage and Housing Corporation reporting average rent to be $1,088. Vacancy rates for bachelor units and more affordable units tend to be significantly lower than the average. A Canadian Rent Report from August 2021 lists St. Catharines as the 9th most expensive Canadian city to rent an apartment in, with the median price for an available unit of $1,360.

To further exasperate the local challenges, social assistance caseloads continue to rise as federal benefits come to an end. Niagara experienced a 91% increase in demand for applications for social assistance in November 2021 over July 2021. Currently, it is anticipated that the local population on social assistance will be higher post pandemic than pre-pandemic figures, creating a further pressure on affordable housing, shelter capacity and homelessness programming, including prevention programs.

For our part, a recently completed report from KPMG found that the amount of funding that Niagara receives from senior levels of government related to homelessness is lower than comparable municipalities across the province. The report goes on to state that Niagara has significant local levy dollars invested into the homelessness portfolio in an attempt to "close the gap" between the local need and the funding provided by senior levels of government. In fact, KPMG found that the Region has the second highest level of local municipal support (as a percentage of total homelessness expenditures) of comparator municipalities. In response to recommendations found in the same report, the Niagara Region took swift action to better align the activities of our housing cooperation (Niagara Region Housing) with the Region's social service division in order to streamline operations and find more efficiencies. In short, we feel that Niagara is making its fair share of contribution to addressing this significant challenge.

It is through the lens of Niagara's local challenges that the Region is once again raising the concern regarding the adequacy of homelessness funding to our region. While staff and Council have advocated over the past several years regarding the inequity of funding to support the local need and demand for homeless services, we were pleased to see the recent Auditor Generals' Value for Money report on homeless funding supports the work that staff and Council have shared with MMAH, indicating:

> *"2017, the Regional Municipality of Niagara expressed its concerns to the Ministry that the funding model was filing to address local needs. According to the municipality, important factors including a decrease in affordable housing vacancies, an increase in in children accessing the emergency shelter system, and an increase in the level of Ontario Works and Ontario Disability support Program cases – are not addressed in the funding model. Additionally, Ottawa noted the need to consider the demand for shelter services and wait times for addiction and mental health services in the allocation of funding to municipalities."*

Based on the above statement in the report, the Auditor General's report includes recommendation 7:

> *"To fairly allocate funding to municipalities based on need, we recommend the Ministry of Municipal Affairs and Housing:*
>
> - *Revisit the options identified in past funding reviews and re-evaluate its funding model for the Community Homelessness Prevention Initiative;*
> - *Implement changes to the funding model; and use the latest census data from Statistics Canada to recalculate the current funding allocation under the Community Homelessness Prevention Initiative."*

Niagara appreciates the work of the Auditor General in looking at the adequacy and fairness of the CHPI funding model, and staff and Council would be willing to present the information from 2017 to those responsible for this portfolio in the MMAH, and support any work that the ministry may consider in a redesign of the CHPI funding formula.

Niagara would again like to thank the Ministry for the enhanced SSRF monies as this funding supported the homeless sector during exceptionally challenging times, and will be sorely missed once the program expires. We believe that the significant advancements made in Niagara as a result of SSRF demonstrate what can be accomplished with a more reasonable infusion of funding into the sensitive homelessness sector. We can assure the Minister that any extension of the

funding made available through SSRF would be put to immediate work helping the most vulnerable in Niagara, ensuring more people would have access to safe and dependable housing.

In closing, it would be difficult to overstate the intense need for funding dedicated to tackling Niagara's homelessness challenge. We look forward to having continued dialog with your office related to this matter, and stand ready to contribute to any initiative that may result in a more equitable distribution of CHPI funding across the Province of Ontario.

Respectfully,

Jim Bradley, Regional Chair
Niagara Region

Mayor David Bylsma
West Lincoln

Mayor Frank Campion
Welland

Mayor Jim Diodati
Niagara Falls

Lord Mayor Betty Disero
Niagara-on-the-Lake

Mayor Sandra Easton
Lincoln

Mayor Kevin Gibson
Wainfleet

Mayor Jeff Jordan
Grimsby

Mayor Marvin Junkin
Pelham

Mayor Wayne Redekop
Fort Erie

Mayor Walter Sendzik
St. Catharines

Mayor Bill Steele
Port Colborne

Mayor Terry Ugulini
Thorold

cc: S. Oosterhoff, MPP, Niagara West
W. Gates, MPP, Niagara Falls
J. Burch, MPP, Niagara Centre
J. Stevens, MPP, St. Catharines

Received January 21, 2022
C-2022-026

Administration
Office of the Regional Clerk
1815 Sir Isaac Brock Way, PO Box 1042, Thorold, ON L2V 4T7
Telephone: 905-685-4225 Toll-free: 1-800-263-7215 Fax: 905-687-4977
www.niagararegion.ca

January 21, 2022

PWC 1-2022, January 11, 2022
PWC-C 1-2022, January 11, 2022
WMPSC-C 41-2021, December 13, 2021

LOCAL AREA MUNICIPALITIES

SENT ELECTRONICALLY

Every Other Week Garbage Collection Diversion Impact – Full Year Analysis
WMPSC-C 41-2021

At the Public Works Committee meeting held on January 11, 2022, Committee requested that the presentation respecting Every Other Week Garbage Collection Diversion Impact – Full Year Analysis, provided to the Waste Management Planning Steering Committee at its meeting held on December 13, 2021, be circulated to the local area municipalities.

A copy of Report WMPSC-C 41-2021 and the presentation is attached for your reference.

Yours truly,

Ann-Marie Norio
Regional Clerk
:cv

CLK-C 2022-006

cc: B. Zvaniga, Interim Commissioner, Public Works
C. Habermebl, Director, Waste Management Services
N. Coffer, Executive Assistant, Public Works

Waste Management Services
1815 Sir Isaac Brock Way, Thorold, ON L2V 4T7
905-980-6000 Toll-free: 1-800-263-7215

MEMORANDUM

WMPSC-C 41-2021

Subject: Every-Other-Week Garbage Collection Diversion Impact – Full Year Analysis

Date: Monday, December 13, 2021

To: Waste Management Planning Steering Committee

From: Alison Powell, Business Support Analyst, Waste Management Services

Purpose

The purpose of this memorandum is to provide Waste Management Planning Steering Committee (WMPSC) with a one (1) year update on the waste diversion impact resulting from the change to every-other-week (EOW) garbage collection.

A six (6) month update was provided in PWC-C 19-2021.

Background

On October 17, 2019, Council approved implementation of EOW garbage collection. Changing 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.

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. (Miller) 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.
- 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.

Curbside Tonnage Analysis

To determine the impact EOW garbage collection has had on the amount of waste collected from the curb, a one (1) year review of tonnage data from October 19, 2020 through October 15, 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 October 16, 2020), identified as 'Before EOW' in this memorandum.

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 garbage container (can/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.

After one (1) year of EOW garbage collection, the combined amount of curbside collected garbage, organics and recycling has decreased 1.2 per cent from almost 141,000 tonnes to 139,000 tonnes in total waste collected at the curb.

Additionally, since EOW garbage collection began, the amount of curbside collected organics and recycling has increased from 49 per cent to 58 per cent of all waste collected at the curb, resulting in significantly reduced demand on the landfill sites.

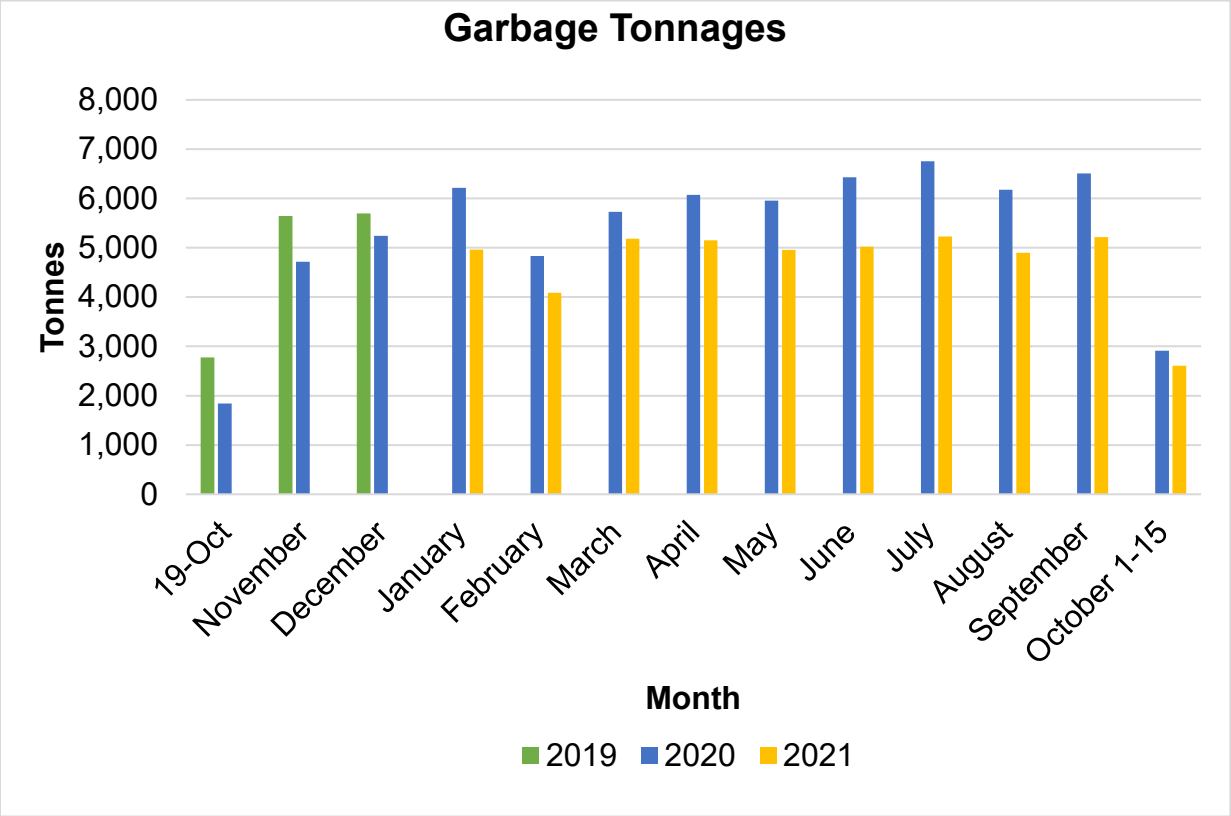
1. Curbside Garbage Tonnages

Curbside collected garbage tonnages have decreased since the start of EOW garbage collection. After one (1) year, the amount of curbside collected garbage has decreased by almost 18 per cent compared to the same time period in 2019 and 2020. Table 1 and Figure 1 provide a monthly breakdown of garbage tonnages.

Table 1: Curbside Garbage Tonnages

Month	**Before EOW (Tonnes)**	**After EOW (Tonnes)**	**Difference**
October 2020 (last two weeks)	2,779	1,844	-33.6%
November	5,647	4,717	-16.5%
December	5,696	5,244	-7.9%
January	6,215	4,961	-20.2%
February	4,835	4,090	-15.4%
March	5,726	5,182	-9.5%
April	6,074	5,151	-15.2%
May	5,958	4,954	-16.8%
June	6,432	5,019	-22.0%
July	6,751	5,232	-22.5%
August	6,176	4,900	-20.7%
September	6,509	5,214	-19.9%
October 2021 (first two weeks)	2,910	2,606	-10.5%
Total	**71,708**	**59,114**	**-17.6%**

Figure 1: Curbside 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 one (1) year.

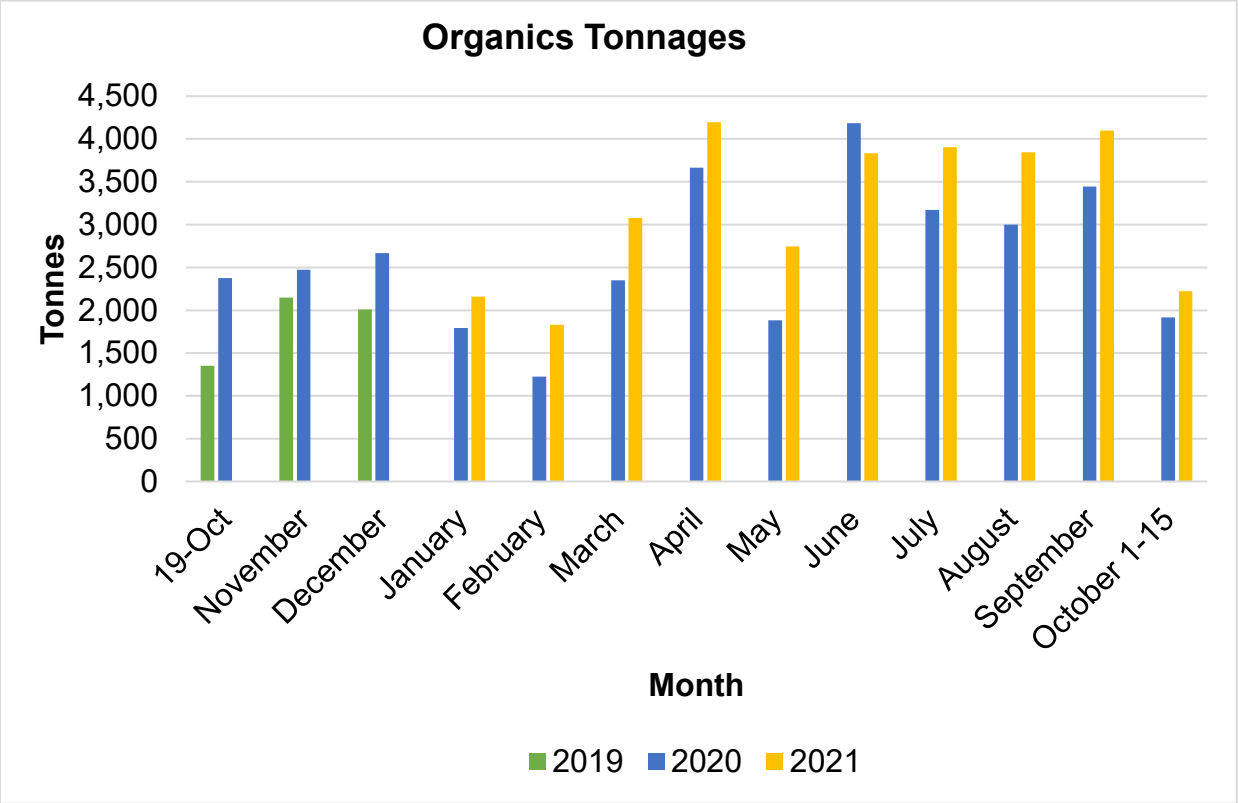
2. Curbside Organics Tonnages

Tonnages for curbside collected organics have increased 23 per cent since the start of EOW garbage collection compared to the same time period in 2019 and 2020. Table 2 and Figure 2 provide a monthly breakdown of organics tonnages.

Table 2: Curbside Organics Tonnages

Month	**Before EOW (Tonnes)**	**After EOW (Tonnes)**	**Difference**
October 2020 (last two weeks)	1,352	2,374	75.6%
November	2,146	2,474	15.3%
December	2,009	2,668	32.8%
January	1,794	2,157	20.2%
February	1,223	1,828	49.5%
March	2,350	3,079	31.0%
April	3,664	4,196	14.5%
May	1,882	2,746	45.9%
June	4,186	3,834	-8.4%
July	3,170	3,903	23.1%
August	3,000	3,846	28.2%
September	3,444	4,099	19.0%
October 2021 (first two weeks)	1,917	2,221	15.9%
Total	**32,137**	**39,425**	**22.7%**

Figure 2: Curbside 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. The increase in organics can be attributed to increased participation in the Green Bin program, and co-collected leaf and yard waste.

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. In 2021, staff delivered 8,903 number Green Bins to distribution centres.

3. Curbside Recycling Tonnages

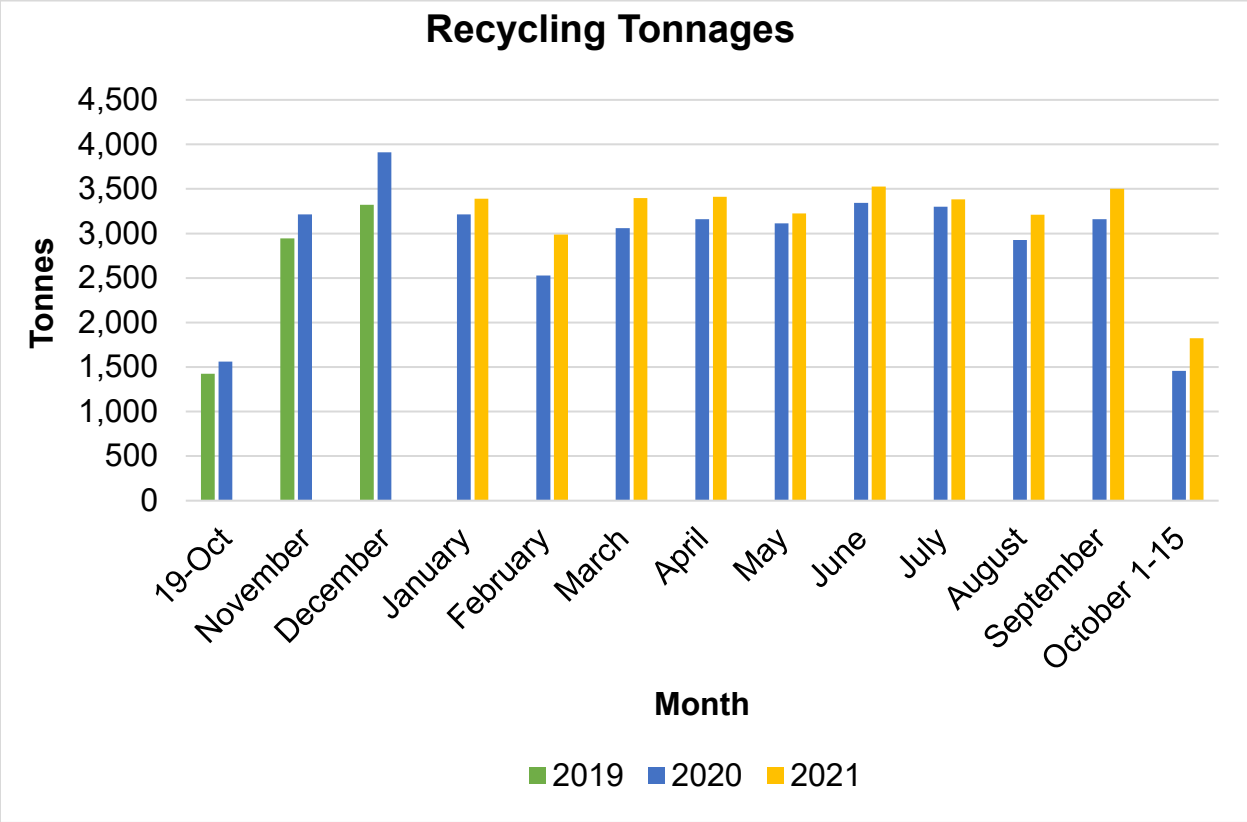
Curbside recycling tonnages have increased 9.7 per cent since the start of EOW garbage collection compared to the same time period in 2019 and 2020. Table 3 and Figure 3 provide a monthly comparison. The tonnages include all recycling collected in

Blue/Grey Boxes, Blue/Grey Carts, bundled cardboard and front-end cardboard collection from downtown St. Catharines.

Table 3: Curbside Recycling Tonnages

Month	**Before EOW (Tonnes)**	**After EOW (Tonnes)**	**Difference**
October (last two weeks)	1,424	1,563	9.8%
November	2,945	3,213	9.1%
December	3,321	3,912	17.8%
January	3,213	3,390	5.5%
February	2,527	2,987	18.2%
March	3,058	3,399	11.2%
April	3,162	3,412	7.9%
May	3,114	3,226	3.6%
June	3,342	3,526	5.5%
July	3,299	3,382	2.5%
August	2,927	3,210	9.7%
September	3,160	3,502	10.8%
October (first two weeks)	1,456	1,822	25.1%
Total	**36,948**	**40,544**	**9.7%**

Figure 3: Curbside 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. As of October 21, 2021, staff delivered 21,146 Blue/Grey Boxes to distribution centres this year.

Further to the EOW analysis above, Niagara Region completed a waste composition study and environmental benefits analysis to further review the impact of EOW garbage collection.

Waste Composition Study

As part of the EOW garbage collection analysis, the Region completed a waste composition study. The 2020-2021 four (4)-season average curbside waste diversion rate is 60 per cent, an increase of 14.3 per cent from the 2015-2016 diversion rate of 45.7 per cent. This can be attributed to the implementation of EOW garbage collection, which resulted in residents decreasing their disposal of garbage, and increasing their

diversion of recycling and organics. The results of this waste composition study were presented at the October 18, 2021 WMPSC meeting, and can be found in the memorandum, WMPSC-C 34-2021.

Environmental Benefits Analysis

Niagara Region retained Sound Resource Management Group, Inc. (SRMG) to evaluate and quantify the environmental benefits over the first year following the Region's switch to EOW curbside garbage collection. SRMG was to: Evaluate the garbage collection decreases, organics collection increases and recycling collection increases during this first year of EOW curbside garbage collection;

- Estimate the environmental impacts of these changes in waste diversion and disposal; and
- Estimate the economic value of the changes in environmental impacts.

The report completed by SRMG can be found in Appendix 1. SRMG analyzed the curbside tonnages as well as the combined curbside and drop-off depot tonnages.

1. Curbside Collection Tonnages

SRMG analyzed the curbside collection tonnages both before and after EOW garbage collection; however, a marginally different time period was reviewed than in the analysis completed by the Region. SRMG analyzed data from October 26, 2020 through October 22, 2021. The first week of EOW garbage collection (week of October 19, 2020) was not included in the analysis as Collection Area One (1) had received garbage collection the previous week; therefore, the amount of garbage placed at the curb would likely have been lower than what is expected for the EOW garbage collection frequency.

An additional difference between the analysis completed by staff and that of SRMG is that SRMG included dedicated leaf and yard waste and brush in the organics total. The Region's analysis of organics did not include dedicated leaf and yard waste and brush as the focus was on Green Bin organics tonnages. Combining this data with dedicated leaf and yard waste could potentially over or understate the impact of EOW garbage collection on the organics program, depending on the amount collected.

Table 4 breaks down the curbside tonnages, which have been adjusted to account for processing residues.

Table 4: SRMG Analysis of Curbside Collected Tonnages

Waste Stream	Before EOW (Tonnes)	After EOW (Tonnes)	Difference
Garbage	80,939	70,238	-13.2%
Recycling	33,153	35,809	8.0%
Organics (including leaf and yard waste)	38,140	45,620	19.6%

Decreases in curbside collected garbage tonnages suggest diversion increases in the recycling and organics waste streams are a direct result of the change to EOW garbage collection.

2. Curbside Collection and Self-Haul Diversion

In addition to curbside collection, residents and businesses are able to self-haul their waste to depots. SRMG compared combined annual totals for both before and after EOW for curbside collection and self-haul deliveries. Table 5 provides a breakdown of tonnages, which have been adjusted to account for processing residues.

Table 5: SRMG Analysis of Curbside and Self-Haul Tonnages

Waste Stream	Before EOW (Tonnes)	After EOW (Tonnes)	Difference
Garbage	117,128	111,702	-4.6%
Recycling	34,549	37,349	8.1%
Organics (including leaf and yard waste)	51,005	59,948	17.5%

The combined curbside and self-haul data shows only a 4.6 per cent decrease for garbage diverted when compared to just curbside collection, which saw a reduction of 13.2 per cent in the analysis by SRMG.

It is possible that residents will have used the drop-off depot to supplement EOW garbage collection. However, the change to EOW from weekly curbside garbage collection was not the only major occurrence during 2020-2021 that could have altered solid waste disposal and diversion behaviors. Other potential drivers of change include, but are not limited to, the COVID-19 pandemic, in which travel restrictions or shutdowns

forced people to stay home, and in many cases work from home, and economic growth in spring 2021.

3. Environmental Impacts and Economic Value of EOW Garbage Collection

SRMG relied on its proprietary Measuring Environmental Benefits Calculator (MEBCalc) to evaluate nine (9) environmental impacts of switching from weekly to EOW curbside garbage collection. The environmental benefits of these disposal reductions and diversion increases are substantial, including the following annual tonnes of pollution decreases:

- 18,400 tonnes in climate changing carbon dioxide equivalent (CO_2e or eCO_2) emissions;
- 4.7 tonnes in fine particle emissions ($ePM_{2.5}$) that cause respiratory cancers and asthmas;
- 1,375 tonnes in non-carcinogenic and carcinogenic toxic chemical pollutants;
- 93 tonnes in nitrogen equivalent (eN) emissions that cause waterways eutrophication; and
- 350 tonnes in ozone equivalent (eO_3) emissions that cause ground level smog formation.

The tonnage totals for these pollution reductions are different quantitatively, so it can be difficult to prioritize trade-offs between public health and environmental impacts. One solution is to monetize these impacts into economic cost and benefit dollar values so that they can be compared and summed up into overall totals. It is estimated that the pollution reductions associated with disposal tonnage decreases and diversion tonnage increases amount to $13.2 million CAD, or $1,300 CAD per average metric tonne of additional curbside diversion.

Illegal Dumping

Based on comments received from municipal comparators who have implemented EOW garbage collection, Niagara Region expected this change in garbage collection frequency to influence illegal dumping for a short term; however, other municipalities experienced a leveling off back to normal levels in the long term. In 2020, there were 678 incidents of illegal dumping investigated by Niagara Region. This is a small increase over the 677 incidents that were investigated in 2019. EOW garbage collection did not appear to have a large impact on the number of reported incidents of illegal dumping in 2020.

In 2021, Waste Management staff have continued to respond to reports of illegal dumping, as well as proactively monitored hotspots and public space litter bins. The number of reported incidents can be highly influenced by the amount of proactive monitoring undertaken by Regional staff. This is especially true for illegal dumping that occurs in or around public space litter bins. As of October 15, 2021, 630 incidents of illegal dumping have been investigated in 2021. An update on illegal dumping in 2021 will be provided next year.

Next Steps

The goal for reducing the frequency of garbage collection to EOW was to encourage residents to divert waste through use of the Blue/Grey Box and Green Bin, both of which are still collected weekly. A one (1)-year review of this change has shown a decrease in garbage collected from the curb, and increases in the recycling and organics programs. Participation in diversion programs has increased based on the number of containers distributed and an improved curbside diversion rate, as determined by the Waste Composition Study. The benefits of EOW garbage collection were not only seen at the curb, but also in terms of environmental benefits, such as decreases in pollution.

Staff will continue to monitor the diversion impact of the change to EOW garbage collection.

Respectfully submitted and signed by

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Alison Powell,
Waste Management Business Support Analyst

Appendices

Appendix 1 Environmental Benefits Analysis Report

Niagara Region EOW Garbage Collection Environmental Benefits Analysis

Prepared by Dr. Jeffrey Morris, Sound Resource Management Group, Inc.

I. Summary and Conclusions

Niagara Region's implementation of every-other-week (EOW) curbside garbage collection in October 2020 resulted in an increased amount of diverted waste collected at the curb. Pre-EOW, 46.8% of waste collected at the curb was diverted from landfill using the organics and recycling programs. After EOW, 53.7% of curbside collected waste was diverted from landfill, an increase of 6.9%.

At the same time EOW garbage collection reduced annual disposal amounts by 10,700 metric tons (MT). These results are based on comparing curbside garbage collection customer disposal and diversion tonnages for the year following Niagara Region's implementation of curbside garbage EOW collection frequency against the year prior to EOW implementation when curbside garbage was collected weekly.

The environmental benefits of these disposal reductions and diversion increases are substantial, including the following annual metric tons of pollution decreases:

- 18,400 MT climate changing carbon dioxide equivalent (CO_2e or eCO_2) emissions,
- 4.7 MT in fine particle emissions ($ePM_{2.5}$) that cause respiratory cancers and asthmas,
- 1,375 MT decrease in non-carcinogenic and carcinogenic toxic chemical pollutants,
- 93 MT in nitrogen equivalent (eN) emissions that cause waterways eutrophication, and,
- 350 MT in ozone equivalent (eO_3) emissions that cause ground level smog formation.

Because the tonnage totals for these pollution reductions are so different quantitatively, decision makers may have difficulty prioritizing trade-offs between public health and environmental impacts that differ so widely in magnitude. One solution is to monetize these impacts into economic cost and benefit dollar values so that they can be compared and also summed up into overall totals. Using this technique, we estimate that the pollution reductions associated with disposal tonnage decreases and diversion tonnage increases discussed in this report amount to $13.2 million (in 2020 Canadian $), or $1,300 per average metric ton of additional curbside diversion.

Climate change accounts for the largest portion of this estimate at 40.3% of the total, or $5.3 million. Perhaps surprisingly, given the small number of metric tons in decreased pollution of fine particulates listed just above, human health respiratory pollutant reductions account for the second largest portion of total monetized environmental benefits at 29.6% of total and $3.9 million in environmental economic value. Eutrophication comes in third at 24.0% of total environmental economic value and $3.2 million of the overall EOW pollution reduction benefit.

The report below also details the lower environmental benefits when taking into account the pre-EOW versus post-EOW depot tonnage changes. As discussed below in this report in more detail regarding this result, there is reason to posit that some EOW curbside garbage collection customers may have used the depot drop-off facilities to handle garbage (and perhaps some recyclable and/or compostable materials) during their week's in-between EOW garbage collections.

However, there was no change in recyclable or organic material collection frequencies when EOW garbage collection was implemented. Furthermore, the 5,275 MT increase in depot garbage for the EOW first year versus the last year for weekly curbside garbage collection is quite large. If entirely due to EOW curbside customers self-hauling garbage to depots during weeks between their EOW collections, this depot garbage tonnage increase would have entailed hundreds of thousands of depot visits annually. In fact, the number of residential depot trips increased by 56,000. In addition, the curbside and drop-off depot tonnage changes after introduction of EOW curbside garbage collection were likely influenced by other factors such as the Covid-19 pandemic, population growth, economic activity levels, weather differences, and changing purchasing patterns. Effects of such additional factors were not assessed for this report.

Despite these many unknown effects and uncertainties, the curbside customers' tonnage only results detailed above and discussed throughout the report appear to be better estimates for the benefits of EOW curbside garbage collection than the curbside plus depot tonnage results. Nevertheless, curbside plus depot tonnage comparisons for EOW versus pre-EOW are reported throughout the report alongside the curbside customer only results. This provides an indication of the extent to which increased use of drop-off depots by EOW curbside garbage customers could reduce EOW environmental benefits. In our judgement, the benefits of EOW seem more likely to be much nearer to the curbside only results summarized above.

II. Introduction

Niagara Region engaged Sound Resource Management Group, Inc. (SRMG) to evaluate and quantify the environmental benefits over the first year following the Region's switch to every-other-week (EOW) curbside garbage collection. The switch from weekly to EOW was implemented October 19, 2020. SRMG's endeavor required:

1. Evaluating garbage disposal decreases, organics collection increases and recycling collection increases during this first year of EOW curbside garbage collection,
2. Estimating the environmental impacts of these changes in disposal and waste diversion, and,
3. Estimating the environmental economic value (EEV) of the changes in environmental impacts.

SRMG relied on curbside collection and depot drop-off tonnage data, residential drop-off depot trip counts, and precipitation data supplied by the Region to evaluate changes in diversion and disposal associated with the change to EOW curbside garbage collection. SRMG used both curbside collection tonnages as well as curbside plus drop-off depot tonnages to provide a range of estimates for the disposal and diversion impacts of the switch to EOW curbside garbage collection. SRMG then used the tonnage data and its proprietary Measuring Environmental Benefits Calculator (MEBCalc) to evaluate nine environmental impacts of switching from weekly to EOW curbside garbage collection:

- ***Climate Change*** – the potential increase in greenhouse effects due to anthropogenic emissions. Carbon dioxide (CO_2) originating from human activities that burn fossil fuels is the most common source of greenhouse gases (GHGs). Methane from anaerobic decomposition of organic material is a GHG and also a large source of climate change impacts. The reference substance for climate change potential is CO_2.
- ***Human Respiratory Disease and Death from Particulates*** – potential human health impacts from anthropogenic releases of coarse particles known to aggravate respiratory conditions such as asthma, releases of fine particles that can lead to more serious respiratory symptoms and disease, and releases of particulate precursors such as nitrogen oxides and sulfur oxides. The reference substance for human respiratory disease potential is particulate matter no larger than 2.5 microns, $PM_{2.5}$.
- ***Human Disease and Death from Toxics*** – potential human health impacts (other than respiratory and carcinogenic effects) from releases of chemicals that are toxic to humans. There are many chemical and heavy metal pollutants that are toxic to

humans, including 2,4-D, benzene, DDT, formaldehyde, permethrin, toluene, chromium, copper, lead, mercury, silver, and zinc. The reference substance for human toxicity potential used in MEBCalc is toluene, T.

- ***Human Disease and Death from Carcinogens*** – potential human health impacts from releases of chemicals that are carcinogenic to humans. Many chemical and heavy metal pollutants are carcinogenic to humans, including 2,4-D, benzene, dichlorodiphenyltrichloroethane (the pesticide commonly known as DDT), formaldehyde, kepone, permethrin, chromium, and lead. The reference substance for human carcinogenic potential used in MEBCalc is benzene, B.
- ***Eutrophication*** – potential environmental impacts from addition of mineral nutrients to the soil or water resulting from emissions of eutrophying pollutants to air, soil or water. The addition to soil or water of mineral nutrients, such as nitrogen and phosphorous, can yield generally undesirable shifts in the number of species in ecosystems and a reduction in ecological diversity. In water, nutrient additions tend to increase algae growth, which can lead to reductions in oxygen and death of fish and other species. The reference substance for waterways eutrophication potential is nitrogen, N.
- ***Acidification*** – potential environmental impacts from anthropogenic releases of acidifying compounds, principally from fossil fuel and biomass combustion, which affect trees, soil, buildings, animals and humans. The main pollutants involved in acidification are sulfur, nitrogen and hydrogen compounds – e.g., sulfur oxides, sulfuric acid, nitrogen oxides, hydrochloric acid, and ammonia. The reference substance for acidification potential is sulfur dioxide, SO_2.
- ***Aquatic Ecosystems Toxicity*** – the relative potential for chemicals released into the environment to harm aquatic ecosystems, including wildlife. There are many chemical and heavy metal pollutants that are toxic to aquatic ecosystems, including 2,4-Dichlorophenoxyacetic acid (an herbicide commonly referred to as 2,4-D), benzene, DDT, ethyl benzene, formaldehyde, kepone, permethrin, toluene, chromium, copper, lead, silver, and zinc. The reference substance for aquatic ecotoxicity potential used in MEBCalc is 2,4-D.
- ***Ozone Depletion*** – the relative potential for chemical compounds released into the atmosphere to cause degradation of the Earth's ozone layer. The reference substance for ozone depletion potential (ODP) is trichlorofluoromethane, CFC-11, where CFC is the acronym for chlorofluorocarbon. CFC-11 is sometimes called R-11, and is also called carbon tetrachloride.
- ***Ground Level Smog Formation*** – the relative potential for chemical compounds released into the atmosphere to react with sunlight, heat and fine particles to form ozone (O_3). For example, nitrogen oxides (NO_x) and volatile organic compounds (VOCs) released during fuel combustion are some of the chemical compounds that

contribute to ground level smog formation. The reference substance for smog formation is ozone, O_3.[1]

MEBCalc uses estimates of pollutant releases associated with waste collections, processing, disposal and diversion to recycling and/or composting, as well as pollution releases from manufacturing products from diverted waste materials versus the same products manufactured from virgin raw materials extracted from Earth's ecosystems. Based on these pollution release profiles, MEBCalc calculates quantitative estimates for the nine environmental impacts.

MEBCalc relies on the U.S. Environmental Protection Agency's TRACI (Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts) to provide characterization factors for pollutants that cause each of these nine environmental impacts.[2] Readers are probably familiar with characterization factors for the climate change impact of GHGs. Each GHG release is multiplied by its global warming potential (GWP) relative to carbon dioxide. These GWPs are the TRACI characterization factors for the GHGs causing climate change. A GWP weight converts each GHG's emissions into a carbon dioxide equivalent (CO_2e or eCO_2). This allows total GHG pollutant emissions to be characterized by a single number -- their carbon dioxide equivalent emissions amount.

In addition to climate change, TRACI codifies characterization factors for each of 3,944 chemical and other environmental pollutants for each of the other eight environmental impacts evaluated by MEBCalc. Like the GWPs for climate change, characterization factors for the other environmental impacts are based on scientific research and consensus on the impact severity of each pollutant relative to the reference substance for each of these other eight environmental impacts.

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[1] Genesis, Methodology & Sources for MEBCalc, available via email by request to info@srmginc.com.

[2] Jane C. Bare, *Developing a Consistent Decision-Making Framework by Using the U.S. EPA's TRACI,* U.S. Environmental Protection Agency, Cincinnati, OH, 2002; Jane C. Bare, Gregory A. Norris, David W. Pennington and Thomas McKone, TRACI: The Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts. *Journal of Industrial Ecology* 2003, 6(3-4): 49-78; and Jane C. Bare, TRACI 2.0: the tool for the reduction and assessment of chemical and other environmental Impacts 2.0. *Clean Technologies and Environmental Policy*, 2011, 13(5) 687-696, provide expositions on the original and more recent versions of the TRACI model.

Finally, MEBCalc estimates the economic value or cost of decreases or increases in each of the nine environmental impacts. The latest cost estimates for pollutant releases amounting to one metric ton (MT) for each environmental impact are (in 2020 Canadian dollars)[3]:

- Climate Change -- $289 per MT eCO_2.
- Human Health Respiratory Effects -- $824,336 per MT $ePM_{2.5}$.
- Human Health Non-Carcinogenic Effects -- $466 per MT eT.
- Human Health Carcinogenic Effects – $3,328 per MT eB.
- Waterways Eutrophication -- $33,901 per MT eN.
- Acidification -- $559 per MT SO_2.
- Aquatic Ecosystems Toxicity -- $5,681 per MT 2,4-D.
- Ozone Layer Depletion -- $77,246 per MT CFC-11.
- Ground Level Smog Formation -- $332 per MT O_3.

The following three sections discuss results for disposal and diversion tonnage changes associated with the switch to EOW curbside garbage collection in the Niagara Region, the environmental benefits (or costs) of those collection tonnage changes, and the monetized value of all nine environmental impact benefits resulting from EOW garbage collection.

III. Tonnage Impacts of EOW Garbage Collections and Self-Hauling to Depots

Curbside Collection Impacts

Tables 1 and 2 show annual curbside garbage, recycling and organics (including leaf and yard wastes) collection quantities for the Niagara region for October 26, 2020, thru October 22, 2021. These are the second through 53rd weeks of curbside EOW garbage collection. The first week of EOW implementation (the week of October 19, 2020) is not included because half of curbside garbage customers received garbage collection the previous week. As a result, their garbage generation for collection in that first week is lower than normal for EOW collection frequency.

[3] Morris, J., *Economic Damage Costs for Nine Human Health and Environmental Impacts*, Prepared by SRMG for Oregon Department of Environmental Quality and Oregon Metro, Portland, OR, July 2020. Available via email by request to info@srmginc.com.

Tables 1 and 2 also show collection quantities for the 52 weeks preceding October 19, 2020. Comparisons between these two sets of annual curbside collection data provides one basis for evaluating diversion and disposal tonnage impacts of EOW curbside garbage collection. According to the data reported in Table 1, total curbside waste generation during the two years is very similar at 151,667 MTs for the EOW analysis year and 152,231 for the pre-EOW year. Total curbside waste generation decreased by 564 MTs, or 0.4%, following EOW implementation.

Table 1 Disposal Reductions and Diversion Increases for the First Year of EOW Curbside Garbage Collection

Material Stream	**Annual Tonnes EOW**	**Annual Tonnes Pre-EOW**	**Difference**	**Per Cent Increase or Decrease**
Garbage	64,364	75,640	-11,275	-14.9%
Recycling	40,140	37,162	2,977	8.0%
Organics (including leaf and yard waste)	47,162	39,429	7,734	19.6%

Table 2 Disposal Reductions and Diversion Increases for First Year of EOW Curbside Garbage Collection Adjusted for Processing Residues

Material Stream	**Annual Tonnes EOW**	**Annual Tonnes Pre-EOW**	**Difference**	**Per Cent Increase or Decrease**
Garbage	70,238	80,939	-10,701	-13.2%
Recycling	35,809	33,153	2,656	8.0%
Organics (including leaf and yard waste)	45,620	38,140	7,481	19.6%

Annual EOW quantities include weeks two thru 53 following EOW implementation October 19, 2020, to adjust for the fact that half of EOW collection entities received garbage collection the week prior to EOW week 1.

The 564 MT decrease in total curbside waste generation following curbside EOW garbage collection implementation, as well as disposal decreases and diversion increases, may have been influenced by drivers other than just the decrease in garbage collection frequency. For example:

- Weather patterns -- precipitation in the Region during the first nine months of 2021 was up 19%, with most of that increase occurring during July thru September. This would tend to increase post-EOW waste generation due to increases in plant and turfgrass growth.
- COVID-19 pandemic effects. Some of the effects of the pandemic included business shutdowns, more employees working at home, increased online purchasing and home meal preparation with associated decreases of in-store shopping and meals at restaurants and fast-food outlets, and increased purchases of durable goods and reduced purchases of services. Whether these effects tended to increase or decrease pre-EOW versus post-EOW waste generation is not known.
- Economic activity levels. The aggregate demand effects from shutdowns and lockdowns of 2020 versus pent-up demand surges of mid-2021 also had unknown impacts on pre- and post-EOW curbside waste generation.
- Population growth. This driver would tend to increase waste generation post-EOW.

More important, and certainly of much greater magnitude, than the 0.4% decrease in curbside customer overall waste generation post-EOW is the rather dramatic shift in garbage and diversion quantity proportions of total waste generation following EOW curbside garbage collection implementation. As indicated in Table 1, the first full year of EOW curbside garbage collection effects differs from the last year of weekly curbside garbage collection, as follows:

- 11,275 MT lower garbage, a 7.3 percentage points lower proportion of waste generation going to garbage collection,
- 7,734 MT additional organics collections (including leaf & yard wastes), a 5.2 percentage points higher organics collection proportion, and,
- 2,977 MT additional recycling, a 2.1 percentage point higher recycling collection proportion.
- Pre-EOW garbage collections accounted for 49.7% of total annual curbside waste generation, organics collections 25.9%, and recycling collections made up 24.4% of total waste collected curbside in the Niagara Region. By contrast, following EOW curbside garbage collections implementation, garbage accounted for 42.4% of curbside waste generation, organics collections 31.1%, and recycling collections 26.5% of curbside collected wastes.

In other words, instead of following the waste generation disposal and diversion proportions associated with the final year of weekly curbside garbage collections, EOW curbside garbage customers in 2020-2021 lowered garbage collection by 11,275 MTs, a 14.9% reduction. This was accomplished by increasing organics collection by 19.6%

and recycling 8.0%. The diversion rate based on collections, thus, went up to 57.6 % for EOW curbside garbage collection versus 50.3% for weekly garbage, a 7.3 percentage point diversion rate increase.

Yet, this is not quite the end of the story for disposal and diversion tonnage changes associated with the switch to EOW curbside garbage collection. Customers for curbside collections may place non-recyclable materials in their recycling containers or include non-compostable materials in their set outs for organics or leaf & yard waste collections. Material recovery facilities for collected recyclables and composting facilities for organics and leaf & yard wastes have to sort out and dispose of these non-acceptable materials. In addition, sorting of the acceptable commingled collected recyclable or compostable materials into separate material types for marketing by material recovery and composting facilities is itself not typically 100% efficient and accurate.

Niagara Region staff provided estimates for the year 2020 of disposal residues from processing recyclables, organics, and leaf & yard waste materials collected from single-family residential customers. According to these data 10.79% of materials collected for curbside recycling end up in material recovery facility processing residues for disposal. The similar estimate for organics and leaf & yard waste composting facility processing residue disposal amounts to 3.27% of collection tonnages for composting.[4]

Table 2 reflects tonnage adjustments to account for processing residues. Taking into account processing residues that end up as garbage, the first full year of EOW curbside garbage collection differs from the last year of weekly curbside garbage collection, as follows:

- 10,701 MT less garbage, a 6.9 percentage points lower proportion of waste generation going to garbage disposal,
- 7,481 MT additional organics diverted (including leaf & yard wastes), a 5.0 percentage points higher organics diversion generation, and,
- 2,656 MT additional recycling, a 1.9 percentage point increase in recycling diversion.

[4] There are multi-family apartment building households and IC&I customers using curbside collections. We assume that single-family processing residue estimates for 2020 are reasonable numbers to use for recycling and organics processing residues for collection quantities from multi-family and IC&I curbside collection customers. Because single-family customers account for most curbside collection customers, any differences in processing residues for these two categories of customers hopefully do not substantially change the overall weighted average processing residue rates for collected recyclables or organics.

- Pre-EOW garbage collections accounted for 53.2% of total annual curbside customers' waste generation, organics generation 25.0%, and recyclables generation made up 21.8% of total waste collected curbside in the Niagara Region. By contrast, following EOW curbside garbage collections implementation, garbage accounted for 46.3% of curbside customers' waste generation, organics generation 30.1%, and recycling generation amounted to 23.6% of curbside collected wastes.

In other words, instead of following the waste generation disposal and diversion proportions associated with the final year of weekly curbside garbage collections, EOW curbside garbage customers in 2020-2021 lowered garbage generation by 10,701 MTs, a 13.2% reduction. This was accomplished by increasing organics diversion by 19.6% and recycling diversion 8.0%. The diversion rate based on materials actually recycled or composted, thus, went up to 53.7% for EOW curbside garbage collection versus 46.8% for weekly garbage, an increase in the disposal diversion rate for organics and recyclables of 6.9 percentage points. Recyclable materials collected, processed, and sold to recycled-content product manufacturing markets increased by 2,656 MT as a result of EOW curbside garbage implementation. Organics materials composted increased by 7,481 MT.

Curbside plus Self-Haul Disposal and Diversion Impacts

Because residential households and industrial, commercial and institutional (ICI) entities can self-haul their wastes to depots as well as having them collected curbside, SRMG also compared annual totals for pre-EOW and post-EOW years for curbside collections plus self-haul deliveries to depots for garbage, organics and recyclables. Table 3, Curbside & Self-Haul Disposal Reductions and Diversion Increases for First Year of EOW Curbside Garbage Collection, displays that comparison.

Table 3 shows annual curbside collection plus depot drop-off garbage, recycling and organics (including leaf and yard wastes and brush) collection quantities for the Niagara Region for October 26, 2020, thru October 22, 2021. These are the second through 53rd weeks of curbside EOW garbage collection. As explained regarding the data in Tables 1 and 2, the first week of EOW implementation (October 19, 2020) is not included in Table 3. Table 3 also shows curbside collection plus depot self-haul quantities for the 52 weeks preceding October 19, 2020.

Depot self-haul garbage and organics collection quantities included in Table 3 are adjusted for organics processing residues that go to garbage disposal rather than being processed into compost products. It is assumed that self-haul recycling materials do not

generate processing residues because they are source sorted for drop off into depot bins segregated for individually marketed recycled materials.

Table 3 Curbside and Self-Haul Disposal Reductions and Diversion Increases for First Year of EOW Curbside Garbage Collection

Material Stream	**Annual Tonnes EOW**	**Annual Tonnes Pre-EOW**	**Difference**	**Per Cent Increase or Decrease**
Garbage	111,702	117,128	-5,426	-4.6%
Recycling	37,349	34,549	2,800	8.1%
Organics (including leaf and yard waste)	59,948	51,005	8,944	17.5%

Annual EOW quantities include weeks 2 thru 53 following EOW implementation October 19, 2020, to adjust for the fact that half of EOW collection entities received garbage collection the week prior to EOW week 1.

Table 3 data combining curbside and depot tonnages adjusted for processing residues show a substantial 49% lower decrease for garbage disposal impacts of EOW garbage collection than Table 1 does for curbside alone. This is because annual self-haul garbage tonnage increased substantially by 5,275 MT following implementation of curbside EOW garbage collection. This suggests that some EOW curbside garbage collection households and ICI curbside garbage customers may have diverted some of their garbage to self-haul during the in-between weeks of their EOW curbside garbage collections. In doing so, they could also have brought along recyclables and/or organics for drop off at the same time. Table 2 displays increases in diversion to recycling and organics.

The mandatory switch to EOW from weekly curbside garbage collection in Niagara Region was not the only major occurrence during 2020-2021 that might be expected to have altered solid waste disposal and diversion behaviors. Other potential factors driving changes in curbside collection and depot drop off disposal and diversion quantities include:

- Responses to the worldwide COVID pandemic, such as school, business and institutional shutdowns, as well as travel restrictions that became widespread in spring 2020, continuing throughout the remainder of that year and into 2021.
- Employees shifting to working remotely at home during the same time period.

- The spring 2021 surge in economic activity from pent up demand and population relief at being able to get out and about once many thought the pandemic was tamed.

Whatever may have been the cause of collection versus self-haul delivery tonnage impact differences, one approach to estimating the impact of EOW curbside garbage collection would be to use the tonnage impacts shown in the two tables as lower and upper bounds. In other words, EOW curbside garbage collection annual impacts resulted in a disposal decrease (after accounting for disposal of processing contaminants and rejects) between 5,426 and 10,701 MT. The respective diversion increases were between 7,481 and 8,944 MTs of increased composting and between 2,656 and 2,800 MTs of increased sales of recycled materials to manufacturers of recycled content products.

The corresponding diversion increase falls somewhere in the interval between 4.4 and 6.9 percentage points as a result of the switch to EOW curbside garbage collection. The curbside diversion percentage for EOW is 53.7% versus 46.8% pre-EOW. Curbside plus depot diversion percentage is 46.6% versus 42.2% pre-EOW.

There is reason to suspect that the depot annual disposal and diversion increases for EOW versus pre-EOW are not all the result of curbside garbage customers flocking to drop-off depots in the weeks between their EOW garbage pickups. For one thing EOW curbside garbage customers did not have any change in their organics or leaf & yard waste collection frequencies or capabilities.

More importantly, the additional 5,275 MT going to landfill disposal from depot drop-off garbage increases during the first year of EOW most likely could not have come entirely from EOW curbside garbage collection customers. Even at the very high rate of 25 kilograms of garbage per trip self-hauled by EOW customers to a depot during off weeks for garbage collection, it would entail an additional 211,000 depot visits in total, or 4,060 per week, during the first year of EOW garbage collection by EOW curbside garbage collection customers in order to increase depot garbage quantities by 5,275 MT.

In fact, residential drop-off depot traffic counts increased by 56,000 trips post-EOW versus pre-EOW, only a little more than 25% of the 211,000 depot visits increment derived above. Thus, the disposal and diversion changes shown in Table 1 rather than those shown in Table 2 are likely to be closer to the true amount of disposal and diversion tonnage changes induced by the Niagara Region switch to EOW curbside garbage collection frequency. Nevertheless, due to the uncertain and unknown impacts

of other potential drivers of disposal and diversion tonnage changes post- versus pre-EOW, we report curbside plus depot, as well as curbside only, results throughout this report.

IV. Environmental Impacts of EOW Curbside Garbage Collection

Table 4: Estimated Pollution Decrease/(Increase) Associated with EOW Garbage Collection shows estimated pollution decreases or increases associated with implementation of EOW curbside garbage collection. Decreases in pollution during the first year of EOW curbside garbage collection versus pollution during the last year of weekly curbside garbage collection are displayed as positive numbers to emphasize the environmental benefit of less pollution.

Table 4 shows increased or decreased environmental benefits of diversion tonnage changes for EOW garbage collection customers alone, as well as for curbside customers plus depot disposal and diversion tonnage changes, during the first year of EOW curbside garbage collection in the Niagara Region[5]. Some households and ICI entities using curbside garbage collection may have increased self-hauling of garbage, as well as recyclables and organics, to depots during the in-between weeks for their garbage collection. Unfortunately, the depot tonnage data do not identify whether a depot drop-off customer is a curbside garbage collection customer. Hence, the depot tonnage changes for the first EOW year versus the last weekly curbside garbage collection year likely overestimate, perhaps substantially, any increased use of depot drop-off facilities for disposal or diversion by curbside garbage collection customers. Nevertheless, curbside plus depot tonnage changes for the EOW first year versus the weekly last year are provided in Table 4 to indicate the potential low end for pollution benefits of EOW garbage collection.

[5] The 564 MT decrease in total curbside waste generation during the first complete post-EOW year is not included as a benefit of EOW implementation in our evaluation of the benefits of EOW compared to weekly curbside garbage collection. The additional depot garbage disposal tonnage post-EOW is counted as a decrease in environmental benefits for the curbside plus depot calculation of environmental benefits for EOW curbside garbage collection. These two methodological assumptions provide a conservative basis for both high and low estimates for the environmental benefits of EOW garbage collection.

Table 4 Estimated Pollution Decrease/Increase Associated with EOW Garbage Collection

Pollution Environmental Impact	**Pollution Indicator Substance**	**Pollution Decrease/(Increase) (MT indicator Substance) - Curbside Only**	**Pollution Decrease/(Increase) (MT indicator Substance) - Curbside and Depot**
Climate Change	eCO_2	18,413.92	10,725.08
Human Health - Respiratory	$ePM_{2.5}$	4.73	1.14
Human Health – Non-Carcinogenic	eT	1,366.97	(1,514.32)
Human Health – Carcinogenic	eB	8.39	(10.84)
Eutrophication	eN	93.39	56.56
Acidification	eSO_2	29.88	(8.48)
Ecosystems Toxicity	e2,4-D	0.04	(0.17)
Ozone Depletion	eCFC-11	0.05	0.03
Smog Formation	eO_3	348.67	(142.89)

The pollutant decreases or increases for each of the nine environmental impacts are measured in terms of the indicator substance for each impact. For example, for climate change curbside only diversion tonnage increases reduced climate impacts by 18,413.9 MT eCO_2. However, for curbside plus depot disposal and diversion tonnage changes, the additional depot disposal offset the additional depot diversions, decreasing climate benefits to 10,725.1 MT eCO_2.

Table 4 also shows that the absolute quantity of pollution decreases or increases measured in terms of each environmental impact's indicator substance vary dramatically among the nine environmental impacts. Curbside EOW pollution decreases range from 18,413.9 MT eCO_2 for climate change down to less than a tenth MT e2,4-D for aquatic ecosystems toxicity reductions and eCFC-11 for ozone depletion impact reductions. These quantitative disparities present challenges for decision makers who may need to somehow compare and prioritize these environmental impact reductions.

Section V details the monetization method for comparing impact reductions. Figure 1 in this section introduces that method's economic valuations for GHG reductions along with its display of estimated GHG reduction quantities associated with EOW curbside garbage collection.

Figure 1 GHG Reductions and Environmental Economic Value (EEV) per MT Material Diverted Curbside

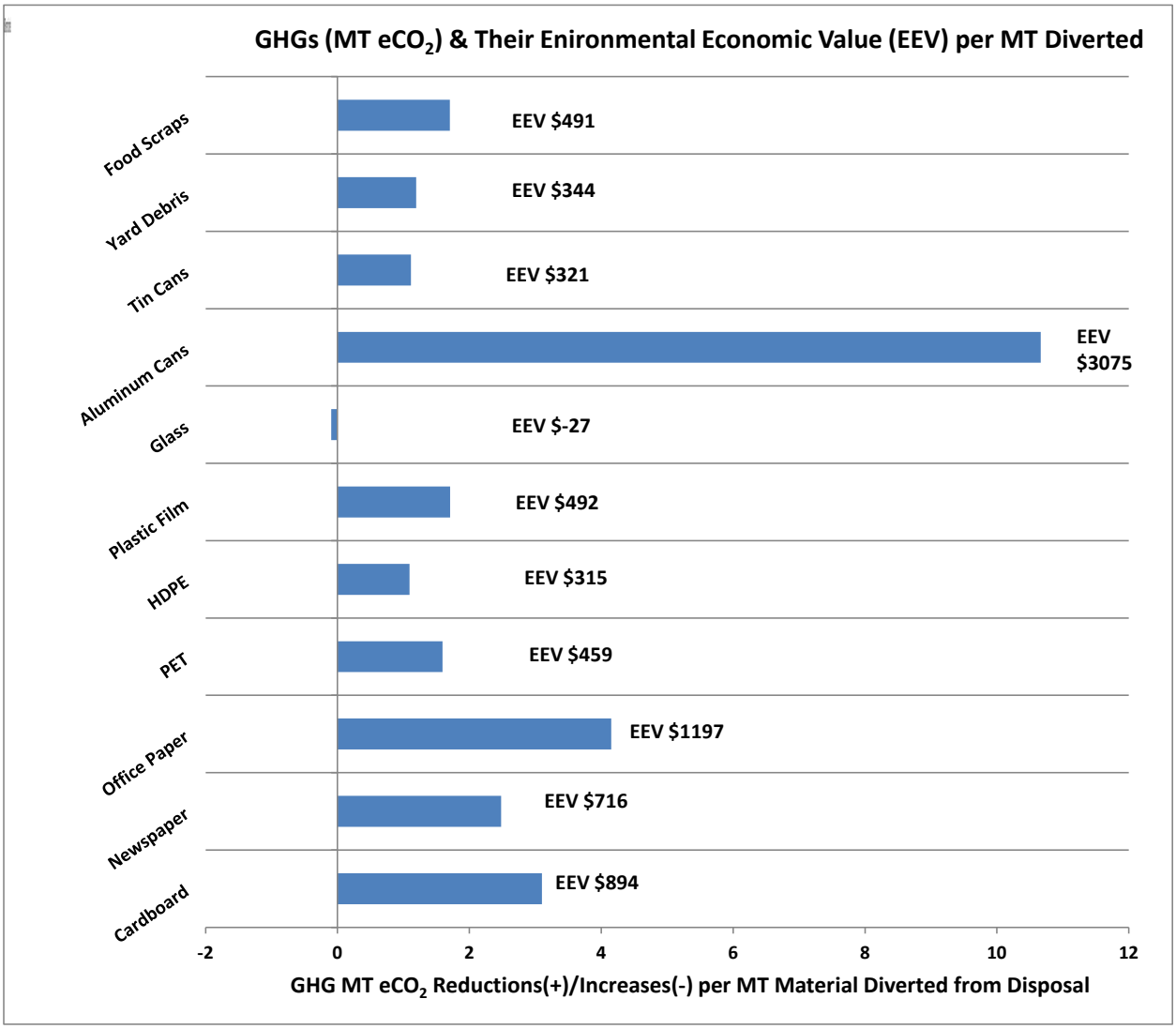


Figure 1: GHGs Reductions & Environmental Economic Value (EEV) per MT Material Diverted Curbside displays in bar graph format the GHG reductions per MT for materials collected in curbside recycling when those materials are diverted from disposal. Reductions due to recycling are shown on Figure 1 as positive numbers to emphasize the environmental benefits of diverting materials from disposal to recovery for use in manufacturing recycled-content products or composting into soil amendments.

Figure 1 text to the right of the graph's blue bars give the environmental benefit valuation for GHG changes for the different materials whose diversion was increased during the first year of EOW curbside garbage collection. For example, as indicated in Figure 1, diverting aluminum reduces climate impacting GHG emissions more than 2.5

times as much as diverting a metric ton of any of the other materials collected curbside for diversion. The GHG reductions from recycling a metric ton of aluminum have an environmental economic value (EEV) of $3,075 per MT recycled.

Diversion of paper fiber ranks second in EEV. Food scraps, plastic film and PET rank third in terms of climate impact reductions and EEV per MT. Yard debris and HDPE come next. Glass containers diverted for use as construction aggregates rank last and slightly increase GHGs versus landfill disposal.

V. Comparison of Economic Benefits for Each Environmental Impact Pollution Reduction

It is apparent from the pollution decrease or increase estimates shown on Table 4 that the nine different environmental impacts have vastly different absolute levels of pollution reduction as measured by each impact's pollution indicator substance. This is in part due to the different scale of emissions measured by each impact's reference substance. Tables 5 and 6 show the environmental economic value for decreases in pollution emissions for each of the nine public health and environmental impact categories.

Table 5 Economic Value of Pollution Decreases Due to EOW Curbside Garbage Collection

Environmental Impact	**Pollution Indicator Substance**	**Midpoint Economic Cost of Pollution per MT (CDN $)**	**Curbside Only - Pollution Decreases**	**Curbside Only - Value of Decreases (CDN $)**	**Curbside Only – Per Cent of Total Benefit**
Climate Change	eCO_2	$288.35	18,413.92	$5,309,772	40.3%
Human Health - Respiratory	$ePM_{2.5}$	$824,335.45	4.73	$3,902,718	29.6%
Human Health – Non-Carcinogenic	eT	$465.81	1,366.97	$636,746	4.8%
Human Health – Carcinogenic	eB	$3,328.67	8.39	$27,913	0.2%
Eutrophication	eN	$33,900.36	93.39	$3,165,898	24.0%
Acidification	eSO_2	$558.97	29.88	$16,701	0.1%
Ecosystems Toxicity	e2,4-D	$5,681.36	0.04	$250	<0.1%
Ozone Depletion	eCFC-11	$77,246.25	0.05	$3,611	<0.1%

Environmental Impact	Pollution Indicator Substance	Midpoint Economic Cost of Pollution per MT (CDN $)	Curbside Only - Pollution Decreases	Curbside Only - Value of Decreases (CDN $)	Curbside Only – Per Cent of Total Benefit
Smog Formation	eO_3	$332.05	348.67	$116,010	0.9%
Overall Total Benefit	N/A	N/A	N/A	**$13,179,620**	**100.0%**

Table 6 Economic Value of Pollution Decreases Due to EOW Curbside and Depot Garbage Collection

Environmental Impact	Pollution Indicator Substance	Midpoint Economic Cost of Pollution per MT (CDN $)	Curbside and Depot - Pollution Decreases	Curbside and Depot - Value of Decreases (CDN $)	Curbside and Depot – Per Cent of Total Benefit
Climate Change	eCO_2	$288.35	10,725.08	$3,092,645	59.9%
Human Health - Respiratory	$ePM_{2.5}$	$824,335.45	1.14	$943,350	18.3%
Human Health – Non-Carcinogenic	eT	$465.81	-1,514.32	-$705,378	-13.7%
Human Health – Carcinogenic	eB	$3,328.67	-10.84	-$36,067	-0.7%
Eutrophication	eN	$33,900.36	56.56	$1,917,294	37.2%
Acidification	eSO_2	$558.97	-8.48	-$4,743	-0.1%
Ecosystems Toxicity	e2,4-D	$5,681.36	-0.17	-$968	>0.1%
Ozone Depletion	eCFC-11	$77,246.25	0.03	$2,051	<0.1%
Smog Formation	eO_3	$332.05	-142.89	-$47,543	-0.9%
Overall Total Benefit	N/A	N/A	N/A	**$5,160,641**	**100.0%**

Pollution environmental costs for each environmental impact are based on a recent study and literature review by SRMG for the Oregon Department of Environmental Quality and Oregon Metro. That study developed low and high estimates for the human health and environmental costs incurred from emissions of the indicator substances for each of the nine environmental impacts. For this report, the midpoint of these Oregon

study ranges in 2019 U.S. dollars was converted to 2020 Canadian dollars. These midpoints for the environmental economic cost of releases of each indicator pollutant is listed in the introduction to this report and also shown in Tables 5 and 6.

As indicated in Tables 5 and 6 the value of annual pollution decreases caused by landfill disposal decreases and diversion increases associated with the switch to EOW curbside garbage collection in the Niagara Region is between $5.2 million and $13.2 million. This is quite a wide range. The lower end includes the environmental cost of an additional 5,275 MT going to landfill disposal due to depot drop-off garbage increases during the first year of EOW. As indicated previously in this report, much of the tonnage changes for depots may have little to do with increased use of depot drop-off facilities by curbside garbage collection customers during the first year of EOW garbage collection. The curbside only environmental valuation of $13.2 million, thus, may be a closer approximation to the environmental benefits induced by the switch to EOW curbside garbage.

Figure 2: Percentage Shares of Environmental Economic Value for EOW Curbside Garbage Collection Benefits provides a visualization for the distribution of total EOW environmental benefits among the nine environmental impacts. This distribution is also listed on Table 5.

Figure 2 Percentage Shares of Environmental Economic Value

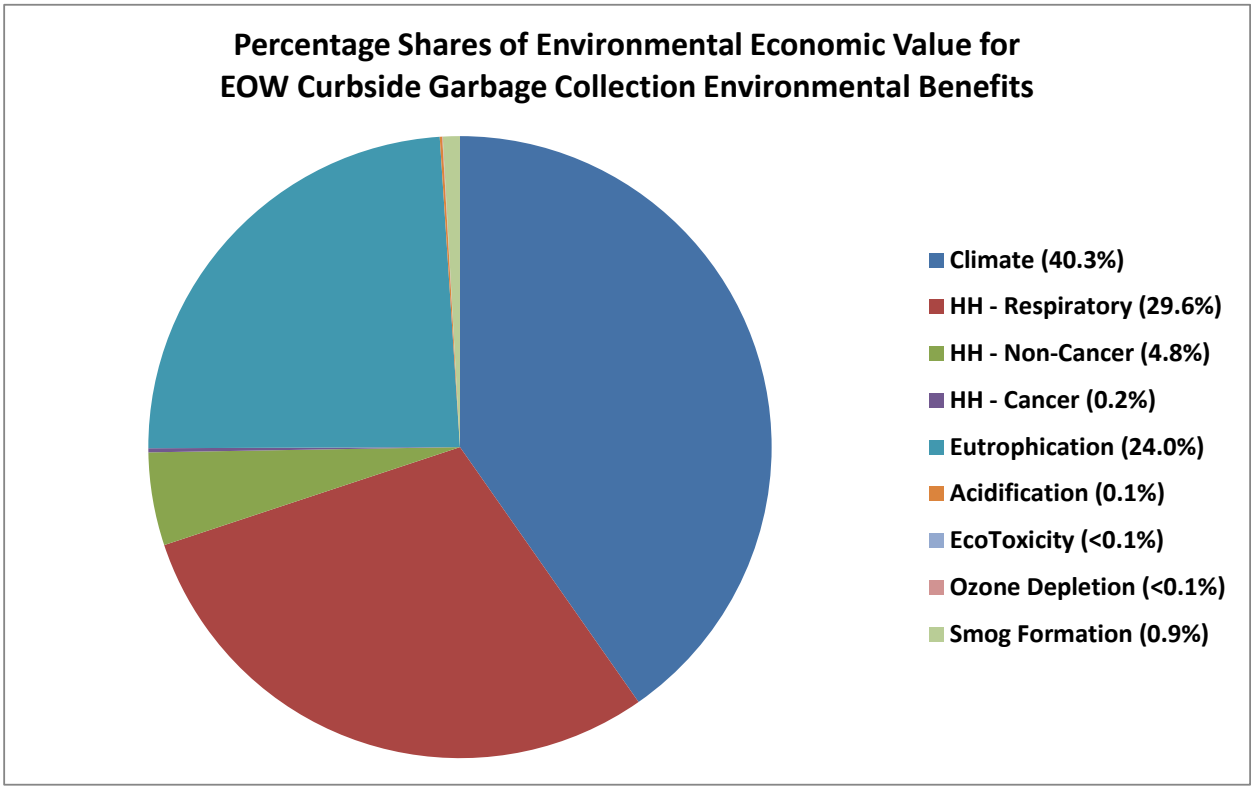


Figure 2 shows that climate benefits provide the largest total environmental economic value among the nine environmental impacts whose environmental economic value is assessed by MEBCalc. Climate changing GHG reductions induced by EOW curbside garbage collection have an economic value of $5.3 million, 40.3% of the $13.2 curbside only benefits. Emissions decreases due to Niagara Region's switch to EOW curbside garbage collection in pollutants that cause respiratory diseases have the second highest environmental economic value at $3.9 million. This accounts for 29.6% of overall curbside waste disposal decrease and diversion increase benefits from EOW garbage collection. Reduced eutrophication of waterways is third at $3.2 million, accounting for 24.0% of monetized environmental benefits for EOW garbage collection. Reductions of non-carcinogenic toxics emissions amount to 4.8% of total environmental economic benefits.

EOW Garbage Collection Diversion Impact – Full Year Analysis

Waste Management Planning Steering Commitee

WMPSC-C 41-2021
December 13, 2021

Alison Powell,
Waste Management Business Support Analyst

Niagara Region

EOW Garbage Collection Impact – Full Year Analysis

Waste Management Planning Steering Committee

December 13, 2021

Niagara Region

Overview

1. One (1)-year update on the waste diversion impact resulting from the change to every other week (EOW) garbage collection;
2. Estimate of the environmental impacts of the changes in waste diversion; and
3. Estimate the economic value of the changes in environmental impacts.

Curbside Collected Tonnages

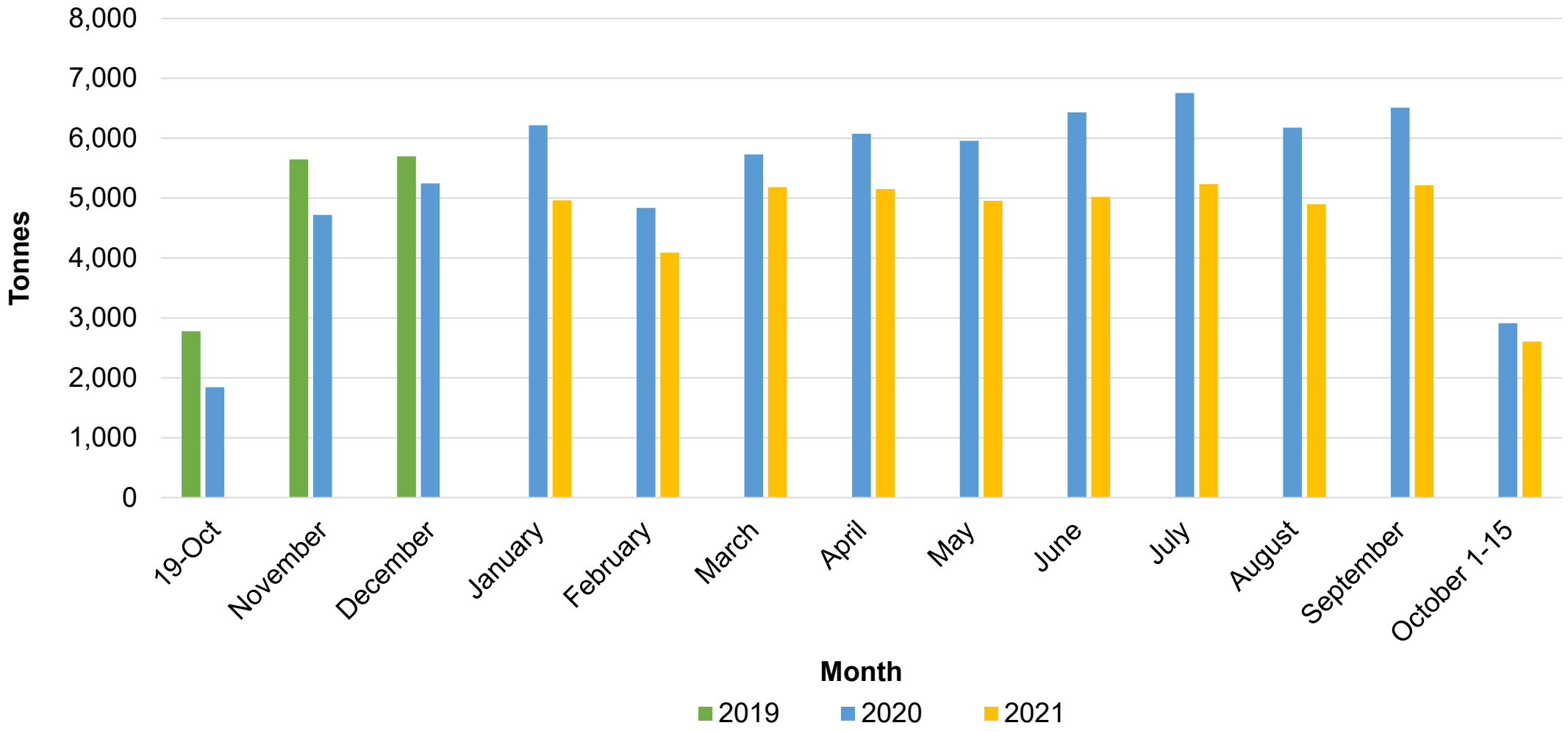
- Data pertains to all curbside collected waste from residential, multi-residential (not including front-end garbage enhanced collection), institutional, industrial and commercial properties throughout Niagara region, including those inside designated business areas (DBAs).
- Data references two time periods:
  - Before EOW – October 21, 2019 through October 16, 2020
  - After EOW – October 19, 2020 through October 15, 2021

Curbside Collected Tonnages Con't

Material Stream	Before EOW (Tonnes)	After EOW (Tonnes)	Difference
Garbage	71,708	59,114	-17.6%
Organics	32,138	39,425	22.7%
Recycling	36,948	40,544	9.7%

Note: Organics does not include separate leaf and yard waste or brush collection.

Curbside Garbage Tonnages



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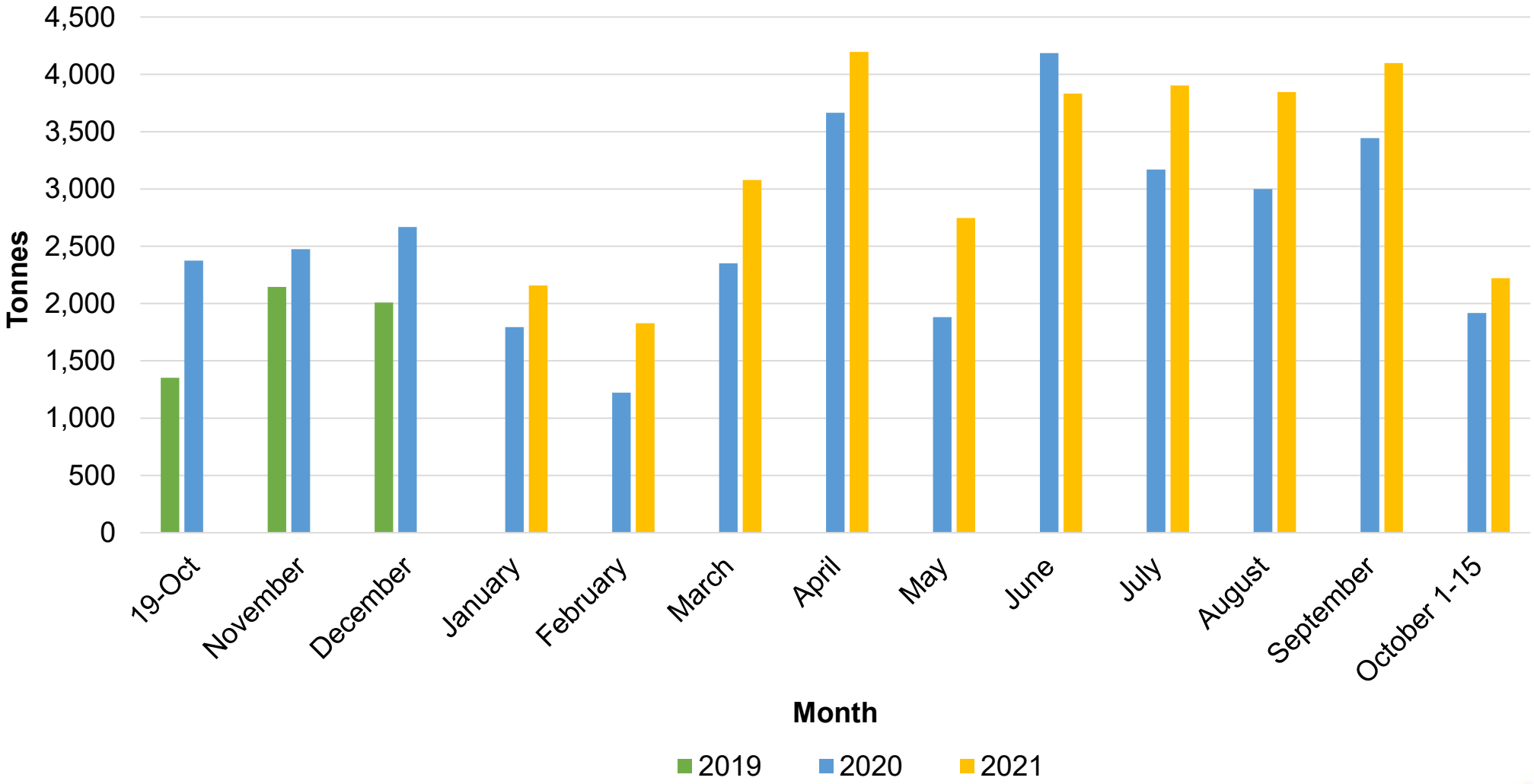
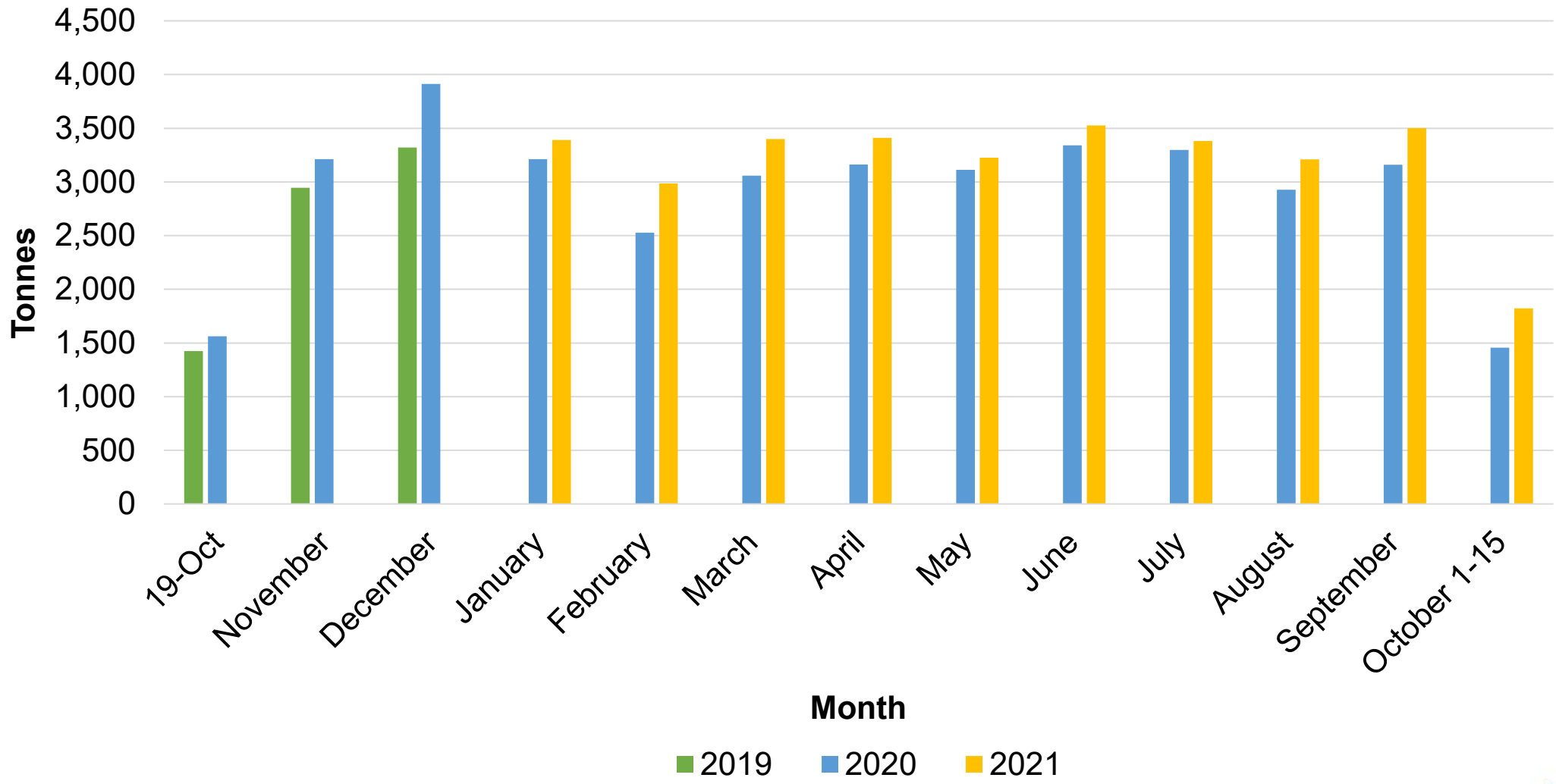
Curbside Organics Tonnages



Curbside Recycling Tonnages



Waste Diversion Analysis

- As part of the EOW garbage analysis, the Region completed a waste composition study and environmental benefits analysis to further review the impact of EOW garbage collection.
- The waste composition study results (WMPSC-C 34-2021) show the 2020-2021 four (4)-season average curbside waste diversion rate is 60 per cent, an increase of 14.3 percentage points from the 2015-2016 diversion rate of 45.7 per cent.

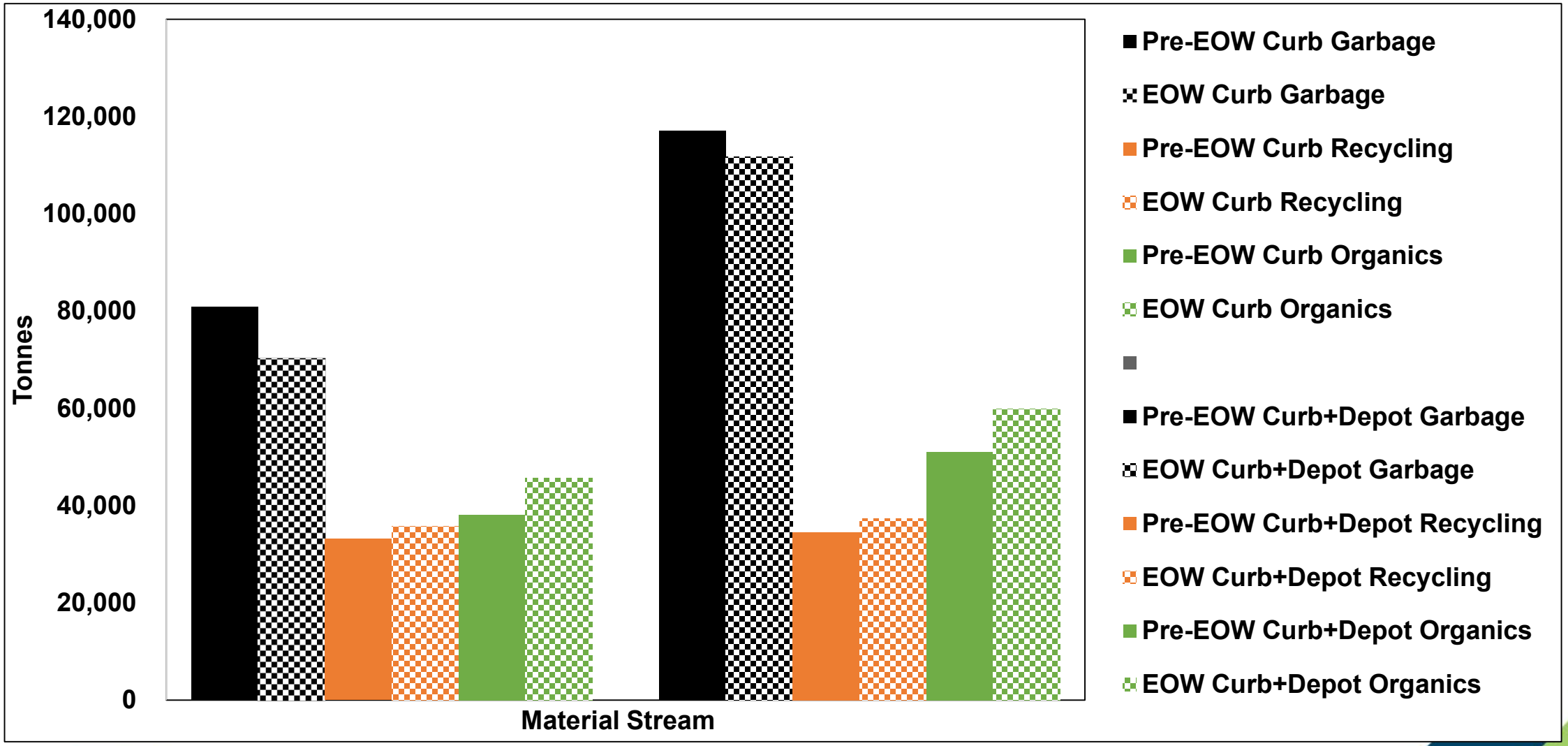
Environmental Benefits Analysis

- Niagara Region retained Sound Resource Management Group, Inc. (SRMG) to evaluate and quantify the environmental benefits over the first year following the Region's switch to EOW curbside garbage collection.
- The report completed by SRMG, can be found in Appendix 1 of WMPSC-C 41-2021.

Environmental Benefits Analysis - Details

- Compares tonnages for year prior to EOW implementation to tonnages for weeks 2 through 53 of EOW garbage collection to adjust for weekly garbage collection prior to EOW week 1.
- Organics tonnages include leaf & yard wastes and brush.
- Tonnages for recycling and organics are adjusted down to exclude contaminants in recycling and organics collections, as well as processing residues. Garbage tonnages are adjusted up to include these recycling and organics contaminants and processing residues.
- SRMG used its proprietary MEBCalc (measuring environmental benefits calculator) tool to estimate environmental impacts of changes in annual garbage, recycling and organics tonnages following implementation of EOW garbage collection.

Annual Curbside & Curbside + Depot Tonnes



Nine Environmental Impacts Assessed

- Climate Change from anthropogenic GHG emissions
- Human Health Respiratory disease and death from particulates
- Human Health Toxicity (other than from respiratory particulates or carcinogenic substances)
- Human Health Carcinogenicity from anthropogenic compounds
- Eutrophication of soil or water from anthropogenic mineral nutrients
- Acidification from anthropogenic acidifying compounds
- Stratospheric Ozone Depletion from anthropogenic compounds
- Ground Level Smog Formation from anthropogenic chemical releases

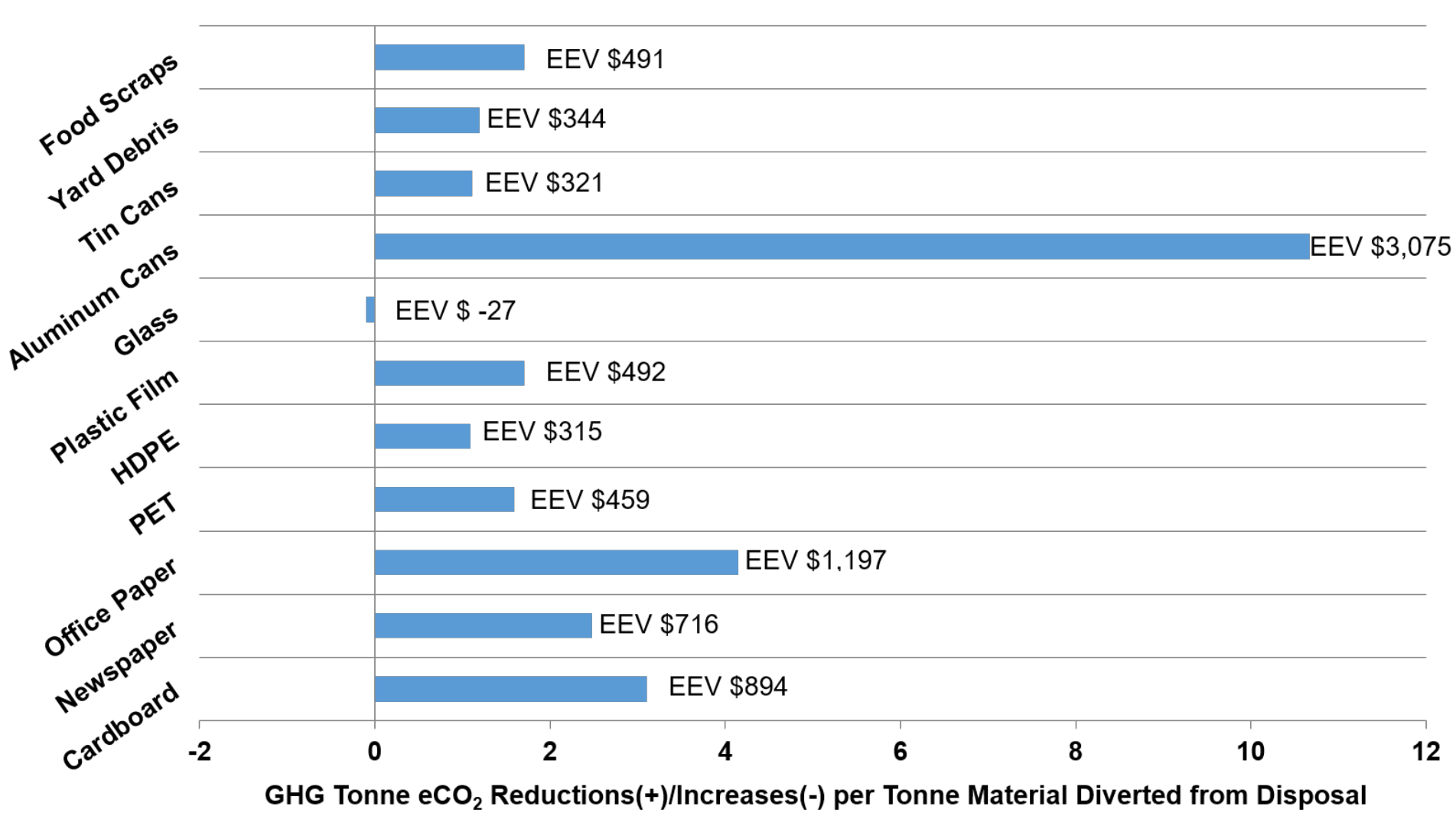
Annual EOW Environmental Pollution Benefits

Pollution Environmental Impact	Pollution Indicator Substance	Pollution Decrease/(Increase) (Tonne indicator Substance) - Curbside Only	Pollution Decrease/(Increase) (Tonne indicator Substance) - Curbside and Depot
Climate Change	eCO_2	18,413.92	10,725.08
Human Health - Respiratory	$ePM_{2.5}$	4.73	1.14
Human Health – Non-Carcinogenic	eT	1,366.97	(1,514.32)
Human Health – Carcinogenic	eB	8.39	(10.84)
Eutrophication	eN	93.39	56.56
Acidification	eSO_2	29.88	(8.48)
Ecosystems Toxicity	e2,4-D	0.04	(0.17)
Ozone Depletion	eCFC-11	0.05	0.03
Smog Formation	eO_3	348.67	(142.89)

Estimated Environmental Economic Value for Environmental Impact Reductions (2021 CDN$)

- Climate Change - $289 per tonne eCO_2
- Human Health Respiratory Effects - $824,336 per tonne $ePM_{2.5}$
- Human Health Toxicity Effects - $466 per tonne eT
- Human Health Carcinogenicity Effects - $3,328 per tonne eB
- Waterways Eutrophication - $33,901 per tonne eN
- Acidification - $559 per tonne SO_2
- Stratospheric Ozone Depletion - $77,246 per tonne CFC-11
- Ground Level Smog Formation - $332 per tonne O_3

GHG Reductions & EEVs for Diverted Materials



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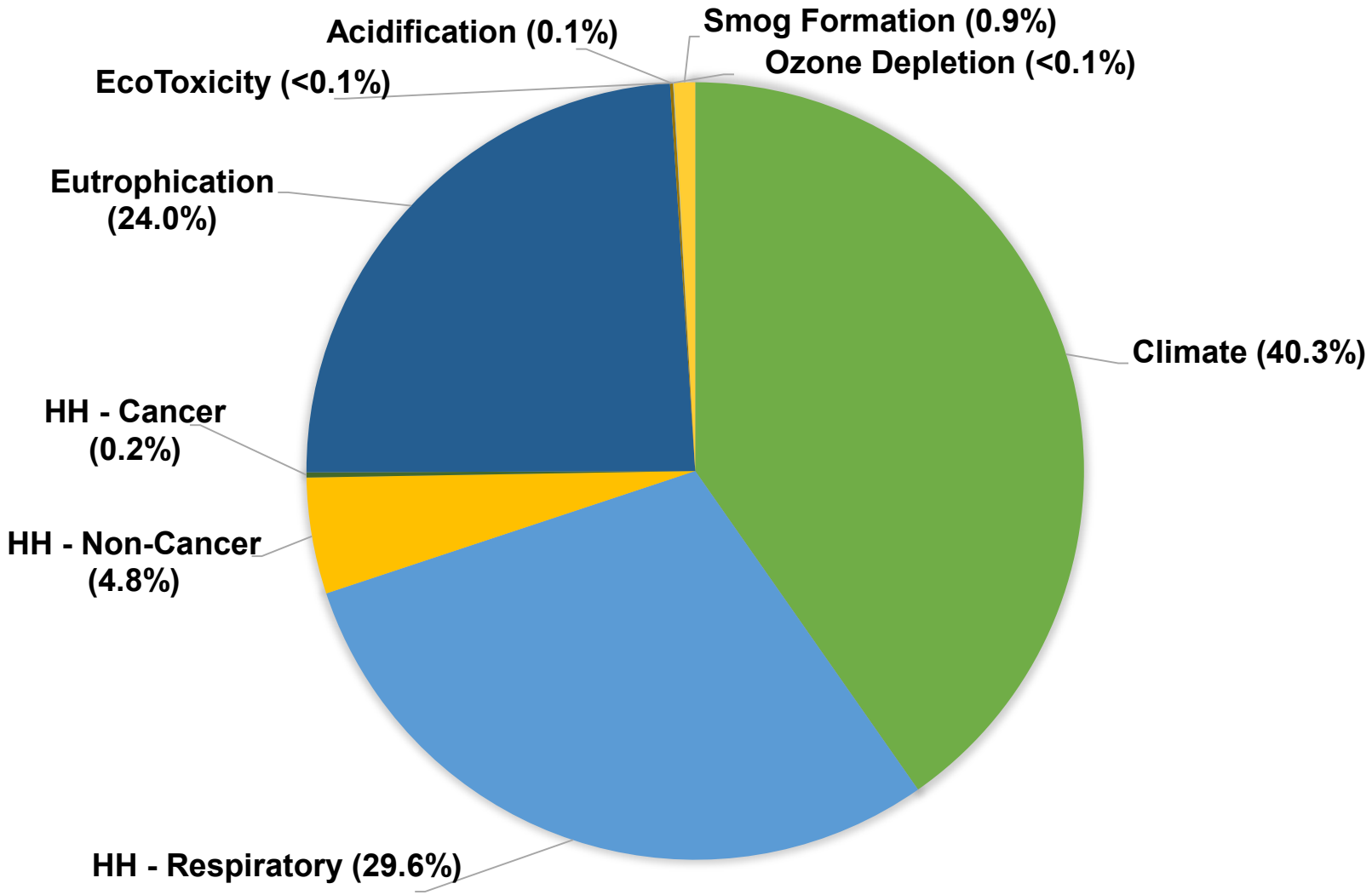
Environmental Economic Value (EEV) of EOW

Environmental Impact	Pollution Indicator Substance	Midpoint Economic Cost of Pollution per tonne (CDN $)	Curbside Only - Pollution Decreases	Curbside Only - Value of Decreases (CDN $)	Curbside Only – Per Cent of Total Benefit
Climate Change	eCO_2	$288.35	18,413.92	$5,309,772	40.3%
Human Health - Respiratory	$ePM_{2.5}$	$824,335.45	4.73	$3,902,718	29.6%
Human Health – Non-Carcinogenic	eT	$465.81	1,366.97	$636,746	4.8%
Human Health – Carcinogenic	eB	$3,328.67	8.39	$27,913	0.2%
Eutrophication	eN	$33,900.36	93.39	$3,165,898	24.0%
Acidification	eSO_2	$558.97	29.88	$16,701	0.1%
Ecosystems Toxicity	e2,4-D	$5,681.36	0.04	$250	<0.1%
Ozone Depletion	eCFC-11	$77,246.25	0.05	$3,611	<0.1%
Smog Formation	eO_3	$332.05	348.67	$116,010	0.9%
Overall Total Benefit	N/A	N/A	N/A	$13,179,620	100.0%

Environmental Impact Shares of Total EEV



Questions?

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Administration
Office of the Regional Clerk
1815 Sir Isaac Brock Way, PO Box 1042, Thorold, ON L2V 4T7
Telephone: 905-685-4225 Toll-free: 1-800-263-7215 Fax: 905-687-4977
www.niagararegion.ca

January 21, 2022

CL 2-2022, January 20, 2022
PEDC 1-2022, January 12, 2022
PDS 2-2022, January 12, 2022

LOCAL AREA MUNICIPALITIES

SENT ELECTRONICALLY

Niagara Official Plan: Proposed Draft for Consultation
PDS 2-2022

Regional Council, at its meeting held on January 20, 2022, passed the following recommendation of its Planning and Economic Development Committee:

That Report PDS 2-2022, dated January 12, 2022, respecting Niagara Official Plan: Proposed Draft for Consultation, **BE RECEIVED** for information, and **BE CIRCULATED** to the local area municipalities.

A copy of PDS 2-2022 is enclosed for your reference.

Yours truly,

Ann-Marie Norio
Regional Clerk
:cv

CLK-C 2022-008

cc:
M. Sergi, Commissioner, Planning and Development Services
N. Oakes, Executive Assistant, Planning and Development Services
D. Heyworth, Official Plan Policy Consultant

Subject: Niagara Official Plan: Proposed Draft for Consultation

Report to: Planning and Economic Development Committee

Report date: Wednesday, January 12, 2022

Recommendations

1. That Report PDS 2-2022, **BE RECEIVED** for information regarding the proposed draft consolidated Niagara Official Plan for consultation.
2. That the draft Niagara Official Plan **BE CIRCULATED** to the area municipalities.

Key Facts

- The purpose of this report is to inform Council that a draft consolidated Niagara Official Plan (NOP) has been made available on the website for public and agency review and comment.
- This report outlines the contents of the NOP including resource, regional structure, transportation, infrastructure, and climate action policies. In addition, it highlights ongoing consultation, including open house webinars in January.
- The Natural Environment System (NES) mapping was made available online for public, local municipalities and agencies to comment on in early January. The NES policies and mapping have been included in the draft NOP. Adjustments will be made as necessary.
- Comments on the proposed settlement area boundary expansion areas are requested by February 7th, 2022. The draft settlement area boundary expansions have been included in the draft NOP and adjustments will be made as necessary.
- The statutory public meeting for the NOP will be scheduled in early Spring.
- Following the public meeting and input received, a final version of the NOP will be brought to Council for consideration. The deadline for submitting the Regional Official Plan to the Province is July 1, 2022.

Financial Considerations

There are no financial considerations directly related to this report. Council approved the resources to complete the Niagara Official Plan (“NOP”) over a five year period as part of the 2017 Budget Process.

The growth forecasts associated with the NOP inform the Niagara 2051 initiatives, guiding updates to the Water and Wastewater Master Servicing Plan ("MSP"), Transportation Master Plan ("TMP") and Development Charges Study ("DCS"). These key master plans and studies identify growth related projects to be undertaken and identify related capital costs to ensure financial responsibility and accountability are appropriately placed and maintained.

Analysis

Proposed Consolidated Draft Niagara Official Plan

A draft consolidated NOP has been prepared and made available for formal public and agency circulation, which can be viewed by accessing:

New Niagara Official Plan Website (https://www.niagararegion.ca/official-plan/)

The draft NOP policies are built on the following Pillar Statements:

EXCEPTIONAL development and communities - Well planned, high quality development in appropriate locations that improves our communities, while protecting what is valuable.

DIVERSE housing types, jobs and population - A wide mix of housing types and employment opportunities that attract diverse populations to Niagara across all ages, incomes and backgrounds.

THRIVING agriculture and tourism - A prosperous agricultural industry and world-class tourism opportunities that grow our economy and elevate the Niagara experience.

RESILIENT urban and natural areas - Areas rich in biodiversity that mitigate and adapt to climate change while strengthening Niagara's ability to recover from extreme weather events.

Taking the Pillar Statements, consultation, and background work to date in to account, the NOP aims to:

- address provincial policy conformity, matters of Regional interest and provide policy support to the local municipalities;
- guide planning at a Regional level while assisting local municipalities with managing growth pressures including policies that support the protection of established neighbourhoods and varying intensification rates across municipalities;

- prioritize climate change throughout the Plan to achieve sustainable and resilient communities;
- improve mapping and policies to protect the natural features and water resources of the natural environment system;
- support a diverse range of housing types and sufficient housing supply to address affordability and market demand; and
- identify areas to protect for long term investment in employment uses.

The draft NOP incorporates revisions to draft policy sets previously released for comment. These draft policy sets included an Introduction, Growth Allocations and Land Needs, Regional Structure, Employment Areas, Housing, Transportation, Infrastructure, District and Secondary Plans, Urban Design, Agriculture, Aggregates, Source Water Protection, Excess Soils, Petroleum Resources and Performance Indicators and Monitoring. Policies and mapping for the NES were provided in December and have been incorporated into the draft NOP.

In addition to the above, the draft NOP also includes draft policies related to:

- climate change;
- watershed planning;
- Niagara Escarpment Plan;
- cultural heritage and archaeological resource;
- open space and trails;
- economic prosperity;
- site specific policy areas developed in consultation with local planning staff; and
- implementation which includes policies on consultation and First Nations engagement.

The settlement area boundaries shown on various schedules of the NOP incorporate the proposed changes outlined in Reports PDS 41-2021 and PDS 42-2021. The expansion areas subject to the SABR review are flagged on all Schedules as “draft for consultation”.

While the proposed draft consolidated NOP can be found at the above link, Appendix 1 provides the Table of Contents for the draft policy Chapters, Sections, Schedules, Glossary of Terms and Appendices.

Background

The NOP is a strategic long range planning document that sets the vision for the Region and guides how we will grow and develop over the next 30 years. The proposed plan preserves what's important, while permitting growth for a future generation of businesses and residents.

The requirements for an Official Plan are set out in the Planning Act. Additionally, the NOP must be consistent with the *Provincial Policy Statement (2020)*, conform with the Growth Plan, the Greenbelt Plan and not conflict with the Niagara Escarpment Plan. Decisions of Council and advice from staff must also meet these requirements. After Regional Council passes the NOP, it is sent to the Province for approval. There are no appeals to the Province's decision on the Official Plan.

Once the NOP is approved, local municipalities must undergo a local exercise to conform to the NOP by updating their local Official Plans. This process is to be guided by Provincial and Regional policy and is intended address local planning matters and circumstances. Local planning departments are already starting to plan for this undertaking.

The NOP will be monitored for what is and isn't working. The Region seeks to be flexible and adapt to changes when necessary. Policies will be reviewed at regular intervals to ensure Regional and local interests are aligned and that growth planning is monitored to determine if changes should be advanced.

Development of the NOP

The NOP work has been informed by several background studies/work including: land needs and growth allocations, housing strategy, regional structure, employment lands strategy, natural environment and watershed planning, climate change discussion paper.

The background work for the Official Plan was informed by significant amounts of consultation, including comments from the general public; stakeholder groups; local Councils; First Nations, Indigenous groups; local municipal planners; local planning workshops, and meetings with the Planning Advisory Committee.

Up to April 2021, the Planning and Economic Development Committee had been informed by 35 Administrative Reports on the Niagara Official Plan. These reports and

presentations provided updates on the work program, individual sections of the Plan, and consultation.

The Joint Consolidated May Report (PDS 17-2021) provided draft policies on numerous sections of the Official Plan highlighting the interconnectivity of policy. The draft policies were made available for review and comment. PDS 17-2021 included draft policies on growth allocations, regional structure, housing, transportation, infrastructure, district and secondary plans, urban design, agriculture and aggregates. The Report also provided updates on the development of the other policy sections of NOP.

Report PDS 32-2021, in August, provided an update on the NOP and draft policy on source water protection; excess soils; petroleum and mineral resources; and performance indicators and monitoring. In addition, Report PDS 33-2021, provided an update on revised land needs and Settlement Area Boundary Review to continue to move the growth management work forward.

In September, Report PDS 36-2021, outlined responses to consultation received on draft Niagara Official Plan (NOP) policies included in the Joint Consolidated Draft Report PDS 17-2021 and introduced a draft NOP Introduction Chapter for comment.

Report PDS 39-2021, in November, provided recommendations relative to Employment Area conversations. The recommendation to not support conversion requests was approved.

On December 1st the Committee of the Whole considered Report PDS 08-2021. The Report provided mapping and policy associated with options 3B and 3C for a Natural Environment System. The Committee selected Option 3C. The mapping and policies for Option 3C have been incorporated in to the proposed draft consolidated NOP for formal comment. Early in January, NES mapping will be available online for public comment and urban property owners notified.

On December 8th, the Planning and Economic Development Committee (PEDC) considered Reports PDS 41-2021 Settlement Area Boundary Review-Urban Recommendations and PDS 42-2021 Settlement Area Boundary Review-Rural Recommendations. Together these reports provide Regional Planning staff's proposed changes to settlement boundaries in urban areas and hamlets. The changes consist of expansions, boundary rationalizations and technical adjustments.

The proposed changes to the Settlement Area Boundaries were assessed using planning criteria that was presented in a report to PEDC/Regional Council in May 2021. The proposed boundary changes have been discussed with local planning departments. All property owners who submitted requests for expansions have been contacted, advised of the status of their expansion request and offered an opportunity to meet. Comments on the proposed expansion areas will be received up to February 7th, 2022. The expansion areas subject to the SABR review are flagged on all Schedules as “draft for consultation”.

The Path Forward To Adoption

There will be significant opportunities for input on the proposed consolidated draft Official Plan. Changes can be made. Notice will be provided to the public, stakeholders, those who have registered for notification, prescribed agencies, and indigenous groups.

The following schedule below identifies opportunities to provide input on the NOP:

1. 2022 Schedule

January

- a consolidated draft Niagara Official Plan has been made available for public and agency circulation in January
- a zoom open house will be held on settlement area boundary expansions –January 26, 2022

February

- an open house on the Natural Environment System will be held –February 10, 2022
- a zoom webinar will be held for owners of property in the urban area with newly mapped environmental features (non-provincially identified) to ask questions – February 17, 2022
- a zoom Open House will be held on the Niagara Official Plan – February 24, 2022

Niagara Official Plan Final Steps

- a formal statutory public meeting for the Niagara Official Plan will be held in early Spring.

- a report will be presented to PEDC/Council for adoption subject to the time required addressing final comments raised through consultation.
- the deadline for submitting the Regional Official Plan to the Province is July 1, 2022

In addition to the above, as indicated in Report PDS 36-2021, staff will contact property owners directly relative to the following:

- where lands will be changed by the Region from Rural to Agricultural unless the properties are already designated or zoned Rural; and,
- A Regionally identified feature in the Natural Environment System in the urban area.

In addition to the above, meetings have been established with Area Planners in January and February to assist with the review of the Chapters of the NOP. Meeting with agencies such as the Niagara Peninsula Conservation Authority and stakeholder groups will also take place.

Alternatives Reviewed

This report is for information purposes and there will be significant opportunities for further consultation.

There has been significant consultation at all stages of the development of the NOP.

There can be more than one good planning approach to achieve the policies and objectives set out in the NOP. Consultation to date has identified a variety of competing interests. The NOP works to strike a balance between these interests to ensure the social and economic health of our communities.

There will be further consultation on the proposed draft Official Plan and opportunity for revisions that are considered good planning and inconformity with provincial policy, during the process.

Relationship to Council Strategic Priorities

The Niagara Official Plan supports the following Council Strategic Priorities:

- **Supporting Business and Economic Growth:** Through long range planning for the supply and retention of a broad range of community and employment lands that

offer community related employment and industrial employment opportunities to attract and support economic wellbeing;

- **Healthy and Vibrant Community:** Through planning for safe, healthy neighbourhoods that are attractive, inclusive and connected, based on complete community principles and design;

- **Responsible Growth and Infrastructure Planning:** Through coordinated, efficient use of existing infrastructure and optimizing planned infrastructure that will service the communities of Niagara and facilitate movement of people and goods; and

- **Sustainable and Engaging Government:** Through planned growth that is fiscally sustainable and fosters strong, successful relationships between all levels of government in the supply of services and infrastructure.

Other Pertinent Reports

PDS 40-2016	Regional Official Plan Update
PDS 41-2017	New Official Plan Structure and Framework
PDS 3-2018	New Official Plan Update
PDS 6-2018	Natural Environment Project Initiation Report
PDS 18-2018	Natural Environment – Project Framework
PDS 9-2019	New Official Plan Consultation Timeline Framework
PDS 10-2019	Update on Natural Environment Work Program – New Regional Official Plan
CWCD 122-2019	Agricultural and Environmental Groups – Draft Stakeholder Lists
CWCD 150-2019	Update on Official Plan Consultations – Spring 2019
CWCD 179-2019	Notice of Public Information Centres – Natural Environment Work Program, New Regional Official Plan
CWCD 271-2019	Update on Consultation for New Official Plan
PDS 32-2019	Natural Environment Work Program – Phases 2 & 3: Mapping and Watershed Planning Discussion Papers and Comprehensive Background Study
PDS 1-2020	New Niagara Official Plan – Public Consultation Summary
PDS 3-2020	Ecological Land Classification Mapping Update
PDS 9-2020	Niagara Official Plan – Consultation Details and Revised Framework
CWCD 153-2020	Natural Environment Work Program Update – New Niagara

	Official Plan
PDS 26-2020	Natural Environment Work Program – Phase 4: Identification and Evaluation of Options
CWCD 314-2020	Update Natural Environment Work Program
PDS 35-2020	Niagara Official Plan Consultation Update
PDS 4-2021	Niagara Official Plan – Steps and Direction Moving Forward
PDS 1-2021	Natural Environment Work Program – 2nd Point of Engagement
CWCD 2021-70	Mapping and Data for Natural Environment Options
PDS 17-2021	Niagara Official Plan Consolidated Policy Report
PDS 30-2021	Niagara Watershed Plan – Draft for Consultation
PDS 32-2021	Update on Niagara Official Plan - Further Draft Policy Development
PDS 36-2021	Consultation Response and Further Policy Development
PDS 39-2021	Niagara Official Plan: Employment Area Conversion Recommendations
PDS 8-2021	Niagara Official Plan: Natural Environment System
PDS 41-2021	Settlement Area Boundary Review - Urban Recommendations
PDS 42-2021	Settlement Area Boundary Review - Rural Recommendations

Prepared by:
Dave Heyworth
Official Plan Policy Consultant
Planning and Development

Recommended by:
Michelle Sergi, MCIP, RPP
Commissioner
Planning and Development Services

Submitted by:
Ron Tripp, P.Eng.
Chief Administrative Officer

This report was prepared in consultation with Isaiah Banach, Manager of Long Range Planning and Erik Acs, Manager of Community Planning and reviewed by Doug Giles, Director of Long Range and Community Planning.

Appendices

Appendix 1 Table of Comments - Proposed Draft Consolidated NOP

Draft Niagara Official Plan – Table of Contents

Received January 26, 2022
C-2022-028

January 26, 2022

Ann-Marie Norio
Regional Clerk
Niagara Region
1815 Sir Isaac Brock Way
P.O. Box 1042
Thorold, ON L2V 4T7

Sent via email: Ann-Marie.Norio@niagararegion.ca

Re: CHPI Funding Shortfalls
Our File 35.23.125

Dear Ms. Norio,

At its meeting held on January 17, 2022, St. Catharines City Council approved the following motion:

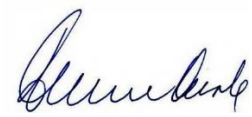
> WHEREAS temporary COVID-19 relief funding from the province has helped the Region's Homelessness Services respond effectively to the most urgent challenges caused by the pandemic on the homelessness system, but the annual CHPI funding from the province is not adequate and has not significantly increased over the last three years; and
>
> WHEREAS the Niagara Region has had to allocate 1.9 million of its own levy funding to meet the ever-increasing needs of the community, and as per a review by KPMG consultants, it was noted that out of all Ontario municipalities, Niagara Region has one of the highest contributions from property tax levies in the province towards homelessness services, which demonstrates a growing shortfall in provincial funding; and
>
> WHEREAS the Auditor General in her December 2021 report on Homelessness in Ontario raised concerns, finding that since 2013, the Ministry's funding methodology for the CHPI program has been primarily based on historical spending rather than local need; and
>
> WHEREAS on January 11, 2022, the Niagara Region's Public Health and Social Services Committee received a staff report seeking approval for the 2022-2023 Community Homelessness Initiative Plan (CHPI) for Niagara Region and a Motion was approved at that Committee directing the Regional Chair to send a letter to the Minister to immediately urge the province to address the funding inadequacies;

…/2

THEREFORE BE IT RESOLVED that the Council of the City of St. Catharines, representing the largest urban centre in the Region, direct the Mayor and City staff to write a letter asking the Minister to address the CHPI funding shortfalls in Niagara, and to coordinate with the Regional Chair's office to support any requests for meetings with the Minister's office; and

BE IT FURTHER RESOLVED that this Motion be sent to the Niagara Region, all twelve lower tier municipalities and to the four local Niagara MPPs.

If you have any questions, please contact the Office of the City Clerk at extension 1524.



Bonnie Nistico-Dunk, City Clerk
Legal and Clerks Services, Office of the City Clerk
:em

cc: Local area municipalities
Jennifer Stevens, MPP - St. Catharines, JStevens-CO@ndp.on.ca
Jeff Burch, MPP - Niagara Centre, JBurch-QP@ndp.on.ca
Wayne Gates, MPP - Niagara Falls, wgates-co@ndp.on.ca
Sam Oosterhoff, MPP - Niagara West-Glanbrook, sam.oosterhoff@pc.ola.org
Brian York, Director, Economic Development and Government Relations
Scott Rosts, Chief of Staff, Mayor's Office
Melissa Wenzler, Government Relations Advisor

…/2

Received January 25, 2022
C-2022-029

Town of Lincoln

4800 SOUTH SERVICE RD
BEAMSVILLE, ON L0R 1B1

905-563-8205

January 25, 2022

SENT VIA EMAIL: annmarie.norio@niagararegion.ca

Region of Niagara
Ann-Marie Norio, Clerk
1815 Sir Isaac Brock way
Thorold, ON L2V 4T7

RE: Town of Lincoln Council Resolution - Vision Zero

Please be advised that Council of the Corporation of the Town of Lincoln at its Special Council Meeting held on January 24, 2022, passed the following motion in support of the Niagara Region's Vision Zero initiative.

Resolution Number: SC-2022-13
Moved by: Councillor J.D. Pachereva; Seconded by: Councillor Lynn Timmers

WHEREAS the Government of Ontario passed legislation allowing all municipalities within the Province to establish speed limits of lower than 50 km/h within their local neighbourhoods;

AND WHEREAS the Town of Lincoln Council has allowed for the reduction of Speed limits in various neighbourhoods as Traffic Calming measures to ensure street safety, comfort and livability are top priority for communities across Lincoln;

AND WHEREAS the Town of Lincoln Council has championed the Vision Zero initiative (which includes but isn't limited to Red Light Camera's and Automated Speed Enforcement) that was brought forward from Niagara Region and remains focused on the safety of our roadways, school zone areas and regional roads;

AND WHEREAS the recent vote by one of the twelve Council's in Niagara Region effectively has stopped the Vision Zero initiative from proceeding at this time;

THEREFORE BE IT RESOLVED THAT Town of Lincoln Council will continue to support Niagara Region on their collaborative initiative for Vision Zero, specifically

the Red Light Camera and Automated Speed Enforcement element and request that reconsideration be given to alternative options that allow the implementation across the Niagara Region, for those municipalities that support it.

CARRIED

If you require any additional information, please do not hesitate to contact the undersigned.

Regards,

Julie Kirkelos
Town Clerk
jkirkelos@lincoln.ca

JK/dp

cc: Local Area Municipalities

Received January 26, 2022
C-2022-030

Town of Lincoln

4800 SOUTH SERVICE RD
BEAMSVILLE, ON L0R 1B1

905-563-8205

January 25, 2022

SENT VIA EMAIL: annmarie.norio@niagararegion.ca

Region of Niagara
Ann-Marie Norio, Clerk
1815 Sir Isaac Brock way
Thorold, ON L2V 4T7

RE: Town of Lincoln Council Resolution - Transit Consolidation: Moving Transit Forward in Niagara

Please be advised that Council of the Corporation of the Town of Lincoln at its Special Council Meeting held on January 24, 2022, passed the following motion in support of the Niagara Region's Transit Consolidation

Resolution Number: SC-2022-05
Moved by: Councillor Lynn Timmers; Seconded by: Councillor Adam Russell

That Council receive and file Report AD-01-22 regarding Transit Consolidation: Moving Transit Forward in Niagara; and

That Town of Lincoln Council consents to the passage of By-law No. 96-2021 of the Regional Municipality of Niagara, being a by-law to provide Niagara Region with the exclusive authority to establish, operate and maintain a consolidated transit system for the Niagara Region.

CARRIED

A copy of Report AD-01-22 is attached for your reference.

If you have any questions, please do not hesitate to contact the undersigned.

Regards,

Julie Kirkelos
Town Clerk
jkirkelos@lincoln.ca

JK/dp

cc: Local Area Municipalities

Subject:	Transit Consolidation: Moving Transit Forward in Niagara
To:	Council
From:	Office of The Chief Administrative Officer

Report Number:	AD-01-22
Wards Affected:	All
Date to Committee:	January 24, 2022
Date to Council:	January 24, 2022

Recommendation:

Receive and file Report AD-01-22 regarding Transit Consolidation: Moving Transit Forward in Niagara; and

That Town of Lincoln Council consents to the passage of By-law No. 96-2021 of the Regional Municipality of Niagara, being a by-law to provide Niagara Region with the exclusive authority to establish, operate and maintain a consolidated transit system for the Niagara Region.

Purpose:

This report provides council an update on the current state/status of the transit governance proposal including recent council decisions, an analysis on the potential benefits and impacts on the residents of the Town of Lincoln and seeks council endorsement on creating a consolidated transit system for Niagara Region.

Background:

Current State - Transit

Currently, five (5) of the municipalities operate independent local transit systems (Fort Erie, St. Catharines, Welland, Niagara Falls and Niagara Region). Each transit system has unique service hours and fares.

The introduction of a consolidated transit model would bring together the five (5) independently operating local transit systems as well as NRT OnDemand to offer consistent operating hours and fares, new digital payment technology and better connections for riders across Niagara. Specialized transit services such as Niagara Specialized Transit and local specialized services would also be integrated.

These transit services operating in Niagara today have different levels of services, different operating hours, standards/frequency of service, and with significant barriers to movement across municipal boundaries.

While significant work has been done in recent years through committees such as the Inter-municipal Transit Working Group (IMTWG) to make these systems integrate better, the limit of what can be achieved independently has been reached. Integrating into one transit system serving all of Niagara represents an opportunity to take these efforts further – combining resources to deliver enhanced service, providing easier connections between towns and cities, and effectively integrating with expanded GO Train service.

Report:

Benefits - Consolidated Niagara Regional Transit

With the introduction of an integrated regional transit system as proposed is expected to bring numerous benefits to the residents of Town of Lincoln and Niagara as a whole, including:

- Creating a single branded system that can take riders anywhere in the Region, for a single fare, that will break down jurisdictional barriers and connect communities;
- Leveraging and supporting GO rail and bus expansion within the Niagara region;
- Developing and supporting the economy, job retention, and creating and driving tourism;
- Promoting socially equitable access to transit;
- Being environmentally sustainable and reducing traffic congestion;
- Supporting accessibility through the standardization of accessibility policies and a greater pool of resources to implement improvements; and
- Providing better value and service to the taxpayers of Niagara.

<u>Additional Services</u>

There are significant additional services gained for the Town under consolidation. These include the following:

- Move to a single $3 fare for any trip, anywhere in Niagara (NRT inter-municipal trips are reduced from $6 down to $3)
- New, fully seamless transfers between routes (under one system)
- New fare payment technology (i.e. Apple Pay, Visa, etc.)
- Standard operating hours – extended hours of NRT OnDemand weekdays and Saturdays (= 3 additional hours daily)
- Addition of Sunday and Holiday service (7am-9pm)
- A total of 2,700 new service hours annually in Lincoln
- Additional fleet to enable OnDemand system growth via capital reserve contributions
- Bus-meets-train connections funded for future hourly service to GO station at Beamsville

- New direct NRT OnDemand routes to new destinations (i.e. hospitals, shopping, etc.) not available under current two-tier jurisdictional model
- In-house customer service, scheduling, drivers (the financial model accounts for contracted services to be brought in-house)
- NRT OnDemand model continues to serve as the transit model for west Niagara with new express key connections
- NRT OnDemand systems continue to have access to the IMT system to travel anywhere in Niagara
- Conventional community bus (high volume fixed routes) routes would be considered once ridership reaches specific thresholds (i.e. downtown, GO station to Community Centre, etc.)

It is worth noting that under an independent system (or even status quo), almost none of these benefits will be realized a result of significant independent operating costs, ongoing jurisdictional barriers, or prohibitive capital requirements.

Actions to date – Consolidated Niagara Regional Transit

On September 29th, 2021, the Linking Niagara Transit Committee (LNTC) endorsed the proposed governance model for the consolidation of transit comprised of comprehensive financial, Board composition, and service strategies.

- These combined strategies for the new Transit Commission reflect extensive consultation, including two rounds of consultation with local municipalities as well as engagement with interested parties from across Niagara and the public.
- The recommended strategies reflect the consensus recommendation of the Governance Steering Committee (GSC), balancing the input and feedback received from all parties.

On November 25th, 2021, Regional Council provided approval to move forward with consolidation (see Appendix A). The only no-vote on the matter came from Wainfleet Mayor Kevin Gibson. This represented the first step in the required triple-majority process. Since Niagara Regional Council approved moving forward with consolidating transit for Niagara Region as of December 21, 2021 - **8** of the **12** LAMs Councils have met to discuss this item.

As of December 21, 2021 - 7 local area municipal (LAMs) councils have passed resolutions consenting to the passage of by-law No. 2021 – 96 (see Appendix B).

With the resolutions and approvals received to date it constitutes a triple majority. **Note:** Welland considered the resolution on December 9, 2021 and approved it with conditions. As the resolution was passed with conditions and Triple majority requires the by-law to be passed clean, without conditions. As such Welland is considered as voting no to regional transit.

The triple-majority process consists of the following steps/approvals:

- A majority of all votes on upper-tier Council (Regional Council) in support; and
    - **(achieved – November 25, 2021)**
- A majority of the councils of the local area municipalities (LAMs) pass resolutions consenting to the by-law; and
    - **(achieved – December 21, 2021)**
- The total number of electors in the local area municipalities (LAMs) that have passed resolutions consenting to the by-law form a majority of the electors (at least 50 percent, plus one, of Niagara's registered voters) in the upper-tier municipality.
    - **(achieved – December 21, 2021)**

As noted previously the by-law provides the Niagara Region the authority to establish, operate and maintain a consolidated transit system for Niagara Region with a triple majority.

Transitional Transit Commission Board

A transitional Transit Commission Board will be established and will be comprised of fifteen (15) elected officials, representing all municipalities. Nine (9) of the fifteen (15) officials would be from smaller municipalities. The transitional Board would be supported by a twenty (20) member public advisory committee comprised of members of the public and other interested parties. Commission Board and public Advisory Committee members would be recommended by local Councils and approved by Regional Council.

Local Perspective – Town of Lincoln Transit Demand

Over the last 10 years, extensive work has been done to develop a recommended governance strategy for the consolidation of transit in Niagara. A significant portion of this time has been focused on consultation: hearing input from municipalities, interested parties, and most importantly the residents who stand to benefit from an enhanced transit system.

Approving the resolution will show Council's support of a consolidated transit system will expand safe and accessible transit within the Town of Lincoln, which has been a rising demand within the community as demonstrated through the introduction of Lincoln's first local ride sharing service, NRT OnDemand (NRT). Introduced in August 2020, NRT launched in partnership with Pelham, Grimsby, and Niagara Region, and also offering service in West Lincoln, Wainfleet, Niagara-on-the-Lake and launching early in 2022 in Port Colborne. The service allows residents to call for service "on demand" using a smart phone or by making phone calls.

As of December 31, 2021, a total of 16, 362 rides have been completed to, from or within the Town of Lincoln. The Town of Lincoln's monthly ridership continues an upward trend, with our best monthly ridership numbers (1,713 rides) being recorded in the month of August 2021 (see Appendix C).

The current response to NRT OnDemand demonstrates the intrinsic value modernized transportation systems offer residents. Under a consolidated transit system, NRT service would continue, and customer service would be enhanced as service hours would become harmonized across the Region. Under the current model, service levels are 7:00am to 10:00pm Monday – Saturday, whereas under the consolidated model operating hours would expand to 6:00am to 12:00am (Midnight) Monday –Saturday, with Sunday and Holiday service being introduced from 7:00am to 9:00pm.

In addition to the successful launch of NRT OnDemand demonstrating the growing need for public transit, not-for-profits, academic institutions, and Niagara and Lincoln Chambers of Commerce have expressed that they are in favour of a consolidated regional transit model. Organizations that have expressed that a consolidated transit model will support Niagara's most vulnerable populations, improve social equity, enhance access to education and will improve economic development include but are not limited to:

- Lincoln Chamber of Commerce;
- Community Care of West Niagara;
- Pharmacist/Owner Shoppers Drug Mart;
- Employment Help Centre;
- Downtown Bench Beamsville BIA;
- Brock University Office of the President;
- Twenty Valley Tourism Association;
- YMCA of Niagara;
- Joint Accessibility Advisory Committee;
- Pathstone Mental Health CEO;
- Niagara Poverty Reduction Network;
- Greater Niagara Chamber of Commerce.

Through their correspondence and delegations to Regional Council, community members have expressed that the implementation of a consolidated transit system that is accessible to all is imperative in moving Lincoln forward as a modern and forward-thinking Town that meets the needs of all residents and visitors.

Please see Appendix D for all correspondence submitted, including feedback from the Joint Accessibility Advisory Committee as well as the Region's response.

Analysis/Comments

Fast, affordable, reliable public transportation networks provide massive benefits to the communities that invest in them. Providing options other than driving a personal vehicle helps get cars off the road, reduces congestion, alleviates stress, and significantly

improves health. Fewer cars on the road also means smoother movement of goods and are a boon to local economies (David Suzuki Foundation).[1]

Over the last 10 years, tremendous efforts at the CAO level have been put into developing a consolidated Niagara transit model. It is imperative that the Town of Lincoln is able to provide both residents, visitors, patrons and employees with access to safe, affordable transit so that they can move freely across the Region. A Regional transit model will not only ensure that the Town of Lincoln can seamlessly integrate with and meet the demands of future transportation enhancements (i.e. GO Transit), but will help realize various short and long term benefits as described below.

A key prerequisite for Niagara getting all day GO service (including a new Lincoln GO station) is that the Town has an integrated transit system that moves people across the Region which can enable residents to have seamless access to the GO network to and from the station.

Responsible Development

The incorporation of public transportation options and considerations into broader economic and land use planning can help a community expand business opportunities, reduce sprawl, and create a sense of community through transit-oriented development. By creating a locus for public activities, such development contributes to a sense of community and can enhance neighborhood safety and security. Public transportation also helps to reduce road congestion, travel times, air pollution, and all of which benefit riders and non-riders alike.

Economic Development

Workforce attraction and retention is one of the top issues local businesses face. Even though the Town of Lincoln businesses across various industries have employment opportunities available, they remain unsuccessful in retaining top talent. One of the key factors for these issues is a lack of reliable and connective transportation. The Town has committed to the local business community that it will continue to improve the Town of Lincoln as a place to do business and introducing an integrated transit system will be a major step forward in fulfilling that commitment.

Regions that have introduced regional transit, such as York, Durham, and Waterloo, have experienced positive economic development impacts. Waterloo's LRT system became operational on June 21, 2019, and was anticipated to have positive local economic impacts by enabling employees to access job opportunities and provide employers to an expanded workforce.[2] Since LRT transit was introduced, Waterloo's manufacturing and

[1] David Suzuki Foundation, 2021, https://davidsuzuki.org/about/
[2] Plenary, "Waterloo Light Rapid Transit", 2021, https://plenarygroup.com/projects/americas/waterloo-light-rapid-transit

utilities workforce increased by 3,000 employees.[3] In 2020, the Region had the 10th largest workforce.[4]

Please see Appendix D for a letter of support from the Employment Help Centre and Niagara and Lincoln Chamber of Commerce.

Environmental Benefits

Approximately 85 percent of greenhouse gas emissions from the transportation sector are related to the surface transportation system.[5] In Ontario, the transportation sector is the largest contributor of greenhouse gases emissions. Public transportation use is one of the most effective actions individuals can take to conserve energy. Riding public transportation far exceeds the benefits of other energy-saving household activities, such as using energy-efficient light bulbs, adjusting thermostats, or using energy-efficient appliances. By investing in public transit, we can create a more sustainable model while meeting our commitments under the Paris Climate Agreement.

Health

Public transit provides many health benefits to transit users and drivers alike. Residents of car-oriented communities often experience longer commutes, air pollution, social exclusion of residents who do not drive and ill-health conditions beginning with a decline in physical exercise amongst residents.[6] A healthy and complete community is compact, pedestrian-friendly, and transit-supportive; contains a mix of uses that support daily living; and, enables physical activity through active transportation.[7] Studies have found that people who take public transit have higher levels of physical activity because they walk or cycle at one or both ends of their transit trip.[8] Investing in Regional transit will provide residents access to sustainable, mix-used transportation options that will realize positive health benefits for the Lincoln community.

Social and Community Services Access

Public transit reduces barriers for participation in community services and improves access to social services. Staff have experienced many instances were transportation to programs and services has been a significant challenge for residents, with the most impacted demographic groups being youth and seniors. While transportation needs are unique to the user and the reliance on public transit may vary from short term to continual demand, in either instance if a transportation solution is not available, the outcome is

---

[3] Report PDL-CPL-21-13, April 13, 2021, https://www.regionofwaterloo.ca/en/regional-government/resources/2020-Labour-Force-Report-and-Council-Bulletin.pdf

[4] Workforce, Region of Waterloo, 2021, https://www.regionofwaterloo.ca/en/doing-business/workforce.aspx

[5] Kansas City Area Transportation Authority, 2021, https://www.kcata.org/about_kcata/entries/environmental_benefits_of_public_transit

[6] Transit-Oriented Communities: Why We Need Them and How We Can Make Them Happen, Ontario 360 Policy Papers, 2021, https://on360.ca/policy-papers/transit-oriented-communities-why-we-need-them-and-how-we-can-make-them-happen/

[7] Health Development Assessment, Region of Peel, 2016, https://www.peelregion.ca/health/resources/healthbydesign/pdf/HDA-User-Guide-Jun3-2016.pdf

[8] Int J Environ Res Public Health. 2012 Jul; 9(7): 2454–2478., https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3407915/

reduced access to community and social services. A reliable, coordinated, and well-integrated public transit solution ensures that residents can safely use community and social services independently, confidently and at their convenience.

The Niagara Aging Strategy had identified transportation resources as an important factor for continued independent living and maintaining well-being. Staff also anticipate that as work from home solutions increase and lifestyles change, reliable public transportation will become even more desirable to support the recreational, sport, fitness, and social needs of the family. While a large part of these services is provided within the Town, there are many social services and outreach resources that exist beyond the municipality. An integrated region-wide public transit solution ensures that community members have options to access these locations and connect to the services that they need to live well.

Traffic Safety and Parking

A fully realized integrated transit system will provide residents a viable alternative to owning and subsequently travelling using personal vehicles. This will ultimately help support the reduction of the number of vehicles on the road and the amount of parking that would be necessary to support them.

Council

The town of Lincoln Council focuses on priorities that support and achieve Lincoln's community vision of a place to grow, a place to prosper, a place to belong. The introduction of a consolidated transit model helps Council achieve these goals.

Specifically, one of Council's key priorities is to promote a "Connected Community" through an integrated mobility network focusing on affordable and accessible transit options.

Further, the introduction of an integrated transit system will 1) welcome new people and businesses into the community, 2) help connect people and businesses, 3) create a vibrant and prosperous community and finally, 4) build resiliency and ensure a sustainable future.

Financial, Legal, Staff Considerations:

Financial:

The Town of Lincoln's municipal transit budget of $175,000 will be uploaded to the Region's special transit levy. This upload will occur in a single year, 2023.

In 2020, $1M of the total Niagara Regional Transit service cost (approx.) was allocated to the Town of Lincoln through the Regional assessment. This was in addition to the Town of Lincoln's Municipal transit levy of $175,000, for a total transit cost of $1.2M (rounded) to the Lincoln taxpayer. In 2023, after adjusting for inflation and the transition to the updated financial strategy, the total estimated regional transit service costs to Lincoln taxpayers through the Special Regional Levy would be $1.4M. This is based on a user pay finance model not an assessment-based finance model. Future costs associated with enhancing current services levels of 7:00am to 10:00pm Monday – Saturday to 6:00am to 12:00am Monday – Saturday with Sunday and Holiday service being introduced from

7:00am to 9:00pm will be allocated on the bases of the increased number of service hours provided.

The Town of Lincoln's Council has made previous inquiries on the cost of running NRT OnDemand independently.

Based on current ridership numbers, growing demand, and current service standards, Lincoln would need a minimum of 3 fully staffed vehicles (in Grimsby this is 4-5 vehicles given demand) for the initial service. I will note this fleet mix does not include a spare vehicle, which, if one in-service vehicle is out of service, dramatically reduces capacity for an indeterminate amount of time. All contracted providers will insist on a spare for this reason adding additional cost or be unwilling to agree to service metrics. This 3-vehicle initial model would have an estimated minimum cost of $750,000 annually, which would be offset by $180,000 in PGT, for a net local levy to Lincoln of $570,000. This total does not include the cost of internal Lincoln staff time that would be required to coordinate transit at a local level, estimated to be ~$50k. This increases the total to $620,000, which would all need to be funded entirely by the Lincoln municipal levy. In combination with the 2023 Regional NRT service costs of $1.1M (the assessment-based regional levy for all municipalities to operate the IMT system), the total cost to Lincoln to run a non-consolidated transit system would exceed $1.7M, in comparison to a consolidated transit system at $1.4M in 2023.

It is also worth noting that in August 2022 the NRT OnDemand pilot is scheduled to end. The introductory cost to Niagara west municipalities of "existing transit levy + PGT for local service" will most certainly not prevail should governance not proceed. Noteworthy is that under the current funding formula, the Region contributes 78% of the total NRT OnDemand operating budget for west Niagara, vs. the LAMs who contribute 22% combined. This was done purposefully to test the operating model and ensure system viability. Should consolidation not occur, this funding agreement would need to be renegotiated to reflect the actual number of local vs. inter-municipal trips, in addition to incremental inflationary increases not contained in the current agreement. However, under consolidation, the new Commission would ensure that on demand service continues in all existing municipalities using the new funding formula outlined in the financial plan ('user pays model' – only those local hours incurred in each municipality would be charged back to their respective regional levies – see Appendix E.

<u>Big 3 / Rest Model</u>

Under the existing status quo, region-wide assessment pays for all inter-municipal routes. These routes travel between communities and are accessed daily by residents travelling between towns and cities. These costs are and will continue to be funded on an assessment basis due to their benefit, usage, and access to and by all of Niagara both now and into the new model.

However, under the financial plan outlined in LNTC C-3 2021 (Appendix E), the new Commission will be funded such that the "Big 3" conventional transit municipalities (STC, NF, WEL) who make up three-quarters of 2020 total transit operating costs, will continue to be apportioned three-quarters of total transit operating costs in 2023.

Additionally, 85% of the capital budget apportioned under the new Commission will also go to the Big 3 conventional transit municipalities. The remaining costs apportioned to the other municipalities will pay for on demand fleet and associated capital requirements to deliver that service model.

All services (conventional, specialized, on demand) will be under the new Commission, but the financial plan is already built to apportion costs where they rightfully belong – to the communities incurring those costs and utilizing those assets.

Simply put – the financial model is built on fairness and equity. You pay for the service you get; you pay for the capital you use. Lincoln will not pay to subsidize buses in St. Catharines, nor will a St. Catharines bus be used to service Lincoln. Those costs are all apportioned back to the municipalities where those assets are utilized.

Legal: N/A

Staffing: N/A

Public Engagement Matters:

To gauge wider community feedback on the proposed model for consolidation, a brief online survey was created and administered as part of the overall communications strategy.

The Moving Transit Forward survey was hosted online through a dedicated project website, available at www.MovingTransitForward.ca**,** as well as through municipal public engagement platforms such as BangTheTable. The survey was live from Sept. 21 – Oct. 1, 2021, and was open to all Niagara residents.

The survey gathered feedback from 2,252 individuals from across Niagara. Overall, the survey results showed strong approval among Niagara residents for each of the three main components of the proposed transit model:

- 82 percent supporting the Governance Structure;
- 85 percent supporting the Service Level Standards; and
- 79 percent support the Financial Model.

Conclusion:

As demonstrated in this report, public transit is an imperative investment that will realize significant benefits for not only the residents of town of Lincoln, but Niagara Region as a whole. A consolidated transit system will better connect Lincoln to its neighbouring municipalities, both within Niagara and to Hamilton, and will ensure that residents can seamlessly connect with the GO station in Lincoln in the future. Niagara Region is also in advanced discussions with the City of Hamilton to provide direct connections between the NRT service and Hamilton Street Railway (HSR – Hamilton Transit).

When public transit is introduced, residents and visitors alike are provided with a sustainable and reliable way to move throughout a community. This ultimately increases economic opportunities for employees and businesses, improves traffic safety, reduces

greenhouse gas emissions, and improves resident health, all of which helps to build a greater sense of community and increased quality of life. It also provides a foundation for a more inclusive community.

Introducing a Niagara Consolidated Transit system will allow Lincoln to become a more equitable community both now and into the future. Providing an affordable, harmonized communal transit model at a cost of $3/trip will afford Lincoln residents from all socio-economic background's greater employment opportunities, additional social services and easier access to educational institutions across the Region. Increasing access to these essential services will have a profound, inter-generational impact for the Lincoln community and will improve residents' quality of life for years to come.

Respectfully submitted,

Michael Kirkopoulos

Chief Administrative Officer

905-563-8205 Ext. 268

Appendices:

- Appendix A – CLK-C 2021-182 PW 55-2021 Consolidated Transit
- Appendix B – By-law No. 2021-96
- Appendix C – NRT OnDemand Dashboard December 2021
- Appendix D – Letters of Support
- Appendix E – LNTC-C3-2021 Niagara Transit Governance

Report Approval:

Report has been reviewed by the Director of Public Works, and the Director of Finance and Administration.